

AUTHOR INDEX FOR VOLUME 20

A

- Abd-Elfattah, Anwar-Saad A., and Shamoo, Adil E.** Regeneration of a Functionally Active Rat Brain Muscarinic Receptor by D-Penicillamine after Inhibition with Methylmercury and Mercuric Chloride: Evidence for Essential Sulfhydryl Groups in Muscarinic Receptor Binding Sites, 492
- Adams, Stephen M., Murphy, Michael J., and Kaminsky, Lawrence S.** Molecular Orbital Studies of the Metabolism of Fluroxene and Analogous Fluorinated Ether Anesthetics, 423
- Adler, A.** See *Scheibel*, 218
- Aguayo, L. G., Pazhenchevsky, B., Daly, J. W., and Albuquerque, E. X.** The Ionic Channel of the Acetylcholine Receptor: Regulation by Sites Outside and Inside the Cell Membrane Which Are Sensitive to Quaternary Ligands, 345
- Albuquerque, E. X.** See *Aguayo, Pazhenchevsky, and Daly*, 345
- Alvarez, Robert, Taylor, Adair, Fazzari, Jasmine J., and Jacobs, John R.** Regulation of Cyclic AMP in Human Platelets: Sequential Activation of Adenylate Cyclase and Cyclic AMP Phosphodiesterase by Prostaglandins, 302
- Andersson, Bo.** See *Jones, Meyer, and Orrenius*, 159
- Appel, Peggy.** See *Powis and Svingen*, 387
- Asano, Masahisa.** See *Hidaka and Tanaka*, 571
- Ayukawa, Saburo, Fisher, Joyce M., and Rabinovitz, Marco.** Proteolytic Susceptibility of Hemoglobin Synthesized in the Presence of Amino Acid Analogues, 227

B

- Baert, François.** See *Hénichart, Houssin, and Gors*, 598
- Baguley, Bruce C.** See *Wilson, Wakelin, and Waring*, 404
- Balsamo, Aldo, Macchia, Bruno, Macchia, Franco, Martinelli, Adriano, Tognetti, Pietro, and Veracini, Carlo A.** Conformational Properties of Benzodioxan Derivatives with *Alpha*-Adrenergic Blocking Activity, 371
- Bandoli, Giuliano, Clemente, Dore A., Grassi, Antonio, and Pappalardo, Giuseppe C.** Molecular Determinants for Drug-Receptor Interactions. I. Solid-State Structure and Conformation of the Novel Nootropic Agent 2-Pyrrolidone-*N*-Acetamide: X-Ray and Theoretical SCF-MO Studies, 558
- Baron, Jeffrey.** See *Kawabata and Guengerich*, 709
- Barrett, J.** See *Handwerker, Barry, Markoff, Zeitler, Cwikel, and Siegler*, 609
- Barry, S.** See *Handwerker, Barrett, Markoff, Zeitler, Cwikel, and Siegel*, 609
- Baudry, Michel, Smith, Elizabeth, and Lynch, Gary.** Influences of Temperature, Detergents, and Enzymes on Glutamate Receptor Binding and Its Regulation by Calcium in Rat Hippocampal Membranes, 280
- Bencuya, Rosa.** See *Rudnick, Nelson, and Zito*, 118
- Bertino, Joseph R.** See *Guo, Dietrich, Hansch, and Dolnick*, 649
- Biermann, Jürgen.** See *Pantien and Gruen*, 76
- Birdsall, Berry.** See *Gronenborn, Hyde, Roberts, Feeney, and Burgen*, 145
- Blume, Arthur J.**  
See *Fantozzi and Mullikin-Kilpatrick*, 8  
See *Larsen and Mullikin-Kilpatrick*, 255
- Bockaert, Joël.** See *Homburger, Lucas, Rosenbaum, and Vassent*, 463
- Boerth, Robert C.** See *Mushlin and Wells*, 179, 190
- Borchardt, Ronald T.** See *Grunewald, Rafferty, and Krass*, 377
- Bourne, Henry R., Kaslow, David, Kaslow, Harvey R., Salomon, Michael R., and Licko, Vojtek.** Hormone-Sensitive Adenylate Cyclase: Mutant Phenotype with Normally Regulated *Beta*-Ad-

renergic Receptors Uncoupled from Catalytic Adenylate Cyclase, 435

- Brostrom, Charles O.** See *Brostrom, Huang, and Wolff*, 59
- Brostrom, Margaret A., Brostrom, Charles O., Huang, Su-Chen, and Wolff, Donald J.** Cholera Toxin-Stimulated Cyclic AMP Accumulation in Glial Tumor Cells: Modulation by  $Ca^{2+}$ , 59
- Brown, Joan Heller.** Calcium-Dependent Blockade of Cardiac Cyclic AMP Accumulation by Batrachotoxin and Veratridine, 113
- Brown, Oliver E.** See *Hamrell, Laszlo, and Sedwick*, 637
- Burgen, Arnold.** See *Gronenborn, Birdsall, Hyde, Roberts, and Feeney*, 145

C

- Cann, John R., Nichol, Lawrence W., and Winzor, Donald J.** Micellarization of Chlorpromazine: Implications in the Binding of the Drug to Brain Tubulin, 244
- Cannon, Joseph G.** See *Kotake, Hoffmann, and Goldberg*, 429
- Catterall, William A.**  
Inhibition of Voltage-Sensitive Sodium Channels in Neuroblastoma Cells by Antiarrhythmic Drugs, 356  
and **Coppersmith, Jeffrey.** High-Affinity Saxitoxin Receptor Sites in Vertebrate Heart: Evidence for Sites Associated with Autonomic Nerve Endings, 526  
and **Coppersmith, Jeffrey.** Pharmacological Properties of Sodium Channels in Cultured Rat Heart Cells, 533
- Carruthers, Junko M.** See *Marshall*, 89
- Cascieri, Margaret A., Goldenberg, Marvin M., and Liang, Teh-ming.** Biological Activity of Substance P Methyl Ester, 457
- Chang, Kwen-Jen, Hazum, Eli, Killian, Anthony, and Cuatrecasas, Pedro.** Interactions of Ligands with Morphine and Enkephalin Receptors Are Differentially Affected by Guanine Nucleotide, 1
- Cheng, Y. -C., Dutschman, G., De Clerq, E., Jones, A. S., Rahim, S. G., Verhelst, G., and Walker, R. T.** Differential Affinities of 5-(2-Halogenovinyl)-2'-Deoxyuridines for Deoxythymidine Kinases of Various Origins, 230
- Cheng, Yung-Chi.** See *Ruth*, 415
- Cheret, A. M., Pignal, F., and Lewin, M. J.-M.** Effects of  $H_2$ -Receptor Antagonists Cimetidine, Ranitidine, and ICI 125, 211 on Histamine-Stimulated Adenylate Cyclase Activity in Guinea Pig Gastric Mucosa, 326
- Chou, David, Polnaszek, Carl F., Yost, Yul, Leppik, Ilo E., and Holtzman, Jordan L.** Application of Spin Labeling to Drug Assays. II. Determination of the Binding of [ $^{14}C$ ]Phenytoin and Spin-Labeled Phenytoins to Albumin and Human Serum, 674
- Clawson, Gary A.** See *Moody, James, and Smuckler*, 685
- Clemente, Dore A.** See *Bandoli*, 558
- Cole, Susan P. C., Whitney, Ralph Allen, and Marks, Gerald S.** Ferrochelataase-Inhibitory and Porphyrin-Inducing Properties of 3,5-Diethoxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine and Its Analogues in Chick Embryo Liver Cells, 395
- Coppersmith, Jeffrey.** See *Catterall*, 526, 533
- Costa, Tommaso**  
**Russell, Laura, Pert, Candace B., and Rodbard, David.** Halide- and  $\gamma$ -Aminobutyric Acid-Induced Enhancement of Diazepam Receptors in Rat Brain: Reversal by Disulfonic Stilbene Blockers of Anion Channels, 470  
See *Goldberg, Habig, Kohn, and Hardegee*, 565
- Cotecchia, Susanna.** See *Mennini, Poggesi, De Blasi, and Samanin*, 237
- Cramer, Richard D., III.** See *Yunger*, 602
- Crankshaw, Duane L.** See *Holtzman, Peterson, and Polnaszek*, 669

Cuatrecasas, Pedro. See *Chang, Hazum, and Killian*, 1  
 Cwikel, B. See *Handwerger, Barrett, Barry, Markoff, Zeitler, and Siegel*, 609

## D

Dahlin, David C. See *Nelson, Rauckman, and Rosen*, 195  
 Daly, J. W. See *Aguayo, Pazhenchevsky, and Albuquerque*, 345  
 Davis, William C., and Ticku, Maharaj K. Ethanol Enhances [<sup>3</sup>H] Diazepam Binding at the Benzodiazepine- $\gamma$ -Aminobutyric Acid Receptor-Ionophore Complex, 287  
 De Blasi, Antonio. See *Mennini, Poggesi, Cotecchia, and Samanin*, 237  
 De Clerq, E. See *Cheng, Dutschman, Jones, Rahim, Verhelst, and Walker*, 230  
 DeLuca, Hector F. See *Stern, Tanaka, Ikekawa, and Kobayashi*, 460  
 Dietrich, Stephen W. See *Guo, Hansch, Dolnick, and Bertino*, 649  
 Di Iorio, E. E. See *Hamboeck*, 579  
 Dinizo, Stephen E. See *Marks, Zimmer, Mico, Kunze, and Ortiz de Montellano*, 206  
 Dolnick, Bruce J. See *Guo, Dietrich, Hansch, and Bertino*, 649  
 Drummond, George I. See *Weiss*, 592  
 Duchemin, Anne-Marie. See *Quach, Rose, and Schwartz*, 331  
 Duruibe, Valentine, and Tejwani, Gopi A. The Effect of Ethanol on the Activities of the Key Gluconeogenic and Glycolytic Enzymes of Rat Liver, 621  
 Dutschman, G. See *Cheng, De Clerq, Jones, Rahim, Verhelst, and Walker*, 230

## E

Eldefrawi, A. T. See *Shaker, Miller, and Eldefrawi*, 511  
 Eldefrawi, M. E. See *Shaker, Eldefrawi, and Miller*, 511  
 El-Fakahany, Esam, and Richelson, Elliott. Phenoxybenzamine and Dibenamine Interactions with Calcium Channel Effectors of the Muscarinic Receptor, 519

## F

Fantozzi, Robert, Mullikin-Kilpatrick, Debra, and Blume, Arthur J. Irreversible Interactions of the Opiate Receptors in the Neuroblastoma  $\times$  Glioma Hybrid NG108-15 by Chlornaltrexamine, 8  
 Fazzari, Jasmine J. See *Alvarez, Taylor, and Jacobs*, 302  
 Feeney, James. See *Gronenborn, Birdsall, Hyde, Roberts, and Burgen*, 145  
 Feinstein, M. B. See *Volpi and Sha'afi*, 363  
 Fischel, Steven V., and Medzihradsky, Fedor. Scatchard Analysis of Opiate Receptor Binding, 269  
 Fischer, R. W. See *Hamboeck*, 579  
 Fisher, Joyce M. See *Ayukawa and Rabinovitz*, 227  
 Fishman, Peter H., Mallorga, Pierre, and Tallman, John F. Catecholamine-Induced Desensitization of Adenylate Cyclase in Rat Glioma C6 Cells: Evidence for a Specific Uncoupling of Beta-Adrenergic Receptors from a Functional Regulatory Component of Adenylate Cyclase, 310  
 Fournie-Zaluski, Marie-Claude, Gacel, Gilles, Maigret, Bernard, Premilat, Samuel, and Roques, Bernard P. Structural Requirements for Specific Recognition of  $\mu$  or  $\delta$  Opiate Receptors, 484  
 Frelin, C., Vigne, P., Ponzio, G., Romey, G., Tourneur, Y., Husson, H. P., and Lazdunski, M. The Interaction of Ervatamine and Epiervatamine with the Action Potential Na<sup>+</sup> Ionophore, 107  
 Friedhelm, Schroeder. See *Harris*, 128  
 Fujii, Tatsuzo. See *Kanaho and Sato*, 704

## G

Gacel, Gilles. See *Fournie-Zaluski, Maigret, Premilat, and Roques*, 484  
 Glazer, Robert I. and Hartman, Kathleen D. Cytokinetic and Biochemical Effects

of Sangivamycin in Human Colon Carcinoma Cells in Culture, 657  
 See *Lin*, 644

See *Saffer*, 211

Glover, Edward. See *Poland and Mark*, 442  
 Goldberg, Leon I. See *Kotake, Hoffmann, and Cannon*, 429  
 Goldberg, Ronald L., Costa, Tommaso, Habig, William H., Kohn, Leonard D., and Hardegree, M. Carolyn. Characterization of Fragment C and Tetanus Toxin Binding to Rat Brain Membranes, 565  
 Goldenberg, Marvin M. See *Cascieri and Liang*, 457  
 Goldfien, Alan. See *Roberts and Insel*, 52  
 Gors, Carole. See *Hénichart, Houssin, and Baert*, 598  
 Graen, Werner. See *Panten and Biermann*, 76  
 Grasl, Markus. See *Turnheim and Luger*, 543  
 Grassi, Antonio. See *Bandoli*, 558  
 Gronenborn, Angela, Birdsall, Berry, Hyde, Eva, Roberts, Gordon, Feeney, James, and Burgen, Arnold. <sup>1</sup>H and <sup>31</sup>P NMR Characterization of Two Conformations of the Trimethoprim-NADP<sup>+</sup>-Dihydrofolate Reductase Complex, 145  
 Grunewald, Gary L., Borchardt, Ronald T., Rafferty, Michael F., and Krass, Polina. Conformational Preferences of Amphetamine Analogues for Inhibition of Phenylethanolamine N-Methyltransferase: Conformationally Defined Agents, 5, 377  
 Grupp, Gunter. See *Wehling, Schwartz, Whitmer, Grupp, and Wallick*, 551  
 Grupp, Ingrid. See *Wehling, Schwartz, Whitmer, Grupp, and Wallick*, 551  
 Guengerich, F. Peter. See *Kawabata and Baron*, 709  
 Guo, Zong-Ru, Dietrich, Stephen W., Hansch, Corwin, Dolnick, Bruce J., and Bertino, Joseph R. A Comparison of the Inhibition of Bovine and Murine Leukemia Dihydrofolate Reductase by 4,6-Diamino-1,2-dihydro-2,2-dimethyl-1-(3-X-phenyl)-s-Triazines, 649  
 Guthrie, Frank E. See *Maliwal*, 138

## H

Habig, William H. See *Goldberg, Costa, Kohn, and Hardegree*, 565  
 Haddox, Mari K., Womble, J. R., Larson, Douglas F., Roeske, William R., and Russell, Diane Haddock. Isoproterenol Stimulation of Ornithine Decarboxylase Blocked by Propranolol during Ontogeny of the Murine Heart, 382  
 Hamboeck, H., Fischer, R. W., Di Iorio, E. E., and Winterhalter, K. H. The Binding of s-Triazine Metabolites to Rodent Hemoglobins Appears Irrelevant to Other Species, 579  
 Hamrell, Michael, Laszlo, John, Brown, Oliver E., and Sedwick, W. David. Toxicity of Methotrexate and Metoprine in a Dihydrofolate Reductase Gene-Amplified Mouse Cell Line, 637  
 Handwerger, S., Barrett, J., Barry, S., Markoff, E., Zeitler, P., Cwikel, B., and Siegel, M. Stimulation of Human Placental Lactogen Release by Arachidonic Acid, 609  
 Hansch, Corwin. See *Guo, Dietrich, Dolnick, and Bertino*, 649  
 Hardegree, M. Carolyn. See *Goldberg, Costa, Habig, and Kohn*, 565  
 Harris, Bruce A., Saunders, Priscilla P., and Plunkett, William. Metabolism of 9- $\beta$ -D-Xylofuranosyladenine by the Chinese Hamster Ovary Cell, 200  
 Harris, R. Adron, and Schroeder, Friedhelm. Ethanol and the Physical Properties of Brain Membranes: Fluorescence Studies, 128  
 Hartman, Kathleen D. See *Glazer*, 657  
 Hazum, Eli. See *Chang, Killian, and Cuatrecasas*, 1  
 Hellman, Bo. Tolbutamide Stimulation of <sup>45</sup>Ca Fluxes in Microdissected Pancreatic Islets Rich in  $\beta$ -Cells, 83  
 Hénichart, Jean-Pierre, Houssin, Raymond, Gors, Carole, and Baert, François. Conformational Analysis of a New Analgesic Triazolinethione: Structural Comparisons with Antipyrine, 598  
 Hidaka, Hiroyoshi, Asano, Masahisa, and Tanaka, Toshio. Activity-Structure Relationship of Calmodulin Antagonists: Naphthalensulfonamide Derivatives, 571

Hitzemann, Robert J. See *Piasecik, Piasecik, and Potter*, 319  
 Hoffman, Brian B. See *Lavin and Lefkowitz*, 28  
 Hoffmann, Philip C. See *Kotake, Goldberg, and Cannon*, 429  
 Holtzman, Jordan L.

Crankshaw, Duane L., Peterson, Francis J., and Polnaszek, Carl F. The Kinetics of the Aerobic Reduction of Nitrofurantoin by NADPH-Cytochrome P-450 (c) Reductase, 669  
 See *Chou, Polnaszek, Yost, and Leppik*, 674  
 Homburger, Vincent, Lucas, Marguerite, Rosenbaum, Etelka, Vassent, Gérard, and Bockaert, Joël. Presence of Both  $\beta_1$ - and  $\beta_2$ -Adrenergic Receptors in a Single Cell Type, 463  
 Hoogsteen, Karst. See *Schlegel and Poe*, 154  
 Hozumi, Keiichiro. See *Kitamura, Kano, and Yoneyama*, 124  
 Huang, Su-Chen. See *Brostrom, Brostrom, and Wolff*, 59  
 Houssin, Raymond. See *Hénichart, Gors, and Baert*, 598  
 Hudson, Thomas H., and Johnson, Gary L. Functional Alterations in Components of Pigeon Erythrocyte Adenylate Cyclase following Desensitization to Isoproterenol, 694  
 Hunnicutt, Edward J. See *Nathanson*, 68  
 Husson, H. P. See *Frelin, Vigne, Ponzio, Romey, Tourneur, and Lazdunski*, 107  
 Hyde, Eva. See *Gronenborn, Birdsall, Roberts, Feeney, and Burgen*, 145

## I

Ikekawa, Nobuo. See *Stern, Tanaka, DeLuca, and Kobayashi*, 460  
 Insel, Paul A. See *Roberts and Goldfien*, 52

## J

Jacobs, John R. See *Alvarez, Taylor, and Fazzari*, 302  
 Jacobs, Robert S. See *White*, 614  
 James, Jacqueline L. See *Moody, Clawson, and Smuckler*, 685  
 Jauzac, Philippe. See *Puget, Zajac, and Meunier*, 263  
 Johnson, Gary L. See *Hudson*, 694  
 Jones, A. S. See *Cheng, Dutschman, De Clerq, Rahim, Verhelst, and Walker*, 230  
 Jones, Dean P., Meyer, David B., Andersson, Bo, and Orrenius, Sten. Conversion of Catalase to the Secondary Catalase-Peroxide Complex (Compound II) by  $\alpha$ -Methyl-dopa, 159

## K

Kaminsky, Laurence S. See *Adams and Murphy*, 423  
 Kanaho, Yasunori, Sato, Takashi, and Fujii, Tatsuzo. The Affinity of Various Phenothiazine Drugs for Membranes of Intact Human Erythrocytes and Their Membrane-Transforming Activity, 704  
 Kano, Hideki. See *Kitamura, Yoneyama, and Hozumi*, 124  
 Kano, Itsu, and Nebert, Daniel W. Ornithine Decarboxylase Induction in Liver- and Hepatoma-Derived Cell Cultures: No Detectable Differences between Control and 3-Methylcholanthrene-Treated Cells, 172  
 Karamat Ali, F. See *Timmermans, Kwa, Schoop, Slothorst-Grisdijk, and van Zwieten*, 295  
 Kaslow, David. See *Bourne, Kaslow, Salomon, and Licko*, 435  
 Kaslow, Harvey R. See *Bourne, Kaslow, Salomon, and Licko*, 435  
 Katzenellenbogen, John A. See *Landvatter*, 43  
 Kawabata, Thomas T., Guengerich, F. Peter, and Baron, Jeffrey. An Immunohistochemical Study on the Localization and Distribution of Epoxide Hydrolase within Livers of Untreated Rats, 709  
 Kenimer, James G., and Nirenberg, Marshall. Desensitization of Adenylate Cyclase to Prostaglandin  $E_1$  or 2-Chloroadenosine, 585  
 Killian, Anthony. See *Chang, Hazum, and Cuatrecasas*, 1  
 Kitamura, Keisuke, Kano, Hideki, Yoneyama, Keiji, and Hozumi, Keiichiro.  $^1H$  Nuclear Magnetic Resonance Study on Transbilayer Permeation of Chlorpromazine in Lecithin Vesicles, 124  
 Kobayashi, Yoshiro. See *Stern, Tanaka, DeLuca, and Ikekawa*, 460  
 Kohn, Leonard D. See *Goldberg, Costa, Habig, and Hardegree*, 565

Kotake, Connie, Hoffmann, Philip C., Goldberg, Leon L., and Cannon, Joseph G. Comparison of the Effects of Dopamine and  $\beta$ -Adrenergic Agonists on Adenylate Cyclase of Renal Glomeruli and Striatum, 429  
 Krass, Polina. See *Grunewald, Borchardt, and Rafferty*, 377  
 Kunze, Kent L. See *Marks, Zimmer, Dinizo, Mico, and Ortiz de Montellano*, 206  
 Kwa, H. Y. See *Timmermans, Karamat Ali, Schoop, Slothorst-Grisdijk, and van Zwieten*, 295

## L

Landvatter, Scott W., and Katzenellenbogen, John A. Stereochemical Considerations in the Binding of Nonsteroidal Estrogens to the Estrogen Receptor, 43  
 Larsen, Nancy E., Mullikin-Kilpatrick, Debra, and Blume, Arthur J. Two Different Modifications of the Neuroblastoma  $\times$  Glioma Hybrid Opiate Receptors Induced by *N*-Ethylmaleimide, 255  
 Larson, Douglas F. See *Haddox, Womble, Roeske, and Russell*, 382  
 Laszlo, John. See *Hamrell, Broun, and Sedwick*, 637  
 Lau, Serrine S., and Zannoni, Vincent G. Bromobenzene Metabolism in the Rabbit: Specific Forms of Cytochrome P-450 Involved in 2,3- and 3,4-Epoxidation, 234  
 Lavin, Thomas N., Hoffman, Brian B., and Lefkowitz, Robert J. Determination of Subtype Selectivity of  $\alpha$ -Adrenergic Antagonists: Comparison of Selective and Nonselective Radioligands, 28  
 Lazdunski, M. See *Frelin, Vigne, Ponzio, Romey, Tourneur, and Husson*, 107  
 Lefkowitz, Robert J. See *Lavin and Hoffman*, 28  
 Leppik, Ilo E. See *Chou, Polnaszek, Yost, and Holtzman*, 674  
 Lewin, M. J.-M. See *Cheret and Pignal*, 326  
 Liang, Tehming. See *Cascieri and Goldenberg*, 457  
 Licko, Vojtek. See *Bourne, Kaslow, Kaslow, Salomon, and Licko*, 435  
 Lin, Hsin-Li, and Glazer, Robert I. The Comparative Effects of 5-Azacytidine and Dihydro-5-Azacytidine on Polysomal RNA in Ehrlich Ascites Cells *in Vitro*, 644  
 Lucas, Marguerite. See *Homburger, Rosenbaum, Vassent, and Bockaert*, 463  
 Lucier, G. W.  
 See *Lui*, 165  
 See *Powell-Jones and Raeford*, 35  
 Luger, Anton. See *Turnheim and Grasl*, 543  
 Lui, E. M. K., and Lucier, G. W. Hypophysial Regulation of Cadmium-Induced Depression of the Hepatic Monooxygenase System in the Rat, 165  
 Lynch, Gary. See *Baudry and Smith*, 280

## M

Macchia, Bruno. See *Balsamo, Macchia, Martinelli, Tognetti, and Veracini*, 371  
 Macchia, Franco. See *Balsamo, Macchia, Martinelli, Tognetti, and Veracini*, 371  
 Maigret, Bernard. See *Fournie-Zaluski, Gacel, Premilat, and Roques*, 484  
 Mak, Ivan. See *Poland and Glover*, 442  
 Mallick, Jeffrey B. See *Regan, Roeske, Yamamura, and Yamamura*, 477  
 Maliwal, Badri P., and Guthrie, Frank E. Interaction of Insecticides with Human Serum Albumin, 138  
 Mallorga, Pierre. See *Fishman and Tallman*, 310  
 Marangos, Paul J., and Martino, Andrea M. Studies on the Relationship of  $\gamma$ -Aminobutyric Acid-Stimulated Diazepam Binding and the  $\gamma$ -Aminobutyric Acid Receptor, 16  
 Markoff, E. See *Handwerker, Barrett, Barry, Zeitler, Cwikel, and Siegel*, 609

- Marks, Gerald S.**  
**Zimmer, Stephen B., Dinizo, Stephen E., Mico, Bruce A., Kunze, Kent L., and Ortiz de Montellano, Paul R.** Studies of the Porphyrin-Inducing Activity of Ethynyl Compounds and Conformationally Restricted and Unrestricted Analogues of Allyliso-propylamide in Chick Embryo Liver Cell Culture, 206  
 See *Cole and Whitney*, 395
- Marshall, Alan G., and Carruthers, Junko M.** Internal Flexibility of Inhibitors Bound to *Electrophorus electricus* Acetylcholinesterase: Proton Nuclear Magnetic Resonance Spectroscopy, 89
- Martinelli, Adriano.** See *Balsamo, Macchia, Macchia, Tognetti, and Veracini*, 371
- Martino, Andrea M.** See *Marangos*, 16
- McMahon, Kathryn K., and Schimmel, Richard J.** Evidence for  $\alpha$ -Adrenergic Activation and Inactivation of Phosphorylase in Hamster Adipocytes, 339
- Medzhradsky, Fedor.** See *Fischel*, 269
- Mennini, Tiziana, Poggesi, Elena, Cotecchia, Susanna, De Blasi, Antonio, and Samanin, Rosario.** Changes in Serotonin, but Not Catecholamine, Receptor Binding in the Brain of Morphine-Dependent Rats, 237
- Meunier, Jean-Claude.** See *Puget, Jauzac, and Zajac*, 263
- Meyer, David B.** See *Jones, Andersson, and Orrenius*, 159
- Mico, Bruce A.** See *Marks, Zimmer, Dinizo, Kunze, and Ortiz de Montellano*, 206
- Miller, E. R.** See *Shaker, Eldefrawi, and Eldefrawi*, 511
- Miyake, Michihisa, and Shibata, Shoji.** A Novel Mode of Neurotoxin Action: A Polypeptide Toxin Isolated from *Anemonia sulcata* Shifts the Voltage Dependence of the Maximal Rate of Rise of  $\text{Na}^+$  Action Potentials in a Mouse Neuronal Clone, 453
- Moody, David E., James, Jacqueline L., Clawson, Gary A., and Smuckler, Edward A.** Correlations among the Changes in Hepatic Microsomal Components after Intoxication with Alkyl Halides and Other Hepatotoxins, 685
- Motohashi, Michio, and Nishikawa, Masao.** Conformational Analysis of  $\text{Beta}_2$ -Adrenoceptor-Stimulating Agents, 22
- Mullikin-Kilpatrick, Debra**  
 See *Fantozzi and Blume*, 8  
 See *Larsen and Blume*, 255
- Murphy, Michael J.** See *Adams and Kaminsky*, 423
- Mushlin, Phillip**  
**Boerth, Robert C., and Wells, Jack N.** Selective Phosphodiesterase Inhibition and Alterations of Cardiac Function by Alkylated Xanthines, 179  
**Boerth, Robert C., and Wells, Jack N.** Xanthine Derivatives That Selectively Inhibit Cyclic GMP Hydrolysis Potentiate Cardiac Contractile Effects of Isoproterenol but Not Those of Bethanecol, 190
- N**
- Nathanson, James A., and Hunnicutt, Edward J.** *N*-Demythylchloridimeform: A Potent Partial Agonist of Octopamine-Sensitive Adenylate Cyclase, 68
- Nebert, Daniel W.** See *Kano*, 172
- Nelson, Pamlea J.** See *Rudnick, Bencuya, and Zito*, 118
- Nelson, Sidney D., Dahlin, David C., Rauckman, Elmer J., and Rosen, Gerald M.** Peroxidase-Mediated Formation of Reactive Metabolites of Acetaminophen, 195
- Nichol, Lawrence W.** See *Cann and Winzor*, 244
- Nirenberg, Marshall.** See *Kenimer*, 585
- Nishikawa, Masao.** See *Motohashi*, 22
- O**
- Orrenius, Sten.** See *Jones, Meyer, and Andersson*, 159
- Ortiz de Montellano, Paul R.** See *Marks, Zimmer, Dinizo, Mico, and Kunze*, 206
- Oshiki, Janis R.** See *Young and Sigman*, 506
- P**
- Panten, Uwe, Biermann, Jürgen, and Graen, Werner.** Recognition of Insulin-Releasing Fuels by Pancreatic B-Cells:  $\alpha$ -Ketoisocaproic Acid Is an Appropriate Model Compound to Study the Role of B-Cell Metabolism, 76
- Pappalardo, Giuseppe C.** See *Bandoli*, 558
- Pazhenchevsky, B.** See *Aguayo, Daly, and Albuquerque*, 345
- Pert, Candace B.** See *Costa, Russell, and Rodbard*, 470
- Peterson, Francis J.** See *Holtzman, Crankshaw, and Polnaszek*, 669
- Philpot, Richard M.** See *Robertson, Zeiger, and Wolf*, 662
- Piascik, Mary E.** See *Piascik, Hitzemann and Potter*, 319
- Piascik, Michael T., Piascik, Mary F., Hitzemann, Robert J., and Potter, James D.**  $\text{Ca}^{2+}$ -Dependent Regulation of Rat Caudate Nucleus Adenylate Cyclase and Effects on the Response to Dopamine, 319
- Pignal, F.** See *Cheret and Lewin*, 326
- Plunkett, William.** See *Harris and Saunders*, 200
- Poe, Martin.** See *Schlegel and Hoogsteen*, 154
- Poggesi, Elena.** See *Mennini, Cotecchia, De Blasi, and Samanin*, 237
- Poland, Alan, Mak, Ivan, and Glover, Edward.** Species Differences in Responsiveness to 1,4-Bis[2-(3,5-dichloropyridyloxy)]-benzene, a Potent Phenobarbital-Like Inducer of Microsomal Monooxygenase Activity, 442
- Polnaszek, Carl F.**  
 See *Chou, Yost, Leppik, and Holtzman*, 674  
 See *Holtzman, Crankshaw, and Peterson*, 669
- Ponzio, G.** See *Frelin, Vigne, Romey, Tourneur, Husson, and Lazdunski*, 107
- Potter, James D.** See *Piascik, Piascik, and Hitzemann*, 319
- Powell-Jones, W., Raeford, S., and Lucier, G. W.** Binding Properties of Zearalenone Mycotoxins to Hepatic Estrogen Receptors, 35
- Powis, Garth, Svingen, Bruce A., and Appel, Peggy.** Quinone-Stimulated Superoxide Formation by Subcellular Fractions, Isolated Hepatocytes, and Other Cells, 387
- Premilat, Samuel.** See *Fournie-Zaluski, Gacel, Maigret, and Roques*, 484
- Puget, Alain, Jauzac, Philippe, Zajac, Jean-Marie, and Meunier, Jean-Claude.** Opiate Receptors in the Rat Brain: Specific Labeling of Multiple Components with [ $^3\text{H}$ ]Etorphine?, 263
- Q**
- Quach, Tam Thanh, Duchemin, Anne-Marie, Rose, Christiane, and Schwartz, Jean-Charles.** Specific Desensitization of Histamine H<sub>1</sub> Receptor-Mediated [ $^3\text{H}$ ]Glycogen Hydrolysis in Brain Slices, 331
- R**
- Rabinovitz, Marco.** See *Ayukawa and Fisher*, 227
- Raeford, S.** See *Powell-Jones and Lucier*, 35
- Rafferty, Michael F.** See *Grunewald, Borchardt, and Krass*, 377
- Rahim, S. G.** See *Cheng, Dutschman, De Clerq, Jones, Verhelst, and Walker*, 230
- Rauckman, Elmer J.** See *Nelson, Dahlin, and Rosen*, 195
- Regan, John W., Roeske, William R., Malick, Jeffrey B., Yamamura, Susan H., and Yamamura, H. I.**  $\gamma$ -Aminobutyric Acid Enhancement of CL 218, 872 Affinity and Evidence of Benzodiazepine Receptor Heterogeneity, 477
- Renton, Kenneth W.** See *Singh*, 681
- Richelson, Elliott.** See *El-Fakahany*, 519
- Roberts, Gordon.** See *Gronenborn, Birdsall, Hyde, Feeney, and Burgen*, 145
- Roberts, James M., Insel, Paul A., and Goldfien, Alan.** Regulation of Myometrial Adrenoreceptors and Adrenergic Response by Sex Steroids, 52
- Robertson, Iain G. C., Philpot, Richard M., Zeiger, Errol, and Wolf, C. Roland.** Specificity of Rabbit Pulmonary Cytochrome P-450 Isozymes in the Activation of Several Aromatic Amines and Aflatoxin B<sub>1</sub>, 662
- Rodbard, David.** See *Costa, Russell, and Pert*, 470

- Roeske, William R.**  
 See *Haddox, Womble, Larson, and Russell*, 382  
 See *Regan, Malick, Yamamura, and Yamamura*, 477
- Romey, G.** See *Frelin, Vigne, Ponzio, Tourneur, Husson, and Lazdunski*, 107
- Roques, Bernard P.** See *Fournie-Zaluski, Gacel, Maigret, and Premilat*, 484
- Rose, Christiane.** See *Quach, Duchemin, and Schwartz*, 331
- Rosen, Gerald M.** See *Nelson, Dahlin, and Rauckman*, 195
- Rosenbaum, Etelka.** See *Homburger, Lucas, Vassent, and Bockaert*, 463
- Rudnick, Gary, Bencuya, Rosa, Nelson, Pamlea J., and Zito, Ruben A., Jr.** Inhibition of Platelet Serotonin Transport by Propranolol, 118
- Russell, Diane Haddock.** See *Haddox, Womble, Larson, and Roeske*, 382
- Russell, Laura.** See *Costa, Pert, and Rodbard*, 470
- Ruth, Jerry L., and Cheng, Yung-Chi.** Nucleoside Analogues with Clinical Potential in Antivirus Chemotherapy: The Effect of Several Thymidine and 2'-Deoxycytidine Analogue 5'-Triphosphates on Purified Human ( $\alpha,\beta$ ) and Herpes Simplex Virus (Types 1,2) DNA Polymerases, 415
- S**
- Saffer, Jeffrey D., and Glazer, Robert I.** Inhibition of Histone H1 Phosphorylation by Sangivamycin and Other Pyrrolopyrimidine Analogues, 211
- Salomon, Michael R.** See *Bourne, Kaslow, Kaslow, and Licko*, 435
- Samanin, Rosario.** See *Mennini, Poggese, Cotecchia, and De Blasi*, 237
- Sato, Takashi.** See *Kanaho and Fujii*, 704
- Saunders, Priscilla P.** See *Harris and Plunkett*, 200
- Schanche, Jon-Sverre, Schanche, Tone, and Ueland, Per Magne.** Inhibition of Phospholipid Methyltransferase(s) from Rat Liver Plasma Membranes by Analogues of S-Adenosylhomocysteine, 631
- Schanche, Tone.** See *Schanche and Ueland*, 631
- Scheibel, L. W., and Adler, A.** Antimalarial Activity of Selected Aromatic Chelators. II. Substituted Quinolines and Quinoline-N-Oxides, 218
- Schimmel, Richard J.** See *McMahon*, 339
- Schlegel, H. Bernard, Poe, Martin, and Hoogsteen, Karst.** Models for the Binding of Methotrexate to *Escherichia coli* Dihydrofolate Reductase: Direct Effect of Carboxylate of Aspartic Acid 27 upon Ultraviolet Spectrum of Methotrexate, 154
- Schoop, A. M. C.** See *Timmermans, Karamat Ali, Kwa, Slothorst-Grisdijk, and van Zwieten*, 295
- Schwartz, Arnold.** See *Wehling, Whitmer, Grupp, Grupp, and Wallick*, 551
- Schwartz, Jean-Charles.** See *Quach, Duchemin, and Rose*, 331
- Sedwick, W. David.** See *Hamrell, Laszlo, and Brown*, 637
- Sha'afi, R. I.** See *Volpi and Feinstein*, 363
- Shaker, N., Eldefrawi, A. T., Miller, E. R., and Eldefrawi, M. E.** Interaction of Tricyclic Antidepressants with the Ionic Channel of the Acetylcholine Receptor of *Torpedo* Electric Organ, 511
- Shamoo, Adil E.** See *Abd-Elfattah*, 492
- Shibata, Shoji.** See *Miyake*, 453
- Siegel, M.** See *Handwerker, Barrett, Barry, Markoff, Zeitler, and Cwikel*, 609
- Sigman, David S.**  
 See *Young*, 498  
 See *Young and Oshiki*, 506
- Singh, Gurmit, and Renton, Kenneth W.** Interferon-Mediated Depression of Cytochrome P-450-Dependent Drug Biotransformation, 681
- Slothorst-Grisdijk, F. P.** See *Timmermans, Karamat Ali, Kwa, Schoop, and van Zwieten*, 295
- Slotkin, T. A.** See *Subramanian*, 240
- Smith, Elizabeth.** See *Baudry and Lynch*, 280
- Smuckler, Edward A.** See *Moody, James, and Clawson*, 685
- Stern, Paula H., Tanaka, Yoko, DeLuca, Hector F., Ikekawa, Nobuo, and Kobayashi, Yoshiro.** Bone Resorptive Activity of Side-Chain Fluoro Derivatives of 25-Hydroxy- and 1 $\alpha$ ,25-Dihydroxyvitamin D<sub>3</sub> in Culture, 460
- Subramanian, N., and Slotkin, T. A.** Solubilization of a [<sup>3</sup>H]Cimetidine Binding Site from Rat Brain: A Clonidine-Sensitive H-2 Receptor Subtype?, 240
- Svingen, Bruce A.** See *Powis and Appel*, 387
- T**
- Tallman, John F.** See *Fishman and Mallorga*, 310
- Tanaka, Toshio.** See *Hidaka and Asano*, 571
- Tanaka, Yoko.** See *Stern, DeLuca, Ikekawa, and Kobayashi*, 460
- Taylor, Adair.** See *Alvarez, Fazzari, and Jacobs*, 302
- Tejwani, Gopi A.** See *Duruibe*, 621
- Ticku, Maharaj K.** See *Davis*, 287
- Timmermans, P. B. M. W. M., Karamat Ali, F., Kwa, H. Y., Schoop, A. M. C., Slothorst-Grisdijk, F. P., and van Zwieten, P. A.** Identical Antagonist Selectivity of Central and Peripheral Alpha<sub>1</sub>-Adrenoceptors, 295
- Tkachuk, V. A., and Wollemann, M.** The Effect of Alprenolol on the Beta-Receptor and Adenylate Cyclase Activity in Rabbit Heart Membranes, 224
- Tognetti, Pietro.** See *Balsamo, Macchia, Macchia, Martinelli, Tognetti, and Veracini*, 371
- Tourneur, Y.** See *Frelin, Vigne, Ponzio, Romey, Husson, and Lazdunski*, 107
- Turnheim, Klaus, Luger, Anton, and Graal, Markus.** Kinetic Analysis of the Amiloride-Sodium Entry Site Interaction in Rabbit Colon, 543
- U**
- Ueland, Per Magne.** See *Schanche and Schanche*, 631
- V**
- van Zwieten, P. A.** See *Timmermans, Karamat Ali, Kwa, Schoop, and Slothorst-Grisdijk*, 295
- Vassent, Gérard.** See *Homburger, Lucas, Rosenbaum, and Bockaert*, 463
- Veracini, Carlo A.** See *Balsamo, Macchia, Macchia, Martinelli, and Tognetti*, 371
- Verhelst, G.** See *Cheng, Dutschman, De Clerq, Jones, Rahim, and Walker*, 230
- Vigne, P.** See *Frelin, Ponzio, Romey, Tourneur, Husson, and Lazdunski*, 107
- Volpi, M., Sha'afi, R. I., and Feinstein, M. B.** Antagonism of Calmodulin by Local Anesthetics: Inhibition of Calmodulin-Stimulated Calcium Transport of Erythrocyte Inside-Out Membrane Vesicles, 363
- W**
- Wakelin, Laurence P. G.** See *Wilson, Baguley, and Waring*, 404
- Walker, R. T.** See *Cheng, Dutschman, De Clerq, Jones, Rahim, and Verhelst*, 230
- Wallick, Earl T.** See *Wehling, Schwartz, Whitmer, Grupp, and Grupp*, 551
- Waring, Michael J.** See *Wilson, Baguley, and Wakelin*, 404
- Wehling, Martin, Schwartz, Arnold, Whitmer, Kyra, Grupp, Gunter, Grupp, Ingrid, and Wallick, Earl T.** Interaction of Chlormadinone Acetate with the Ouabain Binding Site of Na<sup>+</sup>,K<sup>+</sup>-ATPase, 551
- Weiss, Sam, and Drummond, George I.** Dopamine- and Serotonin-Sensitive Adenylate cyclase in the Gill of *Aplysia californica*, 592
- Wells, Jack N.** See *Mushlin and Boerth*, 179, 190
- White, Steven J., and Jacobs, Robert S.** Inhibition of Cell Division and of Microtubule Assembly by Elatone, a Halogenated Sesquiterpene, 614
- Whitmer, Kyra.** See *Wehling, Schwartz, Grupp, Grupp, and Wallick*, 551
- Whitney, Ralph Allen.** See *Cole and Marks*, 395

**Wilson, William R., Baguley, Bruce C., Wakelin, Laurence P. G., and Waring, Michael J.** Interaction of the Antitumor Drug 4'-(9-Acridinylamino)methanesulfon-*m*-anisidide and Related Acridines with Nucleic Acids, 404

**Winterhalter, K. H.** See *Hamboeck*, 579

**Winzor, Donald J.** See *Cann and Nichol*, 244

**Wolf, C. Roland.** See *Robertson, Philpot, and Zeiger*, 662

**Wolff, Donald J.** See *Brostrom, Brostrom, and Huang*, 59

**Wolleman, M.** See *Tkachuk*, 224

**Womble, J. R.** See *Haddox, Larson, Roeske, and Russell*, 382

**Wong, Brendan S.** Quinidine Interactions with *Myxicola* Giant Axons, 98

## Y

**Yamamura, Henry I.** See *Regan, Roeske, Malick, and Yamamura*, 477

**Yamamura, Susan H.** See *Regan, Roeske, Malick, and Yamamura*, 477

**Yoneyama, Keiji.** See *Kitamura, Kano, and Hozumi*, 124

**Yost, Yul.** See *Chou, Polnaszek, Leppik, and Holtzman*, 674

**Young, Anthony P.**

and **Sigman, David S.** Allosteric Effects of Volatile Anesthetics on

the Membrane-Bound Acetylcholine Receptor Protein. I. Stabilization of the High-Affinity State, 498

**Oshiki, Janis R., and Sigman, David S.** Allosteric Effects of Volatile Anesthetics on the Membrane-Bound Acetylcholine Receptor Protein. II. Alteration of  $\alpha$ -Bungarotoxin Binding Kinetics, 506

**Yunger, Libby M., and Cramer, Richard D., III.** Measurement and Correlation of Partition Coefficients of Polar Amino Acids, 602

## Z

**Zajac, Jean-Marie.** See *Puget, Jauzac, and Meunier*, 263

**Zannoni, Vincent G.** See *Lau*, 234

**Zeiger, Errol.** See *Robertson, Philpot, and Wolf*, 662

**Zeitler, P.** See *Handwerker, Barrett, Barry, Markoff, Cwikel, and Siegel*, 609

**Zimmer, Stephen B.** See *Marks, Dinizo, Mico, Kunze, and Ortiz de Montellano*, 206

**Zito, Ruben A., Jr.** See *Rudnick, Bencuya, and Nelson*, 118

**Zukin, R. Suzanne, and Zukin, Stephen R.** Demonstration of [ $^3$ H] Cyclazocine Binding to Multiple Opiate Receptor Sites, 246

**Zukin, Stephen R.** See *Zukin*, 246

CUMULATIVE SUBJECT INDEX<sup>1</sup> FOR VOLUMES 19 AND 20

A

- Absolute configuration**  
dihydriols of chrysene (rat), 19, 168  
dihydriols of phenanthrene (rat), 19, 168
- Absolute spectra, cytochrome P-450 (rat), 19, 162**
- 4-Acetamido-4'-isothiocyano-2,2'-disulfonic acid stilbene, effect on diazepam receptors (rat), 20, 470**
- Acetaminophen**  
reactive metabolites, 20, 195  
formation (hamster), 19, 140
- 2-Acetylaminofluorene, activation (rabbit), 20, 662**
- Acetylcholine receptor**  
alteration of toxin-binding sites (ray), 20, 506  
ionic channel (frog), 20, 345  
interactions (ray), 20, 511  
high-affinity state (ray), 20, 498  
membrane-bound (ray), 20, 498, 506  
muscarinic  
effects of lanthanides (mouse, rat), 19, 282  
phenoxybenzamine and dibenamine interactions (mouse), 20, 519  
non-equivalence (ray), 20, 506  
perturbation by volatile anesthetics (ray), 20, 498  
toxin-binding kinetics (ray), 20, 506
- Acetylcholinesterase**  
inhibitors, flexibility, 20, 89  
size of active-site cavity, 20, 89
- Acridine antitumor drugs, binding to nucleic acids, 20, 404**
- 4'-(9-Acridinylamino)methanesulfon-*m*-anisidide, binding to nucleic acids, 20, 404**
- Action potential**  
calcium, effect of alkaloid, 19, 411  
Na<sup>+</sup>, voltage dependence (mouse), 20, 453  
Na<sup>+</sup> ionophore, interaction of ervatamine and epiervatamine, 20, 107
- Actinomycin D, effect on polysomes and mRNA levels in liver (rat), 19, 103**
- Activity-structure relationships**  
calmodulin antagonists, 20, 571  
dihydrofolate reductase, 20, 649  
dopaminergic and serotonergic stimulation, 20, 592  
triazolinethione, 20, 598
- Acycloguanosine, effect on induction of retrovirus particles, 19, 122**
- N*-O Acyltransferase, rat liver, role in mutagenicity of *N*-hydroxy-2-acetylaminofluorene in *Salmonella* test system, 19, 337**
- Adenosine**  
interactions with *alpha*-adrenergic agents, prostaglandin, and nicotinic acid (hamster), 19, 248  
receptors, in fat cells (rat), 19, 228
- S-Adenosylhomocysteine**  
interaction with isolated hepatocytes (rat), 19, 463  
analogue, effect on liver plasma membranes (rat), 20, 631
- S-Adenosyl-L-methionine, methylation, steric mapping, 19, 307**
- S-Adenosyltransferase, L-methionine site, steric mapping, 19, 307**
- Adenylate cyclase**  
activation by prostaglandins (human), 20, 302  
activity  
dopamine-sensitive, effect of calmodulin (rat), 19, 256  
in striatal membranes (rat), 19, 256  
*beta*-adrenergic linked system, effects of desmethylimipramine and nialamide (rat), 19, 187  
-*beta*-adrenergic receptor complex, pineal gland (rat), 19, 21  
Ca<sup>2+</sup>-modulated, 20, 59  
catalytic, in mutant phenotype, 20, 435  
caudate nucleus, regulation (rat), 20, 319  
desensitization  
catecholamine-induced (rat), 20, 310  
to chloradenosine, 20, 585  
to prostaglandin E<sub>1</sub>, 20, 585  
dopamine-sensitive, 20, 592  
dopamine-sensitive (rat), 20, 319  
erythrocyte, effects of desensitization to isoproterenol (pigeon), 20, 694  
hormone-sensitive, 20, 435  
in intact cells, effects of cholera toxin, 19, 406  
in S49 lymphoma variants (mouse), 19, 109  
isoproterenol-stimulated (rabbit), 20, 224  
octopamine-activated, 20, 68  
octopamine-sensitive, effect of *N*-demethylchlordimeform, 20, 68  
pineal gland (rat), 19, 21  
platelet, inhibition by methylmercury (human), 19, 470  
regulatory component (rat), 20, 310  
renal, effects of dopamine and *beta*-adrenergic agonists (rat), 20, 429  
serotonin-sensitive, 20, 592
- Adipocyte**  
adenosine receptors in (rat), 19, 228  
epididymal, regulation of lipolysis in (hamster), 19, 248  
phosphorylase, effect of *alpha*-adrenergic receptors (hamster), 20, 339
- ADP ribosylation, 19, 406**  
in mutant phenotype, 20, 435
- Adrenal medulla, dopamine- $\beta$ -hydroxylase, radioimmunoassay (human), 19, 444**
- Adrenergic receptor**  
*alpha*-  
antagonists, subtype selectivity, 20, 28  
conformation, 20, 371  
fetal heart (mouse), 20, 382  
in adipocytes (hamster), 20, 339  
interactions with prostaglandin, nicotinic acid, and adenosine (hamster), 19, 248  
myometrial (rabbit), 20, 52  
*alpha*<sub>1</sub>-, antagonist selectivity (rat), 20, 295  
*beta*-  
-adenylate cyclase complex (rat), 19, 21  
binding, 19, 509  
density and affinity (rat), 19, 21  
effect of alprenolol (rabbit), 20, 224  
effects on renal glomeruli (rat), 20, 429  
effects on renal striatum (rat), 20, 429  
erythrocyte (pigeon), 20, 694  
in mutant phenotype, 20, 435  
myometrial (rabbit), 20, 52  
uncoupling from adenylate cyclase (rat), 20, 310  
*beta*<sub>1</sub>-, in single cell type (rat), 20, 463  
*beta*<sub>2</sub>-  
conformational analysis of stimulating agents, 20, 22  
in single cell type (rat), 20, 463  
myometrial, regulation by sex steroids (rabbit), 20, 52
- Adrenergic response, myometrial, regulation by sex steroids (rabbit), 20, 52**
- Adrenoceptor, see Adrenergic receptor**
- Aequorin, in study of cardiotoxic drug effects (squid), 19, 68**
- Aerobic reduction, nitrofurantoin, 20, 669**
- Affinity, drugs, for erythrocyte membrane (human), 20, 704**
- Aflatoxin B<sub>1</sub>, activation (rabbit), 20, 662**

<sup>1</sup>Boldface numbers indicate appropriate volume; lightface numbers indicate pagination.

- Aggregation, platelet  
 effect of prostaglandins (human), **20**, 302  
 epinephrine-induced (human), **19**, 179  
 methylmercury-induced (human), **19**, 470
- Aging, hormonal control of (rat), **19**, 399
- Agonist  
 drugs,  $\gamma$ -aminobutyric acid inhibition of  $\gamma$ -aminobutyric acid release (rat), **19**, 27  
 histamine H<sub>1</sub> binding (guinea pig), **19**, 379  
 octopamine-sensitive adenylate cyclase, **20**, 68  
 opiate, mechanism of sodium effect in binding, **20**, 269  
 receptor H<sub>1</sub>, effects on [<sup>3</sup>H]glycogen hydrolysis (mouse), **20**, 331
- Albumin  
 binding of phenytoin, **20**, 674  
 human serum, interaction with insecticides, **20**, 138  
 mRNA, hepatic (rat), **19**, 103
- Alcohol, *see also* Ethanol  
 cutoff in anesthetic potency (tadpole), **19**, 49
- Alkaline phosphatase, release, effect of arachidonic acid, **20**, 609
- Alkaloid, effect on calcium ATPase, **19**, 411
- Alkylating agents  
 mutagenicity, **19**, 496  
 nucleophilic selectivity, **19**, 496  
 structure-activity study, **19**, 496  
 toxicity protection, **19**, 496
- Alkyl chain length, **20**, 571
- Alkyl halide intoxication, effect on hepatic microsomal components (rat), **20**, 685
- Alkyl methanesulfonic acid esters, nucleophilic selectivity, **19**, 496
- Allosterism  
 receptor and channel sites (ray), **20**, 511  
 volatile anesthetics (ray), **20**, 498
- Allylisopropylacetamide analogues  
 in embryo liver cell culture (chick), **20**, 206  
 porphyrin induction (chick), **20**, 206
- Alprenolol  
 effect on adenylate cyclase activity in heart membrane (rabbit), **20**, 224  
 effect on *beta*-receptor in heart membrane (rabbit), **20**, 224
- Amiloride-sodium entry site, interaction (rabbit), **20**, 543
- Amphetamine analogue  
 bicyclic, **20**, 377  
 conformationally defined, **20**, 377  
 phenylethanolamine *N*-methyltransferase inhibition, **20**, 377
- Amines, aromatic, activation (rabbit), **20**, 662
- Amino acid  
 analogues  
 hemoglobin stability (rabbit), **20**, 227  
 $\beta$ -hetero atom (rabbit), **20**, 227  
 basic, mechanism of increase in intracellular melphalan, **19**, 92  
 logP determination, **20**, 602  
 polar, partition coefficients, **20**, 602
- 2-Aminoanthracene, activation (rabbit), **20**, 662
- 4-Aminoantipyrine, oxidation (rat), **19**, 146
- $\gamma$ -Aminobutyric acid  
 autoreceptor, pharmacology (rat), **19**, 27  
 enhancement of CL 218, 872 affinity (bovine, rat), **20**, 477  
 -induced enhancement of diazepam receptors (rat), **20**, 470  
 inhibition of release by  $\gamma$ -aminobutyric acid agonist drugs (rat), **19**, 27
- <sup>3</sup>H-labeled, binding (rat), **19**, 27
- receptor  
 -benzodiazepine-ionophore complex, [<sup>3</sup>H]diazepam binding at, **20**, 287  
 binding in mammalian brain (rat, bovine), **19**, 217  
 interaction with  $\gamma$ -aminobutyric acid, **20**, 16  
 -stimulated diazepam binding, **20**, 16
- 2-Amino-5,6-dihydroxy-1,2,3,4-tetrahydronaphthalene, effect on renal glomeruli and striatum (rat), **20**, 429
- 2-Amino-6,7-dihydroxy-1,2,3,4-tetrahydronaphthalene, effect on renal glomeruli and striatum (rat), **20**, 429
- [<sup>3</sup>H]Amino-6,7-dihydroxy-1,2,3,4-tetrahydronaphthalene  
 binding to striatal membrane (rat), **19**, 372  
 effect of purine nucleotides (rat), **19**, 372  
 effect of UV irradiation (rat), **19**, 372
- 2-Aminofluorene, activation (rabbit), **20**, 662
- N*-(6-Aminoethyl)-5-chloro-1-naphthalenesulfonamide, vascular response, **20**, 571
- Aminopyrine, oxidation to radical species (rat), **19**, 146
- Analgesic activity  
 analysis, **20**, 598  
 of triazolothione, **20**, 598
- Analogue  
*S*-adenosylhomocysteine, effect on liver plasma membranes (rat), **20**, 631  
 allylisopropylacetamide  
 in embryo liver cell culture (chick), **20**, 206  
 porphyrin induction (chick), **20**, 206
- amino acid  
 hemoglobin stability (rabbit), **20**, 227  
 $\beta$ -hetero atom (rabbit), **20**, 227
- amphetamine  
 conformationally defined, **20**, 377  
 phenylethanolamine *N*-methyltransferase inhibition, **20**, 377
- arachidonic acid, in evaluation of structural determinants of prostaglandin receptor and enzyme specificities, **19**, 242
- bicyclic, conformationally defined **20**, 377
- cyclophosphamide, differential cytotoxicity and DNA cross-linking in mouse L1210 leukemia cells, **19**, 331
- 3,5-diethoxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine, activity (chick), **20**, 395
- $\beta$ -endorphin, conformation in cerebroside sulfate solution, **19**, 302
- enkephalin, structure-activity relationships (guinea pig, mouse), **20**, 484
- nucleoside, potential in antiviral chemotherapy (human), **20**, 415
- prostaglandin, inhibition of 15-hydroxyprostaglandin dehydrogenase, **19**, 456
- pyrrolopyrimidine, inhibition of histone H1 phosphorylation (mouse), **20**, 211
- substance P, salivation and ileum contraction (rat, guinea pig), **20**, 457
- vitamin D<sub>3</sub>, bone resorptive activity (rat), **20**, 460
- Anemonia sulcata*, polypeptide toxin (mouse), **20**, 453
- Anesthesia  
 theory, **19**, 432  
 theory (tadpole), **19**, 49
- Anesthetic  
 alteration of toxin-binding kinetics (ray), **20**, 506  
 fluorinated ether, molecular orbital studies of metabolism, **20**, 423  
 halothane, effect on lung cells (rat), **19**, 520  
 inhalation  
 effect of methoxyflurane on phosphatidic acid bilayers, **19**, 432  
 solubility in various media, **19**, 56  
 lipid disorder (tadpole), **19**, 49  
 lipid phase transitions (tadpole), **19**, 49  
 lipid solubility (tadpole), **19**, 49  
 local  
 antagonism of calmodulin, **20**, 363  
 effect on sodium channels, **20**, 356  
 perturbation of acetylcholine receptor protein by (ray), **20**, 498  
 synaptic transmission (ray), **20**, 498
- Anion  
 transport, erythrocyte membrane (rat), **20**, 470  
 channels, effect of disulfonic stilbene acids (rat), **20**, 470
- Antagonist  
 $\alpha$ -adrenergic, subtype selectivity, **20**, 28  
 calmodulin, vascular response, **20**, 571  
 histamine H<sub>1</sub> binding (guinea pig), **19**, 379



- opiate, mechanism of sodium effect in binding, 20, 269  
 racemic radioligands, two-step binding kinetics, 19, 509  
 receptor H<sub>2</sub>, effects on histamine-stimulated adenylate cyclase (guinea pig), 20, 326  
 selectivity, of  $\alpha_1$ -adrenoceptors (rat), 20, 295
- Anthracycline**  
 antibiotic, flavoprotein catalysis, 19, 184  
 glycosidic cleavage, 19, 184
- Antiarrhythmic drugs**, effect on voltage-sensitive sodium channels, 20, 356
- Antibiotic, anthracycline, flavoprotein catalysis**, 19, 184
- Antibody**  
 antihormone, 19, 1  
 antireceptor, 19, 1
- Antidepressant**  
 effect on *beta*-adrenergic receptor-linked adenylate cyclase system (rat), 19, 187  
 effect on response to noradrenergic stimuli (rat), 19, 187  
 tricyclic, molecular targets (rat), 20, 511
- Antifolate**  
 effect on lymphoblastoid cells (human), 19, 491  
 lipid-soluble  
   effects on cell viability (mouse), 20, 637  
   in lymphoblastoid cells (human), 19, 491  
 resistance in lymphoblastoid cells (human), 19, 491
- Antiherpes compounds**, induction of retrovirus particles, 19, 122
- Antilipolytic activity**, lung (rat), 19, 456
- Antimalarial activity**, selected aromatic chelators, 20, 218
- Antipsychotics**, phenothiazine, photoaffinity labeling, 19, 264
- Antipyrine**, conformational analysis, 20, 598
- Antitumor agents**, structure-activity study, 19, 496
- Antivirus chemotherapy**, deoxyuridine kinase, 20, 230
- Aplysia californica***, gill, dopamine- and serotonin-sensitive adenylate cyclase, 20, 592
- Apomorphine-bromocriptine comparisons**, 19, 517
- Arachidonic acid**  
 analogues, in evaluation of structural determinants of prostaglandin receptor and enzyme specificities, 19, 242  
 effect on human chorionic gonadotropin release, 20, 609  
 hepatic, effect of alkyl halides (rat), 20, 685  
 stimulation of human placental lactogen release, 20, 609  
 turnover (rabbit), 19, 31
- Arachidonyl phosphatidylinositol**, stimulation by formylmethionyl-leucyl-phenylalanine (rabbit), 19, 31
- AR-L 57**, effect on calcium and ion fluxes in axons (squid), 19, 68
- Arrhythmia**, effect of propranolol treatment, 20, 118
- Aryl hydrocarbon hydroxylase**, in liver cell cultures (rat, mouse), 20, 172
- Aspartic acid 27, carboxylate**, effect on ultraviolet spectrum of methotrexate (bacteria), 20, 154
- Assay**, receptor binding, mathematical analysis of competitive inhibition, 19, 367
- ATP**  
 effect on ATPase activity of urinary bladder (rabbit), 19, 525  
 effect on contractility of urinary bladder (rabbit), 19, 525  
 interaction of ouabagenin and (Na<sup>+</sup> + K<sup>+</sup>)-ATPase in presence, 19, 62  
 :L-methionine *S*-adenosyltransferase, steric mapping of L-methionine binding site, 19, 307  
 -norepinephrine complex, structure, 19, 44  
 9- $\beta$ -D-xylofuranosyl-  
   biological half-life (Chinese hamster), 20, 200  
   kinetics of formation (Chinese hamster), 20, 200
- ATPase**  
 (Ca<sup>2+</sup> + Mg<sup>2+</sup>)-  
   inhibition by local anesthetics, 20, 363  
   stimulation by calmodulin, 20, 363  
 calcium-dependent, inhibition by alkaloid, 19, 411  
 (Na<sup>+</sup> + K<sup>+</sup>)-  
   interaction with ouabagenin in presence of Na<sup>+</sup>, Mg<sup>2+</sup>, and ATP, 19, 62  
   ouabain binding site, 20, 551  
   urinary bladder, effect of ATP (rabbit), 19, 525
- Atropine**, binding to acetylcholinesterase, 20, 89
- Autonomic nerve endings**, association with high-affinity saxitoxin receptor sites, 20, 526
- Axon**  
 effect of AR-L 57 on intracellular calcium and ouabain-insensitive ion fluxes (squid), 19, 68  
 giant, voltage clamp, 20, 98  
*Myxicola*, quinidine interactions with, 20, 98
- Axonal transport**, fast, in sciatic nerves (frog), 19, 291
- Azacytosine-containing DNA**, effect on methylases (bacteria), 19, 314
- 5-Azacytidine**  
 effects on polysomal RNA, 20, 644  
 inhibition of DNA(cytosine-5)methylases (bacteria), 19, 314
- B**
- BALB/3T3 cell**, induction of retrovirus particles (mouse), 19, 122
- Batrachotoxin**  
 activation of sodium channels, 19, 78  
 ATP depletion (mouse), 20, 113  
 effect on cardiac cyclic AMP (mouse), 20, 113
- Benzodiazepine**  
 - $\gamma$ -aminobutyric acid receptor-ionophore complex, [<sup>3</sup>H]diazepam binding at, 20, 287  
 receptor  
    $\gamma$ -aminobutyric acid interactions, 20, 16  
   heterogeneity (bovine, rat), 20, 477  
   in brain (rat), 20, 470
- Benzodioxan**, derivatives, conformation, 20, 371
- Benzo[*a*]pyrene diol epoxide**  
 effect of epoxide hydratase, 19, 153  
 hydrolysis, 19, 153
- Bethanecol**, cardiac responses (rabbit), 20, 190
- Binding**  
*S*-adenosylhomocysteine, by isolated hepatocytes (rat), 19, 463  
 affinity  
   *meso*- and *dl*-hexestrol to estrogen receptor, 19, 388  
   role of conformations of nonsteroidal estrogens, 19, 388  
 benzo[*a*]pyrene diol epoxide, effect of epoxide hydratase, 19, 153  
 chlorpromazine  
   to brain tubulin, 20, 244  
   to calmodulin, 19, 264  
 [<sup>3</sup>H]cimetidine, brain (rat), 20, 240  
 constants, in human serum albumin, 20, 138  
 covalent, glutathione conjugate formation (hamster), 19, 140  
 [<sup>3</sup>H]cyclazocine, to opiate receptor sites, 20, 246  
 diazepam,  $\gamma$ -aminobutyric acid-stimulated, 20, 16  
 diprenorphine, to neuroblastoma cell membranes (rat), 20, 1  
 DNA, diol epoxide, 19, 153  
 equilibrium properties of high-affinity racemic radioligands, 19, 205  
 histamine H<sub>1</sub> agonist (guinea pig), 19, 379  
 histamine H<sub>1</sub> antagonist (guinea pig), 19, 379  
 ligand, to receptors, 20, 8  
 [<sup>3</sup>H]mepyramine  
   in brain (mouse), 20, 331  
   in longitudinal muscle (guinea pig), 19, 379  
 L-methionine, steric mapping of site in ATP:L-methionine *S*-adenosyltransferase, 19, 307  
 phenothiazine antipsychotics, to calmodulin, 19, 264  
 (-)-N<sup>6</sup>-[<sup>3</sup>H]phenylisopropyladenosine (rat), 19, 228  
 phenytoin, 20, 674  
 protein, diol epoxide, 19, 153  
 receptor  
    $\gamma$ -aminobutyric acid, in mammalian brain (rat, bovine), 19, 217  
   high-affinity racemic radioligands, 19, 205  
   saxitoxin, in vertebrate heart, 20, 526, 533

- sites  
 cell membrane, internal/external (frog), 20, 345  
 in human serum albumin, 20, 138  
 specific peptides  $\mu$  and  $\delta$ , structural requirements (guinea pig, mouse), 20, 484  
 tetrodotoxin, in vertebrate heart, 20, 526, 533  
 toxin, effects of volatile anesthetics on kinetics (ray), 20, 506  
*s*-triazine metabolites, to hemoglobin, 20, 579  
 trifluoperazine, to calmodulin, 19, 264  
 two-step, kinetics, of high-affinity racemic radioligands, 19, 509  
 zearalenone mycotoxins to hepatic estrogen receptors, properties, 20, 35
- 1,3-Bis(2-chloroethyl)-1-nitrosourea, nucleophilic selectivity, 19, 496  
 1,4-Bis[2-(3,5-dichloropyridyloxy)]-benzene, species differences in responsiveness, 20, 442
- Bladder, urinary, effect of ATP (rabbit), 19, 525
- Blood  
 free fatty acid levels, 19, 456  
 platelets  
 aggregation, effect of prostaglandins (human), 20, 302  
 regulation of cyclic AMP metabolism (human), 20, 302  
 protein binding (human), 20, 138
- Bone resorptive activity, of vitamin D<sub>3</sub> analogues (rat), 20, 460
- Brain  
 binding experiments (guinea pig, mouse), 20, 484  
 catecholamine binding (rat), 20, 237  
 cerebral cortex, dopamine neurons (rat), 19, 270  
 [<sup>3</sup>H]cimetidine binding site (rat), 20, 240  
 diazepam receptors (rat), 20, 470  
 [<sup>3</sup>H]glycogen (mouse), 20, 331  
 mammalian,  $\gamma$ -aminobutyric acid receptor binding in (rat, bovine), 19, 217
- membrane  
 central and peripheral  $\alpha$ <sub>1</sub>-adrenoceptors (rat), 20, 295  
 effect of ethanol (mouse), 19, 425  
 fluidity (mouse), 20, 128  
 fragment C and tetanus toxin binding to (rat), 20, 565  
 opiate receptor binding in, 20, 269  
 physical properties (mouse), 20, 128  
 specific labeling of multiple components (rat), 20, 263  
 muscarinic receptor, regeneration (rat), 20, 492  
 serotonin binding (rat), 20, 237
- tubulin  
 chlorpromazine binding, 20, 244  
 interaction of chlorpromazine, trifluoperazine, and promethazine with (mouse), 19, 295
- Bromobenzene  
 epoxidation (rabbit), 20, 234  
 metabolism (rabbit), 20, 234
- Bromocriptine-apomorphine comparisons, 19, 517  
 $\alpha$ -Bungarotoxin, binding sites (ray), 20, 506  
 $\gamma$ -Butyrolactone, effect on striatal dopamine (rat), 19, 270
- C**
- <sup>46</sup>Ca, fluxes, tolbutamide stimulation (mouse), 20, 83  
 Ca<sup>2+</sup>, *see also* Calcium  
 -calmodulin system, vascular, 20, 571  
 -dependent regulation of caudate nucleus adenylate cyclase (rat), 20, 319  
 effect on cyclic AMP accumulation in glial tumor cells, 20, 59  
 (Ca<sup>2+</sup> + Mg<sup>2+</sup>)-ATPase  
 inhibition by local anesthetics, 20, 363  
 stimulation by calmodulin, 20, 363
- Cadmium  
 cytochrome P-450 depression (rat), 20, 165  
 -induced depression of hepatic monooxygenase system (rat), 20, 165
- Calcium, *see also* Ca<sup>2+</sup>  
 and muscle contraction, effect of alkaloid, 19, 411  
 ATPase, effect of alkaloid, 19, 411  
 channel  
 effect of cardiotoxic drugs (squid), 19, 68  
 effectors of muscarinic receptor (mouse), 20, 519  
 2-halogenoethylamine inhibition (mouse), 20, 519  
 cyclic nucleotide metabolism (mouse), 20, 113  
 -dependent blockade, cardiac cyclic AMP (mouse), 20, 113  
 -dependent hyperpolarization (mouse), 19, 15  
 -dependent stimulation, neutrophilic enzymes (rabbit), 19, 31  
 effect on phenothiazine binding to calmodulin, 19, 264  
 free intracellular, effect of AR-L 57 in axons (squid), 19, 68  
 pump, effect of cardiotoxic drugs (squid), 19, 68  
 regulation of glutamate receptor binding (rat), 20, 280  
 -sodium exchange, effect of cardiotoxic drugs (squid), 19, 68  
 transport, calmodulin-stimulated, 20, 363
- Calmodulin  
 antagonism by local anesthetics, 20, 363  
 antagonists, vascular response, 20, 571  
 binding to phenothiazine antipsychotics, 19, 264  
 -Ca<sup>2+</sup> system, vascular, 20, 571  
 effect on dopamine receptor (rat), 20, 319  
 effect on dopamine-sensitive adenylate cyclase activity (rat), 19, 256  
 photoaffinity labeling, 19, 264
- Carbon tetrachloride, effect on hepatic microsomal components (rat), 20, 685
- Carboxylate, aspartic acid 27, effect on ultraviolet spectrum of methotrexate (bacteria), 20, 154
- Carcinoma, colon, effects of sangivamycin (human), 20, 657
- Carrier  
 -bound, methotrexate, treatment of Reuber H35 cells, 19, 505  
 mechanism, and intracellular melphalan, 19, 92  
 specificity, and intracellular melphalan, 19, 92
- Catalase  
 conversion to secondary catalase-peroxide complex (rat), 20, 159  
 inhibition with  $\alpha$ -methyl dopa (rat), 20, 159  
 -peroxide complex, secondary, conversion of catalase to (rat), 20, 159
- Catalysis  
 cytochrome P-450, 19, 153  
 flavoprotein, of anthracycline antibiotic, 19, 184
- Catecholamine  
 -induced desensitization of adenylate cyclase (rat), 20, 310  
 receptor, binding in brain (rat), 20, 237  
 tetrahydronaphthalene derivative, 20, 22
- Catechol-O-methyltransferase, site of methylation by, 19, 130
- Caudate nucleus, adenylate cyclase, regulation (rat), 20, 319
- Cell, *see also* specific cell  
 Chinese hamster ovary, mutants, nucleoside kinase deficiency, 20, 200  
 culture  
 embryo liver (chick), 20, 206  
 hepatocyte, ornithine decarboxylase induction (rat, mouse), 20, 172  
 hepatoma-derived, ornithine decarboxylase induction (rat, mouse), 20, 172  
 cultured  
 cyclic AMP turnover 19, 38  
 inhibition of methotrexate polyglutamate accumulation in (human), 19, 87  
 cycle, S<sub>2</sub>-type DNA synthesis inhibition, 20, 614  
 division, inhibition by elatone (sea urchin), 20, 614  
 Ehrlich ascites, polysomal RNA, 20, 644  
 gene-amplified, toxicity of methotrexate and metoprine (mouse), 20, 637  
 intact, effects of cholera toxin on adenylate cyclase, 19, 406  
 membrane, sensitivity to quaternary ligands (frog), 20, 345
- B-Cells  
 metabolism (mouse), 20, 76  
 pancreatic, recognition of insulin-releasing fuels (mouse), 20, 76

- $\beta$ -Cells, pancreatic**  
<sup>45</sup>Ca fluxes (mouse), 20, 83  
effect of glucose (mouse), 20, 83  
effect of tolbutamide (mouse), 20, 83
- Cerebroside sulfate solution, conformation of  $\beta$ -endorphin analogues in**, 19, 302
- Cetylpolyoxyethylene ether, in optical measurements of  $\beta$ -endorphin analogues**, 19, 302
- Chelator**  
aromatic, antimalarial activity, 20, 218  
lipophilic, antimalarial activity, 20, 218
- Chemical shift, <sup>1</sup>H**  
in norepinephrine, 19, 44  
in norepinephrine-ATP complex, 19, 44
- Chemotherapy**  
antiviral  
deoxyuridine kinase, 20, 230  
nucleoside analogue potential (human), 20, 415  
methotrexate metabolism, 19, 87
- Chlordimeform, octopaminergic action**, 20, 68
- Chloride channel, erythrocyte membrane (rat)**, 20, 470
- Chlorination, naphthalene ring**, 20, 571
- Chlorine-deficient derivatives, vascular response**, 20, 571
- Chlorisondamine, block of glutamate-activated synaptic channels**, 19, 349
- Chlormadinone acetate, interaction with ouabain binding site of Na<sup>+</sup>,K<sup>+</sup>-ATPase**, 20, 551
- Chlornaltrexamine, inactivation of opiate receptors**, 20, 8
- 2-Chloroadenosine, desensitization of adenylate cyclase to**, 20, 585
- Chloroform**  
effect on hepatic microsomal components (rat), 20, 685  
perturbation of acetylcholine receptor protein by (ray), 20, 498, 506
- Chlorpromazine**  
binding  
to brain tubulin, 20, 244  
to calmodulin, 19, 264  
interaction with mouse brain tubulin, 19, 295  
micellarization, 20, 244  
transbilayer permeation in lecithin vesicles, 20, 124
- Cholera toxin**  
action  
Ca<sup>2+</sup> dependence, 20, 59  
trifluoperazine inhibition, 20, 59  
effects  
mediation by *M<sub>r</sub>* = 52,000 peptide, 19, 406  
on erythrocyte adenylate cyclase (pigeon), 20, 694  
response  
of adenylate cyclase (mouse), 20, 435  
of glioma C6 cells (rat), 20, 310  
-stimulated cyclic AMP accumulation in glial tumor cells, 20, 59
- Cholesterol, membrane, effect of ethanol (mouse)**, 19, 425
- Chromatography**  
frontal gel, micellar characteristics of chlorpromazine, 20, 244  
high-pressure liquid, nucleotide separation (Chinese hamster), 20, 200  
thin-layer, stereospecific patterns, 19, 355
- Chronotropic response, cardiac, to alkylated xanthines (rabbit)**, 20, 179
- Cimetidine**  
effects on histamine-stimulated adenylate cyclase (guinea pig), 20, 326  
<sup>3</sup>H-labeled, brain, solubilization of binding site (rat), 20, 240
- Circular dichroism, study of conformation of  $\beta$ -endorphin analogues**, 19, 302
- Citrovorum factor, rescue from methotrexate toxicity**, 19, 87
- CL 218,872,  $\gamma$ -aminobutyric acid enhancement of affinity (bovine, rat)**, 20, 477
- <sup>14</sup>C-Label, phenacetin analogues, binding (hamster)**, 19, 140
- Cleavage, reductive, in flavoprotein catalysis**, 19, 184
- Clone**  
neuroblastoma N1E-115 (mouse), 19, 15  
neuronal, effect of polypeptide toxin (mouse), 20, 453
- Clonidine**  
antilipolytic activity (hamster), 19, 248  
<sup>3</sup>H-labeled, characterization of *alpha*-adrenergic receptors in platelets (human), 19, 179  
-sensitive H-2 receptor (rat), 20, 240
- Colchicine, effects on respiration and fast axonal transport in sciatic nerves (frog)**, 19, 291
- Colon**  
amiloride-sodium entry site, interaction (rabbit), 20, 543  
apical sodium entry (rabbit), 20, 543  
carcinoma cells, effects of sangivamycin (human), 20, 657
- Complexes, brain membrane, labeled, multiple (rat)**, 20, 263
- Computer graphics, MULTAN**, 20, 598
- Computer modeling, racemic antagonist radioligands**, 19, 509
- Conformational analysis**  
antipyrene, 20, 598  
*beta*<sub>2</sub>-adrenoceptor-stimulating agents, 20, 22  
benzodioxan derivatives, 20, 371  
<sup>1</sup>H NMR and energy calculations (guinea pig, mouse), 20, 484  
nonsteroidal estrogens, 19, 388  
nootropic agents, 20, 558  
triazolinethione, 20, 598
- Conformational preference**  
adrenergic agents, 20, 377  
phenylethanolamine *N*-methyltransferase inhibition, 20, 377
- Conformer populations, effect on binding affinity of *meso*- and *dl*-hexestrol to estrogen receptor**, 19, 388
- Contractility, urinary bladder, effect of ATP (rabbit)**, 19, 525
- Cross-linking, DNA, by polymeric and monomeric activated analogues of cyclophosphamide (mouse)**, 19, 331
- Culture**  
fetal forelimb bones, bone resorptive activity in (rat), 20, 460  
human cells, inhibition of methotrexate polyglutamate accumulation, 19, 87  
liver cells, embryonic (chick), 20, 206
- Cumene hydroperoxide radical, decomposition (rat)**, 146
- Cyclazocine, <sup>3</sup>H-labeled, binding to opiate receptor sites**, 20, 246
- Cyclic AMP**  
aberrant metabolism, and S49 lymphoma variants (mouse), 19, 109  
accumulation, Ca<sup>2+</sup>-modulated, 20, 59  
cardiac  
effect of alkylated xanthines (rabbit), 20, 179  
effect of toxic alkaloids (mouse), 20, 113  
cholera toxin-stimulated, accumulation in glial tumor cells, 20, 59  
formation in fat cells (rat), 19, 228  
in glioma C6 cells, effect of isoproterenol (rat), 20, 310  
inhibition of formation (mouse), 20, 113  
in liver cell cultures (rat, mouse), 20, 172  
metabolism, regulation in platelets (human), 20, 302  
octopamine and pesticides, 20, 68  
pancreatic islets (mouse), 20, 76  
phosphodiesterase  
activation by prostaglandins (human), 20, 302  
activity in pineal gland (rat), 19, 187  
pineal gland (rat), 19, 21  
effects of desmethylimipramine and nialamide (rat), 19, 187  
turnover in cultured cells, 19, 38
- Cyclic GMP**  
cardiac, effect of alkylated xanthines (rabbit), 20, 179  
-dependent hyperpolarization of neuroblastoma cells (mouse), 19, 15  
in liver cell cultures (rat, mouse), 20, 172  
membrane potential change, 19, 15  
muscarinic receptor, calcium channel (mouse), 20, 519
- Cyclic nucleotide, calcium metabolism (mouse)**, 20, 113
- Cyclophosphamide, analogues, differential cytotoxicity and DNA cross-**

- linking in L1210 leukemia cells (mouse), 19, 331  
 Cytochrome *b<sub>5</sub>*, hepatic, effect of alkyl halides (rat), 20, 685  
 Cytochrome P-450  
   cadmium-induced depression (rat), 20, 165  
   catalysis, 19, 153  
   hepatic, effect of intoxication with alkyl halides (rat), 20, 685  
   in 2,3- and 3,4-epoxidation (rabbit), 20, 234  
   interferon-mediated depression (mouse), 20, 681  
   isozymes, substrate specificity (rabbit), 20, 662  
   liver microsomal, in radical oxidation (rat), 19, 146  
   membrane-bound, absolute spectra (rat), 19, 162  
   metabolism, molecular orbital studies, 20, 423  
   -NADPH reductase, aerobic reduction of nitrofurantoin, 20, 669  
   specificity in bromobenzene epoxidation (rabbit), 20, 234  
 (Cytosine-5)methylases, DNA, inhibition by 5-azacytidine (bacteria), 19, 314  
 Cytosol, liver, effect of thioacetamide on NADP-linked enzymes of (rat), 19, 451  
 Cytotoxicity, *see also* Toxicity  
   bromobenzene (rabbit), 20, 234  
   differential, by polymeric and monomeric activated analogues of cyclophosphamide, 19, 331  
   sesquiterpene lactones, 19, 97  
 Cytotoxin, *see also* Toxin  
   elatone (sea urchin), 20, 614

## D

- Decamethonium, effects on end-plate current parameters (rat), 19, 276  
 Decarboxylase, ornithine, isoproterenol stimulation (mouse), 20, 382  
*N*-Demethylchloridimeform, effect on octopaminergic neurotransmission, 20, 68  
 Denervation, effect on pineal gland (rat), 19, 21  
 2'-Deoxycytidine, 5'-triphosphates, effect on herpes simplex virus DNA polymerases (human), 20, 415  
 9,11-Deoxyprostaglandins, inhibition of 15-hydroxyprostaglandin dehydrogenase, 19, 456  
 Deoxythymidine kinase, differential affinity of 5-(2-halogenovinyl)-2'-deoxyuridines, 20, 230  
 2'-Deoxyuridine, 5-substituted, inhibitory activity on leukemia L1210 cell growth (mouse), 19, 321  
 [5-<sup>125</sup>I]2'-Deoxyuridine, incorporation into cellular DNA, 19, 122  
*E*-5-(2-bromovinyl)-2'-Deoxyuridine, effects on induction of retrovirus particles, 19, 122  
*E*-5-(2-<sup>125</sup>I-vinyl)-2'-Deoxyuridine, incorporation into cellular DNA, 19, 122  
 Deoxyuridine kinase, antiviral chemotherapy, 20, 230  
 Desensitization  
   acetylcholine receptor protein (ray), 20, 498  
   adenylate cyclase, 20, 585  
   catecholamine-induced (rat), 20, 310  
   [<sup>3</sup>H]glycogen hydrolysis (mouse), 20, 331  
   guanine nucleotides (rabbit), 20, 224  
   to isoproterenol, effects on erythrocyte adenylate cyclase (pigeon), 20, 694  
   volatile anesthetics (ray), 20, 498  
 Desmethylimipramine, effect on *beta*-adrenergic receptor-linked adenylate cyclase system in pineal gland (rat), 19, 187  
 Detergent, effect on glutamate receptor binding (rat), 20, 280  
 [2,4-Diamino-5-(3',4'-dichlorophenyl)]-6-methylpyrimidine  
   effect on lymphoblastoid cells (human), 19, 491  
   toxicity, in a dihydrofolate reductase gene-amplified cell line (mouse), 20, 637  
 4,6-Diamino-1,2-dihydro-2,2-dimethyl-1-(3-X-phenyl)-*s*-triazines, inhibition of bovine and murine leukemia dihydrofolate reductase, 20, 649  
 Diazepam  
   binding,  $\gamma$ -aminobutyric acid-stimulated, 20, 16  
   <sup>3</sup>H-labeled, binding, effect of ethanol, 20, 287  
   receptors, in brain (rat), 20, 470  
 Diazosulfanilic acid  
   comparison with *N*-ethylmaleimide, 19, 355  
   inhibition of opiate binding, 19, 355  
   interaction with opiate receptor, 19, 355  
 Dibenamine, interactions with calcium channel effectors of muscarinic receptor (mouse), 20, 519  
 Dibromochloropropane, effect on hepatic microsomal components (rat), 20, 685  
 Dibucaine, calmodulin antagonism, 20, 363  
 3,5-Diethoxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine  
   activity of analogues (chick), 20, 395  
   effects on ferrochelatase activity in embryo liver (chick), 19, 477  
 Difference spectra, study of serum binding of insecticides (human), 20, 138  
 Dihydroalprenolol  
   binding, in pineal gland (rat), 19, 21  
   <sup>3</sup>H-labeled, binding in pineal gland (rat), 19, 187  
 Dihydro-5-azacytidine, effects on polysomal RNA, 20, 644  
 Dihydroergocryptine, <sup>3</sup>H-labeled, selective binding to adrenergic receptors, 20, 28  
 Dihydrofolate reductase  
   binding of methotrexate (bacteria), 20, 154  
   bovine and murine leukemia, comparison of inhibition, 20, 649  
   in lymphoblastoid cells (human), 19, 491  
   multiple conformations of trimethoprim complex (bacteria), 20, 145  
   structure-activity relationships, 20, 649  
 $\alpha$ -Dihydroprocrotinin, binding, effect of ethanol, 20, 287  
 Dihydroxyphenylalanine  
   in brain extracts (rat), 19, 270  
   phenol ionization, role in methylation by catechol-*O*-methyltransferase, 19, 130  
 1 $\alpha$ ,25-Dihydroxyvitamin D<sub>3</sub>, effects on bone (rat), 20, 460  
 4,4'-Diisothiocyano-2,2'-disulfonic acid stilbene, effect on diazepam receptors (rat), 20, 470  
 Dimethylaniline *N*-oxidase, activity, effect of steroid sex hormone (mouse), 19, 134  
 Diol epoxide  
   bay-region  
   chrysene (rat), 19, 168  
   phenanthrene (rat), 19, 168  
   DNA binding, 19, 153  
   protein binding, 19, 153  
 Diprenorphine, binding to neuroblastoma cell membranes (rat), 20, 1  
 Dissociation kinetics, estrogen-receptor complexes, 20, 35  
 Disulfonic stilbene acids, effect on diazepam receptors (rat), 20, 470  
 DNA  
   azacytosine-containing, effect on methylases (bacteria), 19, 314  
   benzo[*a*]pyrene diol epoxide binding to, effect of epoxide hydratase, 19, 153  
   biosynthesis in HeLa cells, inhibition by sesquiterpene lactones, 19, 97  
   calf thymus, binding of acridine antitumor drugs, 20, 404  
   cross-linking, by polymeric and monomeric activated analogues of cyclophosphamide in mouse L1210 leukemia cells, 19, 331  
   (cytosine-5)methylases, inhibition by 5-azacytidine (bacteria), 19, 314  
   polymerases, herpes simplex virus (human), 20, 415  
   synthesis, 20, 657  
 Dopa, *see* Dihydroxyphenylalanine  
 Dopamine  
   effects on renal glomeruli (rat), 20, 429  
   effects on renal striatum (rat), 20, 429  
   neurons, mesocortical (rat), 19, 270  
   receptor  
     renal (rat), 20, 429  
     striatal (rat), 19, 372  
   -sensitive adenylate cyclase, 20, 592  
     activity, effect of calmodulin (rat), 19, 256  
   -sensitive adenylate cyclase (rat), 20, 319

- synthesis, regulation in mesocortical neurons (rat), 19, 270
- Dopamine- $\beta$ -hydroxylase, plasma, adrenal medulla, and pheochromocytoma, comparison by radioimmunoassay (human), 19, 444
- Dopaminergic ergolines, stereochemistry, 19, 517
- Drug(s)
- affinity for erythrocyte membrane (human), 20, 704
  - agonist,  $\gamma$ -aminobutyric acid (rat), 19, 27
  - antagonism, in lymphoblastoid cells (human), 19, 491
  - antiarrhythmic, effect on voltage-sensitive sodium channels, 20, 356
  - antitumor, interaction with nucleic acids, 20, 404
  - antiviral, effect on DNA polymerases (human), 20, 415
  - assays, application of spin labeling, 20, 674
  - cardioactive, effect on calcium and ion fluxes in axons (squid), 19, 68
  - cytochrome P-450-dependent biotransformation (mouse), 20, 681
  - free, measurement of levels, 20, 674
  - induced receptor conformations (ray), 20, 511
  - interaction with membrane, 20, 124
  - metabolism, sublobular rates in liver (rat), 19, 513
  - receptor interactions, molecular determinants, 20, 558
  - resistance, in gene-amplified cell line (mouse), 20, 637
  - uptake by hepatoma cells, 19, 505
- E
- Ehrlich ascites cell
- polysomal RNA, 20, 644
  - synthesis and translation of polysomal poly(A)RNA, 19, 117
- Elatone, inhibition of cell division and microtubule assembly (sea urchin), 20, 614
- Electrical activity, in sciatic nerve (frog), 19, 291
- Electrical excitability
- sodium channels, 20, 356
  - spontaneous firing (mouse), 20, 453
  - vertebrate heart, 20, 526, 533
- Electron paramagnetic resonance, in study of effect of methoxyflurane, 19, 432
- Electron spin resonance, spin-labeled drugs, 20, 674
- Electrophorus electricus*, acetylcholinesterase, internal flexibility of inhibitors, 20, 89
- Embryonic liver cells
- ferrochelataase activity (chick), 19, 477; 20, 395
  - porphyrin induction (chick), 20, 206
- Enantiomeric composition
- dihydriols of chrysene (rat), 19, 168
  - dihydriols of phenanthrene (rat), 19, 168
  - nonsteroidal estrogens, 20, 43
- $\beta$ -Endorphin analogues, conformation in cerebroside sulfate solution, 19, 302
- End-plate current
- effects of hexamonium and decamethonium (rat), 19, 276
  - sartorius muscle (frog), 20, 345
- Energy calculations, in structure-activity relationships, 20, 598
- Enkephalin
- leucine, interaction with opioid receptors (mouse), 19, 236
  - receptor
    - interaction with ligands (rat), 20, 1
    - structural requirements (mouse), 20, 484
- Enzyme(s)
- effect on glutamate receptor binding (rat), 20, 280
  - gluconeogenic, effect of ethanol (rat), 20, 621
  - glycolytic, effect of ethanol (rat), 20, 621
  - liver, metabolism of chrysene and phenanthrene (rat), 19, 168
  - lysosomal
    - effect of synthetic peptides on secretion (rabbit), 19, 31
    - neutrophilic, secretion (rabbit), 19, 31
  - NADP-linked, of liver cytosol, effect of thioacetamide (rat), 19, 451
  - one-electron reduction, 20, 387
  - specificity, evaluation with analogues of arachidonic acid, 19, 242
  - target, for inhibitory activity of 2'-deoxyuridines, 19, 321
- Epidermis, growth factor, action and binding 19, 1
- Epididymis, adipocytes, regulation of lipolysis in (hamster), 19, 248
- Epiervatamine, interaction with action potential Na<sup>+</sup> ionophore, 20, 107
- Epinephrine-induced platelet aggregation (human), 19, 179
- Epithelium, sodium transport (rabbit), 20, 543
- Epoxidation
- bromobenzene (rabbit), 20, 234
  - 2,3-, 3,4-, role of cytochrome P-450 (rabbit), 20, 234
- Epoxide hydratase, effect on benzo[*a*]pyrene diol epoxide, 19, 153
- Epoxide hydrolase, immunohistochemical localization (rat), 20, 709
- Epoxide stability, molecular orbital studies, 20, 423
- Equilibrium
- binding properties, of high-affinity racemic radioligands, 19, 205
  - dialysis, acridine antitumor drugs, 20, 404
- Ergolines, dopaminergic, stereochemistry, 19, 517
- Ervatamine, interaction with action potential Na<sup>+</sup> ionophore, 20, 107
- Erythrocyte
- adenylate cyclase, effects of desensitization to isoproterenol (pigeon), 20, 694
  - effect of tienilic acid on transport of Na<sup>+</sup> and K<sup>+</sup> (human), 19, 438
  - homogeneity of *beta*<sub>2</sub>-adrenoceptors (rat), 19, 194
  - membrane
    - calcium transport, 20, 363
    - chloride channels (rat), 20, 470
    - transformation (human), 20, 704
- Escherichia coli*
- dihydrofolate reductase, binding of methotrexate, 20, 154
  - DNA(cytosine-5)methylases, effect of azacytosine, 19, 314
- Eserine, binding to acetylcholinesterase, 20, 89
- Estradiol, receptor binding 20, 43
- Estrogen
- nonsteroidal
    - conformational analysis, 19, 388
    - receptor binding, 20, 43
    - stereochemistry, 20, 43
  - receptor
    - binding affinity of *meso*- and *dl*-hexestrol to, 19, 388
    - binding of nonsteroidal estrogens, 20, 43
    - hepatic, 20, 35
    - nonsteroidal estrogens, 19, 388
- Ethanol, *see also* Alcohol
- effect on [<sup>3</sup>H]diazepam binding, 20, 287
  - effect on gluconeogenic and glycolytic enzymes of liver (rat), 20, 621
  - effect on physical properties of brain membranes (mouse), 20, 128
  - membrane-disordering action (mouse), 19, 425
- Ether, fluorinated, molecular orbital studies of metabolism, 20, 423
- Ethidium, displacement by acridine antitumor drugs, 20, 404
- Ethoxycoumarin, *O*-deethylation (rat), 19, 513
- Ethylenedibromide, effect on hepatic microsomal components (rat), 20, 685
- N*-Ethylmaleimide
- comparison with diazosulfanilic acid, 19, 355
  - effect on opiate receptors in neuroblastoma  $\times$  glioma hybrid (mouse), 20, 255
- Ethylmorphine, *N*-demethylation, hepatic (rat), 20, 165
- Ethynyl compounds, in embryo liver cell culture (chick), 20, 206
- F
- Fat cell, *see* Adipocyte
- Fatty acid
- blood levels, 19, 456
  - hepatic, effect of alkyl halides (rat), 20, 685
  - <sup>14</sup>C-labeled, evaluation of structural determinants of prostaglandin receptor, 19, 242
- Fermentation, homolactate, 20, 218
- Ferrochelataase
- 3,5-dithoxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine inhibition (chick), 20, 395
  - in embryo liver cells (chick), 20, 395

- effects of griseofulvin and 3,5-diethyloxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine, 19, 477
- Fetus, heart, ontogeny (mouse), 20, 382
- Fibroblast, cultured, cyclic AMP turnover, 19, 38
- Flavin-containing monooxygenase, hormone-dependent changes (mouse), 19, 134
- Flavoprotein, catalysis, of anthracycline antibiotic, 19, 184
- Fluidity  
brain membrane (mouse), 20, 128  
hippocampal membrane (rat), 20, 280  
lipid (mouse), 20, 128
- Fluorescence  
quenching, study of serum binding of insecticides (human), 20, 138  
study of brain membrane (mouse), 20, 128
- Fluorescent probe, brain membrane (mouse), 20, 128
- Fluoro derivatives, side-chain, vitamin D<sub>3</sub> (rat), 20, 460
- Fluoro-dopa, role in methylation by catechol-*O*-methyltransferase, 19, 130
- Fluorometry, measurement of sublobular rates of mixed-function oxidation in perfused liver (rat), 19, 513
- 5-Fluorouracil, effect on polysomal poly(A)RNA from Ehrlich ascites cells, 19, 117
- Fluoxetine, metabolism, molecular orbital studies, 20, 423
- Folate coenzyme, in L1210 leukemia cells (mouse), 19, 481
- Folinic acid, inhibition of polyglutamate synthesis, 19, 87
- Force-field calculations, conformations of nonsteroidal estrogens, 19, 388
- Formamidines, octopaminergic action, 20, 68
- Formylmethionyl-leucyl-phenylalanine, stimulation of arachidonyl phosphatidylinositol turnover (rabbit), 19, 31
- 10-Formyltetrahydrofolate synthetase, in L1210 leukemia cells (mouse), 19, 481
- Fourier analysis, triazolinedione, 20, 598
- Fragment C, characterization of binding to brain membrane (rat), 20, 565
- Frustrase-bisphosphatase, hepatic, effect of ethanol (rat), 20, 621
- Fuel, insulin-releasing (mouse), 20, 76  
recognition by pancreatic B-cells (mouse), 20, 76
- ### G
- D-Galactosamine, effect on polysomes and mRNA levels in liver (rat), 19, 103
- Ganglion, superior cervical, decentralization (rat), 19, 21
- Gastic mucosa, histamine-stimulated adenylate cyclase activity (guinea pig), 20, 326
- Gene-amplified cell line, toxicity of methotrexate and metoprine (mouse), 20, 637
- Glial tumor cells, accumulation of cyclic AMP, 20, 59
- Glioma  
C6 cells  
adenylate cyclase (rat), 20, 310  
*beta*<sub>1</sub>- and *beta*<sub>2</sub>-adrenergic receptors in (rat), 20, 463  
neuroblastoma hybrid  
modifications of opiate receptors (mouse), 20, 255  
NG108-15, opiate receptors in, 20, 8
- Glucokinase, hepatic, effect of ethanol (rat), 20, 621
- Gluconeogenesis, effect of ethanol (rat), 20, 621
- Glucose  
effect on pancreatic  $\beta$ -cells (mouse), 20, 83  
metabolism, effect of ethanol (rat), 20, 621
- Glucose 6-phosphatase, hepatic, effect of ethanol (rat), 20, 621
- Gonadotropin  
human chorionic, release, effect of arachidonic acid, 20, 609  
release of (rat), 19, 399
- Gonadotropin-releasing hormone, mechanism of action (rat), 19, 399
- Glutamate  
-activated synaptic channels, block by chlorisondamine, 19, 349  
receptor, binding, effect of temperature, detergents, and enzymes (rat), 20, 280
- Glycogen, <sup>3</sup>H-labeled, desensitization (mouse), 20, 331
- Glycolysis, hepatic, effect of ethanol (rat), 20, 621
- Griseofulvin, effects on ferrochelatase activity in chick embryo liver, 19, 477
- Growth factor, epidermal  
action, 19, 1  
binding, 19, 1
- Guanethidine, effect on *beta*-adrenergic receptors in pineal gland (rat), 19, 21
- Guanine nucleotide  
desensitization (rabbit), 20, 224  
effect on interactions of ligands with morphine and enkephalin receptors (rat), 20, 1  
in mutant phenotype, 20, 435  
regulation (pigeon), 20, 694  
regulatory component (mouse), 19, 109
- Gymnodinium breve*, see *Ptychodiscus brevis*
- ### H
- Halide-induced enhancement of diazepam receptors (rat), 20, 470
- 5-(2-Halogenovinyl)-2'-deoxyuridines, differential affinities for deoxythymidine kinases, 20, 230
- Halothane  
effect on lung proteins (rat), 19, 520  
perturbation of acetylcholine receptor protein by (ray), 20, 498, 506
- Heart  
alteration of function by alkylated xanthines (rabbit), 20, 179  
contractile effects of isoproterenol and bethanecol (rabbit), 20, 190  
cyclic AMP, effect of toxic alkaloids (mouse), 20, 113  
fetal, ontogeny (mouse), 20, 382  
membrane, effect of alprenolol (rabbit), 20, 224  
Na<sup>+</sup> channel, toxin effects (mouse), 20, 113  
vertebrate, high-affinity saxitoxin receptor sites, 20, 526
- HeLa cell, DNA biosynthesis, inhibition by sesquiterpene lactones, 19, 97
- Hemoglobin  
binding of *s*-triazine metabolites, 20, 579  
-free perfused liver, sublobular rates of mixed-function oxidation (rat), 19, 513  
newly synthesized, proteolytic susceptibility (rabbit), 20, 227  
proteolysis (rabbit), 20, 227  
rat, species differences, 20, 579  
stereochemistry, 20, 579
- Hepatocyte  
cultures (rat), 20, 172  
isolated  
interaction with *S*-adenosylhomocysteine (rat), 19, 463  
microsome, 20, 387
- Hepatoma  
cell cultures, ornithine decarboxylase induction (rat, mouse), 20, 172  
Reuber H35 cell cultures, treatment with carrier-bound methotrexate, 19, 505
- Hepatotoxicity, see also Toxicity  
bromobenzene (rabbit), 20, 234
- Hepatotoxin, see also Toxin  
effect on hepatic microsomal components (rat), 20, 685
- Herbicide, metabolism, species differences, 20, 579
- Herpes simplex virus  
DNA polymerase, effect of nucleoside analogues (human), 20, 415  
Type 1, anti-compounds, effects on induction of retrovirus particles, 19, 122
- Heterogeneity  
*beta*-adrenoceptors, on lung (rat), 19, 194  
benzodiazepine receptor (bovine, rat), 20, 477  
binding sites,  $\gamma$ -aminobutyric acid, in mammalian brain (rat, bovine), 19, 217
- Hexamethonium, effects on end-plate current parameters (rat), 19, 276
- Hexestrol  
derivative, 20, 43

- dl*-, binding affinity to estrogen receptor, 19, 388  
*meso*-, binding affinity to estrogen receptor, 19, 388  
 receptor binding, 20, 43  
 Hexokinase, hepatic, effect of ethanol (rat), 20, 621  
 Hippocampus, membrane, glutamate receptor binding in (rat), 20, 280  
 Histamine  
 H<sub>1</sub>  
   agonist binding (guinea pig), 19, 379  
   antagonist binding (guinea pig), 19, 379  
   receptor in brain (mouse), 20, 331  
   receptor in longitudinal muscle (guinea pig), 19, 379  
 H<sub>2</sub>, receptor in gastric mucosa (guinea pig), 20, 326  
 -stimulated adenylate cyclase, effects of H<sub>2</sub>-receptor antagonists (guinea pig), 20, 326  
 Histone, H<sub>1</sub>, phosphorylation, inhibition by pyrrolopyrimidine analogues (mouse), 20, 211  
<sup>3</sup>H-Label-stable, phenacetin, binding (hamster), 19, 140  
 Homofolate, inhibition of serine metabolism in L1210 leukemia cells (mouse), 19, 481  
 Homogeneity, *beta*<sub>2</sub>-adrenoceptors  
   on erythrocytes (rat), 19, 194  
   on reticulocytes (rat), 19, 194  
 Homolactate, fermentation, 20, 218  
 Hormone  
   action, model, 19, 1  
   binding, model, 19, 1  
   hypothalamic, regulation of binding sites for, 19, 399  
   receptors, changes during aging (rat), 19, 399  
   -sensitve adenylate cyclase, 20, 435  
 Hybrid, neuroblastoma × glioma NG108-15, opiate receptors in, 20, 8  
 Hydrolysis  
   benzo[*a*]pyrene diol epoxide, effect of epoxide hydratase, 19, 153  
   cyclic GMP, cardiac, inhibition (rabbit), 20, 190  
   [<sup>3</sup>H]glycogen, H<sub>1</sub> receptor-mediated (mouse), 20, 331  
 Hydroperoxide, linoleic acid, determination of absolute spectra of cytochrome P-450 (rat), 19, 162  
 Hydrophobicity estimates, amino acids, 20, 602  
 Hydrophobic interaction, in human serum albumin, 20, 138  
*N*-Hydroxy-2-acetylaminofluorene, mechanism of mutagenicity in *Salmonella* test system, 19, 337  
 15-Hydroxyprostaglandin dehydrogenase, inhibition by 9,11-deoxyprostaglandins, 19, 456  
 5-Hydroxytryptamine, binding in brain, effect of morphine dependence (rat), 20, 237  
 25-Hydroxyvitamin D<sub>3</sub>, effects on bone (rat), 20, 460  
 Hyperglycemia, effect of ethanol (rat), 20, 621  
 Hyperpolarization  
   cyclic GMP-induced (mouse), 19, 15  
   effect on end-plate current (rat), 19, 276  
 Hypertension, effect of propranolol treatment, 20, 118  
 Hypoglycemia, effect of ethanol (rat), 20, 621  
 Hypophysis, *see* Pituitary  
 Hypothalamus, hormones, regulation of binding sites for, 19, 399
- I
- ICI 125, 211, effects on histamine-stimulated adenylate cyclase (guinea pig), 20, 326  
 Ileum, contraction, substance P analogues (guinea pig), 20, 457  
 Imipramine  
   binding, effect of propranolol, 20, 118  
   <sup>3</sup>H-labeled, agonist-stimulated binding (ray), 20, 511  
 Immunohistochemistry, epoxide hydrolase (rat), 20, 709  
 Inhalation anesthetics, solubility in various media, 19, 56  
 Inhibition  
    $\gamma$ -aminobutyric acid release by  $\gamma$ -aminobutyric acid agonist drugs (rat), 19, 27  
   bovine and murine leukemia dihydrofolate reductase, 20, 649  
   calcium transport, by calmodulin, 20, 363  
   cardiac phosphodiesterase (rabbit), 20, 179  
   cell cycle, by elatone (sea urchin), 20, 614  
   competitive, mathematical analysis of kinetics, 20, 367  
   conformational preference of amphetamine analogues, 20, 377  
   cyclic GMP hydrolysis, cardiac (rabbit), 20, 190  
   DNA biosynthesis, in HeLa cells, 19, 97  
   DNA (cytosine-5)methylases, by 5-azacytidine (bacteria), 19, 314  
   15-hydroxyprostaglandin dehydroxygenase, by 9,11-deoxyprostaglandins, 19, 456  
   leukemia L1210 cell growth, thymidylate synthetase as target enzyme for (mouse), 19, 321  
   macromolecule precursor uptake, 19, 97  
   methotrexate polyglutamate accumulation in cultured human cells, 19, 87  
   platelet serotonin transport, 20, 118  
   phospholipid methyltransferase from liver plasma membranes (rat), 20, 631  
   serine metabolism, in L1210 leukemia cells (mouse), 19, 481  
   specific binding of opiates to synaptic membranes, 19, 355  
   synthesis of lung proteins (rat), 19, 520  
 Inhibitor  
   internal flexibility, 20, 89  
   triazine, 20, 649  
 Inotropic effect, positive, 20, 551  
 Inotropic response, cardiac, to alkylated xanthines (rabbit), 20, 179  
 Insectides, interaction with human serum albumin, 20, 138  
 Insulin  
   action, 19, 1  
   binding, 19, 1  
   release, effect of tolbutamide (mouse), 20, 83  
   -releasing fuels, recognition by pancreatic B-cells (mouse), 20, 76  
   secretion (mouse), 20, 76  
 Intercalation, acridine antitumor drugs, 20, 404  
 Interferon-mediated depression of drug biotransformation (mouse), 20, 681  
 Intestine, small, [<sup>3</sup>H]mepyramine binding to longitudinal muscle of (guinea pig), 19, 379  
 Intoxication, alkyl halides, effect on hepatic microsomal components (rat), 20, 685  
 5-Iodo-2'-deoxyuridine, induction of retrovirus particles, 19, 122  
 Ion  
   flux  
     ouabain-insensitive (squid), 19, 68  
     voltage-sensitive sodium channels, 19, 78  
   transport  
     effect of antiarrhythmic drugs, 20, 356  
     in vertebrate heart, 20, 526, 533  
 Ionic channel  
   acetylcholine receptor, interaction with tricyclic antidepressants (ray), 20, 511  
   effect of hexamethonium and decamethonium (rat), 19, 276  
   interaction with tricyclic antidepressants (ray), 20, 511  
   of acetylcholine receptor (frog), 20, 345  
 Ionization, phenol, in dopa, role in methylation by catechol-*O*-methyltransferase, 19, 130  
 Ionopore  
   benzodiazepine- $\gamma$ -aminobutyric acid complex, [<sup>3</sup>H]diazepam binding at, 20, 287  
   Na<sup>+</sup>, action potential, 20, 107  
 Iontophoresis, internal (frog), 20, 345  
 Islets  
   Langerhans  
     effect of glucose on <sup>45</sup>Ca fluxes (mouse), 20, 83  
     effect of tolbutamide on <sup>45</sup>Ca fluxes (mouse), 20, 83  
     *ob/ob* mice, 20, 83  
   pancreatic  
     <sup>45</sup>Ca fluxes (mouse), 20, 83  
     isolated (mouse), 20, 76  
 3-Isobutyl-1-methylxanthine

- effect on cyclic AMP egress from cultured cells, 19, 38
- in liver cell cultures (rat, mouse), 20, 172
- Isoetharine, conformation, 20, 22
- Isoproterenol
  - cardiac responses (rabbit), 20, 190
  - desensitization to, effects on erythrocyte adenylate cyclase (pigeon), 20, 694
  - stimulated adenylate cyclase (rabbit), 20, 224
  - stimulation of fetal heart development (mouse), 20, 382
  - stimulation of ornithine decarboxylase (mouse), 20, 382

## K

- K<sup>+</sup>, *see also* Potassium
  - transport in red cells, effect of tienilic acid (human), 19, 438
- $\alpha$ -Ketoisocaproic acid
  - in study of B-cell metabolism (mouse), 20, 76
  - metabolites (mouse), 20, 76
- Kidney
  - glomeruli, adenylate cyclase (rat), 20, 429
  - N-oxidase activity (mouse), 19, 134
  - striatum, adenylate cyclase (rat), 20, 429
- Kinase, protein, nuclear, I and II (mouse), 20, 211
- Kinetic analysis
  - amiloride-sodium entry site interaction (rabbit), 20, 543
  - transport inhibition (rabbit), 20, 543

## L

- Labeling, specific, multiple components of brain membrane (rat), 20, 263
- Lactic dehydrogenase, release, effect of arachidonic acid, 20, 609
- Lactogen, human placental, release, stimulation by arachidonic acid, 20, 609
- Lanthanides, effects on muscarinic acetylcholine receptor function (mouse, rat), 19, 282
- Lateral phase separations, peptide-induced, in phosphatidic acid bilayers 19, 432
- Lecithin vesicles, transbilayer permeation, 20, 124
- Leucine
  - enkephalin, interaction with opioid receptors (mouse), 19, 236
  - role in increase in intracellular melphalan by basic amino acids, 19, 92
- Leukemia
  - L1210 cells
    - differential cytotoxicity and DNA cross-linking by analogues of cyclophosphamide, 19, 331
    - inhibition of serine metabolism by tetrahydrohomofolate (mouse), 19, 481
    - inhibitory activity of 5-substituted 2'-deoxyuridines, 19, 321
  - dihydrofolate reductase, bovine and murine, comparison of inhibition, 20, 649
- Ligand
  - binding to receptors, 20, 8
  - bivalent, quantitative model for hormone action, 19, 1
  - interaction with morphine and enkephalin receptors (rat), 20, 1
  - quaternary, cell membrane sensitivity (frog), 20, 345
- Light exposure, effect on *beta-adrenergic* receptors in pineal gland (rat), 19, 21
- Linoleic acid
  - hepatic, effect of alkyl halides (rat), 20, 685
  - hydroperoxide, determination of spectra of membrane-bound cytochrome P-450 (rat), 19, 162
- Lipid
  - fluidity (mouse), 20, 128
  - peroxidation, microsomal, initiated by hydroperoxides (rat), 19, 146
  - phase transitions (mouse), 20, 128
  - polar, synaptic membrane labeling, 19, 355
  - soluble antifolates (human), 19, 491
  - effects on cell viability (mouse), 20, 637

- solubility, inhalation anesthetics, 19, 56
- theories of anesthesia (tadpole), 19, 49
- Lipolysis
  - in fat cells (rat), 19, 228
  - in epididymal adipocytes (hamster), 19, 248
- Liver cells
  - cultured, ornithine decarboxylase induction (rat, mouse), 20, 172
  - embryonic, ferrochelatase activity (chick), 19, 477; 20, 395
  - isolated, interaction with S-adenosylhomocysteine (rat), 19, 463
  - cytosol, effect of thioacetamide on NADP-linked enzymes of (rat), 19, 451
  - embryonic, porphyrin induction (chick), 20, 206
  - enzymes
    - effect of ethanol (rat), 20, 621
    - metabolism of chrysene and phenanthrene (rat), 19, 168
  - epoxide hydrolase distribution (rat), 20, 709
  - estrogen receptors, binding properties, 20, 35
  - $\alpha$ -methyl-dopa-induced toxicity (rat), 20, 159
  - microsomal monooxygenase activity, 20, 442
  - microsomes
    - formation of radicals in (rat), 19, 146
    - formation of reactive metabolites of phenacetin in (hamster), 19, 140
  - monooxygenase system (rat), 20, 165
  - NADP-linked enzymes (rat), 19, 451
  - N-oxidase activity (mouse), 19, 134
  - pentose phosphate pathway (rat), 19, 451
  - perfused, hemoglobin-free, sublobular rates of mixed-function oxidation (rat), 19, 513
  - plasma membranes, inhibition of phospholipid methyltransferase (rat), 20, 631
  - polysomes, effect of D-galactosamine and actinomycin D (rat), 19, 103
  - mRNA levels, effect of D-galactosamine and actinomycin D (rat), 19, 103
- Lumicolchicine, effects on respiration and fast axonal transport in sciatic nerves (frog), 19, 291
- Lung
  - activation (rabbit), 20, 662
  - cells, effect of halothane (rat), 19, 520
  - cytochrome P-450, substrate specificity (rabbit), 20, 662
  - heterogeneity of *beta*-adrenoceptors (rat), 19, 194
  - 15-hydroxyprostaglandin dehydrogenase inhibition, 19, 456
  - perfusion (rat), 19, 520
- Lymphoblastoid cells, phenotypic resistance after use of antifolates (human), 19, 491
- Lymphoma cells, S49
  - adenylate cyclase (mouse), 20, 435
  - variants, with aberrant cyclic AMP metabolism (mouse), 19, 109
- Lysergic acid diethylamide, effect on adenylate cyclase, 20, 592
- Lysosome, neutrophilic, enzyme secretion (rabbit), 19, 31

## M

- Macromolecular precursors, inhibition of uptake, 19, 97
- Malaria, growth inhibition, 20, 218
- Malondialdehyde, synthesis, stimulation by methyl mercury (human), 19, 470
- Marine natural product, elatol derivative (sea urchin), 20, 614
- Mathematical analysis, kinetics of competitive inhibition, 19, 367
- Meclofenamate, effect on cyclic AMP egress from cultured cells, 19, 38
- Melphalan, intracellular, carrier mechanism and specificity, 19, 92
- Membrane
  - axonal, quinidine interactions with, 20, 98
  - bound cytochrome P-450, absolute spectra (rat), 19, 162
  - brain
    - central and peripheral *alpha*<sub>1</sub>-adrenoceptors (rat), 20, 295
    - fluidity (mouse), 20, 128



- fragment C and tetanus toxin binding to (rat), 20, 565  
 opiate receptor binding in, 20, 269  
 physical properties (mouse), 20, 128  
 specific labeling of multiple components (rat), 20, 263
- cell  
 internal external binding sites (frog), 20, 345  
 sensitivity to quaternary ligands (frog), 20, 345  
 cholesterol content, effect of ethanol (mouse), 19, 425  
 conductances, quinidine-induced block, 20, 98
- erythrocyte  
 calcium transport, 20, 363  
 chloride channels (rat), 20, 470  
 drug effect on (human), 20, 704  
 shape change (human), 20, 704
- fluidity, effect of ethanol (mouse), 19, 425
- heart, effect of alprenolol (rabbit), 20, 224
- hippocampal  
 fluidity (rat), 20, 280  
 glutamate receptor binding in (rat), 20, 280
- lecithin vesicle, interactions with drugs, 20, 124
- lipid  
 labeling, 19, 355  
 stereospecifically protected by opioids, 19, 355
- liver plasma, inhibition of phospholipid methyltransferase (rat), 20, 631
- neuroblastoma cell, diprenorphrine binding (rat), 20, 1
- neutrophil, phospholipids (rabbit), 19, 31
- order, effect of temperature (mouse), 19, 425
- plasma, adenosine binding in (rat), 19, 228
- potential, hyperpolarization of neuroblastoma cells (mouse), 19, 15
- striatal  
 adenylate cyclase activity (rat), 19, 256  
 dopamine receptors (rat), 19, 372
- synaptic, inhibition of specific binding of opiates, 19, 355
- synaptosomal, effect of ethanol (mouse), 19, 425
- vesicles, inside-out, calcium transport, 20, 363
- Mepyramine, <sup>3</sup>H-labeled  
 binding in brain (mouse), 20, 331  
 binding to longitudinal muscle, characterization (guinea pig), 19, 379
- Mercuric chloride, inhibition of muscarinic receptor (rat), 20, 492
- Metabolism  
 bromobenzene (rabbit), 20, 234  
 B-cell (mouse), 20, 76  
 chrysene, by liver enzymes (rat), 19, 168  
 cyclic AMP  
 aberrant, S49 lymphoma variants and (mouse), 19, 109  
 regulation in platelets (human), 20, 302  
 cyclic nucleotide, calcium (mouse), 20, 113  
 cytochrome P-450, molecular orbital studies, 20, 423  
 drug, sublobular rates in liver (rat), 19, 513  
 fluorenone, molecular orbital studies, 20, 423  
 glucose, effect of ethanol (rat), 20, 621  
 herbicide, species differences, 20, 579  
 liver, thiacetamide toxicity (rat), 19, 451  
 microaerophilic, 20, 218  
 phenanthrene, by liver enzymes (rat), 19, 168  
 serine, inhibition in L1210 leukemia cells (mouse), 19, 481  
 9-β-D-xylofuranosyladenine, by ovary cells (Chinese hamster), 20, 200
- Metabolite, reactive  
 of acetaminophen (hamster), 19, 140; 20, 195  
 of phenacetin (hamster), 19, 140
- Metabolites, α-ketoisocaproic acid (mouse), 20, 76
- Metallo-protein oxidase, antimalarial activity, 20, 218
- Methionine, uptake in L1210 leukemia cells (mouse), 19, 481
- L-Methionine, binding site of ATP:L-methionine S-adenosyltransferase, steric mapping, 19, 307
- Methionyl-leucyl-phenylalanine, stimulation of arachidonyl phosphatidylinositol turnover (rabbit), 19, 31
- Methotrexate  
 binding to dihydrofolate reductase (bacteria), 20, 154  
 carrier-bound, treatment of Reuber H35 hepatoma cells, 19, 505  
 effect on lymphoblastoid cells (human), 19, 491  
 in cultured human cells, 19, 87  
 inhibition of accumulation in cultured human cells, 19, 87  
 metabolism during chemotherapy, 19, 87  
 poly(L-lysine), mechanism of action, 19, 505  
 polyglutamate forms, inhibition of accumulation in cultured cells (human), 19, 87  
 toxicity  
 in a dihydrofolate reductase gene-amplified cell line (mouse), 20, 637  
 rescue of citrovorum factor, 19, 87  
 ultraviolet spectrum (bacteria), 20, 154
- Methoxyflurane, effect on phosphatidic acid bilayers, 19, 432
- Methyl ester, substance P, activity (rat, guinea pig), 20, 457
- Methylation site, by catechol-O-methyltransferase, 19, 130
- 3-Methylcholanthrene, effect on ornithine decarboxylase induction in cell cultures (rat, mouse), 20, 172
- α-Methyl dopa  
 generation of free radical (rat), 20, 159  
 reaction with catalase (rat), 20, 159
- β,γ-Methylene ATP, effect on contractility of urinary bladder (rabbit), 19, 525
- Methylene tetrahydrofolate dehydrogenase, in L1210 leukemia cells (mouse), 19, 481
- Methylene tetrahydrofolate reductase, in L1210 leukemia cells (mouse), 19, 481
- Methylmercury  
 effect on platelets (human), 19, 470  
 inhibition of muscarinic receptor (rat), 20, 492
- Methylxanthine, effect on cyclic AMP egress from cultured cells, 19, 38
- Metoprine, *see* [2,4,-Diamino-5-(3',4'-dichlorophenyl)]-6-methylpyrimidine
- Mg<sup>2+</sup>, interaction of ouabagenin and (Na<sup>+</sup> + K<sup>+</sup>)-ATPase in presence, 19, 62
- Micellarization, chlorpromazine, 20, 244
- Microaerophile, metabolism, 20, 218
- Microsome, hepatic  
 effect of intoxication of alkyl halides (rat), 20, 685  
 formation of radicals in (rat), 19, 146  
 formation of reactive metabolites of phenacetin in (hamster), 19, 140  
 isolated, 20, 387  
 monooxygenase activity, 20, 442
- Microtubule assembly, inhibition by elatone (sea urchin), 20, 614
- Mitosis inhibitors  
 effects on fast axonal transport in sciatic nerves (frog), 19, 291  
 effects on respiration in sciatic nerves (frog), 19, 291
- Mixed-function oxidation, sublobular, in perfused liver (rat), 19, 513
- Molecular conformation, 2-pyrrolidone-N-acetamide, 20, 558
- Molecular mechanics, calculations, conformations of nonsteroidal estrogens, 19, 388
- Molecular orbital studies, fluorinated ether anesthetics, 20, 423
- Molecule, functional groups, arrangement, 20, 22
- Monoamine oxidase inhibitor, effects on pineal gland (rat), 19, 187
- Monooxygenase  
 flavin-containing, hormone-dependent changes (mouse), 19, 134  
 microsomal, induction of activity, 20, 442  
 system, hepatic, hypophysial regulation (rat), 20, 165
- Morphine  
 dependence, effect on binding of 5-hydroxytryptamine in brain (rat), 20, 237  
 naloxone-releasable, interactions with opioid receptors (mouse), 19, 236  
 receptors  
 interaction with ligands (rat), 20, 1  
 structural requirements (guinea pig), 20, 484
- Mucosa, gastric, histamine-stimulated adenylate cyclase activity

- (guinea pig), 20, 326
- Muscarinic receptor**  
 acetylcholine  
 binding, role of sulfhydryl groups (rat), 20, 492  
 effects of lanthanides (mouse, rat), 19, 282  
 regeneration (rat), 20, 492  
 neuroblastoma cells (mouse), 19, 15
- Muscimol**, binding, effect of ethanol, 20, 287
- Muscle**  
 contraction, and ATPase, effect of alkaloid, 19, 411  
 longitudinal, small intestine, [<sup>3</sup>H]mepyramine binding (guinea pig), 19, 379  
 skeletal, contractions, potentiation and prolongation by alkaloid, 19, 411
- Mutagenicity**  
 alkylating agents, 19, 496  
*N*-hydroxy-2-acetylaminofluorene in *Salmonella* test system, mechanism, 19, 337
- Mycotoxin**  
 estrogenicity, 20, 35  
 zearalenone, binding to hepatic estrogen receptors, properties, 20, 35
- Myometrium**, adrenergic receptors (rabbit), 20, 52
- Myxicola** giant axons, quinidine interactions with, 20, 98
- N**
- Na<sup>+</sup>**, *see also* Sodium  
 action potential  
 maximal rate of rise (mouse), 20, 453  
 voltage dependence (mouse), 20, 453  
 channels  
 effect of neurotoxins, 20, 107  
 inactivation gate (mouse), 20, 453  
 shift of inactivation curve (mouse), 20, 453  
 toxins (mouse), 20, 113  
 interaction of ouabagenin and (Na<sup>+</sup> + K<sup>+</sup>)-ATPase in presence, 19, 62  
 transport in red cells, effect of tienilic acid (human), 19, 438
- NADP-linked enzymes** of liver cytosol, effect of thioacetamide (rat), 19, 451
- NADP<sup>+</sup>**, binding to dihydrofolate reductase (bacteria), 20, 145
- NADPH-cytochrome P-450 reductase**, aerobic reduction of nitrofurantoin, 20, 669
- Na<sup>+</sup>,K<sup>+</sup>-ATPase**  
 chloramadinone acetate inhibition, 20, 551  
 ouabain inhibition, 20, 551
- Naltrexone**, nature of binding to opiate receptor, 20, 269
- Naphthalene ring**, chlorination, 20, 571
- Naphthalenesulfonamide derivatives**, vascular response, 20, 571
- Narcotics**, interactions with opioid receptors (mouse), 19, 236
- Nerve**  
 autonomic, endings, association with high-affinity receptor sites, 20, 526  
 sciatic, effects of mitosis inhibitors on respiration and fast axonal transport (frog), 19, 291  
 sympathetic  
 activity (rat), 19, 21  
 effect of long-term changes on pineal gland (rat), 19, 21  
 synaptic, ion flux in voltage-sensitive sodium channels, 19, 78
- Neuroblastoma cell**  
 effects of lanthanides on muscarinic acetylcholine receptor function (mouse, rat), 19, 282  
 × glioma hybrid  
 modifications of opiate receptors (mouse), 20, 255  
 NG108-15, opiate receptors in, 20, 8  
 hyperpolarization of membrane potential (mouse), 19, 15  
 membranes, diprenorphine binding (rat), 20, 1  
 mode of action of polypeptide neurotoxin (mouse), 20, 453  
 muscarinic receptors (mouse), 20, 519  
 voltage-sensitive sodium channels, 20, 356

- Neuromuscular junction**, sartorius muscle (frog), 20, 345
- Neuron**, mammalian  
 in culture (mouse), 20, 453  
 mesocortical dopamine (rat), 19, 270
- Neurotoxin**, *see also* Toxin  
 activation of sodium channels, 19, 78  
 binding  
 in vertebrate heart, 20, 526, 533  
 to brain membrane, characterization (rat), 20, 565  
 effect on sodium channels, 20, 107  
 mode of action (mouse), 20, 453
- Neurotransmitter**, receptor binding assays, mathematical analysis of competitive inhibition, 19, 367
- Neutrophil**, lysosomal enzyme secretion (rabbit), 19, 31
- Nialamide**, effect on *beta*-adrenergic receptor-linked adenylate cyclase system (rat), 19, 187
- Nicotinic acid**, interactions with *alpha*-adrenergic agents, prostaglandin, and adenosine (hamster), 19, 248
- 4-(4'-Nitrobenzyl)pyridine**  
 assay for alkylating agents, 19, 496  
 nucleophilic selectivity, 19, 496
- Nitrofurantoin**, aerobic reduction, 20, 669
- Nitrogen mustards**, nucleophilic selectivity, 19, 496
- Nitrosobenzene**, spin-trapping function in microsomal oxidation (rat), 19, 146
- Nocodazole**, effects on respiration and fast axonal transport in sciatic nerves (frog), 19, 291
- Nootropic agent**, solid-state structure and conformation, 20, 558
- Norepinephrine**  
 ·ATP complex, structure, 19, 44  
 in brain extracts (rat), 19, 270  
 -induced stimulation of adenylate cyclase activity (rat), 19, 187  
<sup>3</sup>H-labeled, vascular efflux, 20, 571
- Nuclear magnetic resonance**  
 chemical shifts, coupling constants of nonsteroidal estrogens, 19, 388  
<sup>1</sup>H  
 of trimethoprim-NADP<sup>+</sup>-dihydrofolate reductase complex (bacteria), 20, 145  
 norepinephrine·ATP complex, 19, 44  
 permeation of chlorpromazine in lecithin vesicles, 20, 124  
<sup>31</sup>P, of trimethoprim-NADP<sup>+</sup>-dihydrofolate reductase complex (bacteria), 20, 145  
 proton, acetylcholinesterase inhibitors, 20, 89
- Nucleophilic reactivity**, and alkylating agents, 19, 496
- Nucleophilic selectivity**, ratios, alkylating agents, 19, 496
- Nucleoside**  
 analogues, potential in antiviral chemotherapy (human), 20, 415  
 antiviral, effect on DNA polymerases (human), 20, 415  
 kinase, deficiency in cell mutants (Chinese hamster), 20, 200
- Nucleotide separation**, high-pressure liquid chromatography (Chinese hamster), 20, 200

**O**

- Octopamine**  
 cyclic AMP and pesticides, 20, 68  
 -sensitive adenylate cyclase, effect of *N*-demethylchlordimeform, 20, 68
- Ontogeny**, fetal heart (mouse), 20, 382
- Opiate**  
 agonist, mechanism of sodium effect in binding, 20, 269  
 antagonist, mechanism of sodium effect in binding, 20, 269  
 receptor  
 binding in brain membrane, 20, 269  
 binding of [<sup>3</sup>H]cyclazocine, 20, 246  
 effect of guanine nucleotide (rat), 20, 1  
 [<sup>3</sup>H]etorphine (rat), 20, 263  
 inactivation by chlornaltrexamine, 20, 8  
 influence of methodology in assessing ligand binding, 20, 269  
 in neuroblastoma × glioma hybrid (mouse), 20, 255

- in NG108-15 cells, 20, 8  
 interaction with diazosulfanilic acid, 19, 355  
 Scatchard analysis of binding 20, 269  
 structural requirements (guinea pig, mouse), 20, 484
- Opioid**  
 peptide  
   high specific  $\mu$  and  $\delta$  (guinea pig, mouse), 20, 484  
   regulation of cyclic AMP synthesis, 20, 8  
 receptor, interactions with leucine enkephalin and narcotics (mouse), 19, 236
- Ornithine decarboxylase**  
 blocked by propranolol (mouse), 20, 382  
 induction in liver- and hepatoma-derived cell cultures (rat, mouse), 20, 172  
 isoproterenol stimulation (mouse), 20, 382
- Ouabagenin**  
 interaction with  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$  in presence of  $\text{Na}^+$ ,  $\text{Mg}^{2+}$ , and ATP, 19, 62  
 multiforms of complexes with  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ , 19, 62
- Ouabain**  
 effects of sugar moiety on interaction with  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ , 19, 62  
 initial association rate with  $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ , 19, 62  
 -insensitive ion fluxes (squid), 19, 68  
 pharmacological receptor, 20, 551
- Ovary**, cellular metabolism of 9- $\beta$ -D-xylofuranosyladenine (Chinese hamster), 20, 200
- Oxidase**, mixed-function protein, effect of epoxide hydratase, 19, 153
- N-Oxidase**  
 activity in kidney (mouse), 19, 134  
 activity in liver (mouse), 19, 134
- Oxidation**, mixed-function, sublobular, in perfused liver (rat), 19, 513
- 2-Oxopyrrolidin-1-ylacetamide**, solid-state structure and conformation, 20, 558
- Oxygen consumption**, in flavoprotein catalysis, 19, 184
- P**
- Pancreas**  
 $\beta$ -cells  
   effect of glucose (mouse), 20, 83  
   effect of tolbutamide (mouse), 20, 83  
 B-cells, recognition of insulin-releasing fuels (mouse), 20, 76  
 islets, cyclic AMP (mouse), 20, 76  
 microdissected islets,  $^{45}\text{Ca}$  fluxes (mouse), 20, 83
- Partition coefficient**  
 amino acids, 20, 602  
 radiometric method, 20, 602
- D-Penicillamine**, effect on muscarinic receptor (rat), 20, 492
- Pentose phosphate pathway**, hepatic, effect of thioacetamide (rat), 19, 451
- Peptide**  
 bioactive, mechanism of action (rat), 19, 399  
 -induced lateral phase separations, effect of methoxyflurane, 19, 432  
 $M_r = 52,000$ , mediation of effects of cholera toxin, 19, 406  
 opioid, regulation of cyclic AMP synthesis, 20, 8  
 specific  $\mu$  and  $\delta$  (guinea pig, mouse), 20, 484  
 synthetic, effect on enzyme secretion (rabbit), 19, 31
- Perhydrohistrionicotoxin**,  $^3\text{H}$ -labeled, binding to channel (ray), 20, 511
- Permeation**, transbilayer, in lecithin vesicles, 20, 124
- Peroxidase-mediated formation of reactive metabolites of acetaminophen**, 20, 195
- Peroxidation**, lipid, microsomal, initiated by hydroperoxides (rat), 19, 146
- Peroxide-catalase complex**, secondary, conversion of catalase to (rat), 20, 159
- Pesticides**, adenylate cyclase, 20, 68
- Phase transition**, effect of methoxyflurane, 19, 432
- Phenacetin**, reactive metabolites, formation (hamster), 19, 140
- Phencyclidine**, effect on end plate currents (frog), 20, 345
- Phenobarbital-like agent**, species differences in responsiveness, 20, 442
- Phenol**, ionization in dopa, 19, 130
- Phenothiazine**  
 antipsychotics, photoaffinity labeling, 19, 264  
 drugs, effect on erythrocytes (human), 20, 704
- Phenotype**, mutant, catalytic adenylate cyclase, 20, 435
- Phenotypic resistance**, in lymphoblastoid cells (human), 19, 491
- Phenoxybenzamine**, interactions with calcium channel effectors of muscarinic receptor (mouse), 20, 519
- L-Phenylalanine mustard**, nucleophilic selectivity, 19, 496
- Phenylethanolamine N-methyltransferase**, inhibition, 20, 377
- Phenylethylamines**, inhibition of phenylethanolamine N-methyltransferase, 20, 377
- (-)-N<sup>6</sup>-Phenylisopropyladenosine**,  $^3\text{H}$ -labeled, binding in fat cells (rat), 19, 228
- Phenytoin**  
 binding to albumin, 20, 674  
 binding to serum, 20, 674
- Pheochromocytoma**, dopamine- $\beta$ -hydroxylase, radioimmunoassay (human), 19, 444
- Phosphatidic acid**, bilayers, peptide-induced lateral phase separation, 19, 432
- Phosphatidylinositol**  
 arachidonyl, stimulation by formylmethionyl-leucyl-phenylalanine (rabbit), 19, 31  
 turnover (rabbit), 19, 31
- Phosphodiesterase**  
 cardiac, xanthine inhibition (rabbit), 20, 179  
 cyclic AMP, activation by prostaglandins (human), 20, 302  
 cyclic nucleotide, in S49 lymphoma variants (mouse), 19, 109
- Phosphoenolpyruvate carboxykinase**, hepatic effect of ethanol (rat), 20, 621
- Phosphofructokinase**, hepatic, effect of ethanol (rat), 20, 621
- Phospholipase A<sub>2</sub>**  
 effect on human chorionic gonadotropin release, 20, 609  
 effect on human placental lactogen release, 20, 609  
 neutrophil (rabbit), 19, 31
- Phospholipid**  
 bilayer, peptide-induced lateral phase separation, 19, 432  
 methyltransferase, inhibition in liver plasma membranes (rat), 20, 631  
 neutrophil membrane (rabbit), 19, 31  
 vesicles  
   effect of ethanol (mouse), 19, 425  
   effect of methoxyflurane, 19, 432
- Phosphorylase**, adipocyte, effect of  $\alpha$ -adrenergic receptors (hamster), 20, 339
- Phosphorylation**, histone H1, inhibition by pyrrolopyrimidine analogues (mouse), 20, 211
- Photoaffinity labeling**, calmodulin, 19, 264
- Physostigmine**, binding to acetylcholinesterase, 20, 89
- Pineal gland**  
 $\beta$ -adrenergic receptor-linked adenylate cyclase system (rat), 19, 187  
 effect of long-term changes in sympathetic nervous activity (rat), 19, 21
- Piperocaine methiodide**, effect on end plate currents (frog), 20, 345
- Pituitary**  
 receptors, regulation by steroids, 19, 399  
 regulation of hepatic monooxygenase system (rat), 20, 165
- Plasma**, dopamine- $\beta$ -hydroxylase, radioimmunoassay (human), 19, 444
- Platelet**  
 aggregation  
   effect of prostaglandins (human), 20, 302  
   epinephrine-induced (human), 19, 179  
   methylmercury-induced (human), 19, 470  
 characterization of  $\alpha$ -adrenergic receptors in (human), 19, 179  
 regulation of cyclic AMP metabolism (human), 20, 302  
 serotonin, inhibition of transport, 20, 118

- Podophyllotoxin, effects on respiration and fast axonal transport in sciatic nerves (frog), 19, 291
- Polyglutamate  
in cultured human cells, 19, 87  
synthesis, inhibition by folic acid, 19, 87
- Polymerase, DNA, herpes simplex virus (human), 20, 415
- Polymyxin-induced lateral phase separation, 19, 432
- Polypeptide, toxin, effect on Na<sup>+</sup> action potentials (mouse), 20, 453
- Polysome  
hepatic, effect of D-galactosamine and actinomycin D (rat), 19, 103  
poly(A)RNA  
from Ehrlich ascites cells, 19, 117  
synthesis and translation, 19, 117  
RNA, effects of 5-azacytidine and dihydro-5-azacytidine, 20, 644
- Porphyryn  
-inducing activity in embryo liver cell culture (chick), 20, 206  
induction (chick), 20, 395  
patterns in embryo liver (chick), 19, 477
- Potassium, *see also* K<sup>+</sup>  
channel, effect of cardiotoxic drugs (squid), 19, 68
- Prazosin, <sup>3</sup>H-labeled, selective binding to adrenergic receptors, 20, 28
- Pressure, high, antagonism of anesthesia, 19, 432
- Promethazine, interaction with mouse brain tubulin, 19, 295
- Propranolol  
inhibition of platelet serotonin transport, 20, 118  
ornithine decarboxylase block (mouse), 20, 382
- Prostacyclin, effect on cyclic AMP metabolism in platelets (human), 20, 302
- Prostaglandin  
activation  
of cyclic AMP phosphodiesterase (human), 20, 302  
of adenylate cyclase (human), 20, 302  
D<sub>2</sub>, effect on cyclic AMP metabolism in platelets (human), 20, 302  
E<sub>1</sub>  
desensitization of adenylate cyclase to, 20, 585  
inhibition of 15-hydroxyprostaglandin dehydrogenase, 19, 456  
E<sub>2</sub>, inhibition of 15-hydroxyprostaglandin dehydrogenase, 19, 456  
interactions with *alpha*-adrenergic agents, nicotinic acid, and adenosine (hamster), 19, 248  
receptor, evaluation with analogues of arachidonic acid, 19, 242  
synthesis pathway, induction by methylmercury (human), 19, 470
- Protease, effect on glutamate receptor binding (rat), 20, 280
- Protein  
blood, protein binding (human), 20, 138  
high-mobility groups 14 and 17 (mouse), 20, 211  
kinase, nuclear, I and II (mouse), 20, 211  
lung, synthesis inhibition (rat), 19, 520  
-metallo oxidase, antimalarial activity, 20, 218  
mixed-function oxidase, effect of epoxide hydratase, 19, 153  
phosphorylation (mouse), 20, 211  
synthesis, in sciatic nerve (frog), 19, 291
- Proteolysis, hemoglobin (rabbit), 20, 227
- Proton  
nuclear magnetic resonance, acetylcholinesterase inhibitors, 20, 89  
relaxation time, *beta*<sub>2</sub>-adrenergic receptor-stimulating agents, 20, 22
- Ptychodiscus brevis*, toxin T<sub>4</sub>, effect on voltage-sensitive sodium channels, 19, 345
- Pumiliotoxin  
inhibition of calcium-ATPase, 19, 411  
potentiation and prolongation of muscle contraction, 19, 411
- Purine nucleotides, effects on binding of [<sup>3</sup>H]amino-6,7,-dihydroxy-1,2,3,4,-tetrahydronaphthalene (rat), 19, 372
- 2-Pyrrolidone-N-acetamide, solid-state structure and conformation, 20, 558
- Pyrolopyrimidine, analogues, inhibition of histone H1 phosphorylation (mouse), 20, 211
- Pyruvate carboxylase, hepatic effect of ethanol (rat), 20, 621
- Pyruvate kinase, hepatic, effect of ethanol (rat), 20, 621
- Q
- Quinidine  
effect on membrane conductances, 20, 98  
interactions with *Myxicola* giant axons, 20, 98
- Quinoline, antimalarial activity, 20, 218
- Quinoline-N-oxide, antimalarial activity, 20, 218
- Quinone  
antitumor, 20, 387  
-stimulated superoxide formation, 20, 387
- Quinuclidinyl benzilate, binding, effect of lanthanides (mouse, rat), 19, 282
- R
- Radical  
formation in liver, role of hydroperoxides (rat), 19, 146  
free, generation from  $\alpha$ -methyldopa (rat), 20, 159  
of acetaminophen, formation, 20, 195
- Radioimmunoassay, dopamine- $\beta$ -hydroxylase, 19, 444
- Radioligand  
binding kinetics, 19, 509  
comparison of selective and nonselective subtypes, 20, 28  
racemic  
antagonist, two-step binding kinetics, 19, 509  
high-affinity, equilibrium binding properties, 19, 205
- Ranitidine, effects on histamine-stimulated adenylate cyclase (guinea pig), 20, 326
- Receptor  
acetylcholine  
membrane-bound (ray), 20, 498, 506  
muscarinic, 2-halogenoethylamine inhibition (mouse), 20, 519  
muscarinic, phenoxybenzamine and dibenamine interactions (mouse), 20, 519  
adenosine, in fat cells (rat), 19, 228  
adrenergic, *see* Adrenergic receptor  
agonists H<sub>1</sub>, effects on [<sup>3</sup>H]glycogen hydrolysis (mouse), 20, 331  
 $\gamma$ -aminobutyric acid, interaction with  $\gamma$ -aminobutyric acid, 20, 16  
antagonists H<sub>2</sub>, effects on histamine-stimulated adenylate cyclase (guinea pig), 20, 326  
auto-  
 $\gamma$ -aminobutyric acid, pharmacology (rat), 19, 27  
in dopamine synthesis (rat), 19, 270  
benzodiazepine, heterogeneity (bovine, rat), 20, 477  
binding  
 $\gamma$ -aminobutyric acid, in mammalian brain (rat, cow), 19, 217  
studies, using high-affinity racemic radioligands, 19, 205  
catecholamine, binding in brain (rat), 20, 237  
[<sup>3</sup>H]cimetidine, clonidine-sensitive H-2 subtype (rat), 20, 240  
conformations, drug-induced (ray), 20, 511  
dopamine  
effect of calmodulin (rat), 20, 319  
renal (rat), 20, 429  
striatal (rat), 19, 372  
-drug interactions, molecular determinants, 20, 558  
enkephalin  
interaction with ligands (rat), 20, 1  
structural requirements (mouse), 20, 484  
estrogen  
binding affinity of *meso*- and *dl*-hexestrol to, 19, 388  
binding of nonsteroidal estrogens, 20, 43  
hepatic, 20, 35  
nonsteroidal, 19, 388  
glutamate, binding, effect of temperature, detergents, and enzymes (rat), 20, 280  
hormone, 19, 1  
changes during aging (rat), 19, 399  
ligand binding to, 20, 8  
morphine  
interaction with ligands (rat), 20, 1

- structural requirements (guinea pig), 20, 484
- muscarinic acetylcholine
- binding, role of sulfhydryl groups (rat), 20, 492
  - effects of lanthanides (mouse, rat), 19, 282
  - neuroblastoma cells (mouse), 19, 15
  - regeneration (rat), 20, 492
- neurotransmitter, mathematical analysis of competitive inhibition, 19, 367
- opiate
- [<sup>3</sup>H]cyclazocine binding, 20, 246
  - effect of guanine nucleotide (rat), 20, 1
  - [<sup>3</sup>H]etorphine (rat), 20, 263
  - inactivation by chlornaltrexamine, 20, 8
  - in neuroblastoma × glioma hybrid (mouse), 20, 255
  - in NG108-15 cells, 20, 8
  - interaction with diazosulfanilic acid, 19, 355
  - Scatchard analysis of binding, 20, 269
  - structural requirements (guinea pig, mouse), 20, 484
  - opioid, interactions with enkephalin and narcotics (mouse), 19, 236
  - pituitary, regulation by steroids, 19, 399
  - prostaglandin, evaluation with analogues of arachidonic acid, 19, 242
  - saxitoxin, high-affinity sites, 20, 526
  - serotonin, binding in brain (rat), 20, 237
- delta* Receptor, *see* Enkephalin receptor
- mu* Receptor, *see* Morphine receptor
- Red cell, *see* Erythrocyte
- Reduction, enzymatic, one-electron, 20, 387
- Regeneration, muscarinic receptor (rat), 20, 492
- Relaxation time, proton, *beta*<sub>2</sub>-adrenergic receptor-stimulating agents, 20, 22
- Release, platelet, induction by methylmercury (human), 19, 470
- Reserpine, effect on *beta*-adrenergic receptors in pineal gland (rat), 19, 21
- Resorption, bone, culture studies (rat), 20, 460
- Respiration, in sciatic nerves, effects of mitosis inhibitors (frog), 19, 291
- Reticulocytes, homogeneity of *beta*<sub>2</sub>-adrenoceptors (rat), 19, 194
- Retrovirus particles, induction by nucleoside analogues, 19, 122
- Reuber H35 hepatoma cells, treatment with carrier-bound methotrexate, 19, 505
- Ribosylation, ADP, 19, 406
- in mutant phenotype, 20, 435
- Ring stacking, norepinephrine·ATP complex, 19, 44
- RNA
- messenger
    - in liver, effect of D-galactosamine and actinomycin D (rat), 19, 103
    - synthesis and translation, 19, 117
  - non-polyadenylic acid-containing, 20, 644, 657
  - nuclear (mouse), 20, 211
  - polyadenylic acid-containing, 20, 644, 657
  - poly(A)
    - from Ehrlich ascites cells, 19, 117
    - synthesis and translation, 19, 117
  - polysomal, effects of 5-azacytidine and dihydro-5-azacytidine, 20, 644
  - ribosomal, 20, 644
    - binding of acaridine antitumor drugs, 20, 404
    - synthesis, 20, 657
    - transfer, 20, 644
- Rubber, silicone, solubility, inhalation anesthetics, 19, 56
- S
- Salivation, substance P analogues (rat), 20, 457
- Salmonella*
- test (rabbit), 20, 662
  - test system, mechanism of *N*-hydroxy-2-acetylaminofluorene mutagenicity, 19, 337
- Sangivamycin
- cytokinetic and biochemical effects in colon carcinoma cells (human), 20, 657
  - inhibition of histone H1 phosphorylation (mouse), 20, 211
- Sarcoplasmic reticulum, effect of alkaloid on calcium ATPase, 19, 411
- Saxitoxin
- binding in vertebrate heart, 20, 526, 533
  - receptor, high-affinity sites, 20, 526
- Scatchard analysis, opiate receptor binding, 20, 269
- SCF-MO studies, theoretical, 20, 558
- Sciatic nerve, effects of mitosis inhibitors on respiration and fast axonal transport (frog), 19, 291
- Scorpion toxin, activation of sodium channels, 19, 78
- Sea anemone, polypeptide toxin (mouse), 20, 453
- Selectivity
- antagonist, of *alpha*<sub>1</sub>-adrenoceptors (rat), 20, 295
  - subtype, of *alpha*-adrenergic antagonists, 20, 28
- Sensitivity
- catecholamine, pineal gland adenylate cyclase (rat), 19, 21
  - sub-, *beta*-adrenergic receptor-linked adenylate cyclase system in pineal gland (rat), 19, 187
- Serine
- metabolism, inhibition in L1210 leukemia cells (mouse), 19, 481
  - transhydroxymethylase, inhibition in L1210 leukemia cells (mouse), 19, 481
- Serotonin
- sensitive adenylate cyclase, 20, 592
  - platelet, inhibition of transport, 20, 118
  - receptor, binding in brain (rat), 20, 237
- Serum, human, binding of phenytoin, 20, 674
- Sesquiterpene
- halogenated, inhibition of cell division and microtubule assembly (sea urchin), 20, 614
  - lactones, cytotoxicity in HeLa cells, 19, 97
- Sex steroids
- effects on tissue *N*-oxidase (mouse), 19, 134
  - regulation of adrenergic receptors (rabbit), 20, 52
- Shift reagents, lecithin vesicle, 20, 124
- Silicone rubber, solubility, inhalation anesthetics, 19, 56
- Sodium, *see also* Na<sup>+</sup>
- amiloride entry site, interaction (rabbit), 20, 543
  - calcium exchange, effect of cardiotonic drugs (squid), 19, 68
  - channels
    - activation by neurotoxins, 19, 78
    - effect of cardiotonic drugs (squid), 19, 68
    - pharmacological properties (rat), 20, 533
    - voltage-sensitive, 20, 356
    - voltage-sensitive, effect of toxin T<sub>α</sub> from *Ptychodiscus brevis*, 19, 345
    - voltage-sensitive, ion flux in synaptic nerve-ending particles, 19, 78
  - ions, role in increase in intracellular melphalan by basic amino acids, 19, 92
  - mechanism of effect in opiate receptor binding, 20, 269
  - transport
    - inhibition by antiarrhythmic drugs, 20, 356
    - in vertebrate heart, 20, 526, 533
- Solubility
- inhalation anesthetics, correlation in various media, 19, 56
  - lipid, anesthetic, 19, 56
- Solubilization, Lubrol fraction, effect on [<sup>3</sup>H]diazepam binding, 20, 287
- Solvent, effects on norepinephrine·ATP complex, 19, 44
- Species differences
- in enzyme induction, 20, 442
  - in herbicide metabolism, 20, 579
- Specificity
- enzyme, evaluation with analogues of arachidonic acid, 19, 242
  - pulmonary cytochrome P-450 isozymes (rabbit), 20, 662
- Spectra
- absolute, membrane-bound cytochrome P-450 (rat), 19, 162
  - difference, red shift (human), 20, 138

- ultraviolet, of methotrexate (bacteria), 20, 154
- Spectroscopy, proton nuclear magnetic resonance, acetylcholinesterase, 20, 89
- Spin labeling  
application to drug assays, 20, 674  
synaptosomal membrane (mouse), 19, 425
- Stereochemistry  
dopaminergic ergoline derivatives, 19, 517  
hemoglobin, 20, 579  
nonsteroidal estrogens, 20, 43
- Stereospecificity  
opioid, membrane lipid protected by, 19, 355  
thin-layer chromatographic patterns, 19, 355
- Steric mapping, L-methionine binding site of ATP:L-methionine S-adenosyltransferase, 19, 307
- Steroids  
regulation of pituitary by (rat), 19, 399  
sex, effects on tissue N-oxidase (mouse), 19, 134
- Striatum  
dopamine receptors (rat), 19, 372  
membrane, adenylate cyclase activity (rat), 19, 256  
renal, adenylate cyclase (rat), 20, 429
- Structural requirements, for  $\mu$  and  $\delta$  opiate receptors (guinea pig, mouse), 20, 484
- Structure-activity relationships  
alkylating agents, 19, 496  
calmodulin antagonists, 20, 571  
dihydrofolate reductase, 20, 649  
dopaminergic and serotonergic stimulation, 20, 592  
enkephalin analogues (mouse), 20, 484  
triazolinethione, 20, 598
- Substance P methyl ester, activity (rat, guinea pig), 20, 457
- Sulfhydryl groups, role in muscarinic receptor binding (rat), 20, 492
- Sulfonylurea, effect on islet fluxes of  $^{45}\text{Ca}$  (mouse), 20, 83
- Sulfotransferase, hepatic, role in mutagenicity of N-hydroxy-2-acetylaminofluorene in *Salmonella* test system (rat), 19, 337
- Superoxide, quinone-stimulated, 20, 387
- Swain-Scott constants, nucleophilic, 19, 496
- Sympathectomy, effect on pineal gland (rat), 19, 21
- Sympathetic nerve  
activity (rat), 19, 21  
long-term changes, effect on pineal gland (rat), 19, 21
- Synaptic channels, glutamate-activated, block by chlorisondamine, 19, 349
- Synaptic membrane, polar lipid labeling, protection by opioids, 19, 355
- Synaptosome  
effect of neurotoxins, 19, 78  
membrane, effect of ethanol (mouse), 19, 425
- T
- Temperature  
effect on glutamate receptor binding (rat), 20, 280  
effect on membrane order (mouse), 19, 425  
effect on norepinephrine-ATP complex, 19, 44
- Tetanus toxin, characterization of binding to brain membrane (rat), 20, 565
- Tetraethylammonium, effect on end plate currents (frog), 20, 345
- Tetrahydrohomofolate, inhibition of serine metabolism in L1210 leukemia cells (mouse), 19, 481
- Tetrahydronaphthalene, derivative, catecholamine, 20, 22
- Tetraphenylphosphonium,  $^3\text{H}$ -labeled, demonstration of hyperpolarization of membrane potential (mouse), 19, 15
- Tetrodotoxin binding  
in study of sodium channels, 20, 107  
in vertebrate heart, 20, 526, 533
- Thin-layer chromatography, stereospecific patterns, 19, 355
- Thioacetamide, effect on pentose phosphate pathway (rat), 19, 451
- Thymidine  
 $^3\text{H}$ -labeled, effect of elatone (sea urchin), 20, 614
- 5'-triphosphates, effect on herpes simplex virus DNA polymerases (human), 20, 415
- Thymidylate synthetase  
in L1210 leukemia cells (mouse), 19, 481  
target for inhibitory activity of 2'-deoxyuridines, 19, 321
- Tienilic acid, effect on  $\text{Na}^+$  and  $\text{K}^+$  transport in red cells (human), 19, 438
- Tissue, fluorometry, micro-light guides (rat), 19, 513
- Tolbutamide, stimulation of  $^{45}\text{Ca}$  fluxes (mouse), 20, 83
- Torpedo californica*, acetylcholine receptors, 20, 498, 506
- Torpedo electroplax*, acetylcholine receptors, 20, 511
- Toxicity, *see also* Cytotoxicity, Hepatotoxicity  
hepatic,  $\alpha$ -methyl dopa (rat), 20, 159  
methotrexate, in a dihydrofolate reductase gene-amplified cell line (mouse), 20, 637  
metoprine, in a dihydrofolate reductase gene-amplified cell line (mouse), 20, 637  
protection, alkylating agents, 19, 496
- Toxin, *see also* Cholera toxin, Cytotoxin, Hepatotoxin, Neurotoxin, Scorpion toxin, Tetanus toxin  
binding kinetics, effect of volatile anesthetics (ray), 20, 506  
polypeptide, effect on  $\text{Na}^+$  action potentials (mouse), 20, 453  
 $\text{T}_4$ , from *Ptychodiscus brevis*, effect on voltage-sensitive sodium channels, 19, 345
- Transport  
calcium, calmodulin-stimulated, 20, 363  
fast axonal, in sciatic nerves (frog), 19, 291  
ion  
effect of antiarrhythmic drugs, 20, 356  
in vertebrate heart, 20, 526, 533  
 $\text{Na}^+$  and  $\text{K}^+$  in red cells, effect of tienilic acid (human), 19, 438  
sodium  
effect of antiarrhythmic drugs, 20, 356  
epithelial (rabbit), 20, 543  
in vertebrate heart, 20, 526, 533
- Translation  
assay of effect of 5-fluorouracil, 19, 117  
*in vitro*, 20, 644
- s-Triazine  
inhibition of bovine and murine leukemia dihydrofolate reductase, 20, 649  
metabolites, binding to hemoglobin, 20, 579
- Triazolinethione  
conformational analysis, 20, 598  
molecular structure, 20, 598
- Trifluoperazine  
binding to calmodulin, 19, 264  
interaction with mouse brain tubulin, 19, 295
- Trimethoprim, binding to dihydrofolate reductase (bacteria), 20, 145
- Tubulin, brain  
binding to chlorpromazine, 20, 244  
interaction of chlorpromazine, trifluoperazine, and promethazine with (mouse), 19, 295
- U
- Ultraviolet  
irradiation, effects on binding of [ $^3\text{H}$ ]amino-6,7-dihydroxy-1,2,3,4-tetrahydronaphthalene (rat), 19, 372  
light, effect on binding of phenothiazine antipsychotics, 19, 264  
spectrum, of methotrexate (bacteria), 20, 154
- V
- Variant, S49 lymphoma, with aberrant cyclic AMP metabolism (mouse), 19, 109
- Vascular relaxants, activity-structure relationship, 20, 571
- Vascular strips, relaxation and contraction, 20, 571
- Veratridine  
activation of voltage-sensitive sodium channels, 19, 345

ATP depletion (mouse), 20, 113  
 effect on cardiac cyclic AMP (mouse), 20, 113  
 -induced sodium uptake, 19, 78  
 in study of cardiotoxic drug effects (squid), 19, 68  
 Vertebrate heart, high-affinity saxitoxin receptor sites, 20, 526  
 Vitamin D, fluorinated derivatives (rat), 20, 460

## Voltage

## clamp

ionic channel (frog), 20, 345

*Myxicola* giant axon, 20, 98

dependence of Na<sup>+</sup> action potentials (mouse), 20, 453

## -sensitive sodium channels

effect of toxin T<sub>4</sub> from *Ptychodiscus brevis*, 19, 345

inhibition by antiarrhythmic drugs, 20, 356

ion flux in synaptic nerve-ending particles, 19, 78

## X

## Xanthine

alkylated, effect on cardiac function (rabbit), 20, 179

## derivatives

effect on cyclic AMP (rabbit), 20, 190

effect on cyclic GMP (rabbit), 20, 190

effect on cardiac function (rabbit), 20, 190

effect on cyclic GMP hydrolysis (rabbit), 20, 190

## X-Ray

diffraction, triazolothione, 20, 598

structural analysis, 2-pyrrolidone-*N*-acetamide, 20, 558

## 9-β-D-Xylofuranosyladenine

metabolism by ovary cell (Chinese hamster), 20, 200

phosphorylation, adenosine kinase (Chinese hamster), 20, 200

## Y

Yohimbine, <sup>3</sup>H-labeled, selective binding to adrenergic receptors, 20, 28

## Z

Zearalenone, mycotoxins, binding to hepatic estrogen receptors, properties, 20, 35

MOLECULAR PHARMACOLOGY

*An International Journal*

VOLUME 20, 1981

EDITOR: NORMAN KIRSHNER

ASSOCIATE EDITOR: T. A. SLOTKIN

EDITORIAL AND ADVISORY BOARD

EARL BARIL  
R. B. BARLOW  
L. L. BENNETT, JR.  
N. J. M. BIRDSALL  
JOËL BOCKAERT  
BRUCE BRECKENRIDGE  
THEODORE M. BRODY  
ERNEST BUEDING  
A. S. V. BURGEN  
WILLIAM CATTERALL  
COLIN F. CHIGNELL  
RONALD CHUANG  
DOMINICK L. CINTI  
P. MICHAEL CONN  
BRIAN COX  
JOHN W. DALY  
JAMES N. DAVIS  
GEORGE I. DRUMMOND  
MOHYEE E. ELDEFRAWI  
ROBERT F. FURCHGOTT  
ALFRED G. GILMAN  
ROBERT I. GLAZER  
DAVID V. GODIN  
AVRAM GOLDSTEIN  
H. JOSEPH GOREN  
CHARLES HEIDELBERGER  
GEORGE H. HITCHINGS  
DONALD JERINA  
ARTHUR KARLIN  
JOYCE J. KAUFMAN  
SEYMOUR KAUFMAN  
LEMONT B. KIER  
ERNEST KUN

HERBERT D. LANDAHL  
ROBERT J. LEFKOWITZ  
ANTHONY Y. H. LU  
KARL MAGLEBY  
GILBERT J. MANNING  
RONALD M. MCELHANEY  
KEITH W. MILLER  
PERRY B. MOLINOFF  
DANIEL W. NEBERT  
CHARLES A. NICHOL  
JOHN P. PERKINS  
RICHARD M. PHILPOT  
BERNARD PULLMAN  
K. V. RAJAGOPALAN  
H. P. RANG  
ELLIOTT RICHELSON  
MARTIN RODBELL  
GERALD ROSEN  
JOHN B. SCHENKMAN  
ARNOLD SCHWARTZ  
DAVID SILVERMAN  
IAN C. P. SMITH  
SOLOMON H. SNYDER  
SNORRI S. THORGEIRSSON  
JAMES R. TRUDELL  
PAUL O. P. TS'O  
DAVID C. U'PRICHARD  
WYLIE W. VALE  
ELLIOT S. VESELL  
O. H. VIVEROS  
MICHAEL J. WARING  
HAREL WEINSTEIN



## CONTENTS OF VOLUME 20

NUMBER 1, JULY 1981

KWEN-JEN CHANG, ELI HAZUM, ANTHONY KILLIAN, AND PEDRO CUATRECASAS. Interactions of Ligands with Morphine and Enkephalin Receptors Are Differentially Affected by Guanine Nucleotide .....	1
ROBERT FANTOZZI, DEBRA MULLIKIN-KILPATRICK, AND ARTHUR J. BLUME. Irreversible Inactivation of the Opiate Receptors in the Neuroblastoma × Glioma Hybrid NG108-15 by Chlornaltrexamine .....	8
PAUL J. MARANGOS AND ANDREA M. MARTINO. Studies on the Relationship of $\gamma$ -Aminobutyric Acid-Stimulated Diazepam Binding and the $\gamma$ -Aminobutyric Acid Receptor .....	16
MICHIO MOTOHASHI AND MASAO NISHIKAWA. Conformational Analysis of $Beta_2$ -Adrenoceptor-Stimulating Agents .....	22
THOMAS N. LAVIN, BRIAN B. HOFFMAN, AND ROBERT J. LEFKOWITZ. Determination of Subtype Selectivity of $Alpha$ -Adrenergic Antagonists: Comparison of Selective and Non-selective Radioligands .....	28
W. POWELL-JONES, S. RAEFORD, AND G. W. LUCIER. Binding Properties of Zearalenone Mycotoxins to Hepatic Estrogen Receptors .....	35
SCOTT W. LANDVATTER AND JOHN A. KATZENELLENBOGEN. Stereochemical Considerations in the Binding of Nonsteroidal Estrogens to the Estrogen Receptor .....	43
JAMES M. ROBERTS, PAUL A. INSEL, AND ALAN GOLDFIEN. Regulation of Myometrial Adrenoceptors and Adrenergic Response by Sex Steroids .....	52
MARGARET A. BROSTROM, CHARLES O. BROSTROM, SU-CHEN HUANG, AND DONALD J. WOLFF. Cholera Toxin-Stimulated Cyclic AMP Accumulation in Glial Tumor Cells: Modulation by $Ca^{2+}$ .....	59
JAMES A. NATHANSON AND EDWARD J. HUNNICUTT. <i>N</i> -Demethylchlordimeform: A Potent Partial Agonist of Octopamine-Sensitive Adenylate Cyclase .....	68
EWE PANTEN, JÜRGEN BIERMANN, AND WERNER GRAEN. Recognition of Insulin-Releasing Fuels by Pancreatic B-Cells: $\alpha$ -Ketoisocaproic Acid Is an Appropriate Model Compound to Study the Role of B-Cell Metabolism .....	76
BO HELLMAN. Tolbutamide Stimulation of $^{45}Ca$ Fluxes in Microdissected Pancreatic Islets Rich in $\beta$ -Cells .....	83
ALAN G. MARSHALL AND JUNKO M. CARRUTHERS. Internal Flexibility of Inhibitors Bound to <i>Electrophorus electricus</i> Acetylcholinesterase: Proton Nuclear Magnetic Resonance Spectroscopy .....	89
BRENDAN S. WONG. Quinidine Interactions with <i>Myxicola</i> Giant Axons .....	98
C. FRELIN, P. VIGNE, G. PONZIO, G. ROMÉY, Y. TOURNEUR, H. P. HUSSON, AND M. LAZDUNSKI. The Interaction of Ervatamine and Epiervatamine with the Action Potential $Na^+$ Ionophore .....	107
JOAN HELLER BROWN. Calcium-Dependent Blockade of Cardiac Cyclic AMP Accumulation by Batrachotoxin and Veratridine .....	113
GARY RUDNICK, ROSA BENCUYA, PAMLEA J. NELSON, AND RUBEN A. ZITO, JR. Inhibition of Platelet Serotonin Transport by Propranolol .....	118
KEISUKE KITAMURA, HIDEKI KANO, KEIJI YONEYAMA, AND KEIICHIRO HOZUMI. $^1H$ Nuclear Magnetic Resonance Study on Transbilayer Permeation of Chlorpromazine in Lecithin Vesicles .....	124
R. ADRON HARRIS AND FRIEDHELM SCHROEDER. Ethanol and the Physical Properties of Brain Membranes: Fluorescence Studies .....	128
BADRI P. MALIWAL AND FRANK E. GUTHRIE. Interaction of Insecticides with Human Serum Albumin .....	138
ANGELA GRONENBORN, BERRY BIRDSALL, EVA HYDE, GORDON ROBERTS, JAMES FEENEY, AND ARNOLD BURGEN. $^1H$ and $^{31}P$ NMR Characterization of Two Conformations of the Trimethoprim-NADP $^+$ -Dihydrofolate Reductase Complex .....	145

H. BERNHARD SCHLEGEL, MARTIN POE, AND KARST HOOGSTEN. Models for the Binding of Methotrexate to <i>Escherichia coli</i> Dihydrofolate Reductase: Direct Effect of Carboxylate of Aspartic Acid 27 upon Ultraviolet Spectrum of Methotrexate .....	154
DEAN P. JONES, DAVID B. MEYER, BO ANDERSSON, AND STEN ORRENIUS. Conversion of Catalase to the Secondary Catalase-Peroxide Complex (Compound II) by $\alpha$ -Methyldopa ..	159
E. M. K. LUI AND G. W. LUCIER. Hypophysial Regulation of Cadmium-Induced Depression of the Hepatic Monooxygenase System in the Rat .....	165
ITSU KANO AND DANIEL W. NEBERT. Ornithine Decarboxylase Induction in Liver- and Hepatoma-Derived Cell Cultures: No Detectable Differences between Control and 3-Methylcholanthrene-Treated Cells .....	172
PHILLIP MUSHLIN, ROBERT C. BOERTH, AND JACK N. WELLS. Selective Phosphodiesterase Inhibition and Alterations of Cardiac Function by Alkylated Xanthines .....	179
PHILLIP MUSHLIN, ROBERT C. BOERTH, AND JACK N. WELLS. Xanthine Derivatives That Selectively Inhibit Cyclic GMP Hydrolysis Potentiate Cardiac Contractile Effects of Isoproterenol but Not Those of Bethanecol .....	190
SIDNEY D. NELSON, DAVID C. DAHLIN, ELMER J. RAUCKMAN, AND GERALD M. ROSEN. Peroxidase-Mediated Formation of Reactive Metabolites of Acetaminophen ..	195
BRUCE A. HARRIS, PRISCILLA P. SAUNDERS, AND WILLIAM PLUNKETT. Metabolism of 9- $\beta$ -D-Xylofuranosyladenine by the Chinese Hamster Ovary Cell .....	200
GERALD S. MARKS, STEPHEN B. ZIMMER, STEPHEN E. DINIZO, BRUCE A. MICO, KENT L. KUNZE, AND PAUL R. ORTIZ DE MONTELLANO. Studies of the Porphyrin-Inducing Activity of Ethynyl Compounds and Conformationally Restricted and Unrestricted Analogues of Allylisopropylacetamide in Chick Embryo Liver Cell Culture .....	206
JEFFREY D. SAFFER AND ROBERT I. GLAZER. Inhibition of Histone H1 Phosphorylation by Sangivamycin and Other Pyrrolopyrimidine Analogues .....	211
L. W. SCHEIBEL AND A. ADLER. Antimalarial Activity of Selected Aromatic Chelators. II. Substituted Quinolines and Quinoline-N-oxides .....	218
<b>SHORT COMMUNICATIONS</b>	
V. A. TKACHUK AND M. WOLLEMAN. The Effect of Alprenolol on the <i>Beta</i> -Receptor and Adenylate Cyclase Activity in Rabbit Heart Membranes .....	224
SABURO AYUKAWA, JOYCE M. FISHER, AND MARCO RABINOVITZ. Proteolytic Susceptibility of Hemoglobin Synthesized in the Presence of Amino Acid Analogues .....	227
Y.-C. CHENG, G. DUTSCHMAN, E. DE CLERCQ, A. S. JONES, S. G. RAHIM, G. VERHELST, AND R. T. WALKER. Differential Affinities of 5-(2-Halogenovinyl)-2'-Deoxyuridines for Deoxythymidine Kinases of Various Origins .....	230
SERRINE S. LAU AND VINCENT G. ZANNONI. Bromobenzene Metabolism in the Rabbit: Specific Forms of Cytochrome P-450 Involved in 2,3- and 3,4-Epoxidation .....	234

NUMBER 2, SEPTEMBER 1981

<b>SHORT COMMUNICATIONS</b>	
TIZIANA MENNINI, ELENA POGGESI, SUSANNA COTECCHIA, ANTONIO DE BLASI, AND ROSARIO SAMANIN. Changes in Serotonin, but Not Catecholamine, Receptor Binding in the Brain of Morphine-Dependent Rats .....	237
N. SUBRAMANIAN AND T. A. SLOTKIN. Solubilization of a [ <sup>3</sup> H]Cimetidine Binding Site from Rat Brain: A Clonidine-Sensitive H-2 Receptor Subtype? .....	240
JOHN R. CANN, LAWRENCE W. NICHOL, AND DONALD J. WINZOR. Micellarization of Chlorpromazine: Implications in the Binding of the Drug to Brain Tubulin .....	244
<hr/>	
R. SUZANNE ZUKIN AND STEPHEN R. ZUKIN. Demonstration of [ <sup>3</sup> H]Cyclazocine Binding to Multiple Opiate Receptor Sites .....	246
NANCY E. LARSEN, DEBRA MULLIKIN-KILPATRICK, AND ARTHUR J. BLUME. Two Different Modifications of the Neuroblastoma $\times$ Glioma Hybrid Opiate Receptors Induced by <i>N</i> -Ethylmaleimide .....	255
ALAIN PUGET, PHILIPPE JAUZAC, JEAN-MARIE ZAJAC, AND JEAN-CLAUDE MEUNIER. Opiate Receptors in the Rat Brain: Specific Labeling of Multiple Membrane Components with [ <sup>3</sup> H]Etorphine? .....	263

STEVEN V. FISCHER AND FEDOR MEDZIHRADSKY. Scatchard Analysis of Opiate Receptor Binding .....	269
MICHEL BAUDRY, ELIZABETH SMITH, AND GARY LYNCH. Influences of Temperature, Detergents, and Enzymes on Glutamate Receptor Binding and Its Regulation by Calcium in Rat Hippocampal Membranes .....	280
WILLIAM C. DAVIS AND MAHARAJ K. TICKU. Ethanol Enhances [ <sup>3</sup> H]Diazepam Binding at the Benzodiazepine- $\gamma$ -Aminobutyric Acid Receptor-Ionophore Complex .....	287
P. B. M. W. M. TIMMERMANS, F. KARAMAT ALI, H. Y. KWA, A. M. C. SCHOOP, F. P. SLOTHORST-GRISDIJK, AND P. A. VAN ZWIETEN. Identical Antagonist Selectivity of Central and Peripheral $\alpha_1$ -Adrenoceptors .....	295
ROBERT ALVAREZ, ADAIR TAYLOR, JASMINE J. FAZZARI, AND JOHN R. JACOBS. Regulation of Cyclic AMP Metabolism in Human Platelets: Sequential Activation of Adenylate Cyclase and Cyclic AMP Phosphodiesterase by Prostaglandins .....	302
PETER H. FISHMAN, PIERRE MALLORGA, AND JOHN F. TALLMAN. Catecholamine-Induced Desensitization of Adenylate Cyclase in Rat Glioma C6 Cells: Evidence for a Specific Uncoupling of $\beta$ -Adrenergic Receptors from a Functional Regulatory Component of Adenylate Cyclase .....	310
MICHAEL T. PIASCIK, MARY F. PIASCIK, ROBERT J. HITZEMANN, AND JAMES D. POTTER. $Ca^{2+}$ -Dependent Regulation of Rat Caudate Nucleus Adenylate Cyclase and Effects on the Response to Dopamine .....	319
A. M. CHERET, F. PIGNAL, AND M. J.-M. LEWIN. Effects of $H_2$ -Receptor Antagonists Cimetidine, Ranitidine, and ICI 125,211 on Histamine-Stimulated Adenylate Cyclase Activity in Guinea Pig Gastric Mucosa .....	326
TAM THANH QUACH, ANNE-MARIE DUCHEMIN, CHRISTIANE ROSE, AND JEAN-CHARLES SCHWARTZ. Specific Desensitization of Histamine $H_1$ Receptor-Mediated [ <sup>3</sup> H]Glycogen Hydrolysis in Brain Slices .....	331
KATHRYN K. MCMAHON AND RICHARD J. SCHIMMEL. Evidence for $\alpha$ -Adrenergic Activation and Inactivation of Phosphorylase in Hamster Adipocytes .....	339
L. G. AGUAYO, B. PAZHENCHEVSKY, J. W. DALY, AND E. X. ALBUQUERQUE. The Ionic Channel of the Acetylcholine Receptor: Regulation by Sites Outside and Inside the Cell Membrane Which Are Sensitive to Quaternary Ligands .....	345
WILLIAM A. CATTERALL. Inhibition of Voltage-Sensitive Sodium Channels in Neuroblastoma Cells by Antiarrhythmic Drugs .....	356
M. VOLPI, R. I. SHA'AFI, AND M. B. FEINSTEIN. Antagonism of Calmodulin by Local Anesthetics: Inhibition of Calmodulin-Stimulated Calcium Transport of Erythrocyte Inside-Out Membrane Vesicles .....	363
ALDO BALSAMO, BRUNO MACCHIA, FRANCO MACCHIA, ADRIANO MARTINELLI, PIETRO TONETTI, AND CARLO A. VERACINI. Conformational Properties of Benzodioxan Derivatives with $\alpha$ -Adrenergic Blocking Activity .....	371
GARY L. GRUNEWALD, RONALD T. BORCHARDT, MICHAEL F. RAFFERTY, AND POLINA KRASS. Conformational Preferences of Amphetamine Analogues for Inhibition of Phenylethanolamine $N$ -Methyltransferase: Conformationally Defined Adrenergic Agents .....	377
MARI K. HADDOX, J. R. WOMBLE, DOUGLAS F. LARSON, WILLIAM R. ROESKE, AND DIANE HADDOCK RUSSELL. Isoproterenol Stimulation of Ornithine Decarboxylase Blocked by Propranolol during Ontogeny of the Murine Heart .....	382
GARTH POWIS, BRUCE A. SVINGEN, AND PEGGY APPEL. Quinone-Stimulated Superoxide Formation by Subcellular Fractions, Isolated Hepatocytes, and Other Cells .....	387
SUSAN P. C. COLE, RALPH ALLEN WHITNEY, AND GERALD S. MARKS. Ferrochelatase-Inhibitory and Prophyrin-Inducing Properties of 3,5-Diethoxycarbonyl-1,4-dihydro-2,4,6-trimethylpyridine and Its Analogues in Chick Embryo Liver Cells .....	395
WILLIAM R. WILSON, BRUCE C. BAGULEY, LAURENCE P. G. WAKELIN, AND MICHAEL J. WARING. Interaction of the Antitumor Drug 4'-(9-Acridinylamino)methanesulfon- $m$ -anisidide and Related Acridines with Nucleic Acids .....	404
JERRY L. RUTH AND YUNG-CHI CHENG. Nucleoside Analogues with Clinical Potential in Antivirus Chemotherapy: The Effect of Several Thymidine and 2'-Deoxycytidine Analogue 5'-Triphosphates on Purified Human ( $\alpha,\beta$ ) and Herpes Simplex Virus (Types 1, 2) DNA Polymerase .....	415

STEPHEN M. ADAMS, MICHAEL J. MURPHY, AND LAURENCE S. KAMINSKY. Molecular Orbital Studies of the Metabolism of Fluroxene and Analogous Fluorinated Ether Anesthetics ..	423
CONNIE KOTAKE, PHILIP C. HOFFMANN, LEON I. GOLDBERG, AND JOSEPH G. CANNON. Comparison of the Effects of Dopamine and <i>Beta</i> -Adrenergic Agonists on Adenylate Cyclase of Renal Glomeruli and Striatum .....	429
HENRY R. BOURNE, DAVID KASLOW, HARVEY R. KASLOW, MICHAEL P. SALOMON, AND VOJTEK LICKO. Hormone-Sensitive Adenylate Cyclase: Mutant Phenotype with Normally Regulated <i>Beta</i> -Adrenergic Receptors Uncoupled from Catalytic Adenylate Cyclase .....	435
ALAN POLAND, IVAN MAK, AND EDWARD GLOVER. Species Differences in Responsiveness to 1,4-Bis[2-(3,5-dichloropyridyloxy)]-benzene, a Potent Phenobarbital-Like Inducer of Mitochondrial Monooxygenase Activity .....	442
ERRATA .....	451

NUMBER 3, NOVEMBER 1981

SHORT COMMUNICATIONS

MICHIHISA MIYAKE AND SHOJI SHIBATA. A Novel Mode of Neurotoxin Action: A Polypeptide Toxin Isolated from <i>Anemonia sulcata</i> Shifts the Voltage Dependence of the Maximal Rate of Rise of Na <sup>+</sup> Action Potentials in a Mouse Neuronal Clone .....	453
MARGARET A. CASCIERI, MARVIN M. GOLDENBERG, AND TEHMING LIANG. Biological Activity of Substance P Methyl Ester .....	457
PAULA H. STERN, YOKO TANAKA, HECTOR F. DELUCA, NOBUO IKEKAWA, AND YOSHIRO KOBAYASHI. Bone Resorptive Activity of Side-Chain Fluoro Derivatives of 25-Hydroxy- and 1 $\alpha$ ,25-Dihydroxyvitamin D <sub>3</sub> in Culture .....	460
<hr/>	
VINCENT HOMBURGER, MARGUERITE LUCAS, ETELKA ROSENBAUM, GÉRARD VASSENT, AND JOËL BOCKAERT. Presence of Both <i>Beta</i> <sub>1</sub> - and <i>Beta</i> <sub>2</sub> -Adrenergic Receptors in a Single Cell Type .....	463
TOMMASO COSTA, LAURA RUSSELL, CANDACE B. PERT, AND DAVID RODBARD. Halide- and $\gamma$ -Aminobutyric Acid-Induced Enhancement of Diazepam Receptors in Rat Brain: Reversal by Disulfonic Stilbene Blockers of Anion Channels .....	470
JOHN W. REGAN, WILLIAM R. ROESKE, JEFFREY B. MALICK, SUSAN H. YAMAMURA, AND HENRY I. YAMAMURA. $\gamma$ -Aminobutyric Acid Enhancement of CL 218,872 Affinity and Evidence of Benzodiazepine Receptor Heterogeneity .....	477
MARIE-CLAUDE FOURNIE-ZALUSKI, GILLES GACEL, BERNARD MAIGRET, SAMUEL PREMILAT, AND BERNARD P. ROQUES. Structural Requirements for Specific Recognition of $\mu$ or $\delta$ Opiate Receptors .....	484
ANWAR-SAAD A. ABD-ELFATTAH AND ADIL E. SHAMOO. Regeneration of a Functionally Active Rat Brain Muscarinic Receptor by D-Penicillamine after Inhibition with Methylmercury and Mercuric Chloride: Evidence for Essential Sulfhydryl Groups in Muscarinic Receptor Binding Sites .....	492
ANTHONY P. YOUNG AND DAVID S. SIGMAN. Allosteric Effects of Volatile Anesthetics on the Membrane-Bound Acetylcholine Receptor Protein. I. Stabilization of the High-Affinity State .....	498
ANTHONY P. YOUNG, JANIS R. OSHIKI, AND DAVID S. SIGMAN. Allosteric Effects of Volatile Anesthetics on the Membrane-Bound Acetylcholine Receptor Protein. II. Alteration of $\alpha$ -Bungarotoxin Binding Kinetics .....	506
N. SHAKER, A. T. ELDEFRAWI, E. R. MILLER, AND M. E. ELDEFRAWI. Interaction of Tricyclic Antidepressants with the Ionic Channel of the Acetylcholine Receptor of <i>Torpedo</i> Electric Organ .....	511
ESAM EL-FAKAHANY AND ELLIOTT RICHELSON. Phenoxybenzamine and Dibenamine Interactions with Calcium Channel Effectors of the Muscarinic Receptor .....	519
WILLIAM A. CATTERALL AND JEFFREY COPPERSMITH. High-Affinity Saxitoxin Receptor Sites in the Vertebrate Heart: Evidence for Sites Associated with Autonomic Nerve Endings .....	526
WILLIAM A. CATTERALL AND JEFFREY COPPERSMITH. Pharmacological Properties of Sodium Channels in Cultured Rat Heart Cells .....	533

KLAUS TURNHEIM, ANTON LUGER, AND MARKUS GRASL. Kinetic Analysis of the Amiloride-Sodium Entry Site Interaction in Rabbit Colon .....	543
MARTIN WEHLING, ARNOLD SCHWARTZ, KYRA WHITMER, GUNTER GRUPP, INGRID GRUPP, AND EARL T. WALLICK. Interaction of Chlormadinone with the Ouabain Binding Site of Na <sup>+</sup> ,K <sup>+</sup> -ATPase .....	551
GIULIANO BANDOLI, DORE A. CLEMENTE, ANTONIO GRASSI, AND GIUSEPPE C. PAPPALARDO. Molecular Determinants for Drug-Receptor Interactions. 1. Solid-State Structure and Conformation of the Novel Nootropic Agent 2-Pyrrolidone- <i>N</i> -Acetamide: X-Ray and Theoretical SCF-MO Studies .....	558
RONALD L. GOLDBERG, TOMMASO COSTA, WILLIAM H. HABIG, LEONARD D. KOHN, AND M. CAROLYN HARDEGREE. Characterization of Fragment C and Tetanus Toxin Binding to Rat Brain Membranes .....	565
HIROYOSHI HIDAKA, MASAHISA ASANO, AND TOSHIO TANAKA. Activity-Structure Relationship of Calmodulin Antagonists: Naphthalenesulfonamide Derivatives .....	571
H. HAMBROECK, R. W. FISCHER, E. E. DI IORIO, AND K. H. WINTERHALTER. The Binding of <i>s</i> -Triazine Metabolites to Rodent Hemoglobins Appears Irrelevant to Other Species .....	579
JAMES G. KENIMER AND MARSHALL NIRENBERG. Desensitization of Adenylate Cyclase to Prostaglandin E <sub>1</sub> or 2-Chloroadenosine .....	585
SAM WEISS AND GEORGE I. DRUMMOND. Dopamine- and Serotonin-Sensitive Adenylate Cyclase in the Gill of <i>Aplysia californica</i> .....	592
JEAN-PIERRE HÉNICHART, RAYMOND HOUSSIN, CAROLE GORS, AND FRANÇOIS BAERT. Conformational Analysis of a New Analgesic Triazolothione: Structural Comparisons with Antipyrine .....	598
LIBBY M. YUNGER AND RICHARD D. CRAMER, III. Measurement and Correlation of Partition Coefficients of Polar Amino Acids .....	602
S. HANDWERGER, J. BARRETT, S. BARRY, E. MARKOFF, P. ZEITLER, B. CWIKEL, AND M. SIEGEL. Stimulation of Human Placental Lactogen Release by Arachidonic Acid .....	609
STEVEN J. WHITE AND ROBERT S. JACOBS. Inhibition of Cell Division and of Microtubule Assembly by Elatone, a Halogenated Sesquiterpene .....	614
VALENTINE DURUIBE AND GOPI A. TEJWANI. The Effect of Ethanol on the Activities of the Key Gluconeogenic and Glycolytic Enzymes of Rat Liver .....	621
JON-SVERRE SCHANCHE, TONE SCHANCHE, AND PER MAGNE UELAND. Inhibition of Phospholipid Methyltransferase(s) from Rat Liver Plasma Membranes by Analogues of <i>S</i> -Adenosylhomocysteine .....	631
MICHAEL HAMRELL, JOHN LASZLO, OLIVER E. BROWN, AND W. DAVID SEDWICK. Toxicity of Methotrexate and Metoprine in a Dihydrofolate Reductase Gene-Amplified Mouse Cell Line .....	637
HSIN-LI LIN AND ROBERT I. GLAZER. The Comparative Effects of 5-Azacytidine and Dihydro-5-azacytidine on Polysomal RNA in Ehrlich Ascites Cells <i>in Vitro</i> .....	644
ZONG-RU GUO, STEPHEN W. DIETRICH, CORWIN HANSCH, BRUCE J. DOLNICK, AND JOSEPH R. BERTINO. A Comparison of the Inhibition of Bovine and Murine Leukemia Dihydrofolate Reductase by 4,6-Diamino-1,2-dihydro-2,2-dimethyl-1-(3- <i>X</i> -phenyl)- <i>s</i> -Triazines .....	649
ROBERT I. GLAZER AND KATHLEEN D. HARTMAN. Cytokinetic and Biochemical Effects of Sangivamycin in Human Colon Carcinoma Cells in Culture .....	657
IAIN G. C. ROBERTSON, RICHARD M. PHILPOT, ERROL ZEIGER, AND C. ROLAND WOLF. Specificity of Rabbit Pulmonary Cytochrome P-450 Isozymes in the Activation of Several Aromatic Amines and Aflatoxin B <sub>1</sub> .....	662
JORDAN L. HOLTZMAN, DUANE L. CRANKSHAW, FRANCIS J. PETERSON, AND CARL F. POLNASZEK. The Kinetics of the Aerobic Reduction of Nitrofurantoin by NADPH-Cytochrome P-450 (c) Reductase .....	669
DAVID CHOU, CARL F. POLNASZEK, YUL YOST, ILO E. LEPIK, AND JORDAN L. HOLTZMAN. Application of Spin Labeling to Drug Assays. II. Determination of the Binding of [ <sup>14</sup> C]Phenytoin and Spin-Labeled Phenytoins to Albumin and Human Serum .....	674
GURMIT SINGH AND KENNETH W. RENTON. Interferon-Mediated Depression of Cytochrome P-450-Dependent Drug Biotransformation .....	681

DAVID E. MOODY, JACQUELINE L. JAMES, GARY A. CLAWSON, AND EDWARD A. SMUCKLER. Correlations among the Changes in Hepatic Microsomal Components after Intoxication with Alkyl Halides and Other Hepatotoxins .....	685
THOMAS H. HUDSON AND GARY L. JOHNSON. Functional Alterations in Components of Pigeon Erythrocyte Adenylate Cyclase following Desensitization to Isoproterenol .....	694
YASUNORI KANAHO, TAKASHI SATO, AND TATSUZO FUJII. The Affinity of Various Phenothiazine Drugs for Membranes of Intact Human Erythrocytes and Their Membrane-Transforming Activity .....	704
THOMAS T. KAWABATA, F. PETER GUENGERICH, AND JEFFREY BARON. An Immunohistochemical Study on the Localization and Distribution of Epoxide Hydrolase within Livers of Untreated Rats .....	709
AUTHOR INDEX FOR VOLUME 20 .....	715
CUMULATIVE SUBJECT INDEX FOR VOLUMES 19 AND 20 .....	721

## INSTRUCTIONS TO AUTHORS

*Molecular Pharmacology* will publish the results of investigations that shed significant light on drug action or selective toxicity at the molecular level. The term "drug" is defined broadly to include chemical agents that selectively modify biological function.

Suitable papers are those which describe applications of the methods of biochemistry, biophysics, genetics, and molecular biology to problems in pharmacology or toxicology. Also suitable are reports of fundamental investigations which, although not concerned directly with drugs, nevertheless provide an immediate basis for further study of the molecular mechanism of drug action. Observations of phenomena that shed no light upon underlying molecular interactions are not regarded as appropriate for publication.

Specific areas of interest include: stereochemical, electronic, and other parameters of drug architecture; conformational analysis of receptors and their function; drug-enzyme and other interactions between drugs and macromolecules; drug effects upon gene replication and transcription and on protein synthesis; mechanism of action of antibiotics and other growth-inhibitory drugs; induction by drugs of changes in macromolecular structure or allosteric transitions; drug-induced alterations in metabolic pathways; effects of hormones and other drugs on cellular regulatory mechanisms; chemical mutagenesis, carcinogenesis, and teratogenesis; pharmacogenetics, idiosyncrasies, and drug allergies; selective toxicity in a single organism or in different species; drug actions on properties and functions of membranes; mechanisms of drug metabolism; distribution and transport of drug molecules between biological compartments.

"Short Communications" will be considered for rapid publication if their subject matter lies within the scope of the Journal, if they are concise, and if they are considered to be of sufficiently immediate importance to the work of other investigators to justify accelerated publication. They may contain experimental observations, theoretical material, or significant comment upon published investigations.

**Page charges.** Authors will be billed at the rate of \$30.00 per page after the paper has been published. It is expected that the page charge will be paid if funds are available for that purpose from the author's institution or from the sponsor of this research. Payment of the charge is not a condition for publication. Neither the editors nor the reviewers will have knowledge as to who has paid the charge, and this payment always will be considered entirely voluntary.

**Submission of manuscript.** Manuscripts are published in English only and should be sent to the Editor, Dr. Norman Kirschner, Department of Pharmacology, Duke University Medical Center, Durham, North Carolina 27710, U.S.A. Manuscripts should be typewritten double spaced with ample margins on one side of the paper, 8½ × 11 inches (ca. 215 × 280 mm). Submit three complete copies of the manuscript and three copies of each figure, plus one original drawing or photograph of each figure. All pages should be numbered consecutively beginning with the title page. Limit your reference listings to the minimal number required to adequately document the manuscript. In most instances 30 references or fewer should suffice.

It is understood that the manuscripts and the results they contain will not have been published previously and are not being submitted elsewhere. Manuscripts are accepted for review with the understanding that all persons listed as authors have given their approval for the submission of the paper; further, that any person cited as a source of personal communications has approved such citation. Written authorization may be required at the Editor's discretion. Articles and any other material published in *Molecular Pharmacology* represent the opinions of the author(s) and should not be construed to reflect the opinions of the Editor(s) and the Publisher. If and when a manuscript is published, it will become the sole property of the Journal.

Authors submitting a manuscript do so on the understanding that if it is accepted for publication, copyright in the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the Society for Pharmacology and Experimental Therapeutics. No reasonable request by the author for permission to reproduce any of his or her contributions to the journal will be refused.

**Organization and style of manuscripts.** The policy of the Journal is to allow authors maximum freedom in organizing and presenting

their material, and in expressing their ideas, provided only that clarity and conciseness are achieved.

Certain conventions must be observed. Chemical and mathematical formulas and abbreviations should follow the *Instructions to Authors of the Journal of Biological Chemistry* (Vol. 255, pp. 1-11, January 10, 1980). Drugs must be referred to by their generic or chemical names throughout the text, but may be identified by trade name in parentheses or a footnote. The systematic name and number given by the Commission on Enzymes of the International Union of Biochemistry should be included for each enzyme of importance in a paper, at the point in the Summary or Introduction where the enzyme is first mentioned. The use of abbreviations should be minimized and abbreviations avoided in the Summary. All essential abbreviations should be defined in a single footnote when first introduced. Abbreviations of journal names should conform to the style of *Biological Abstracts*. References to papers that have been accepted for publication, but have not appeared, should be cited like other references with the abbreviated name of the journal followed by the words "in press." Copies of such papers should be sent whenever the findings described in them have a direct bearing on the paper being submitted for publication. "Personal Communications" and "Unpublished Observations" should be cited in footnotes to the text and should not be included in the reference list.

A manuscript should include the following, in the order listed: (1) Title. Numbered footnotes to the title should be avoided; acknowledgment of financial support should be given in an unnumbered footnote to the title. (2) Names of authors, their laboratory and institution. (3) A running title, not exceeding 60 characters and spaces. (4) Summary preceded by authors' names and title of article. For example:

### SUMMARY

DAIRMAN, W., AND S. UDENFRIEND. Studies on the mechanism of the L-3,4-dihydroxyphenylalanine-induced decrease in tyrosine hydroxylase activity. *Mol. Pharmacol.* 8:293-299 (1972).

(5) Text. Footnotes should be referred to by superscript numbers and references by numbers in parentheses. (6) References, numbered according to order of citation in the text, including title and complete pagination. Examples: 1. Goren, J. H., L. G. Bauce, and W. Vale. Forces and structural limitations of binding of thyrotropin-

releasing receptor: the pyroglutamic acid moiety. *Mol. Pharmacol.* 13:606-614 (1977). 2. Sandler, M. Variations in monoamine oxidase activity in some human disease states, in *Monoamine Oxidase and Its Inhibition*. Ciba Foundation Symposium 39. Elsevier, Amsterdam, 327-340 (1976) (7). Footnotes, numbered according to order of appearance in the text. (8) Tables. (9) Figures. (10) Legends to figures. (11) Name and address of person to receive galley proof.

**Tables.** These should be numbered with arabic numerals and designed to fit the single-column width of the full-page width. Every table should have an explanatory title and sufficient experimental detail in a paragraph following the title to be intelligible without references to the text (unless the procedure is given in the Methods section, or under another table or figure). Footnotes to tables should appear beneath the tables themselves and should be designated by lower-case italic superscript letters, *a*, *b*, *c*, etc.

**Figures.** These should be numbered with arabic numerals. Each of the three manuscript copies should contain all the figures, but only the original set need be of quality suitable for reproduction. These should be unmounted glossy photographs (or original India-ink drawings). Usually figures will be reduced to one column width (85 mm) and all numbers *after* such reduction should be at least 1.5

mm high. The figures must be ready, in all respects, for direct reproduction: no lettering or other art work will be done by the publisher. If symbols are not explained on the face of the figure, only standard characters, of which the printer has type, may be used (×, ○, ●, □, ■, △, ▲, ⊙). The back of each photograph should bear its number, and the legend TOP at the appropriate edge. The list of legends for the figures should give captions and sufficient experimental detail, as required for tables.

**Galley proof.** The cost of all changes on galley proof, other than printer's errors, will be charged to authors. The Editors are very much interested in having accepted contributions appear in the earliest possible issue of the Journal, and therefore request that galley proof be returned within 24 hours after its receipt. In exceptional cases, a "Note added in proof" may be attached and will be published if the Editor approves.

**Reprints and page charges.** An order form for reprints as well as information on the estimation of page charges will be mailed with galley proof. Please direct questions on reprints, page charges, or other business matters to Dr. Houston Baker, Executive Officer, American Society for Pharmacology and Experimental Therapeutics, 9650 Rockville Pike, Bethesda, Md. 20014. Telephone (301)530-7060.