

The Journal of
Steroid
Biochemistry &
Molecular
Biology

Editors-in-chief

J. R. PASQUALINI and R. SCHOLLER

VOLUME CONTENTS,
SUBJECT AND AUTHOR INDEX

Volume 49
1994



Pergamon

The Journal of Steroid Biochemistry and Molecular Biology

EDITORS-IN-CHIEF

J. R. Pasqualini and R. Scholler

Foundation for Hormone Research, 26 Boulevard Brune, 75014 Paris, France

ASSOCIATE EDITORS

H. Adlercreutz, Helsinki, Finland
M. Beato, Marburg/Lahn, Germany
B. Groner, Freiburg, Germany
E. Gurpide, New York, U.S.A.
J.-Å. Gustafsson, Huddinge, Sweden
E. V. Jensen, Hamburg, Germany
J. Kato, Yamanashi-ken, Japan

R. J. B. King, Guildford, England
M. E. Lippman, Washington, DC, U.S.A.
L. Martini, Milan, Italy
A. Munck, Hanover, NH, U.S.A.
B. W. O'Malley, Houston, TX, U.S.A.
D. O. Toft, Rochester, MN, U.S.A.

CORRESPONDING EDITORS

A. Aakvaag, Bergen, Norway
A. S. Bhatnagar, Basel, Switzerland
R. Bouillon, Leuven, Belgium
A. Brodie, Baltimore, U.S.A.
M. L. Casey, Dallas, U.S.A.
K. J. Catt, Bethesda, U.S.A.
J. A. Cidlowski, Chapel Hill, U.S.A.
P. D. Darbre, Reading, England
G. Daxenbichler, Innsbruck, Austria
E. R. DeSombre, Chicago, U.S.A.
B. N. Diaz-Chico, Las Palmas, Spain
R. B. Dickson, Washington, U.S.A.
M. Dowsett, London, England
M. L. Dufau, Bethesda, U.S.A.
D. P. Edwards, Denver, U.S.A.
H. A. Eriksson, Stockholm, Sweden
A. N. Fejes-Toth, Hanover, U.S.A.
K. Fotherby, London, England
J. W. Funder, Prahran, Australia
G. Greene, Chicago, U.S.A.
H. Gronemeyer, Strasbourg, France
H. Honjo, Kyoto, Japan

K. B. Horwitz, Denver, U.S.A.
I. Huhtaniemi, Turku, Finland
V. H. T. James, London, England
V. C. Jordan, Chicago, U.S.A.
B. S. Katzenellenbogen, Urbana, U.S.A.
A. M. Kaye, Rehovot, Israel
E. R. de Kloet, Leiden, The Netherlands
L. Kloosterboer, Oss, The Netherlands
F. Labrie, Quebec, Canada
S. Liao, Chicago, U.S.A.
V. B. Mahesh, Augusta, U.S.A.
B. S. McEwen, New York, U.S.A.
H. Michna, Berlin, Germany
E. Milgrom, Le Kremlin-Bicêtre, France
W. R. Miller, Edinburgh, Scotland
J. Müller, Zurich, Switzerland
B. E. P. Murphy, Montreal, Canada
L. J. Murphy, Winnipeg, Canada
M. I. New, New York, U.S.A.
A. W. Norman, Riverside, U.S.A.
T. Ojasoo, Montrouge, France
M. J. Parker, London, England

G. Pérez-Palacios, Mexico City, Mexico
W. B. Pratt, Ann Arbor, U.S.A.
J. P. Raynaud, Paris, France
R. Renkawitz, Giessen, Germany
H. Rochefort, Montpellier, France
G. Rousseau, Brussels, Belgium
B. Sato, Osaka, Japan
M. Serio, Florence, Italy
E. R. Simpson, Dallas, U.S.A.
J. Sjövall, Stockholm, Sweden
L. Stárka, Prague, Czech Republic
J. F. Strauss III, Philadelphia, U.S.A.
R. L. Sutherland, Darlinghurst, Australia
J. R. Tata, London, England
W. Taylor, Tynemouth, England
P. Tuohimaa, Tampere, Finland
G. Verhoeven, Leuven, Belgium
A. Vermeulen, Ghent, Belgium
R. Viikio, Oulu, Finland
C. A. Villee, Boston, U.S.A.
A. E. Wakeling, Macclesfield, England
C. R. Wira, Hanover, U.S.A.

Publishing Office

(Production Editor: Andrea Lane)

Elsevier Science Ltd, Bampfylde Street, Exeter EX1 2AH, England
[Tel. Exeter (0392) 51558; Fax 425370]

Subscription and Advertising Offices

North America: Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.
Rest of the World: Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England
[Tel. Oxford (0865) 843000; Fax (0865) 843010]

Publication Frequency (1994)

Published semi-monthly in 4 volumes.

Subscription Rates (1994)

Annual Institutional Subscription Rates (1994): North, Central and South America, US\$1820.00; Rest of World, £1182.00. Associated Personal Subscription Rates are available on request for those whose institutions are library subscribers. Sterling prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice.

Back Issues

Back issues of all previously published volumes, in both hard copy and in microform, are available direct from Elsevier Science offices.

Second class postage paid at RAHWAY NJ and additional mailing offices. Postmaster send address corrections to *The Journal of Steroid Biochemistry and Molecular Biology*, c/o Elsevier Science Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

Copyright © 1994 Elsevier Science Ltd

LIST OF CONTENTS

MAY

- Mitsuo Hirai, Shuji Hirata, Takaaki Osada,
Kazuki Hagihara and Junzo Kato 1 Androgen receptor mRNA in the rat ovary and uterus
- Stephen D. McLeod, Marie Ranson and
Rebecca S. Mason 9 Effects of estrogens on human melanocytes *in vitro*
- Hasrat Ali, J. Rousseau and J. E. van Lier 15 Synthesis of (17 α ,20E/Z)iodovinyl testosterone and 19-nortestosterone derivatives as potential radioligands for androgen and progesterone receptors
- Nathalie Jausons-Loffreda, Patrick Balaguer,
Gilles Auzou and Michel Pons 31 Development of specific bioluminescent *in vitro* assays for selecting potential antiminerlocorticoids
- M. Stühlinger, H. Helmer, K. Dobianer,
Ch. Hruza, H. Rainer, G. Locker and J. Spona 39 Clinical therapy and HER-2 oncogene amplification in breast cancer: chemo- vs radiotherapy
- Hector Coirini, Daniel Flores, M. Cristina Vega,
M. Claudia Gonzalez Deniselle and
Alejandro F. De Nicola 43 Binding of the anti-inflammatory steroid deflazacort to glucocorticoid receptors in brain and peripheral tissues. *In vivo* and *in vitro* studies
- E. von Angerer, C. Biberger, E. Holler, R. Koop
and S. Leichtl 51 1-Carbamoylalkyl-2-phenylindoles: relationship between side chain structure and estrogen antagonism
- L. J. Duncan, N. G. Coldham and M. J. Reed 63 The interaction of cytokines in regulating oestradiol 17 β -hydroxysteroid dehydrogenase activity in MCF-7 cells
- Yoshiyu Takeda, Isamu Miyamori,
Kazuhiro Iki, Takashi Yoneda and
Ryoyu Takeda 69 Biosynthetic pathway of 19-noraldosterone in isolated rat glomerulosa cells
- R. K. Srivastava, V. Luu-The,
B. L. Marrone, S. Harris-Hooker and
R. Sridaran 73 Inhibition of steroidogenesis by luteal cells of early pregnancy in the rat in response to *in vitro* administration of a gonadotropin-releasing hormone agonist
- Yin Di Zhang, Beverly Lorenzo and
Marcus M. Reidenberg 81 Inhibition of 11 β -hydroxysteroid dehydrogenase obtained from guinea pig kidney by furosemide, naringenin and some other compounds
- Marko Vitas, Kelvin Smith, Damjana Rozman
and Radovan Komel 87 Progesterone metabolism by the filamentous fungus *Cochliobolus lunatus*
- Kelvin E. Smith, Farjad Ahmed,
Ralph A. D. Williams and Steven L. Kelly 93 Microbial transformations of steroids—VIII. Transformation of progesterone by whole cells and microsomes of *Aspergillus fumigatus*
- Tomas Cronholm, Stefan Borg,
Margareta Viestam-Rains and Jan Sjövall 101 Metabolic profiles of steroids in urine of alcoholics after withdrawal

JUNE

- General Review*
E. Giacomucci, C. Bulletti, V. Polli,
R. A. Prefetto and C. Flamigni 107 Immunologically mediated abortion (IMA)
- Papers*
D. L. Crombie, R. Mukherjee, D. P. McDonnell,
J. S. Hayes and M.-W. Wang 123 Creatine kinase activity as an indicator of unopposed estrogen action in the mouse uterus associated with anti-progesterone treatment
- Jean-Guy LeHoux, J. Ian Mason,
Hugues Bernard, Lyne Ducharme,
Jacques LeHoux, Steeve Véronneau
and Andrée Lefebvre 131 The presence of two cytochrome P450 aldosterone synthase mRNAs in the hamster adrenal
- Kathryn E. Bergmann, Cynthia H. Wooge,
Kathryn E. Carlson,
Benita S. Katzenellenbogen
and John A. Katzenellenbogen 139 Bivalent ligands as probes of estrogen receptor action
- Richard J. Miksicek 153 Interaction of naturally occurring nonsteroidal estrogens with expressed recombinant human estrogen receptor
- János Garai and James H. Clark 161 Estrogen affinity crosslinking to tyrosinase-like immunoreactive proteins of rat uterine nuclear extracts
- Leif Dibbelt, Helwe Nagel, Rudolf Knuppen,
Bernhard Ugele and Erich Kuss 167 Sterylsulfatase expression in normal and transformed human placental cells

- Nathalie Pagé, Nalini Warriar
and Manjapra V. Govindan
- Charles H. Blomquist, Dennis G. Bealka,
Hugh C. Hensleigh and George E. Tagatz
- George V. Avvakumov
and Geoffrey L. Hammond
- Jadwiga Gniot-Szulżycka and Alicja Drywa
- N. M. Bonham, J. L. Maggs, P. C. Bulman-Pagc
and B. K. Park
- J.-L. J. Gachancard-Bouya and R.-J. Bègue
- Qi-gui Li
- G. P. B. Kraan, J. Hartstra, B. G. Wolthers,
J. C. van der Molen, G. T. Nagel,
N. M. Drayer, R. W. J. Zijlstra
and W. H. Kruizinga
- K. Yang and M. Yu
- 173 11β -Hydroxysteroid dehydrogenase and tissue specificity of androgen action in human prostate cancer cell LNCaP
- 183 A comparison of 17β -hydroxysteroid oxidoreductase type 1 and type 2 activity of cytosol and microsomes from human term placenta, ovarian stroma and granulosa-luteal cells
- 191 Substitutions of tryptophan residues in human corticosteroid-binding globulin: impact on steroid binding and glycosylation
- 195 A "soluble" form of sterol sulphate sulphohydrolase from cell nuclei of human placenta tissue—examinations with oestrone sulphate as substrate
- 203 Structure-metabolism relationships of ring-A halogenated analogues of 17α -ethynylloestradiol
- 213 Urinary steroids from a newborn human infant. Identification of 2α -hydroxy-4-pregnene-3,20-dione, $3\beta,15\beta$ -dihydroxy-5-pregnen-20-one and $3\beta,15\alpha$ -dihydroxy-5-pregnen-20-one
- 227 Aromatization and hydrolysis of norethisterone-3-oxime in rabbit
- 233 Synthesis and identification of twelve A-ring reduced 6α - and 6β -hydroxylated compounds derived from 11-deoxycortisol, corticosterone and 11-dehydrocorticosterone
- 245 Evidence for distinct isoforms of 11β -hydroxysteroid dehydrogenase in the ovine liver and kidney

JUNE

PROCEEDINGS OF THE XVIth MEETING OF
THE INTERNATIONAL STUDY GROUP FOR STEROID
HORMONES

*Steroid Biosynthesis Inhibitors and Antagonists**Symposia*

- D. M. Robins, A. Scheller and
A. J. Adler
- Moshe Raikhinsein and
Israel Hanukoglu
- D. Engelhardt and M. M. Weber
- Lawrence B. Hendry, Chung K. Chu,
Mary L. Rosser, John A. Copland,
Joseph C. Wood and Virendra B. Mahesh
- Angela M. H. Brodie
- E. Di Salle, G. Briatico, D. Giudici, G. Ornati,
T. Zaccheo, F. Buzzetti, M. Nesi and
A. Panzeri
- 251 Specific steroid response from a nonspecific DNA element
- 257 Cloning of ACTH-regulated genes in the adrenal cortex
- 261 Therapy of Cushing's syndrome with steroid biosynthesis inhibitors
- 269 Design of novel antiestrogens
- 281 Aromatase inhibitors in the treatment of breast cancer
- 289 Novel aromatase and 5α -reductase inhibitors

*Steroids and Cancer**Plenary Lecture*

Kathryn B. Horwitz

- 295 How do breast cancers become hormone resistant?

Symposia

- Francis M. Hughes Jr and John A. Cidlowski
- H. J. Kloosterboer, W. G. E. J. Schoonen,
G. H. Deckers and J. G. M. Klijin
- Serdar E. Bulun, Mala S. Mahendroo and
Evan R. Simpson
- E. Petrangeli, C. Lubrano, F. Ortolani,
L. Ravenna, A. Vacca, S. Sciacchitano,
L. Frati and A. Gulino
- 303 Regulation of apoptosis in S49 cells
- 311 Effects of progestagens and Org OD14 in *in vitro* and *in vivo* tumor models
- 319 Aromatase gene expression in adipose tissue: relationship to breast cancer
- 327 Estrogen receptors: new perspectives in breast cancer management

Alberto Angeli, Luigi Dogliotti, Carlo Naldoni, Fabio Orlandi, Barbara Puligheddu, Pasquale Caraci, Lauro Bucchi, Mirella Torta and Paolo Bruzzi	333 Steroid biochemistry and categorization of breast cyst fluid: relation to breast cancer risk
Jos Veldscholte, Cor A. Berrevoets and Eppo Mulder	341 Studies on the human prostatic cancer cell line LNCaP
Patrizia Limonta, Roberta M. Moretti, Donatella Dondi, Marina Montagnani Marelli and Marcella Motta	347 Androgen-dependent prostatic tumors: biosynthesis and possible actions of LHRH
L. Castagnetta, O. M. Granata, L. Polito, L. Blasi, S. Cannella and G. Carruba	351 Different conversion metabolic rates of testosterone are associated to hormone-sensitive status and -response of human prostate cancer cells
Elisabetta Baldi, Lorella Bonaccorsi, Giovanna Finetti, Michaela Luconi, Monica Muratori, Tommaso Susini, Gianni Forti, Mario Serio and Mario Maggi	359 Platelet-activating factor in human endometrium
Alain G. Zeimet, Elisabeth Müller-Holzner, Christian Marth and Günter Daxenbichler	365 Immunocytochemical versus biochemical receptor determination in normal and tumorous tissues of the female reproductive tract and the breast
 <i>Plenary Lecture</i>	
Donald W. Pfaff, Mona M. Freidin, X. Sharon Wu-Peng, Jun Yin and Yuan-Shan Zhu	373 Competition for DNA steroid response elements as a possible mechanism for neuroendocrine integration
 <i>Symposia</i>	
John W. Funder	381 Corticosteroid receptors and the central nervous system
E. Costa, J. Auta, A. Guidotti, A. Korneyev and E. Romeo	385 The pharmacology of neurosteroidogenesis
M. Joëls, W. Heslen, H. Karst and E. R. de Kloet	391 Steroids and electrical activity in the brain
Roberta Rosie, Barbara E. H. Sumner and George Fink	399 An α_1 adrenergic mechanism mediates estradiol stimulation of LHRH mRNA synthesis and estradiol inhibition of POMC mRNA synthesis in the hypothalamus of the prepubertal female rat
J. B. Hutchison, C. Beyer, S. Green and A. Wozniak	407 Brain formation of oestrogen in the mouse: sex dimorphism in aromatase development
B. W. M. M. Peeters and C. L. E. Broekkamp	417 Involvement of corticosteroids in the processing of stressful life-events. A possible implication for the development of depression
D. Armanini	429 Corticosteroid receptors in lymphocytes: a possible marker of brain involution?

Steroids in the Brain

SUBJECT INDEX

- Abortion
 - immunologically mediated, 107
- ACTH-regulated genes
 - cloning of, in the adrenal cortex, 257
- Adrenal(s)
 - presence of two cytochrome *P*450 aldosterone synthase mRNAs in the, of the hamster, 131
- Adrenal cortex
 - cloning of ACTH-regulated genes in the, 257
- Androgen(s)
 - receptors(s)
 - mRNA of, in the rat ovary and uterus, 1
 - synthesis of (17 α ,20E/Z)-iodovinyl testosterone and 19-nortestosterone derivatives as potential radioligands for, 15
 - tissue specificity of, action in human prostate cancer cell LNCaP, 173
- Androgen-dependent prostatic tumors
 - biosynthesis and possible actions of LHRH, 347
- Antiestrogen(s)
 - design of novel, 269
- Antimineralocorticoid(s)
 - development of specific bioluminescent *in vitro* assays for selecting potential, 31
- Anti-progesterone
 - effect of, in the mouse uterus, 123
- Apoptosis
 - regulation of, in S49 cells, 303
- Aromatase
 - gene expression in adipose tissue: relationship to breast cancer, 319
 - inhibitors in the treatment of breast cancer, 281
 - novel, inhibitors, 289
 - sex dimorphism in, development in mouse brain, 407

- Brain
 - binding of the anti-inflammatory steroid deflazacort to glucocorticoid receptors in, 43
 - corticosteroid receptors in lymphocytes: a possible marker of, involution? 429
 - formation of oestrogen in the, of the mouse, 407
 - steroids and electrical activity in, 391
- Breast cancer
 - aromatase inhibitors in the treatment of, 281
 - clinical therapy and HER-2 oncogene amplification in, 39
 - estrogen receptors: new perspectives in management of, 327
 - how does, become hormone-resistant? 295
 - relation of steroid biochemistry and categorization of breast cyst fluid to risk of, 333
 - relationship of aromatase gene expression in adipose tissue to, 319
- Breast cyst fluid
 - steroid biochemistry and categorization of, in relation to breast cancer risk, 333

- Central nervous system
 - corticosteroid receptors and the, 381
- Corticosteroid-binding globulin
 - substitutions of tryptophan residues in human, 191
- Corticosteroid(s)
 - involvement of, in the processing of stressful life-events, 417
 - receptor(s)
 - and the central nervous system, 381
 - in lymphocytes: a possible marker of brain involution? 429
- Creatine kinase
 - activity of, as an indicator of unopposed estrogen action in the mouse uterus, 123
- Cushing's syndrome
 - therapy of, with steroid biosynthesis inhibitors, 261
- Cytochrome *P*450
 - presence of two, aldosterone synthase mRNAs in the hamster adrenal, 131
- Cytokines
 - interaction of, in regulating oestradiol 17 β -hydroxysteroid dehydrogenase activity in MCF-7 cells, 63

DNA

- competition for, steroid response elements as a possible mechanism for neuroendocrine integration, 373
- specific steroid response from a non-specific, element, 251

Endometrium

- platelet-activating factor in human, 359

Estrogen(s)

- affinity crosslinking to tyrosinase-like immunoreactive proteins of rat uterine nuclear extracts, 161
- creatine kinase activity as an indicator of unopposed, action in the mouse uterus, 123
- effects of, on human melanocytes *in vitro*, 9
- interaction of naturally occurring nonsteroidal, with expressed recombinant human estrogen receptor, 153
- receptor(s)
 - bivalent ligands as probes of, action, 139
 - interaction of naturally occurring nonsteroidal estrogens with expressed recombinant human, 153
 - new perspectives in breast cancer management using, 327

Estrogen antagonism

- 1-carbamoylalkyl-2-phenylindoles: relationship between, and side chain structure, 51

17 α -Ethinylestradiol

- structure-metabolism relationships of ring-A halogenated analogues of, 203

Female reproductive tract

- immunocytochemical versus biochemical receptor determination in normal and tumorous tissues of the, and the breast, 365

Gene expression

- aromatase, in adipose tissue: relationship to breast cancer, 319

Glomerulosa cells

- biosynthetic pathway of 19-noraldosterone in isolated, of rat, 69

Glucocorticoid(s)

receptor(s)

- binding of the anti-inflammatory steroid deflazacort to, in brain and peripheral tissue, 43

Gonadotropin-releasing hormone

- effect of, on inhibition of steroidogenesis by luteal cells in the rat, 73

Granulosa-luteal cells

- 17 β -hydroxysteroid oxidoreductase Type 1 and Type 2 activity on cytosol and microsomes from, in human, 183

Hormone-resistant

- how do breast cancers become, 295

11 β -Hydroxysteroid dehydrogenase

- and tissue specificity of androgen action in human prostate cancer cell LNCaP, 173
- evidence for distinct isoforms of, in the ovine liver and kidney, 245
- inhibition of, obtained from guinea pig kidney, 81

17 β -Hydroxysteroid dehydrogenase

- interaction of cytokines in regulating oestradiol, activity in MCF-7 cells, 63

17 β -Hydroxysteroid oxidoreductase

- comparison of Type 1 and Type 2 activity on cytosol and microsomes from human term placenta, ovarian stroma and granulosa-luteal cells, 183

LHRH

- androgen-dependent prostatic tumors: biosynthesis and possible actions of, 347

LHRH mRNA

- an α 1 adrenergic mechanism mediates estradiol stimulation of, synthesis in the hypothalamus of prepubertal female rat, 399

LNCaP cells

- 11 β -hydroxysteroid dehydrogenase and tissue specificity of androgen action in human prostate cancer, 173
- studies on the, of human prostatic cancer, 341

MCF-7 cells

- interaction of cytokines in regulating oestradiol 17 β -hydroxysteroid dehydrogenase activity in, 63

Melanocytes

- effects of estrogens on human, *in vitro*, 9

Messenger RNA(s)

- androgen receptor, in the rat ovary and uterus, 1
- presence of two cytochrome P450 aldosterone synthase, in the hamster adrenal, 131

Neurosteroidogenesis

- pharmacology of, 385

Newborn human infants

- identification of 2 α -hydroxy-4-pregnene-3,20-dione, 3 β ,15 β -dihydroxy-5-pregnen-20-one and 3 β ,15 α -dihydroxy-5-pregnen-20-one in urine from, 69

19-Noraldosterone

- biosynthetic pathway of, in isolated rat glomerulosa cells, 69

- Norethisterone-3-oxime
aromatization and hydrolysis of, in rabbit 227
- Oncogene(s)
amplification of HER-2, in breast cancer; chemo- versus radiotherapy, 39
- ORG OD14
effects of, in *in vitro* and *in vivo* tumor models, 311
- Ovarian stroma cells
comparison of 17 β -hydroxysteroid oxidoreductase Type 1 and Type 2 activity on cytosol and microsomes from human, 183
- Placenta
“soluble” form of sterol sulphate sulphohydrolase from cell nuclei of human, tissue, 195
steryl-sulfatase expression in normal and transformed cells of human, 167
- Platelet-activating factor
in human endometrium, 359
- POMC mRNA
an $\alpha 1$ adrenergic mechanism mediates estradiol stimulation of LHRH mRNA synthesis and estradiol inhibition of, synthesis in the hypothalamus of the prepubertal female rat, 399
- Probes
bivalent ligands as, of estrogen receptor action, 139
- Progestagens(s)
effects of, in *in vitro* and *in vivo* tumor models, 311
- Progesterone
metabolism of, by the filamentous fungus *Cochliobolus lunatus*, 87
microbial transformation of, by whole cells and microsomes of *Aspergillus fumigatus*, 93
receptor(s)
synthesis of (17 α ,20E/Z)-iodovinyl testosterone and 19-nortestosterone derivatives as potential radioligands for, 15
- Prostate cancer
different conversion metabolic rates of testosterone are associated to hormone-sensitive status and -response of human, cells, 351
11 β -hydroxysteroid dehydrogenase and tissue specificity of androgen action in human, cell LNCaP, 173
studies on the human, cell line LNCaP, 351
- Prostatic tumors
androgen-dependent, biosynthesis and possible actions of LHRH on, 347
- Receptor(s)
androgen(s)
mRNA in the rat ovary and uterus, 1
estrogen(s)
bivalent ligands as probes of, action, 139
interaction of naturally occurring nonsteroidal estrogens with expressed recombinant human, 153
new perspectives in breast cancer management, 327
glucocorticoid(s)
and the central nervous system, 381
binding of the anti-inflammatory steroid deflazacort to, in brain and peripheral tissue, 43
in lymphocytes: a possible marker of brain involution? 429
progesterone
synthesis of (17 α ,20E/Z)-iodovinyl testosterone and 19-nortestosterone derivatives as potential radioligands for, 15
steroid(s)
immunocytochemical versus biochemical, determination in normal and tumorous tissues of the female reproductive tract and the breast, 365
- 5 α -Reductase inhibitors
novel, 289
- S49 cells
regulation of apoptosis in, 363
- Steroid(s)
and electrical activity in the brain, 391
binding to human corticosteroid-binding globulin, 191
identification of urinary, from newborn human infant, 213
metabolic profiles of, in urine of alcoholics after withdrawal, 101
specific, response from a non-specific DNA element, 251
synthesis and identification of twelve A-ring reduced 6 α - and 6 β -hydroxylated compounds derived from 11-deoxycortisol, corticosterone and 11-dehydrocorticosterone, 233
therapy of Cushing's syndrome with, biosynthesis inhibitors, 261
- Sulfatase
expression of steryl-, in normal and transformed human placental cells, 167
“soluble” form of sterol, sulphohydrolase from cell nuclei of human placenta tissue, 195
- Testosterone
metabolic rates of, in human prostate cancer cells, 357

Tumor models

effects of progestagens and ORG OD14 in, *in vitro* and *in vivo*, 311

Tyrosinase-like immunoreactive proteins

of rat uterine nuclear extracts, 161

Urine

identification of 2α -hydroxy-4-pregnene-3,20-dione, $3\beta,15\beta$ -dihydroxy-5-pregnen-20-one and $3\beta,15\alpha$ -dihydroxy-5-pregnen-20-one in, from newborn human infants, 213

metabolic profiles of steroids in, of alcoholics after withdrawal, 101

We would like to express our deep thanks to the following people for their kind collaboration in reviewing papers for *The Journal of Steroid Biochemistry and Molecular Biology*:

Drs **L. Amundadottir**, Washington, U.S.A.; **A. Belanger**, Ste Foy, Canada; **A. Colletta**, London, England; **C. Denef**, Leuven, Belgium; **W. L. Duax**, Buffalo, U.S.A.; **C. R. W. Edwards**, Edinburgh, Scotland; **D. El Ashry**, Washington, U.S.A.; **M. Govindan**, Ste Foy, Canada; **D. Hansell**, Washington, U.S.A.; **W. Heyns**, Leuven, Belgium; **J. W. Honour**, London, England; **P. J. Hornsby**, Houston, U.S.A.; **M. D. Johnson**, Washington, U.S.A.; **J. A. Katzenellenbogen**, Urbana, U.S.A.; **C. Knabbe**, Hamburg, Germany; **K. Lee**, London, England; **B. M. Markaverich**, Texas, U.S.A.; **C. Monder**, New York, U.S.A.; **K. Nahoul**, Fresnes, France; **C. Newton**, Munich, Germany; **R. A. Oakley**, Chapel Hill, U.S.A.; **F. F. G. Rommerts**, Rotterdam, The Netherlands; **M. G. Rowlands**, Sutton, England; **R. J. Sherins**, Fairfax, U.S.A.; **P. M. Stewart**, Birmingham, England; **D. B. Tully**, Chapel Hill, U.S.A.; **F. Vignon**, Montpellier, France; **W. Wahli**, Lausanne, Switzerland; **C. K. W. Watts**, Darlinghurst, Australia.

AUTHOR INDEX

- Adler A. J., 251
 Ahmed F., 93
 Ali H., 15
 Angeli A., 333
 von Angerer E., 51
 Armanini D., 429
 Auta J., 385
 Auzou G., 31
 Avvakumov G. V., 191
- Balaguer P., 31
 Baldi E., 359
 Bealka D. G., 183
 Bergmann K. E., 139
 Bernard H., 131
 Berrevoets C. A., 341
 Bègue R.-J., 213
 Beyer C., 407
 Biberger C., 51
 Blasi L., 351
 Blomquist C. H., 183
 Bonaccorsi L., 359
 Bonham N. M., 203
 Borg S., 101
 Briatico G., 289
 Brodie A. M. H., 281
 Broekkamp C. L. E., 417
 Bruzzi P., 333
 Bucchi L., 333
 Bulletti C., 107
 Bulman-Page P. C., 203
 Bulun S. E., 319
 Buzzetti F., 289
- Cannella S., 351
 Caraci P., 333
 Carlson K. E., 139
 Carruba G., 351
 Castagnetta L., 351
 Chu C. K., 269
 Cidłowski J. A., 303
 Clark J. H., 161
 Coirini H., 43
 Coldham N. G., 63
 Copland J. A., 269
 Costa E., 385
 Crombie D. L., 123
 Cronholm T., 101
- Daxenbichler G., 365
 De Nicola A. F., 43
 Deckers G. H., 311
 Di Salle E., 289
 Dibbelt L., 167
 Dobianer K., 39
 Dogliotti L., 333
 Dondi D., 347
 Drayer N. M., 233
 Drywa A., 195
 Ducharme L., 131
 Duncan L. J., 63
- Engelhardt D., 261
- Finetti G., 359
 Fink G., 399
 Flamigni C., 107
- Flores D., 43
 Forti G., 359
 Frati L., 327
 Freidin M. M., 373
 Funder J. W., 381
- Gachancard-Bouya J.-L. J., 213
 Garai J., 161
 Giacomucci E., 107
 Giudici D., 289
 Gniot-Szulżycka J., 195
 Gonzalez Deniselle M. C., 43
 Govindan M. V., 173
 Granata O. M., 351
 Green S., 407
 Guidotti A., 385
 Gulino A., 327
- Hagihara K., 1
 Hammond G. I., 191
 Hanukoglu I., 257
 Harris-Hooker S., 73
 Hartstra J., 233
 Hayes J. S., 123
 Helmer H., 39
 Hendry L. B., 269
 Hensleigh H. C., 183
 Hesen W., 391
 Hirai M., 1
 Hirata S., 1
 Holler E., 51
 Horwitz K. B., 295
 Hruza Ch., 39
 Hughes F. M. Jr, 303
 Hutchison J. B., 407
- Iki K., 69
- Jausons-Loffreda N., 31
 Joëls M., 391
- Karst H., 391
 Kato J., 1
 Katzenellenbogen B. S., 139
 Katzenellenbogen J. A., 139
 Kelly S. L., 93
 Klijn J. G. M., 311
 de Kloet E. R., 391
 Kloosterboer H. J., 311
 Knuppen R., 167
 Komel R., 87
 Koop R., 51
 Korneyev A., 385
 Kraan G. P. B., 233
 Kruizinga W. H., 233
 Kuss E., 167
- LeHoux J., 131
 LeHoux J.-G., 131
 Lefebvre A., 131
 Leichtl S., 51
 Li Q.-g., 227
 van Lier J. E., 15
 Limonta P., 347
 Locker G., 39
 Lorenzo B., 81
 Lubrano C., 327
- Luconi M., 359
 Luu-The V., 73
- Maggi M., 359
 Maggs J. L., 203
 Mahendroo M. S., 319
 Mahesh V. B., 269
 Marelli M. M., 347
 Marrone B. L., 73
 Marth C., 365
 Mason J. I., 131
 Mason R. S., 9
 McDonnell D. P., 123
 McLeod S. D., 9
 Miksicek R. J., 153
 Miyamori I., 69
 Moretti R. M., 347
 van der Molen J. C., 233
 Motta M., 347
 Mukherjee R., 123
 Mulder E., 341
 Müller-Holzner E., 365
 Muratori M., 359
- Nagel G. T., 233
 Nagel H., 167
 Naldoni C., 333
 Nesi M., 289
- Orlandi F., 333
 Ornati G., 289
 Ortolani F., 327
 Osada T., 1
- Pagé N., 173
 Panzeri A., 289
 Park B. K., 203
 Peeters B. W. M. M., 417
 Petrangeli E., 327
 Pfaff D. W., 373
 Polito L., 351
 Polli V., 107
 Pons M., 31
 Prefetto R. A., 107
 Puligheddu B., 333
- Raikhinsein M., 257
 Rainer H., 39
 Ranson M., 9
 Ravenna L., 327
 Reed M. J., 63
 Reidenberg M. M., 81
 Robins D. M., 251
 Romeo E., 385
 Rosie R., 399
 Rosser M. L., 269
 Rousseau J., 15
 Rozman, D., 87
- Scheller A., 251
 Schoonen W. G. E. J., 311
 Sciacchitano S., 327
 Serio M., 359
 Simpson E. R., 319
 Sjövall J., 101
 Smith K. E., 87, 93

Spona J., 39
Sridaran R., 73
Srivastava R. K., 73
Stühlinger M., 39
Sumner B. E. H., 399
Susini T., 359

Tagatz G. E., 183
Takeda R., 69
Takeda Y., 69
Torta M., 333

Ugele B., 167

Vacca A., 327
Vega M. C., 43
Veldscholte J., 341
Véronneau S., 131
Viestam-Rains M., 101
Vitas M., 87

Wang M.-W., 123
Warriar N., 173
Weber M. M., 261
Williams R. A. D., 93
Wolthers B. G., 233
Wood J. C., 269

Wooge C. H., 139
Wozniak A., 407
Wu-Peng X. S., 373

Yang K., 245
Yin J., 373
Yoneda T., 69
Yu M., 245

Zaccheo T., 289
Zeimet A. G., 365
Zhang Y. D., 81
Zhu Y.-S., 373
Zijlstra R. W. J., 233