



BRITISH JOURNAL OF PHARMACOLOGY

Contents

page

Systematic Pharmacology

- 1 DAVIES, B. N. and WITHRINGTON, P. G. Actions of prostaglandin F_{2a} on the splenic vascular and capsular smooth muscle in the dog. (SP1, AP1, AP2)
8 LAWRENCE, A. J., SCHILD, H. O. and SMITH, G. M. Preparation and assay of urogastrone, an inhibitor of gastric acid secretion. (SP3, PM, DM2)

Autopharmacology

- 19 COX, B. and HECKER, SALLY E. Investigation of the mechanism of action of oxotremorine on the guinea-pig isolated ileum preparation. (AP1)
26 HOLMAN, MOLLIE E., MUIR, T. C., SZURSZEWSKI, J. H. and YONEMURA, K. Effect of iontophoretic application of cholinergic agonists and their antagonists to guinea-pig pelvic ganglia. (AP1)
41 LOIZOU, L. A. The effect of inhibition of catecholamine synthesis on central catecholamine-containing neurones in the developing albino rat. (AP1, PK2, SP2)
49 CRUNKHORN, PEARL and WILLIS, A. L. Cutaneous reactions to intradermal prostaglandins. (AP2, SP1, DM2)

Pharmacokinetics

- 57 COSTA, E., GROPPETTI, A. and REVUELTA, A. Action of fenfluramine on monoamine stores of rat tissues. (PK1, SP2)
65 PATON, D. M. Effects of Na^+ and K^+ on the uptake of metaraminol by rabbit ventricular slices. (PK3, AP1)

Drug Mechanisms

- 76 MIKIKITS, W., SKINNER, A., SPECTOR, R. G. and WATTS, D. C. Influence of pH on aggregation and protein binding of barbituric acid and amylobarbitone. (DM1)
84 DATTA, K., THAL, L. and WAJDA, I. J. Effects of morphine on choline acetyltransferase levels in the caudate nucleus of the rat. (DM1, SP2)
94 HIRST, G. D. S. and WOOD, D. R. On the neuromuscular paralysis produced by procaine. (DM1, SP3)
105 HIRST, G. D. S. and WOOD, D. R. Changes in the time course of transmitter action produced by procaine. (DM1, SP3)
113 BASSETT, J. R. β -Adrenoceptor antagonist activity of 3-methoxyisoprenaline. (DM2)
122 BURDEN, D. T. and PARKES, M. W. Effect of β -adrenoceptive blocking agents on the response to bronchoconstrictor drugs in the guinea-pig air overflow preparation. (DM2, SP3)

Pharmacometrics

- 132 GREEN, ANN Y., GREEN, D., MURRAY, PATRICIA A. and WILSON, A. B. Factors influencing the inhibitory action of anti-inflammatory drugs on carrageenin induced oedema. (PM)

Contents-contd.

Toxicology

- 140 COONEY, D. A., DAVIS, R. D., HOMAN, E. R., RAKIETEN, N., SCHAEPP, U. and VANATTA, G. Studies on the inhibition of clearance of organic dyes by Saramycetin. (TX)
154 FREEMAN, SHIRLEY E. and TURNER, R. J. Cardiovascular effects of toxins isolated from the cnidarian *Chironex fleckeri* Southcott. (TX, SP1)

SHORT COMMUNICATION

- 167 RADWAN, A. G. and WEST, G. B. Effect of aminoguanidine, chlorpromazine and NSD-1055 on gastric secretion and ulceration in the Shay rat. (AP2, CP)

Systematic Pharmacology

Cardiovascular system SP1
Central nervous system SP2
Other physiological systems SP3

Pharmacokinetics

Storage, distribution, fate PK1
Synthesis, metabolism PK2
Uptake, release PK3

Clinical Pharmacology, Experimental

Therapy CP
Chemotherapy CT
Miscellaneous M

Autopharmacology

Adrenergic, cholinergic transmission AP1
Histamine, kinins, prostaglandins, etc. AP2
Hormones AP3

Drug Mechanisms

Molecular, cellular, biochemical, biophysical DM1
Receptors, antagonism, potentiation, tolerance DM2

Pharmacometrics PM

Psychopharmacology PP
Toxicology TX

CONTENTS

VOLUME 41 No. 1 JANUARY 1971

page

Systematic Pharmacology

- 1 DAVIES, B. N. and WITHRINGTON, P. G. Actions of prostaglandin $F_{2\alpha}$ on the splenic vascular and capsular smooth muscle in the dog. (SP1, AP1, AP2)
- 8 LAWRENCE, A. J., SCHILD, H. O. and SMITH, G. M. Preparation and assay of urogastrone, an inhibitor of gastric acid secretion. (SP3, PM, DM2)

Autopharmacology

- 19 COX, B. and HECKER, SALLY E. Investigation of the mechanism of action of oxotremorine on the guinea-pig isolated ileum preparation. (AP1)
- 26 HOLMAN, MOLLIE E., MUIR, T. C., SZURSZEWski, J. H. and YONEMURA, K. Effect of iontophoretic application of cholinergic agonists and their antagonists to guinea-pig pelvic ganglia. (AP1)
- 41 LOIZOU, L. A. The effect of inhibition of catecholamine synthesis on central catecholamine-containing neurones in the developing albino rat. (AP1, PK2, SP2)
- 49 CRUNKHORN, PEARL and WILLIS, A. L. Cutaneous reactions to intradermal prostaglandins. (AP2, SP1, DM2)

Pharmacokinetics

- 57 COSTA, E., GROPPETTI, A. and REVUELTA, A. Action of fenfluramine on monoamine stores of rat tissues. (PK1, SP2)
- 65 PATON, D. M. Effects of Na^+ and K^+ on the uptake of metaraminol by rabbit ventricular slices. (PK3, AP1)

Drug Mechanisms

- 76 MIKIKITS, W., SKINNER, A., SPECTOR, R. G. and WATTS, D. C. Influence of pH on aggregation and protein binding of barbituric acid and amylobarbitone. (DM1)
- 84 DATTA, K., THAL, L. and WAJDA, I. J. Effects of morphine on choline acetyltransferase levels in the caudate nucleus of the rat. (DM1, SP2)
- 94 HIRST, G. D. S. and WOOD, D. R. On the neuromuscular paralysis produced by procaine. (DM1, SP3)
- 105 HIRST, G. D. S. and WOOD, D. R. Changes in the time course of transmitter action produced by procaine. (DM1, SP3)
- 113 BASSETT, J. R. β -Adrenoceptor antagonist activity of 3-methoxyisoprenaline. (DM2)
- 122 BURDEN, D. T. and PARKES, M. W. Effect of β -adrenoceptive blocking agents on the response to bronchoconstrictor drugs in the guinea-pig air overflow preparation. (DM2, SP3)

Pharmacometrics

- 132 GREEN, ANN Y., GREEN, D., MURRAY, PATRICIA A. and WILSON, A. B. Factors influencing the inhibitory action of anti-inflammatory drugs on carrageenin induced oedema. (PM)

Toxicology

- 140 COONEY, D. A., DAVIS, R. D., HOMAN, E. R., RAKIETEN, N., SCHAEPI, U. and VANATTA, G. Studies on the inhibition of clearance of organic dyes by Saramycetin. (TX)
- 154 FREEMAN, SHIRLEY E. and TURNER, R. J. Cardiovascular effects of toxins isolated from the cnidarian *Chironex fleckeri* Southcott. (TX, SP1)

SHORT COMMUNICATION

- 167 RADWAN, A. G. and WEST, G. B. Effect of aminoguanidine, chlorpromazine and NSD-1055 on gastric secretion and ulceration in the Shay rat. (AP2, CP)

page

Systematic Pharmacology

- 171 DEBRECZENI, L. and FENYVESI, T. Effect of β -adrenoceptor blocking compounds (propranolol, practolol and LB 46) on isoprenaline induced changes in regional blood flow in the rat. (SP1)
 177 HAYDEN, J. and TARGETT, MARGARET A. Central components of the renin-angiotensin system. (SP1, AP3)
 187 FOZARD, J. R. Effects of progesterone on cardiovascular responses to amines and to sympathetic stimulation in the pithed rat. (SP1, AP3, DM2)
 198 LEONARD, B. E. and SHALLICE, SUSAN A. Some neurochemical effects of amphetamine, methylamphetamine and *p*-bromomethylamphetamine in the rat. (SP2, PK3, PPI)
 213 FURNESS J. B. Secondary excitation of intestinal smooth muscle. (SP3, API)

Autopharmacology

- 227 BAILEY, DIANA M. Inhibitory and excitatory effects of sympathomimetic amines on muscle strips from the stomach of the guinea-pig. (API)
 239 HUGHES, J. and ROTH, R. H. Evidence that angiotensin enhances transmitter release during sympathetic nerve stimulation. (AP1, PK3, SP1)
 256 HELLMANN, G., HERTTING, G. and PESKAR, B. Uptake kinetics and metabolism of ^3H -dopamine in the isolated perfused rat heart. (AP1, PK3, PK2)
 270 HELLMANN, G., HERTTING, G. and PESKAR, B. Effect of pretreatment with 6-hydroxydopamine on the uptake and metabolism of catecholamines by the isolated perfused rat heart. (AP1, PK3, PK2)
 278 GRAHAM, J. D. P., IVENS, CAROLINE, LEVER, J. D., MCQUISTON, R. and SPRIGGS, T. L. B. In pursuit of the α -adrenoceptor: a fine-structural and electron autoradiographical study using ^3H -phenoxybenzamine and smooth muscle from the cat and guinea-pig. (AP1, DM1, DM2)
 285 INOKI, R., KOJIMA, S., TAMARI, Y. and YAMAMOTO, I. Effects of nicotine on salivary amylase secretion from rabbit parotid gland. (AP1, DM2, SP3)
 294 DZODZOE, YAO C. G. and ROSENGREN, ELSA. Decarboxylases of histidine and ornithine in chick embryo. (AP2)
 302 HETTIARATCHI, E. S. G. and PICKFORD, MARY. Effect of catecholamines and angiotensin on extracellular water and cation movements and the effect of α and β -adrenoceptor blockade. (AP3, DM1)
 317 NORTON, P. R. E. Some endocrinological aspects of barbiturate dependence. (AP3, PP)

Drug Mechanisms

- 331 CHRIST, D. D. and NISHI, S. Effects of adrenaline on nerve terminals in the superior cervical ganglion of the rabbit. (DM1, AP1)
 339 BROOKES, N. and MACKAY, D. Rate of onset and offset of neuromuscular block in the isolated rat diaphragm. (DM2)
 344 CRANSTON, W. I., LUFF, R. H., RAWLINS, M. D. and WRIGHT, V. ANN. Influence of the duration of experimental fever on salicylate antipyresis in the rabbit. (DM2, SP2, SP3)
 352 MALIK, K. U. Effect of ($\pm$) dihydroxy ephedrine and ($\pm$) dihydroxy pseudoephedrine on adrenergic transmission in mesenteric arteries. (DM2, AP1)
 361 BELISLE, S. and GAGNON, D. J. Stimulating action of catecholamines on isolated preparations of the rat colon and human and rabbit taenia coli. (DM2, AP1, SP3)

Pharmacokinetics

- 367 BROOKES, N. and MACKAY, D. Diffusion of labelled substances through isolated rat diaphragm. (PK3, PK1, DM2)

**Proceedings of the British Pharmacological Society, London,
7-8 January, 1971**

Communications

- 379P LAYMAN, J. M. and MILTON, A. S. Some actions of Δ^1 tetrahydrocannabinol and cannabidiol at cholinergic junctions
 380P FERRY, C. B., and MARSHALL, A. R. An anticurare effect of hexamethonium at the mammalian neuromuscular junction
 381P CLARK, E. R. and SMITH, C. F. C. Conformations and biological activities of cyclic analogues of choline aryl ethers
 382P ENGELMAN, D. M., METCALFE, J. C. and METCALFE, SUSAN M. Structural comparisons of native and reaggregated membranes
 383P BALLINGER, B., O'MALLEY, K., STEVENSON, I. H. and TURNBULL, M. J. Stimulation of drug metabolism by centrally active drugs
 384P CURWAIN, B. P. and HOLTON, PAMELA. Radioactive aniline clearance from canine gastric pouches for the measurement of gastric mucosal blood flow
 384P CURWAIN, B. P., ENDERSBY, K. and HOLTON, PAMELA. Effect of isoprenaline on histamine induced gastric acid secretion in dogs

page

- 385P SINGH, B. N. Explanation for the discrepancy in reported cardiac electrophysiological actions of diphenylhydantoin and lignocaine
- 387P BELL, C. Selective vasoconstrictor effect of atropine on the parametrial arteries in the pregnant guinea-pig (T)

Clinical Pharmacology Section

- 388P GILLAM, P. M. S. and PRICHARD, B. N. C. Log dose-response curve to assess the effects of propranolol in angina pectoris
- 388P DAY, GILLIAN M. and PRICHARD, B. N. C. Hypotensive action from combination of propranolol and other hypotensive drugs
- 390P BLACKWELL, E. W., CONOLLY, M. E., DAVIES, D. S., DOLLERY, C. T. and GEORGE, C. F. Resistance to β adrenoceptor stimulants and death from bronchial asthma
- 391P BOVILL, J. G., CLARKE, R. S. J., DAVIS, E. A. and DUNDEE, J. W. Some cardiovascular effects of ketamine in man
- 392P LADER, M. H. and WALTERS, A. J. Hangover effects of hypnotics in man
- 393P MULLEN, P. E. and SMITH, I. Tyramine metabolism and migraine: a metabolic defect
- 394P RICHENS, A. and WATERS, A. H. Acute effect of phenytoin on serum folate concentration
- 396P GREAVES, M. W., McDONALD-GIBSON, WENDY and SØNDERGAARD, J. S. Recovery of prostaglandin-like fatty acids from human allergic contact eczema using a skin perfusion method
- 396P PAWAN, G. L. S., PAYNE, P. M. and SHELDRIK, E. C. A preliminary study on the effects of fenfluramine derivative, 'S992' in man
- 398P LEDINGHAM, I. MCA., PARRATT, J. R. and VANCE, J. P. Effect of propranolol on hypoxia induced myocardial vasodilatation
- 398P HARRY, J. D., KAPPAGODA, C. T., LINDEN, R. J. and SNOW, H. M. Effects of β -adrenoceptor blocking drugs on the chronotropic and inotropic actions of isoprenaline on the acutely denervated dog heart
- 400P KELLY, J. G. and SHANKS, R. G. Adrenoceptors mediating metabolic responses in the greyhound
- 401P BININI, R., BONACCORSI, A., GARATTINI, S., MORSELLI, P. L. and MUSCETTOLA, G. B. Concentrations of desipramine in the vas deferens and potentiation of noradrenaline response
- 402P BUTTERWORTH, K. R. and RANDALL, M. J. Effects of catecholamines on the uteri of adult, immature and ovariectomized rabbits
- 403P CALLINGHAM, B. A. and CORTE, LAURA DELLA. Effect of adrenalectomy upon some rat heart enzymes
- 404P BROCH, JUN., O. J., GULDBERG, H. C. and MARSDEN, C. A. Changes in catechol-O-methyl transferase activity in the rat submaxillary gland after surgical and pharmacological procedures
- 405P BRADSHAW, C. M., ROBERTS, M. H. T. and SZABADI, E. Effect of tricyclic antidepressants on monoamine responses of single cortical neurones
- 406P GONZALEZ-VEGAS, J. A. and WOLSTENCROFT, J. H. Actions of 3,4-dimethoxyphenylethylamine in relation to the effects of catecholamines on brainstem neurones
- 407P COLLINS, G. G. S. and NEAL, M. J. Rate of turnover of γ -aminobutyric acid in various brain regions
- 409P LARGE, W. A. and MILTON, A. S. Effects of morphine, levorphanol, nalorphine and naloxone on the release of acetylcholine from slices of rat cerebral cortex and hippocampus
- 410P BARTOLINI, A., DEFFENU, G., NISTRI, A. and PEPEU, G. Effect of septal lesions on acetylcholine output from the cerebral cortex in the cat
- 411P BALFOUR, D. J. and GILBERT, J. C. Some effects of phenobarbitone on the properties of synaptosomes
- 412P CALCUTT, C. R. and SPENCER, P. S. J. Activities of narcotic and narcotic-antagonist analgesics following the intraventricular injection of various substances
- 413P DEPOORTERE, H. and LOEW, D. M. Alterations in sleep/wakefulness cycle in rats following treatment with (+)-lysergic acid diethylamide (LSD-25)
- 414P MELDRUM, B. S. Convulsive effects of 4-deoxypyridoxine in photosensitive baboons (*Papio papio*)
- 415P SHILLITO, ELIZABETH E. Effect of parachlorophenylalanine on the behaviour of castrated male rats
- 416P CHRISTIE, J. E. and CROW, T. J. Central actions of amphetamines and ephedrine after unilateral lesions of dopamine neurones
- 417P ANLEZARK, G. M., ARBUTHNOTT, G. W., CHRISTIE, J. E. and CROW, T. J. Role of cerebral dopamine in the action of psychotropic drugs
- 418P PRESCOTT, L. F. and WRIGHT, N. Paracetamol metabolism and excretion in paracetamol overdose complicated by hepatic necrosis (T)

Demonstrations

- 419P HETREED, M. A. and HOLTON, PAMELA. Method for the quantitative wash-out of the stomach in the anaesthetized rat
- 419P SMYTHIES, J. R. A possible role for nucleoside-protein complexes in membrane
- 421P HANAHOE, T. H. P. and STURMAN, GILLIAN. Comparison of the neuromuscular blocking action of (+)-tubocurarine and piperazine in the leech, frog, rat and cat
- 422P STEVENSON, I. H. and TURNBULL, M. J. Methods for investigating barbiturate tolerance

page

- 423P BALLANTYNE, B., BRIGHT, J., SWANSTON, D. W. and WILLIAMS, P. Toxicity of cyanides given by intramuscular injection
- 424P FRANCIS, D. L. and SCHNEIDER, C. Jumping after naloxone precipitated withdrawal of chronic morphine in the rat
- 425P CHERRINGTON, NORMA and SMART, J. V. Some multivariate statistical techniques applied to pharmacological research
- 426P HEDGES, ANNMARIE and TURNER, P. Effect of five β -adrenoceptor antagonists on the effects of isoprenaline and acetylcholine on human isolated smooth muscle
- 428P BEVAN-JONES, B. and LIND, NORMA A. Interactions of monoamine oxidase inhibition and sympathomimetic amines on the human iris
- 429P HARRISON, JEAN, REES, W. L. LL. and WATSON, A. C. Method of studying anticonvulsant properties of drugs in man
- 430P ARBAB, A. G., BONN, J. A. and HICKS, DEBORAH C. Effect of propranolol on lactate induced phenomena in normal subjects
- 431P CURRY, S. H., LADER, M. H., MOULD, G. P. and SAKALIS, G. Pharmacology of chlorpromazine: clinical studies
- 432P CURRY, S. H. and MOULD, G. P. Pharmacology of chlorpromazine: relevance to clinical studies, of investigations of absorption, distribution and metabolism in animals (T)
- 432P CURRY, S. H. Pharmacology of chlorpromazine: analysis, concentrations in plasma in man, and excretion of metabolites in man (T)
- 432P BARBER, H. E. Computer programme to process liquid scintillation counting data (T)
- 432P STEPHENSON, J. D. A controlled environment chamber (T)

page

- 433 SMITH, S. E. Training of overseas graduates in pharmacology.

Systematic Pharmacology

- 437 DAS, P. K. and PARRATT, J. R. Myocardial and haemodynamic effects of phentolamine (SP1)
 445 LOH, L., SEED, R. F. and SYKES, M. K. Cardiorespiratory effects of intravenous isoprenaline and salbutamol in dogs. (SP1, SP3)
 454 LAVERY, HELEN A., LOWE, R. D. and SCROOP, G. C. Central autonomic effects of prostaglandin $F_{2\alpha}$ on the cardiovascular system of the dog. (SP1, AP2)
 462 BOAKES, R. J., BRADLEY, P. B., BROOKES, N., CANDY, J. M. and WOLSTENCROFT, J. H. Actions of noradrenaline, other sympathomimetic amines and antagonists on neurones in the brain stem of the cat. (SP2, AP1, DM2)
 480 ATKINSON, D. C. and HICKS, R. Relationship between the anti-inflammatory and irritant properties of inflammatory exudate. (SP3)
 488 SCHNIEDEN, H. and SMALL, R. C. Spasmolytic effects of cadmium and zinc ions upon the guinea-pig isolated ileum preparation. (SP3, DM1)

Autopharmacology

- 500 AL TAI, SUHAILA, A. and GRAHAM, J. D. P. Response to acetylcholine and nicotine of the perfused vessels of the rabbit ear. (AP1, SP1)
 507 CRUNKHORN, PEARL and WILLIS, A. L. Interaction between prostaglandins E and F given intradermally in the rat. (AP2)

Pharmacokinetics

- 513 BARBER, H. E. and BOURNE, G. R. Distribution kinetics and intestinal absorption of practolol in the rat. (PK1)
 521 TURNER, D. M. Metabolism of small multiple doses of (^{14}C) nicotine in the cat. (PK1)
 530 BARTLET, A. L. and GILBERT, FRANCES M. Estimation of urinary 5-hydroxytryptamine-*O*-glucuronide, a metabolite of endogenous 5-hydroxytryptamine in sheep. (PK2, AP2)

Drug Mechanisms

- 540 NORTHOVER, B. J. Mechanism of the inhibitory action of indomethacin on smooth muscle. (DM1)
 552 SALAKO, L. A. and SMITH, A. J. Effects of the diuretics, triamterene and mersalyl on active sodium transport mechanisms in isolated frog skin. (DM1)

Toxicology

- 558 GOODE, P. G. An implanted reservoir of morphine solution for rapid induction of physical dependence in rats. (Tx.)

SHORT COMMUNICATION

- 567 HART, S. L. and MIR, M. S. Adrenoceptors in the human foetal small intestine. (AP1)

page

Third Gaddum Memorial Lecture

- 571 IVERSEN, L. L. Role of transmitter uptake mechanisms in synaptic neurotransmission. (AP1, PK3)

Systematic Pharmacology

- 592 ANGUS, J. A., COBBIN, L. B., EINSTEIN, ROSEMARIE and MAGUIRE, M. H. Cardiovascular actions of substituted adenosine analogues. (SP1)

Autopharmacology

- 600 POLAK, R. L. Stimulating action of atropine on the release of acetylcholine by rat cerebral cortex *in vitro*. (AP1, SP2)
 607 FERRY, C. B. and NORRIS, BERYL. Actions of bretylium tosylate at the neuromuscular junction. (AP1, DM2)
 622 CLINESCHMIDT, B. V., GELLER, R. G., GOVIER, W. C., PISANO, J. J. and TANIMURA, T. Effects of ranatensin, a polypeptide from frog skin, on isolated smooth muscle. (AP2, AP1)
 629 AMURE, B. O. and OMOLE, A. Comparative study of antral gastrin activity in some mammals. (AP3)
 640 HODGES, J. R. and MITCHLEY, SUSAN. Effects of stress and betamethasone on the production of corticosterone by the rat adrenal gland *in vitro*. (AP3)

Pharmacokinetics

- 648 KOLENDA, K.-D., LÜLLMANN, H., PETERS, T. and SEILER, K.-U. Plasma concentration, uptake by liver, and biliary excretion of tritiated cardiac glycosides in the isolated perfused guinea-pig liver. (PK1)
 661 KOLENDA, K.-D., LÜLLMANN, H. and PETERS, T. Metabolism of cardiac glycosides studied in the isolated perfused guinea-pig liver. (PK2)

Drug Mechanisms

- 675 MORRISON, J. F. B. and PICKFORD, MARY. Effects of angiotensin and noradrenaline on discharge in fibres of the cervical sympathetic nerve in cats and dogs. (DM1, AP2)
 684 POMEROY, A. R. and RAPER, C. Pytrolizidine alkaloids: actions on muscarinic receptors in the guinea-pig ileum. (DM2, AP1)

Psychopharmacology

- 692 CHAN, ONN-LENG and WEBSTER, R. A. Effect of tetrabenazine and α -methyl-*m*-tyrosine on exploratory activity and brain catecholamines in rats. (PP, SP2)
 701 CHAN, ONN-LENG and WEBSTER, R. A. Importance of noradrenaline found in a functional pool in maintaining spontaneous locomotor activity in rats. (PP, SP2)

SHORT COMMUNICATIONS

- 710 ABSOLON, K. B., BASHOUR, F. A. and GEUMEI, AIDA. Effect of temperature on the intra-hepatic vasculature. (SP1)
 712 BELL, C. Rat superfused aortic strip for the bioassay of noradrenaline and adrenaline. (PM)