

Photo-Induced DNA Cleavage Reaction Characteristics of Propargylic Sulfones Possessing Anthraquinone Chromophore

Ken-ichi Haruna,^a Kazuhito Tanabe,^a Atsushi Ishii,^a Wei Min-Dai,^b Hiroshi Hatta^a and Sei-ichi Nishimoto^{a,*}

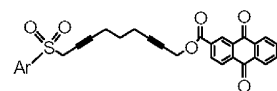
^aDepartment of Energy and Hydrocarbon Chemistry, Faculty of Engineering, Kyoto University, Kyoto University Katsura, Nishikyo-ku, Kyoto 615-8510, Japan

^bDepartment of Chemistry, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, SAR, China

Propargylic sulfones possessing anthraquinone chromophore were investigated to evaluate photoirradiation effect on the DNA-binding and cleavage ability.

Bioorg. Med. Chem. 11 (2003) 5311

Propargylic Sulfones Possessing AQ Chromophore



UV-irradiation

Higher Degree of DNA Cleavage

Structural Requirements of Flavonoids for Inhibition of Protein Glycation and Radical Scavenging Activities

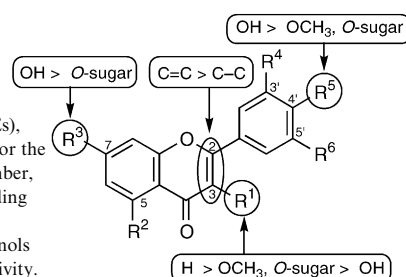
Hisashi Matsuda, Tao Wang, Hiromi Managi and Masayuki Yoshikawa*

Kyoto Pharmaceutical University, Misasagi, Yamashina-ku, 2Kyoto 607-8412, Japan

To clarify the structural requirements of flavonoids for formation of advanced glycation end-products (AGEs), various flavonoids were examined. The results suggested the following structural requirements of flavonoids for the inhibition of AGEs formation: (1) as the hydroxyl groups at the 3'-, 4'-, 5-, and 7-positions increased in number, the inhibitory activities became stronger; (2) the activities of flavones were stronger than those of corresponding flavonols, flavanones, and isoflavones; (3) methylation or glucosylation of the 4'-hydroxyl group of flavones, flavonols, and flavanones reduced activity; (4) methylation or glycosylation of the 3-hydroxyl group of flavonols tended to increase activity; (5) glycosylation of the 7-hydroxyl group of flavones and isoflavones reduced activity.

In addition, various flavonoids with strong AGEs formation inhibitory activity tended to exhibit strong scavenging activity for 1,1-diphenyl-2-picrylhydrazyl and superoxide anion radicals, with several exceptions.

Bioorg. Med. Chem. 11 (2003) 5317

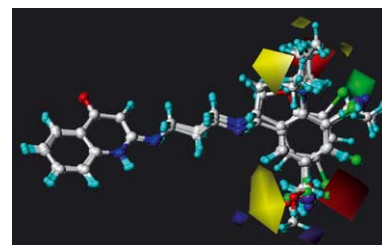


3-D-QSAR Study and Molecular Docking of Methionyl-tRNA Synthetase Inhibitors

Su Yeon Kim and Jeewoo Lee*

Laboratory of Medicinal Chemistry, Research Institute of Pharmaceutical Sciences, College of Pharmacy, Seoul National University, Shinlim-Dong, Kwanak-Ku, Seoul 151-742, South Korea

Bioorg. Med. Chem. 11 (2003) 5325



Synthesis of a [2-Pyridinyl-¹⁸F]-labelled Fluoro Derivative of (–)-Cytisine as a Candidate Radioligand for Brain Nicotinic α4β2 Receptor Imaging with PET

Gaëlle Roger,^a Béatrice Lagnel,^a Jacques Rouden,^b Laurent Besret,^{a,c} Héric Valette,^a Stéphane Demphel,^a JaganMohan Gopiseti,^b Christine Coulon,^a Michele Ottaviani,^a Lori A. Wrenn,^d Sharon R. Letchworth,^d Georg A. Bohme,^e Jesus Benavides,^c Marie-Claire Lasne,^b Michel Bottlaender^a and Frédéric Dollé^{a,*}

^aService Hospitalier Frédéric Joliot, Département de Recherche Médicale, CEA/DSV, 4 place du Général Leclerc, F-91401 Orsay, France

^bLaboratoire de Chimie Moléculaire et Thio-organique, UMR CNRS 6507, ENSICAEN, Institut des Sciences de la Matière et du Rayonnement, Université de Caen-Basse-Normandie, 6 Boulevard du Maréchal Juin, F-14050 Caen Cedex, France

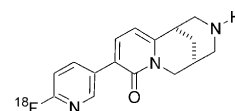
^cURA CEA/CNRS 2210, Service Hospitalier Frédéric Joliot, Département de Recherche Médicale, CEA/DSV, 4 place du Général Leclerc, F-91401 Orsay, France

^dTargacept, Inc., 200 East First Street, Suite 300, Winston-Salem, NC 27101-4165, USA

^eAventis Pharma, Centre de Recherches de Paris, Site de Vitry-Alfortville, 13 Quai Jules Guesde, F-94403 Vitry-sur-Seine cedex, France

(–)-9-(2-Fluoropyridinyl)cytisine has been synthesized and labelled with fluorine-18 ($T_{1/2}$: 109.8 min) as a potential positron emission tomography (PET) tracer for imaging the nicotinic α4β2 receptor.

Bioorg. Med. Chem. 11 (2003) 5333



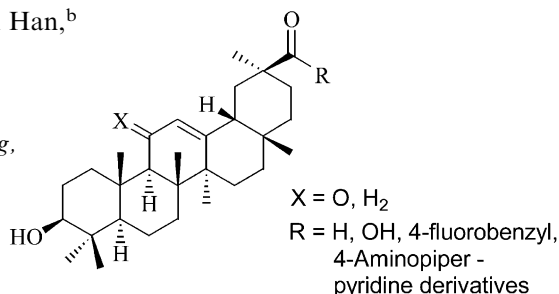
Synthesis of New Glycyrrhetic Acid (GA) Derivatives and Their Effects on Tyrosinase Activity

Bioorg. Med. Chem. 11 (2003) 5345

Soo-Jong Um,^{a,b} Myoung-Soon Park,^b Si-Ho Park,^b Hye-Sook Han,^b Youn-Ja Kwon^b and Hong-Sig Sin^{b,*}

^aDepartment of Bioscience & Biotechnology/Institute of Bioscience, Sejong University, Seoul 143-747, South Korea

^bChebigen Inc., 305-B, Chungmugwan, Sejong University, 98 Kunja-dong, Kwangjin-gu, Seoul 143-747, South Korea



Quantitative Structure–Activity Relationship Study on Sulfanilamide Schiff’s Bases: Carbonic Anhydrase (CA) Inhibitors

Bioorg. Med. Chem. 11 (2003) 5353

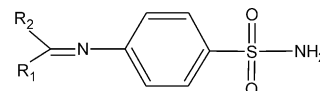
Vijay K. Agrawal,^a Shachi Srivastava,^a Padmakar V. Khadikar^{b,*} and Claudiu T. Supuran^c

^aQSAR and Computer Chemical Laboratories, A.P.S. University, Rewa-486 003, India

^bResearch Division, Laxmi Fumigation and Pest Control Pvt. Ltd., 3 Khatipura, Indore-452 007, India

^cUniversity of Florence, Dipartimento di Chimica, Laboratorio di Chimica Bioinorganica, Via della Lastruccia, 3, RM.188, Polo Scientifico, 50019-Sesto Fiorentino (Firenze), Italy

The paper deals with quantitative structure–activity studies on a group of sulfanilamide Schiff’s base inhibitors of carbonic anhydrase (CA) using distance-based topological indices. The regression analysis of the data has shown that the activities of the compounds used in inhibiting CAII activity can be modeled excellently in multi-parametric model in that some indicator parameters are also involved. The results are discussed critically.



Synthesis of Glycosylated β -Amino Hydroxamates as New Class of Antimalarials

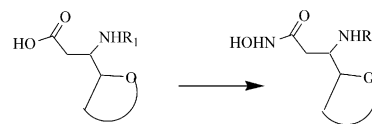
Bioorg. Med. Chem. 11 (2003) 5363

R. C. Mishra,^a Renu Tripathi,^b Diksha Katiyar,^a Neetu Tewari,^a Deepti Singh^b and R. P. Tripathi^{a,*}

^aDivision of Medicinal Chemistry, Central Drug Research Institute, Lucknow-226001, India

^bDivision of Parasitology, Central Drug Research Institute, Lucknow-226001, India

A number of glycosylated β -amino hydroxamates were synthesized and evaluated in vitro against *P. falciparum* in vitro. One of the compounds showed good activity at 2 μ g/mL.



Ultrasensitive Assay of Azithromycin in Medicine and Bio-Fluids Based on Its Enhanced Luminol–H₂O₂ Chemiluminescence Reaction Using Flow Injection Technique

Bioorg. Med. Chem. 11 (2003) 5375

Zhenghua Song* and Changna Wang

Department of Chemistry, Northwest University, Xi'an 710069, China

An ultrasensitive chemiluminescence method for the determination of azithromycin in pharmaceutical preparations, human urine and serum was described based on the enhancement of azithromycin in the luminol–H₂O₂ CL reaction. The emission produced by the CL reaction is proportionate to the azithromycin concentration from 0.1 pg mL⁻¹ to 1.0 ng mL⁻¹ ($r^2 = 0.9988$) with the detection limit of 0.04 pg mL⁻¹.

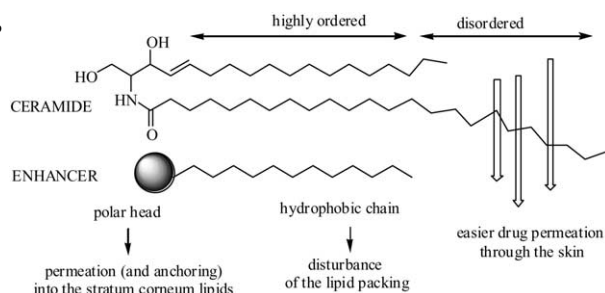
Synthetic Ceramide Analogues as Skin Permeation Enhancers: Structure–Activity Relationships

Bioorg. Med. Chem. 11 (2003) 5381

Kateřina Vávrová,^{a,*} Alexandr Hrabálek,^a Pavel Doležal,^b
Lucie Šámalová,^b Karel Palát,^a Jarmila Zbytovská,^b
Tomáš Holas^a and Jana Klimentová^a

^aDepartment of Inorganic and Organic Chemistry,
Faculty of Pharmacy, Charles University,
Heyrovského 1203, 500 05, Hradec Králové, Czech Republic

^bDepartment of Pharmaceutical Technology,
Faculty of Pharmacy, Charles University,
Heyrovského 1203, 500 05, Hradec Králové, Czech Republic



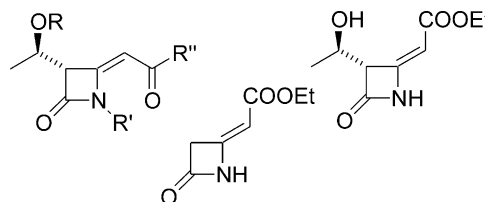
4-Alkylidene-azetidin-2-ones: Novel Inhibitors of Leukocyte Elastase and Gelatinase

Bioorg. Med. Chem. 11 (2003) 5391

Gianfranco Cainelli,^a Paola Galletti,^a Spiridione Garbisa,^{b,*} Daria Giacomini,^{a,*} Luigi Sartor^b
and Arianna Quintavalla^a

^aDepartment of Chemistry 'G. Ciamician', University of Bologna, Via Selmi 2, I-40126 Bologna, Italy

^bDepartment of Experimental Biomedical Sciences, Medical School of Padova,
Viale G. Colombo 3, 35121 Padova, Italy



Synthesis, Radiosynthesis and In Vivo Evaluation of 5-[3-(4-Benzylpiperidin-1-yl)prop-1-ynyl]-1,3-dihydrobenzimidazol-2-[¹¹C]one, as a Potent NR_{1A}/2B Subtype Selective NMDA PET Radiotracer

Bioorg. Med. Chem. 11 (2003) 5401

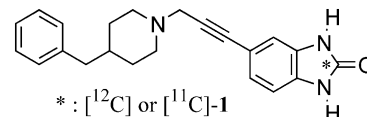
Gaëlle Roger,^a Béatrice Lagnel,^a Laurent Besret,^a Yann Bramoullé,^a Christine Coulon,^a Michelle Ottaviani,^a
Michael Kassiou,^{b,c} Michel Bottlaender,^a Héric Valette^a and Frédéric Dollé^{a,*}

^aService Hospitalier Frédéric Joliot, Département de Recherche Médicale, CEA/DSV, 4 Place du Général Leclerc,
F-91401 Orsay, France

^bDepartment of PET and Nuclear Medicine, Royal Prince Alfred Hospital, Missenden Road, Camperdown, NSW 2050, Australia

^cDepartment of Pharmacology, University of Sydney, NSW 2006, Australia

5-[3-(4-Benzylpiperidin-1-yl)prop-1-ynyl]-1,3-dihydrobenzimidazol-2-one (**1**), a selective NR_{1A}/2B subtype antagonist, has been labelled with carbon-11 (*T*_{1/2}: 20.4 min) as a potential positron emission tomography (PET) tracer for imaging the NMDA receptor.



*: [¹²C] or [¹¹C]-**1**

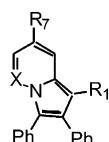
Indolizines as Novel Potent Inhibitors of 15-Lipoxygenase

Bioorg. Med. Chem. 11 (2003) 5409

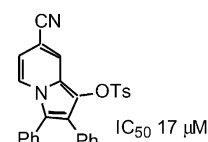
Lise-Lotte Gundersen,^{a,*} Karl E. Malterud,^b Ayele H. Negussie,^a Frode Rise,^a Solomon Teklu^a
and Ole Benny Østby^a

^aDepartment of Chemistry, University of Oslo, PO Box 1033, Blindern, N-0315 Oslo, Norway

^bSchool of Pharmacy, University of Oslo, PO Box 1068, Blindern, N-0316 Oslo, Norway



R₁: H, OR, OSO₂R, OCOR, alkyl, aryl
R₇: H, CN
X: CH, N



Rat Brain Guanosine Binding Site: Biological Studies and Pseudo-Receptor Construction

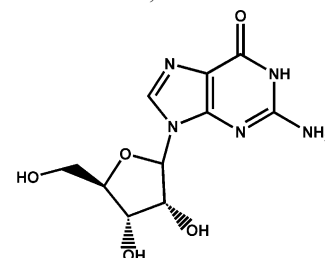
Bioorg. Med. Chem. 11 (2003) 5417

Ugo Traversa,^a Giulia Bombi,^a Emidio Camaioni,^b Antonio Macchiarulo,^b Gabriele Costantino,^{b,*} Clara Palmieri,^a Francesco Caciagli^c and Roberto Pellicciari^b

^aDipartimento di Scienze Biomediche — B.R.A.I.N. Center, via L. Giorgieri 7, Università di Trieste, 34127 Trieste, Italy

^bDipartimento di Chimica e Tecnologia del Farmaco, via de Liceo 1, Università di Perugia, 06123 Perugia, Italy

^cDipartimento di Scienze Biomediche, via dei Vestini 31, Università 'G. D'Annunzio Chieti, 66013 Chieti, Italy



Novel Naphthalimide Hydroperoxide Photonucleases: The Role of Thiocyclic-Fused Area and the Difference in Spectra, Photochemistry and Photobiological Activity

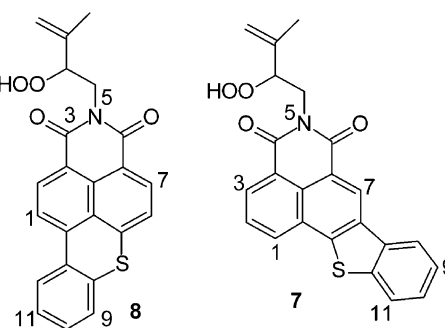
Bioorg. Med. Chem. 11 (2003) 5427

Yufang Xu,^a Xuhong Qian,^{b,*} Wei Yao,^a Ping Mao^a and Jingnan Cui^b

^aShanghai Key Lab. of Chemical Biology, Institute of Pesticides Pharmaceuticals, East China University of Science and Technology, PO Box 544, 130 Meilong Road, Shanghai, 200237, China

^bState Key Laboratory of Fine Chemicals, Dalian University of Technology, PO Box 40, 158 Zhongshan Road, Dalian, 116012, China

Novel five- and six-membered thiocyclic-fused naphthalimide hydroperoxides (**7**, **8**) as photonucleases were designed, evaluated and synthesized via unusual isomerization in Pschorr cyclization and photooxygenation.



Synthesis and Opioid Activity of *N,N*-Dimethyl-Dmt-Tic-NH-CH(R)-R' Analogues: Acquisition of Potent δ Antagonism

Bioorg. Med. Chem. 11 (2003) 5435

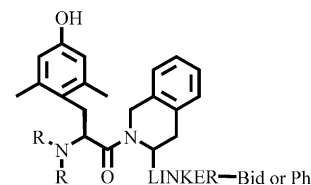
Gianfranco Balboni,^a Severo Salvadori,^b Remo Guerrini,^b Lucia Negri,^c Elisa Giannini,^c Sharon D. Bryant,^d Yunden Jinsmaa^d and Lawrence H. Lazarus^{d,*}

^aDepartment of Toxicology, University of Cagliari, I-09126, Cagliari, Italy

^bDepartment of Pharmaceutical Sciences and Biotechnology Center, University of Ferrara, I-44100 Ferrara, Italy

^cDepartment of Human Physiology and Pharmacology 'Vittorio Erspamer,' University La Sapienza, I-00185 Rome, Italy

^dPeptide Neurochemistry, LCBRA, National Institute of Environmental Health Sciences, Research Triangle Park, NC 27709, USA



Enhanced Antitumor Activity of *trans*(\pm)-1,2-Diaminocyclohexaneglutamatoplatinum(II) Formulated with Stealth Liposome

Bioorg. Med. Chem. 11 (2003) 5443

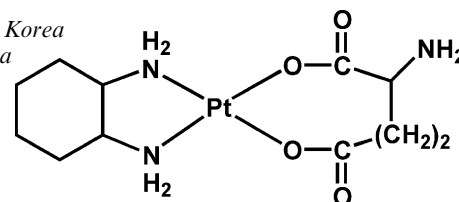
Insook Han,^a Ok Ju Kim,^b Gab Yong Lee,^b Young Kwan Sung,^a Rita Song^c and Youn Soo Sohn^{c,*}

^aTrichogene, Inc., Daegu 700-422, South Korea

^bDepartment of Chemistry, Taegu Catholic University, Kyongsan 712-702, South Korea

^cDivision of Nano Science, Ewha Womans University, Seoul 120-750, South Korea

The platinum(II) compound, [Pt(dach)(Glu)] (dach = *trans*(\pm)-1,2-diaminocyclohexane, Glu = glutamate), was formulated with a stealth liposome composed of PC/PEG2000-PE/CH [PC = 1,2-diacyl-glycero-3-phosphocholine; PEG2000-PE = poly(ethylene glycol)2000-1,2-diacyl-glycero-3-phosphoethanolamine; CH = cholesterol] involving different acyl moieties of phospholipids such as DO (dioleoyl), DM (dimyristoyl) or DS (distearoyl) group.



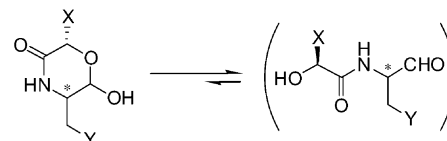
Novel 6-Hydroxy-3-morpholinones as Cornea Permeable Calpain Inhibitors

Bioorg. Med. Chem. 11 (2003) 5449

Masayuki Nakamura,* Hiroyuki Miyashita, Masazumi Yamaguchi, Yoshihisa Shirasaki, Yoshikuni Nakamura and Jun Inoue

Research Laboratory, Senju Pharmaceutical Co., Ltd., 1-5-4 Murotani Nishiku, Kobe 651-2241, Japan

A novel series of 6-hydroxy-3-morpholinones, in which the functional aldehyde and the hydroxy group of P2 site form a cyclic hemiacetal, was identified as calpain inhibitors.



Cyclic Phosphinamides and Phosphonamides, Novel Series of Potent Matrix Metalloproteinase Inhibitors with Antitumour Activity

Bioorg. Med. Chem. 11 (2003) 5461

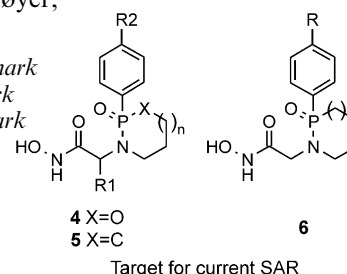
Morten Dahl Sørensen,^{a,*} Lars K. A. Blæhr,^a Mette K. Christensen,^a Thomas Høyer,^a Scilla Latini,^b Pernille-Julia V. Hjarnaa^c and Fredrik Björklund^a

^aMedicinal Chemistry Research, LEO Pharma, Industriparken 55, DK-2750 Ballerup, Denmark

^bDepartment of Biochemistry, LEO Pharma, Industriparken 55, DK-2750 Ballerup, Denmark

^cDepartment of Pharmacology, LEO Pharma, Industriparken 55, DK-2750 Ballerup, Denmark

The design, synthesis, and SAR of a series of novel cyclic phosphon- and phosphinamide-based hydroxamic acids as potent MMP inhibitors are presented. Furthermore, in vivo tumour growth reducing effects are observed for selected compounds in a xenograft cancer model in mice.



Heterocyclic Rimantadine Analogues with Antiviral Activity

Bioorg. Med. Chem. 11 (2003) 5485

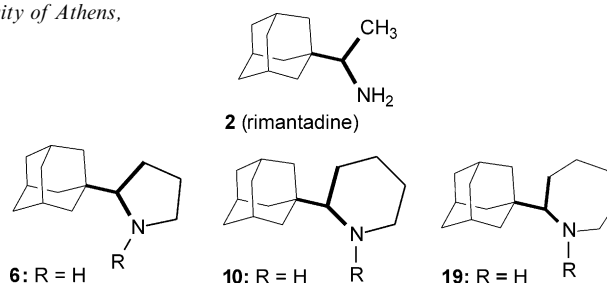
George Stamatiou,^a George B. Foscolos,^{a,*} George Fytas,^{a,*} Antonios Kolocouris,^a Nicolas Kolocouris,^a Christophe Pannecouque,^b Myriam Witvrouw,^b Elizaveta Padalko,^b Johan Neyts^b and Erik De Clercq^b

^aDepartment of Pharmacy, Division of Pharmaceutical Chemistry, University of Athens, Panepistimioupoli-Zografou GR-15771 Athens, Greece

^bRega Institute for Medical Research, Katholieke Universiteit Leuven, Minderbroedersstraat 10, B-3000 Leuven, Belgium

Synthetic aminoadamantanes **6**, **10** and **19** include the 1-aminoethyl pharmacophore group of Rimantadine **2** in a saturated nitrogen heterocycle (pyrrolidine, piperidine and hexahydroazepine, respectively).

Rimantadine analogues **6** and **10** were respectively 6 and 4-fold more potent than Rimantadine **2**, whereas azepine **19** was inactive; heterocyclic ring enlargement from 5 atoms (pyrrolidine) or 6 (piperidine) to 7 atoms (hexahydroazepine) dramatically reduced the anti-influenza virus A activity. Substitution of piperidine **10** with dialkylaminoethyl groups led to **15a**, which was active against influenza A virus, whereas **15a** and **15b** were active against HIV-1 as well.



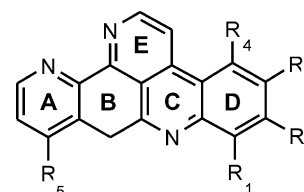
QSAR Study on Some Pyridoacridine Ascididemin Analogues as Anti-tumor Agents

Bioorg. Med. Chem. 11 (2003) 5493

Bikash Debnath, Shovanlal Gayen, Subrata Bhattacharya, Soma Samanta and Tarun Jha*

Department of Pharmaceutical Technology, Division of Medicinal and Pharmaceutical Chemistry, PO Box No. 17020, Jadavpur University, Kolkata-700 032, India

QSAR study was performed using physicochemical parameters and ETSA index on some ascididemin analogues to find out physicochemical and structural features for their anti-tumor activity.



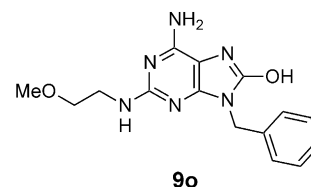
Bioorg. Med. Chem. 11 (2003) 5501

Ayumu Kurimoto,^{a,*} Tetsuhiro Ogino,^a Shinji Ichii,^a Yoshiaki Isobe,^a Masanori Tobe,^a Haruhisa Ogita,^a Haruo Takaku,^a Hironao Sajiki,^b Kosaku Hirota^b and Hajime Kawakami^a

^aResearch Division, Discovery Research Laboratories II, Sumitomo Pharmaceuticals Co. Ltd., Konohana-ku, Osaka 554-0022, Japan

^bLaboratory of Medicinal Chemistry, Gifu Pharmaceutical University, Mitahora-higashi, Gifu 502-8585, Japan

Compound **9o** exhibited potent IFN inducing activity both in vitro and in vivo. Compound **9o** induced IFN from the dosage of 0.1 mg/kg in mouse, and showed a good oral bioavailability ($F=81\%$).



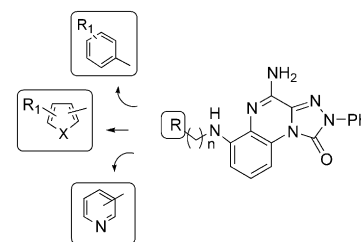
Bioorg. Med. Chem. 11 (2003) 5509

Vittoria Colotta,^{a,*} Daniela Catarzi,^a Flavia Varano,^a Guido Filacchioni,^a Claudia Martini,^b Letizia Trincavelli^b
and Antonio Lucacchini^b

^a*Dipartimento di Scienze Farmaceutiche, Polo Scientifico, Università di Firenze,
Via Ugo Schiff, 6, 50019 Sesto Fiorentino (FI), Italy*

^bDipartimento di Psichiatria, Neurobiologia, Farmacologia e Biotecnologie, Università di Pisa, Via Bonanno, 6, 50126 Pisa, Italy

Synthesis and A₁, A_{2A} and A₃ adenosine receptor binding activities of some 4-amino-6-(hetero)arylalkylamino-2-phenyl-1,2,4-triazolo[4,3-*a*]quinoxalin-1-ones are reported. Most of the newly synthesized compounds are inactive at the A₃ receptors while showing nanomolar A_{2A} affinities and different degrees of A_{2A} versus A₁ selectivity.



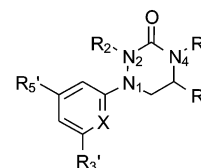
Bioorg. Med. Chem. 11 (2003) 5519

Vijay K. Agrawal,^a Shahnaz Bano^a and Padmakar V. Khadikar^{b,*}

^aOSAR and Computer Chemical Laboratories, A.P.S. University, Rewa-486 003, India

^bResearch Division, Laxmi Fumigation and Pest Control Pvt. Ltd., 3 Khatipura, Indore-452 007, India

QSAR study on a large set of 5-lipoxygenase inhibitors has been carried out using distance-based topological indices. Regression analysis of the data has indicated that an excellent model is obtained when these topological indices are combined with some classical molecular descriptors. The obtained models are critically discussed and examined on the basis of cross-validation parameters.



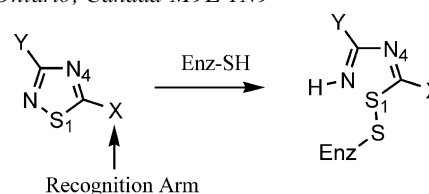
Bioorg. Med. Chem. 11 (2003) 5529

Regis Leung-Toung,^a Jolanta Wodzinska,^b Wanren Li,^a Jayme Lowrie,^b Rahul Kukreja,^b Denis Desilets,^a
Khashavar Karimian^a and Tim Fat Tam^{a,*}

^aDepartment of Medicinal Chemistry, Apotex Research, Inc., 400 Ormont Drive, Toronto, Ontario, Canada M9L 1N9

^bDepartment of Biochemistry, Apotex Research, Inc., 400 Ormont Drive, Toronto, Ontario, Canada M9L 1N9

A novel class of Cathepsin B inhibitors has been designed based on an electrophilic 1,2,4-thiadiazole heterocyclic pharmacophore. These compounds inactivate Cat B in a time-dependent, irreversible manner. The inhibition of the enzyme is brought about by disulfide bond formation between the active site cysteine thiol and the sulfur atom of the heterocycle.



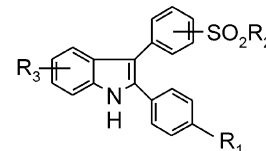
Discovery of 2-Phenyl-3-sulfonylphenyl-indole Derivatives as a New Class of Selective COX-2 Inhibitors

Bioorg. Med. Chem. 11 (2003) 5539

Wenhui Hu,^a Zongru Guo,^{a,*} Xiang Yi,^a Changbin Guo,^a Fengming Chu^a and Guifang Cheng^b

^aDepartment of Synthetic Medicinal Chemistry, Institute of Materia Medica, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100050, PR China

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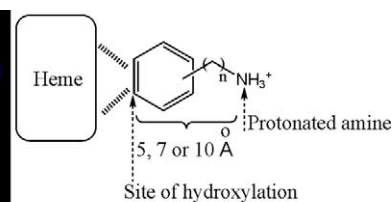
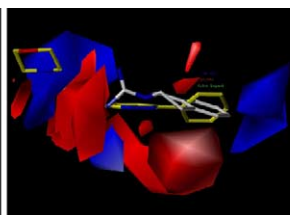
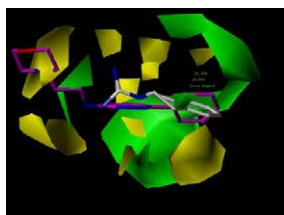


Comparative Molecular Field Analysis and QSAR on Substrates Binding to Cytochrome P450 2D6

Bioorg. Med. Chem. 11 (2003) 5545

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A Novel Series of Complexones with Bis- or Biazole Structure as Mixed Ligands of Paramagnetic Contrast Agents for MRI

Bioorg. Med. Chem. 11 (2003) 5555

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The synthesis, physicochemical properties and biological evaluation from a novel series of mixed ligands of paramagnetic contrast agents for MRI are reported.

