

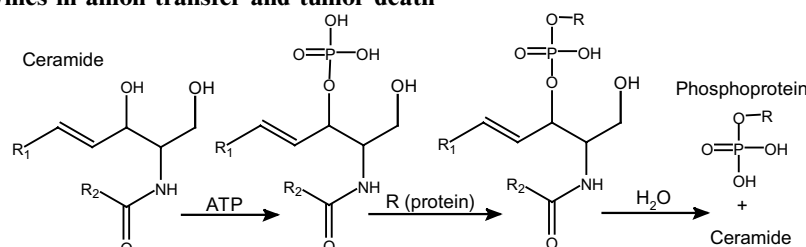
Contents

PERSPECTIVE

Sphingolipids as coenzymes in anion transfer and tumor death

pp 6029–6037

Norman S. Radin



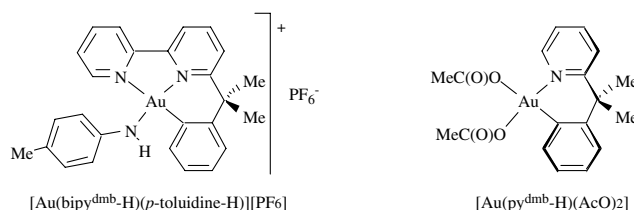
I propose that the multitude of biological effects reported for the sphingolipids results from their functioning as coenzymes, catalyzing the transfer of anions for protein phosphorylation, dephosphorylation, and hydrolysis, and synthesis and hydrolysis of lipoidal esters or amides. The transferred anion may form a transitory ester with the allylic alcohol moiety of the sphingolipid.

ARTICLES

Solution chemistry and cytotoxic properties of novel organogold(III) compounds

pp 6039–6043

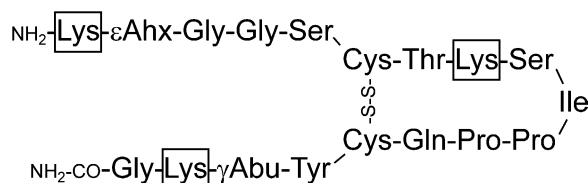
Luigi Messori,* Giordana Marcon, Maria Agostina Cinellu, Marcella Coronello, Enrico Mini, Chiara Gabbiani and Pierluigi Orioli



Inhibition of human β -tryptase by Bowman–Birk inhibitor derived peptides: creation of a new tri-functional inhibitor

pp 6045–6052

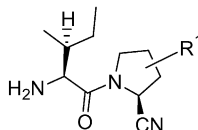
Dina Scarpi, Jeffrey D. McBride and Robin J. Leatherbarrow*



Synthesis and structure–activity relationships of potent 3- or 4-substituted-2-cyanopyrrolidine dipeptidyl peptidase IV inhibitors

pp 6053–6061

Hiroshi Fukushima,* Akira Hiratate, Masato Takahashi, Masako Saito, Eiji Munetomo, Kiyokazu Kitano, Hidetaka Saito, Yuji Takaoka and Koji Yamamoto

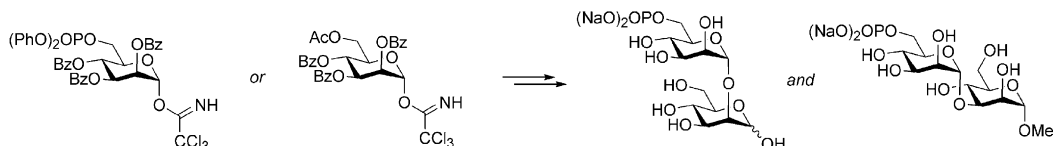


A series of 3- or 4-substituted-2-cyanopyrrolidines were synthesized and evaluated as dipeptidyl peptidase IV inhibitors.

The synthesis of phosphorylated disaccharide components of the extracellular phosphomannan of *Pichia (Hansenula) holstii* NRRL Y-2448

pp 6063–6075

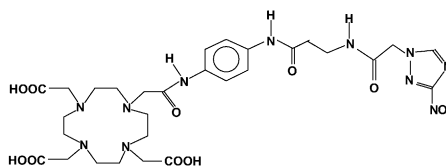
Jon K. Fairweather, Tomislav Karoli and Vito Ferro*



Preparation and preliminary biological evaluation of a ¹⁷⁷Lu labeled sanazole derivative for possible use in targeting tumor hypoxia

pp 6077–6084

Tapas Das, Sudipta Chakraborty, Sharmila Banerjee,* Archana Mukherjee, Grace Samuel, H. D. Sarma, C. K. K. Nair, V. T. Kagiya and Meera Venkatesh



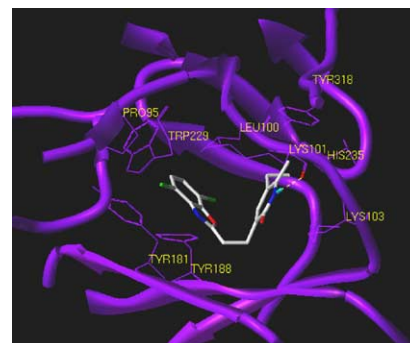
Sanazole, a tumor-avid molecule has been coupled with a polyazamacrocycle in order to obtain tumor-specific conjugate, which is subsequently radiolabeled with a potential therapeutic radionuclide, ¹⁷⁷Lu. The radiolabeled conjugate exhibited moderate tumor uptake in fibrosarcoma bearing Swiss mice with sufficiently high tumor to background ratio.

Flexible docking of pyridinone derivatives into the non-nucleoside inhibitor binding site of HIV-1 reverse transcriptase

pp 6085–6095

José Luis Medina-Franco, Sergio Rodríguez-Morales, Cecilia Juárez-Gordiano, Alicia Hernández-Campos, Jesús Jiménez-Barbero* and Rafael Castillo*

Pyridinone derivatives were docked into the non-nucleoside reverse transcriptase inhibitors binding site of HIV-1 reverse transcriptase (RT). Pyridinones–RT interactions are discussed. Docking results helped to understand at the molecular level the biological activity of published hybrid pyridinone–NNRTIs molecules. Strategies to design further pyridinone derivatives active against RT containing mutations are discussed.

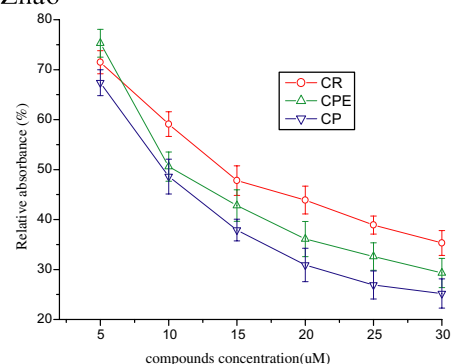


Chrysin and its phosphate ester inhibit cell proliferation and induce apoptosis in Hela cells

pp 6097–6105

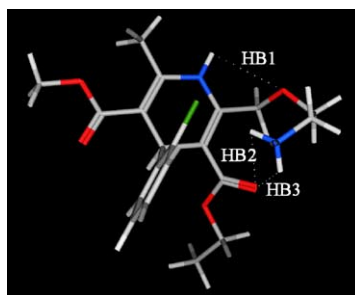
Ting Zhang, Xiaolan Chen, Lingbo Qu,* Jinglan Wu, Ran Cui and Yufen Zhao*

The MTT relative absorbance of all test compounds with different concentrations in Hela cells following treatment for 72 h was shown.

**Ionization, lipophilicity, and molecular modeling to investigate permeability and other biological properties of amlodipine**

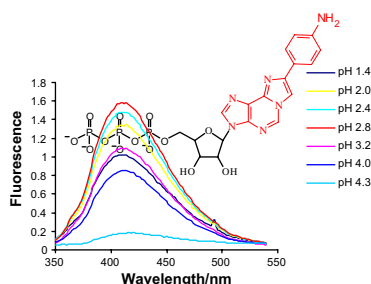
pp 6107–6118

Giulia Caron,* Giuseppe Ermondi, Alessandro Damiano, Laura Novaroli, Oksana Tsinman, Jeffrey A. Ruell and Alex Avdeef

**Fluorescent ε-ATP analogues for probing physicochemical properties of proteins. Synthesis, biochemical evaluation, and sensitivity to properties of the medium**

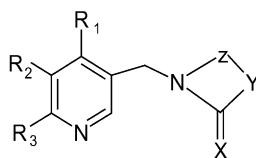
pp 6119–6135

Einat Sharon, Gregor Zündorf, Sébastien A. Lévesque, Adrien R. Beaudoin, Georg Reiser and Bilha Fischer*

**Quantitative structure–activity relationship study using refractotopological state atom index on some neonicotinoid insecticides**

pp 6137–6145

Bikash Debnath, Shovanlal Gayen, Anindya Basu, Balaram Ghosh, Kolluru Srikanth and Tarun Jha*



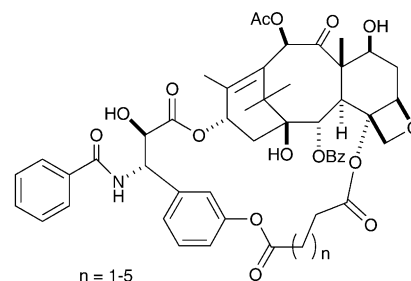
QSAR study was performed on some azidopyridinyl neonicotinoids for selective insect nAChR agonistic activity over mammalian nAChR.

Syntheses and bioactivities of macrocyclic paclitaxel bis-lactones

pp 6147–6161

Changhui Liu, Jennifer K. Schilling, Rudravajhala Ravindra,
Susan Bane and David G. I. Kingston*

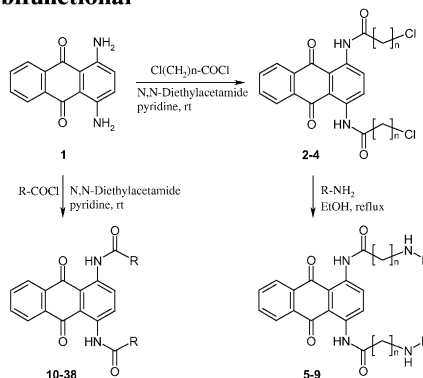
Five macrocyclic paclitaxel bis-lactones and their corresponding open chain taxoids were synthesized as models of the tubulin-binding conformation of paclitaxel. Macrocyclic lactones with a 19–21-membered ring underwent isomerization to form smaller rings. The lactones were evaluated for cytotoxicity and tubulin-polymerization ability.



Synthesis and structure–activity correlations of the cytotoxic bifunctional 1,4-diamidoanthraquinone derivatives

pp 6163–6170

Hsu-Shan Huang,* Hui-Fen Chiu, An-Long Lee,
Ching-Long Guo and Chun-Lung Yuan

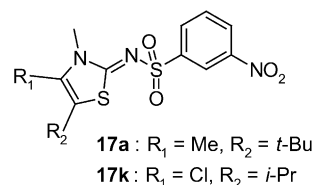


Studies of nonnucleoside HIV-1 reverse transcriptase inhibitors. Part 1: Design and synthesis of thiazolidenebenzenesulfonamides

pp 6171–6182

Naoyuki Masuda,* Osamu Yamamoto, Masahiro Fujii, Tetsuro Ohgami, Jiro Fujiyasu, Toru Kontani, Ayako Moritomo, Masaya Orita, Hiroyuki Kurihara, Hironobu Koga, Hideaki Nakahara, Shunji Kageyama, Mitsuaki Ohta, Hiroshi Inoue, Toshifumi Hatta, Hiroshi Suzuki, Kenji Sudo, Yasuaki Shimizu, Eiichi Kodama, Masao Matsuoka, Masatoshi Fujiwara, Tomoyuki Yokota, Shiro Shigeta and Masanori Baba

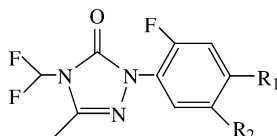
A series of thiazolidenebenzenesulfonamides have been discovered as nonnucleoside reverse transcriptase inhibitors. Compound **17a** exhibited the most potent inhibitory activity against the Y181C mutant reverse transcriptase (RT). The introduction of the 4-chloro-5-isopropyl moiety (**17k**) markedly increased the activity against the wild type RT. Both **17a** and **17k** strongly inhibited HIV-1 replication.



A DFT-based QSARs study of protoporphyrinogen oxidase inhibitors: phenyl triazolinones

pp 6183–6191

Li Zhang, Jian Wan and Guangfu Yang*



Based on a set of quantum chemical descriptors obtained at the B3LYP/6-31G(d,p) level, a quantitative structure–activity relationships study has been carried out for both substitutes R_1 and R_2 of the title compounds.

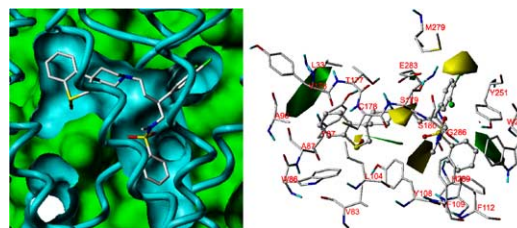


Molecular docking and 3D QSAR studies on 1-amino-2-phenyl-4-(piperidin-1-yl)-butanes based on the structural modeling of human CCR5 receptor

pp 6193–6208

Yong Xu, Hong Liu,* Chunying Niu, Cheng Luo, Xiaomin Luo,
Jianhua Shen, Kaixian Chen and Hualiang Jiang*

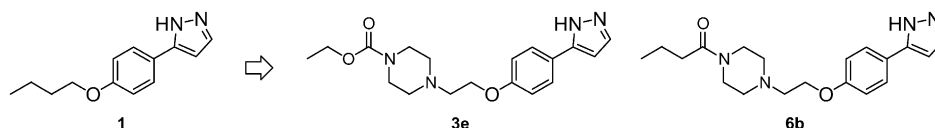
The interaction of CCR5 to the antagonists was studied using automated docking and 3D QSAR analyses based on the structural modeling of human CCR5 receptor. These results suggest that the 3D model of CCR5 can be used in structure-based drug design and the 3D QSAR models provide clear guidelines for novel antagonist design.



Pyrazole derivatives as new potent and selective 20-hydroxy-5,8,11,14-eicosatetraenoic acid synthase inhibitors

pp 6209–6219

Toshio Nakamura,* Hiroyuki Kakinuma, Hideaki Amada, Noriyuki Miyata, Kazuo Taniguchi, Ayumi Koda and Masakazu Sato*



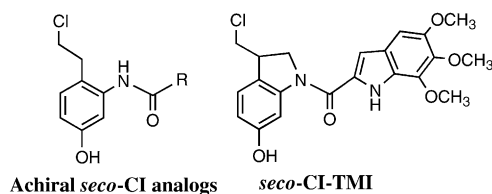
Introduction of a piperazino group to the selective and potent 20-HETE synthase inhibitor **1** to obtain potential therapeutic agents with suitable water-solubility for injectable formulation is described.



A novel class of achiral *seco*-analogs of CC-1065 and the duocarmycins: design, synthesis, DNA binding, and anticancer properties

pp 6221–6236

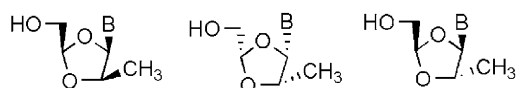
Stanley Kupchinsky, Sara Centioni, Tiffany Howard, John Trzupek, Shane Roller, Virginia Carnahan, Heather Townes, Bethany Purnell, Carly Price, Heather Handl, Kaitlin Summerville, Kimberly Johnson, James Toth, Stephen Hudson, Konstantinos Kiakos, John A. Hartley and Moses Lee*



Synthesis and biological evaluation of 5*R*- and 5*S*-methyl substituted D- and L-configuration 1,3-dioxolane nucleoside analogs

pp 6237–6247

Sanjib Bera, Leila Malik, Balkrishen Bhat, Steven S. Carroll, Renee Hrin, Malcolm MacCoss, Daniel R. McMasters, Michael D. Miller, Greg Moyer, David B. Olsen, William A. Schleif, Joanne E. Tomassini and Anne B. Eldrup*

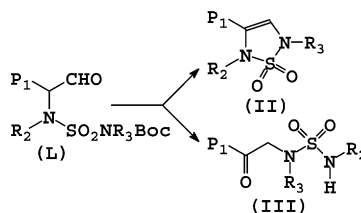


B is guanine, adenine or 2,6-diamonpurine

Serendipitous discovery of an unexpected rearrangement leads to two new classes of potential protease inhibitors

pp 6249–6254

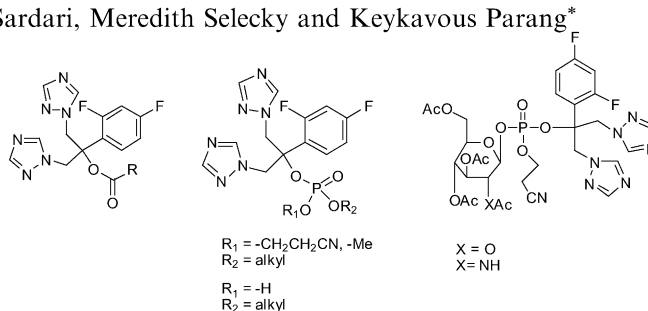
Jiaying Zhong, Zhong Lai, Christopher S. Groutas, Tzutshin Wong, Xiangdong Gan, Kevin R. Alliston, David Eichhorn, John R. Hoidal and William C. Groutas*



Carboxylic acid and phosphate ester derivatives of fluconazole: synthesis and antifungal activities

pp 6255–6269

Nguyen-Hai Nam, Soroush Sardari, Meredith Selecky and Keykavous Parang*

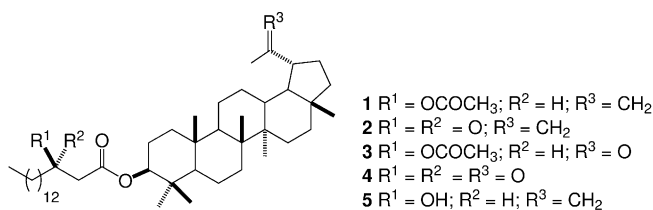


Carboxylic acid and phosphate ester derivatives of fluconazole were synthesized and evaluated in vitro against *Cryptococcus neoformans*, *Candida albicans*, and *Aspergillus niger*.

New lupane triterpenoids from *Solidago canadensis* that inhibit the lyase activity of DNA polymerase β

pp 6271–6275

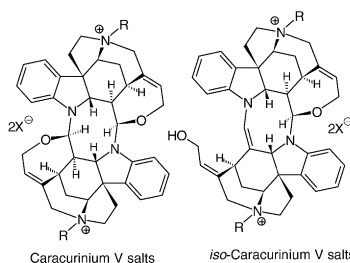
V. S. Prakash Chaturvedula, Bing-Nan Zhou, Zhijie Gao, Shannon J. Thomas, Sidney M. Hecht and David G. I. Kingston*



Bisquaternary caracurine V and *iso*-caracurine V salts as ligands for the muscle type of nicotinic acetylcholine receptors: SAR and QSAR studies

pp 6277–6285

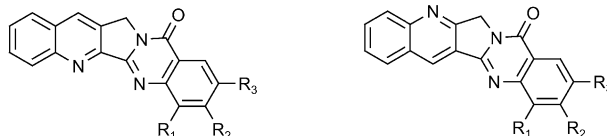
D. P. Zlotos,* D. Gündisch, S. Ferraro, M. C. Tilotta, N. Stiefl and K. Baumann



Synthesis and topoisomerase I inhibitory properties of luotonin A analogues

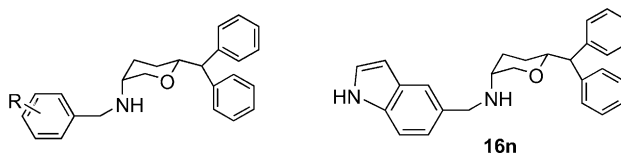
pp 6287–6299

Ali Cagir, Brian M. Eisenhauer, Rong Gao, Shannon J. Thomas and Sidney M. Hecht*

**Structural requirements for 2,4- and 3,6-disubstituted pyran biomimetics of *cis*-(6-benzhydryl-piperidin-3-yl)-benzylamine compounds to interact with monoamine transporters**

pp 6301–6315

Shijun Zhang, Juan Zhen, Maarten E. A. Reith and Aloke K. Dutta*



Structure–activity relationship study of *cis*-(6-benzhydryl-tetrahydropyran-3-yl)-(4-fluorobenzyl)-amine derivatives and their bioisosteric analogs for the monoamine transporters in the central nervous system.

**OTHER CONTENTS**

Corrigendum

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Bioorganic & Medicinal Chemistry Reviews and Perspectives

pp 6319–6320

Contributors to this issue

p I

Instructions to contributors

pp III–VII

*Corresponding author

i+ Supplementary data available via ScienceDirect

COVER

Sphingolipids seem to act as coenzymes for a variety of enzymes that catalyze transfer of anionic moieties. The allylic alcohol group on the C-3 of most sphingolipids apparently forms a transient ester with the anion. The figure depicts an important example, the role of ceramide in catalyzing a protein kinase reaction. [N. S. Radin *Bioorg. Med. Chem.* **2004**, *12*, 6029–6037].

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