



Contents lists available at ScienceDirect

Bioorganic & Medicinal Chemistry

journal homepage: www.elsevier.com/locate/bmc



Bioorganic & Medicinal Chemistry Volume 17, Issue 22, 2009

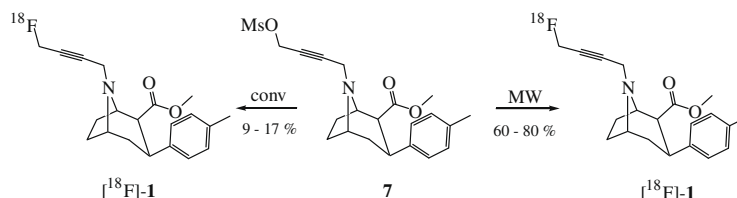
Contents

ARTICLES

Efficient microwave-assisted direct radiosynthesis of [^{18}F]PR04.MZ and [^{18}F]LBT999: Selective dopamine transporter ligands for quantitative molecular imaging by means of PET

pp 7630–7634

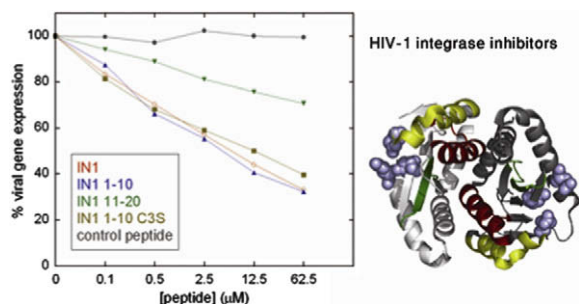
Patrick J. Riss^{*}, Frank Roesch



Peptide inhibitors of HIV-1 integrase: From mechanistic studies to improved lead compounds

pp 7635–7642

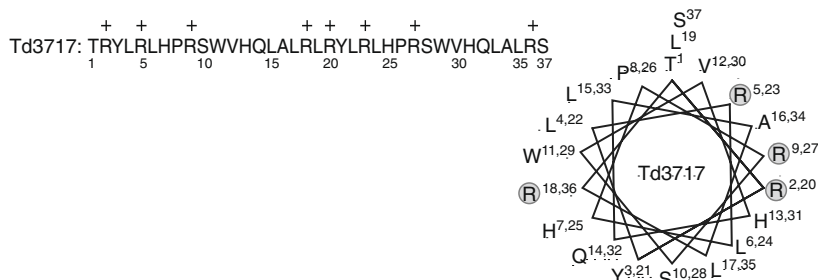
Michal Maes, Aviad Levin, Zvi Hayouka, Deborah E. Shalev, Abraham Loyter, Assaf Friedler^{*}



Stability of DNA/Td3717 complexes for gene transfection, defined by the size and polydispersity of the complex

pp 7643–7646

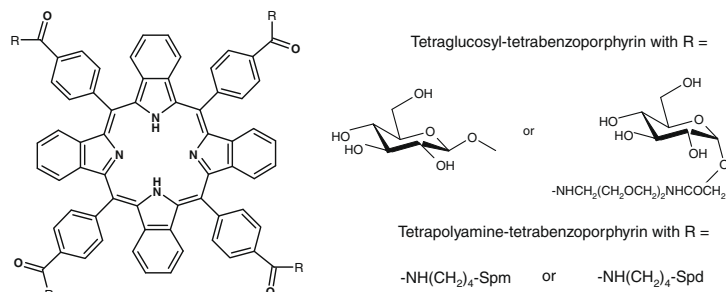
Shinichi Kuriyama, Yasushi Taguchi, Kazuto Watanabe, Kanako Nishimura, Kazutoshi Yanagibashi, Yoshiki Katayama, Takuro Niidome^{*}



Synthesis of tetraglucosyl- and tetrapolyamine-tetrabenzoporphyrin conjugates for an application in PDT

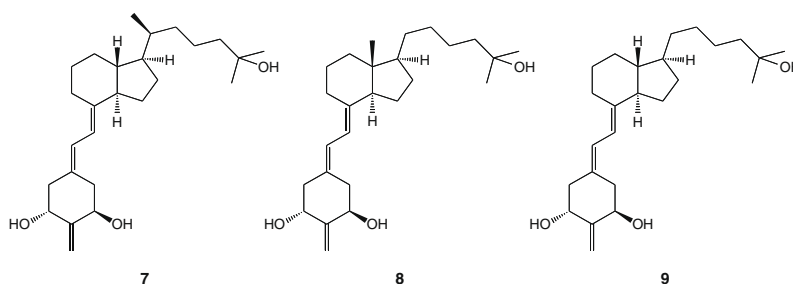
pp 7647–7657

Florian Ménard, Vincent Sol ^{*}, Cyril Ringot, Robert Granet, Sandra Alves, Caroline Le Morvan, Yves Queneau, Noboru Ono, Pierre Krausz

**Removal of the 20-methyl group from 2-methylene-19-nor-(20S)-1 α ,25-dihydroxyvitamin D₃ (2MD) selectively eliminates bone calcium mobilization activity**

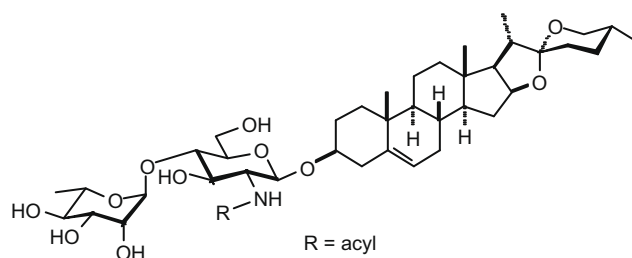
pp 7658–7669

Rafal Barycki, Rafal R. Sicinski, Lori A. Plum, Pawel Grzywacz, Margaret Clagett-Dame, Hector F. DeLuca ^{*}

**Structural analogues of diosgenyl saponins: Synthesis and anticancer activity**

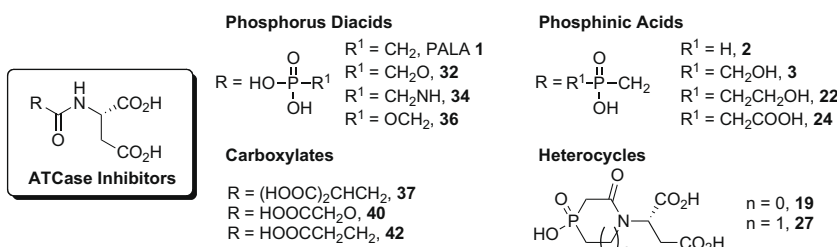
pp 7670–7679

Matthew J. Kaskiw, Mary Lynn Tassotto, Mac Mok, Stacey L. Tokar, Roxanne Pycko, John Th'ng, Zi-Hua Jiang ^{*}

**Synthesis and in vitro evaluation of aspartate transcarbamoylase inhibitors**

pp 7680–7689

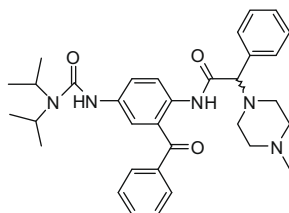
Laëtitia Coudray, Anne F. Pennebaker, Jean-Luc Montchamp ^{*}



Antimalarial and antitrypanosomal activity of a series of amide and sulfonamide derivatives of a 2,5-diaminobenzophenone

pp 7690–7697

Mirko Altenkämper, Benjamin Bechem, Johann Perruchon, Svetlana Heinrich, Andrea Mädler, Regina Ortmann, Hans-Martin Dahse, Ellen Freunscht, Yulin Wang, Jennifer Rath, August Stich, Manuela Hitzler, Peter Chiba, Michael Lanzer, Martin Schlitzer *

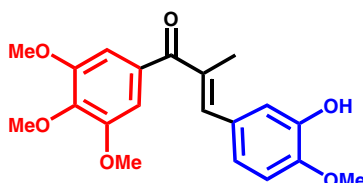


Here, we describe a series of amide and sulfonamide derivatives of 2,5-diaminobenzophenone. The most active derivative inhibits the growth of malaria parasites with an IC_{50} value of 110 nM.

Combretastatin-like chalcones as inhibitors of microtubule polymerization. Part 1: Synthesis and biological evaluation of antivascular activity

pp 7698–7710

Sylvie Ducki *, David Rennison, Meiko Woo, Alexander Kendall, Jérémie Fournier Dit Chabert, Alan T. McGown, Nicholas J. Lawrence

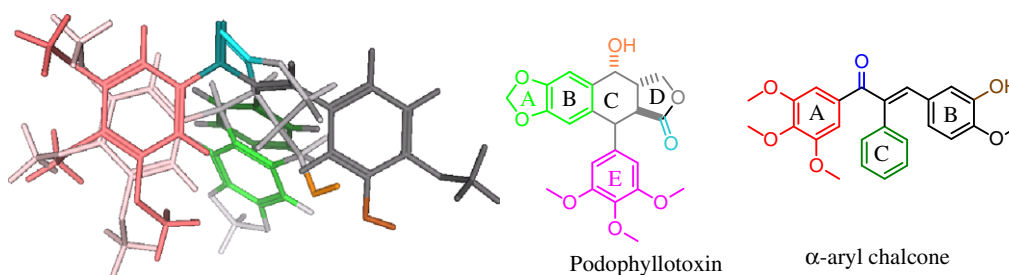


SD400
 IC_{50} (K562) = 0.21 nM

**Combretastatin-like chalcones as inhibitors of microtubule polymerisation. Part 2: Structure-based discovery of alpha-aryl chalcones**

pp 7711–7722

Sylvie Ducki *, Grant Mackenzie, Ben Greedy, Simon Armitage, Jérémie Fournier Dit Chabert, Elizabeth Bennett, Jim Nettles, James P. Snyder, Nicholas J. Lawrence *

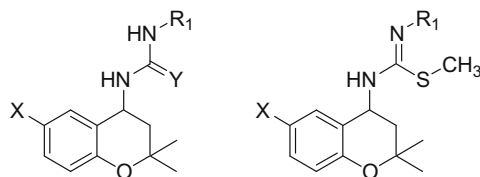


Podophyllotoxin

 α -aryl chalcone**New *R/S*-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyrans as K_{ATP} channel openers: Modulation of the 4-position**

pp 7723–7731

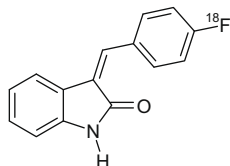
Xavier Florence *, Sophie Sebille, Pascal de Tullio, Philippe Lebrun, Bernard Pirotte



R_1 = 3- or 4-substituted phenyl; pyridyl; thienyl
X = F, Cl, Br
Y = S, N-CN

Synthesis and radiopharmacological investigation of 3-[4'-¹⁸F]fluorobenzylidene]indolin-2-one as possible tyrosine kinase inhibitor

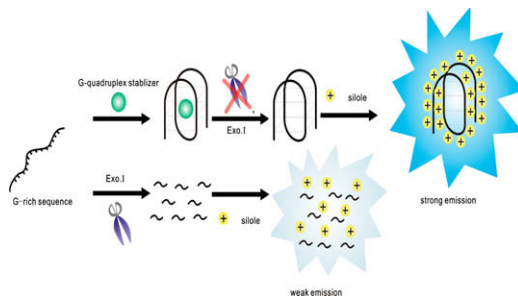
pp 7732–7742

Torsten Kniess ^{*}, Ralf Bergmann, Manuela Kuchar, Jörg Steinbach, Frank Wuest

The radiosynthesis and radiopharmacological evaluation of 3-[4'-¹⁸F]fluorobenzylidene]indolin-2-one as possible tyrosine kinase inhibitor as potential PET radiotracer for imaging of angiogenic processes is described. The radiosynthesis was accomplished by Knoevenagel condensation of 4-[¹⁸F]fluorobenzaldehyde with oxindole, the biodistribution was studied in Wistar rats, small animal PET studies with FaDu tumour bearing mice were performed.

Visual observation of G-quadruplex DNA with the label-free fluorescent probe silole with aggregation-induced emission

pp 7743–7748

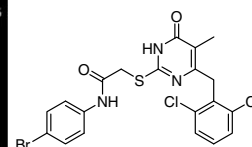
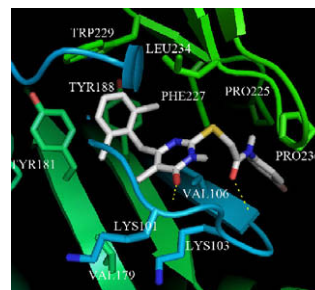
Jing Huang, Ming Wang, Yangyang Zhou, Xiaocheng Weng, Liang Shuai, Xiang Zhou ^{*}, Deqing Zhang ^{*}

Synthesis and biological evaluation of novel 2-(substituted phenylaminocarbonylmethylthio)-6-(2,6-dichlorobenzyl)-pyrimidin-4(3H)-ones as potent HIV-1 NNRTIs

pp 7749–7754

Mingyan Yu, Xinyong Liu ^{*}, Zhenyu Li, Shuai Liu, Christophe Pannecouque, Erik De Clercq

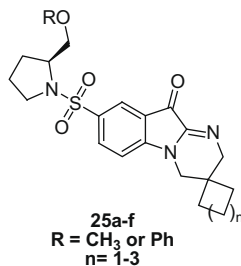
The compound **4b3** was docked into the NNRTIs binding pocket (NNIBP) of HIV-1 RT (PDB code: 1RT2) using Autodock Vina [http://vina.scripps.edu]. The docking result of **4b3** is showed by PyMOL [http://pymol.sourceforge.net].



3,4-Dihydropyrimido(1,2-a)indol-10(2H)-ones as potent non-peptidic inhibitors of caspase-3

pp 7755–7768

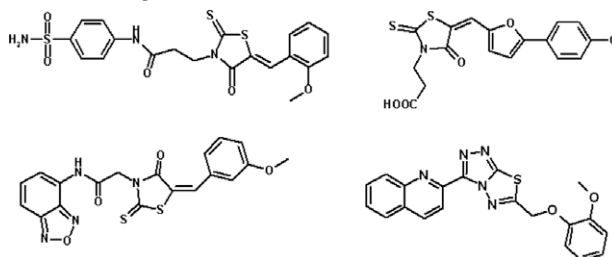
Lisa M. Havran ^{*}, Dan C. Chong, Wayne E. Childers, Paul J. Dollings, Arlene Dietrich, Boyd L. Harrison, Vasilios Marathias, Gregory Tawa, Ann Aulabaugh, Rebecca Cowling, Bhupesh Kapoor, Weixin Xu, Lidia Mosyak, Franklin Moy, Wah-Tung Hum, Andrew Wood, Albert J. Robichaud



As part of a program to develop a small molecule inhibitor of caspase-3, a novel series of 3,4-dihydropyrimido(1,2-a)indol-10(2H)-ones (pyrimidoindolones) was identified. The synthesis, biological evaluation and structure–activity relationships of the pyrimidoindolones are described.

Structure-based virtual screening approach to the discovery of novel inhibitors of factor-inhibiting HIF-1: Identification of new chelating groups for the active-site ferrous ion

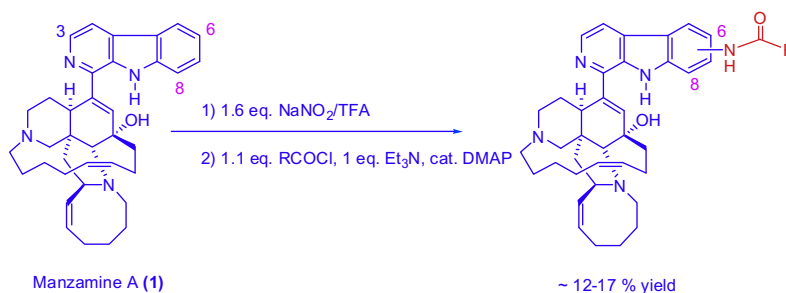
pp 7769–7774

Sungmin Ko, Myung Kyu Lee, Dongkyu Shin^{*}, Hwangseo Park^{*}

We have identified new novel FIH1 inhibitors with the chelating groups for the active-site ferrous ion by means of a drug design protocol involving virtual screening and enzyme inhibition assay.

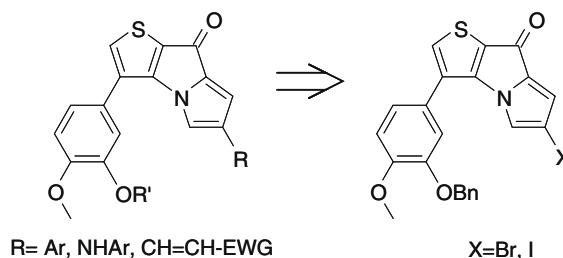
Structure–activity relationship studies of manzamine A: Amidation of positions 6 and 8 of the β -carboline moiety

pp 7775–7782

Amir E. Wahba, Jiangnan Peng, Sucheta Kudrimoti, Babu L. Tekwani, Mark T. Hamann^{*}

Synthesis, reactivity and biological evaluation of novel halogenated tripentones

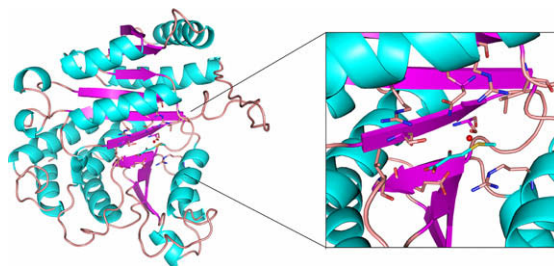
pp 7783–7788

Vittoria Perri, Christophe Rochais, Thierry Cresteil, Patrick Dallemagne^{*}, Sylvain Rault

We describe herein the synthesis and the biological evaluation of a novel series of a potent anticancer agents: the tripentones. For the first time, a halogen atom was introduced in high yields on the pyrrole ring of the tricycle. This synthesis and the reactivity of the novel halogenated tripentones in metallo-catalysed cross-coupling reactions will be described in that article. Finally their influence on biological activity will be discussed.

Crystal structure of 3-isopropylmalate dehydrogenase in complex with NAD⁺ and a designed inhibitor

pp 7789–7794

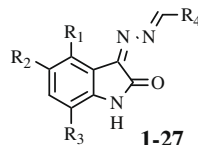
Eriko Nango, Takashi Yamamoto, Takashi Kumasaka, Tadashi Eguchi^{*}

The crystal structure of isopropylmalate dehydrogenase derived from *Thermus thermophilus* in a ternary complex with NAD⁺ and a designed inhibitor, (2S,3S)-(–)-3-methylmercaptomalic acid, has been determined.

Synthesis of bis-Schiff bases of isatins and their antiglycation activity

pp 7795–7801

Khalid Mohammed Khan^{*}, Momin Khan, Muhammad Ali, Muhammad Taha, Saima Rasheed, Shahnaz Perveen, M. Iqbal Choudhary



A series of bis-Schiff bases of isatin **1-27** has been synthesized and screened for their antiglycation activity in vitro. Where R₁, R₂, and R₃ are mono- and disubstituted chloro analogs while R₄ may be substituted aryl groups.

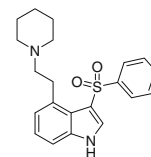


Dual acting norepinephrine reuptake inhibitors and 5-HT_{2A} receptor antagonists: Identification, synthesis and activity of novel 4-aminoethyl-3-(phenylsulfonyl)-1H-indoles

pp 7802–7815

Gavin D. Heffernan^{*}, Richard D. Coghlan, Eric S. Manas, Robert E. McDevitt, Yanfang Li, Paige E. Mahaney, Albert J. Robichaud, Christine Huselton, Peter Alfinito, Jenifer A. Bray, Scott A. Cosmi, Grace H. Johnston, Thomas Kenney, Elizabeth Koury, Richard C. Winneker, Darlene C. Deecher, Eugene J. Trybulski

The discovery of a series of 4-aminoethyl-3-(phenylsulfonyl)-1H-indoles, dual acting norepinephrine reuptake inhibitors (NRIs) and 5-HT_{2A} receptor antagonists, is described. The synthesis and structure-activity relationship (SAR) of this novel series of compounds is also presented.

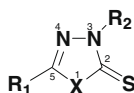


hNET K_i 27 nM
h5-HT_{2A} K_i 59 nM

1,3,4-Oxadiazole-2(3H)-thione and its analogues: A new class of non-competitive nucleotide pyrophosphatases/phosphodiesterases 1 inhibitors

pp 7816–7822

Khalid M. Khan^{*}, Naheed Fatima, Maimona Rasheed, Saima Jalil, Nida Ambreen, Shahnaz Perveen, M. Iqbal Choudhary



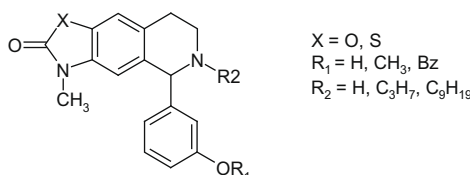
R may be any alkyl or aryl group

A series of 1,3,4-oxadiazole-2(3H)-thiones and 1,3,4-thiadiazole-2(3H)-thiones were synthesized and evaluated for their inhibitory activities against the two nucleotide pyrophosphatase phosphodiesterase 1 enzymes. Dixon, as well as Lineweaver–Burk plots, and their secondary replots have indicated that the inhibition was of pure non-competitive type, against both snake venom and pure human recombinant enzymes.

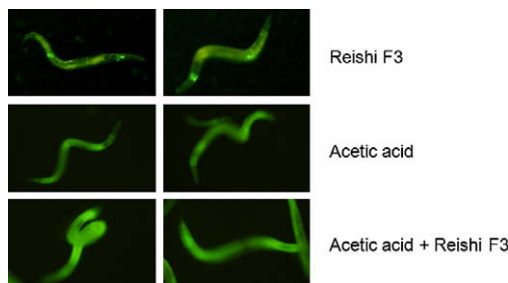

Antioxidant activity of benzoxazolinonic and benzothiazolinonic derivatives in the LDL oxidation model

pp 7823–7830

Ismaël Yekini, Fatma Hammoudi, Françoise Martin-Nizard, Saïd Yous, Nicolas Lebegue, Pascal Berthelot, Pascal Carato^{*}



A series of benzazalone derivatives was synthesized. Their antioxidant activity was determined by inhibition of lipid peroxidation. Their protective actions against the cytotoxicity were evaluated with lactate dehydrogenase (LDH) activity and cellular vitality.

The lifespan-promoting effect of acetic acid and Reishi polysaccharide**pp 7831–7840**Ming-Hong Chuang, Shyh-Horng Chiou^{*}, Chun-Hao Huang, Wen-Bin Yang, Chi-Huey Wong^{*}Acetic acid and Reishi polysaccharide exhibit a greater combined lifespan-promoting effect on the DAF-16 expression in *Caenorhabditis elegans*.^{*}Corresponding author ⁺ Supplementary data available via ScienceDirect**COVER**

An insight into biologically relevant chemical space showing the scaffolds of potential natural-product based inhibitors orbiting their target, the protein structure of protein 11-beta steroid dehydrogenase (PDB code 1xu7). Graphic produced using Pymol (<http://www.pymol.org>). [M. A. Koch, A. Schuffenhauer, M. Scheck, S. Wetzel, M. Casaulta, A. Odermatt, P. Ertl, H. Waldmann, Charting biologically relevant chemical space: A structural classification of natural products (SCONP), *PNAS* **2005**, 102, 17272–17277 and S. Wetzel, H. Waldmann, Cheminformatic analysis of natural products and their chemical space, *Chimia* **2007**, 61(6), 355–360].

Available online at www.sciencedirect.com

Indexed/Abstracted in: Beilstein, Biochemistry & Biophysics Citation Index, CANCERLIT, Chemical Abstracts, Chemistry Citation Index, Current Awareness in Biological Sciences/BIOBASE, Current Contents: Life Sciences, EMBASE/Excerpta Medica, MEDLINE, PASCAL, Research Alert, Science Citation Index, SciSearch, TOXFILE. Also covered in the abstract and citation database SCOPUS[®]. Full text available on ScienceDirect[®]



ELSEVIER

ISSN 0968-0896