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Bioorganic & Medicinal Chemistry Volume 18, Issue 23, 2010

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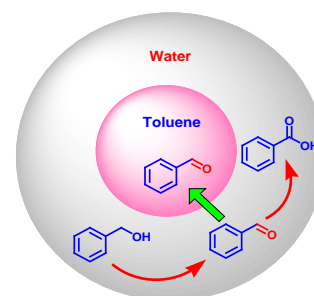
ARTICLES

Highly efficient controllable oxidation of alcohols to aldehydes and acids with sodium periodate catalyzed by water-soluble metalloporphyrins as biomimetic catalyst

pp 8144–8149

Qing-Gang Ren, Shao-Yun Chen, Xian-Tai Zhou, Hong-Bing Ji*

A highly efficient, reaction medium-controlled oxidation of alcohols to acids or aldehydes has been developed in the presence of water-soluble manganese porphyrin and sodium periodate.

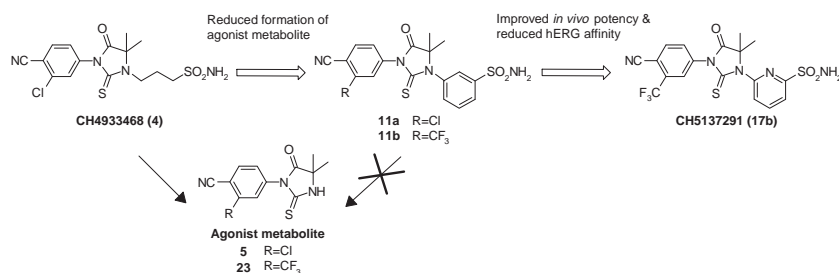


Design and synthesis of an androgen receptor pure antagonist (CH5137291) for the treatment of castration-resistant prostate cancer

pp 8150–8157

Hitoshi Yoshino*, Haruhiko Sato*, Takuya Shiraishi, Kazutaka Tachibana, Takashi Emura, Akie Honma, Nobuyuki Ishikura, Toshiaki Tsunenari, Miho Watanabe, Ayako Nishimoto, Ryo Nakamura, Toshito Nakagawa, Masateru Ohta, Noriyuki Takata, Kentaro Furumoto, Kazuya Kimura, Hiromitsu Kawata

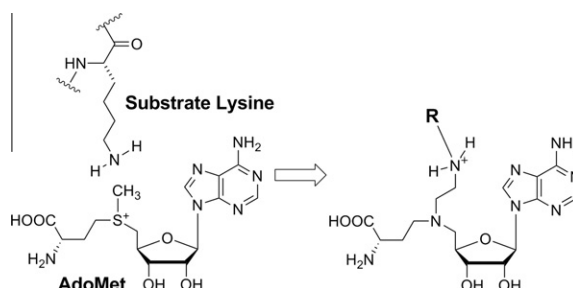
We designed and synthesized novel AR pure antagonists for the treatment of castration-resistant prostate cancer. CH5137291 was a potent AR pure antagonist without formation of agonist metabolite.



Development of novel bisubstrate-type inhibitors of histone methyltransferase SET7/9

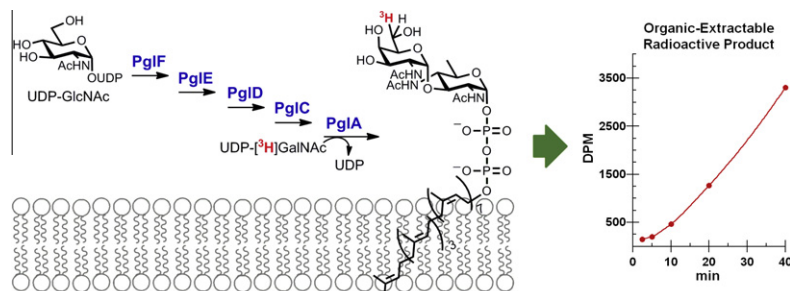
pp 8158–8166

Shuichi Mori, Kenta Iwase, Naoko Iwanami, Yujiro Tanaka, Hiroyuki Kagechika, Tomoya Hirano*



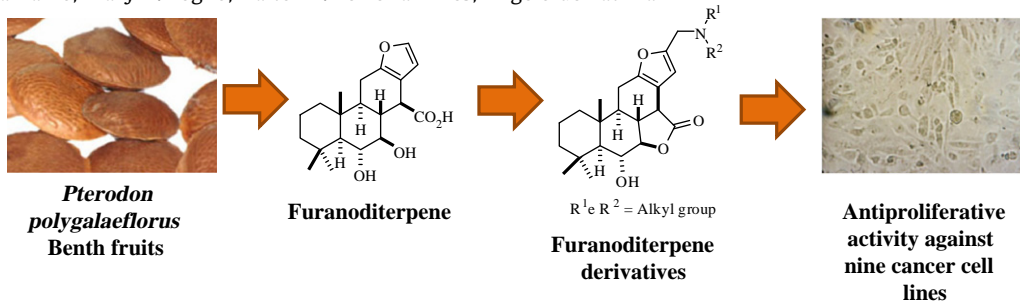
Development of a multicomponent kinetic assay of the early enzymes in the *Campylobacter jejuni* N-linked glycosylation pathway pp 8167–8171

James P. Morrison, Jerry M. Troutman, Barbara Imperiali*



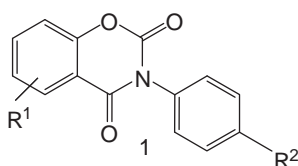
Synthesis, antiproliferative activity in cancer cells and theoretical studies of novel 6 α ,7 β -dihydroxyvouacapan-17 β -oic acid Mannich base derivatives pp 8172–8177

Felipe P. G. Euzébio, Flávio J.L. dos Santos, Dorila Piló-Veloso, Antônio F. C. Alcântara, Ana L.T. G. Ruiz, João Ernesto de Carvalho, Mary A. Foglio, Dalton L. Ferreira-Alves, Ângelo de Fátima*



Highly active antimycobacterial derivatives of benzoxazine pp 8178–8187

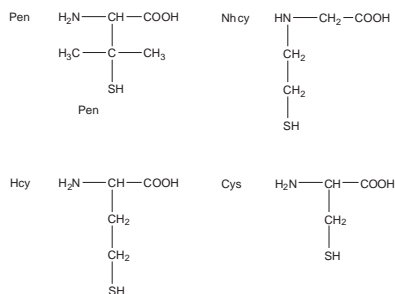
Eva Petrliková*, Karel Waisser, Hana Divišová, Petra Husáková, Petra Vrabcová, Jiří Kuneš, Karel Kolář, Jiřina Stolaříková



The replacement of the oxo group with the thioxo group in 3-(4-alkylphenyl)-2H-1,3-benzoxazine-2,4(3H)-diones (**1**) increases the antimycobacterial activity. The most active derivatives are more active than isonicotinhydrazide (INH).

Implication of the disulfide bridge in trypsin inhibitor SFTI-1 in its interaction with serine proteinases pp 8188–8193

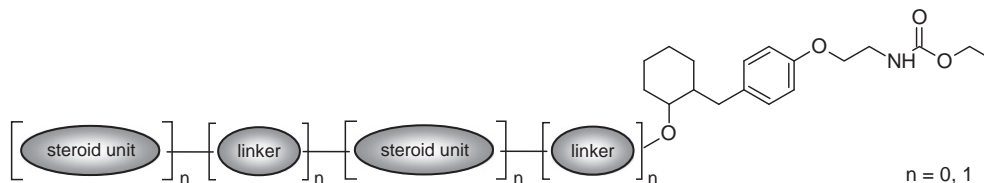
Anna Łęgowska*, Dawid Dębowski, Rafał Łukajtis, Magdalena Wysocka, Cezary Czaplowski, Adam Lesner, Krzysztof Rolka



Steroid conjugates: Synthesis and preliminary biological testing of pro-juvenoids

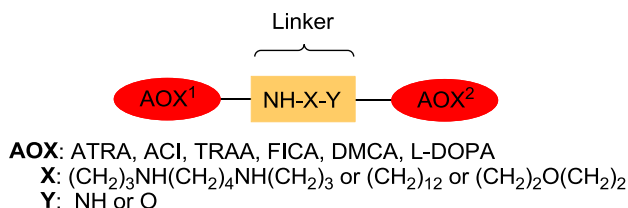
pp 8194–8203

Hana Svobodová, Hana Ryšavá, Milan Pavlík, David Šaman, Pavel Drašar, Zdeněk Wimmer*

**Does conjugation of antioxidants improve their antioxidative/anti-inflammatory potential?**

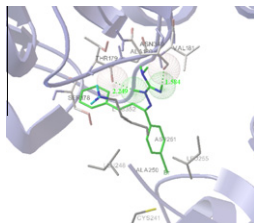
pp 8204–8217

Dimitra Hadjipavlou-Litina*, George E. Magoulas, Stavros E. Bariamis, Denis Drainas, Konstantinos Avgoustakis, Dionissios Papaioannou*

**Synthesis, molecular modeling and biological evaluation of guanidine derivatives as novel antitubulin agents**

pp 8218–8225

Yong Qian, Hong-Jia Zhang, Peng-Cheng Lv, Hai-Liang Zhu*



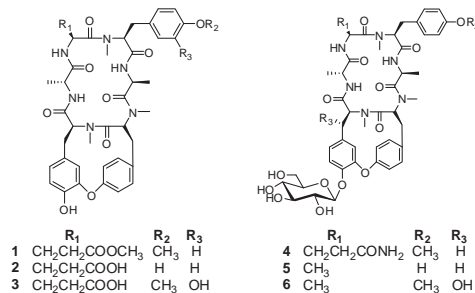
Compound **4q** showed the most potent biological activity ($\text{IC}_{50} = 0.09 \pm 0.01 \mu\text{M}$ for MCF-7 and $\text{IC}_{50} = 8.4 \pm 0.6 \mu\text{M}$ for tubulin), which is comparable to the positive controls. Docking simulation was performed to position compound **4q** into the colchicine binding site to determine the probable binding model, which suggested probable inhibition mechanism. Antitubulin polymerization, antiproliferative assay and docking simulation results showed the compound **4q** was a potential anticancer agent.

Rubiunnanins C–H, cytotoxic cyclic hexapeptides from *Rubia yunnanensis* inhibiting nitric oxide production and NF- κ B activation

pp 8226–8234

Jun-Ting Fan, Jia Su, Yan-Min Peng, Yan Li, Jia Li, Yu-Bo Zhou, Guang-Zhi Zeng, He Yan, Ning-Hua Tan*

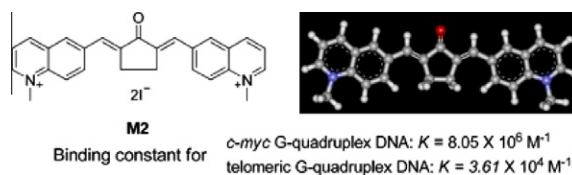
Six new (**1–6**) and five known (**7–11**) cyclic hexapeptides were isolated from the roots of *Rubia yunnanensis*. This is the first time it is being reported that compounds **2** and **7–10** significantly inhibited TNF- α -induced NF- κ B pathway activation.



Bisaryldiketene derivatives: A new class of selective ligands for *c-myc* G-quadruplex DNA

pp 8235–8242

Dan Peng, Jia-Heng Tan, Shuo-Bin Chen, Tian-Miao Ou, Lian-Quan Gu, Zhi-Shu Huang*

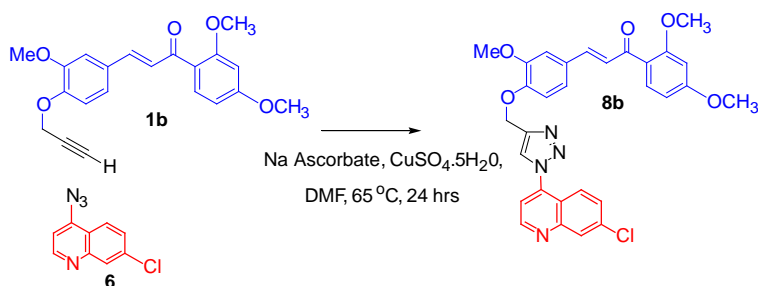


A series of bisaryldiketene derivatives were designed and synthesized as a new class of specific G-quadruplex ligands. The primary binding affinity of ligand **M2** for *c-myc* G-quadruplex DNA was over 200 times larger than that for telomere G-quadruplex DNA.

**Design, synthesis and in vitro antimalarial evaluation of triazole-linked chalcone and dienone hybrid compounds**

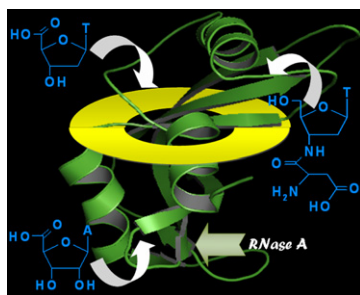
pp 8243–8256

Eric M. Guantai, Kanyile Ncokazi, Timothy J. Egan, Jiri Gut, Philip J. Rosenthal, Peter J. Smith, Kelly Chibale*

**Comparative inhibitory activity of 3'- and 5'-functionalized nucleosides on ribonuclease A**

pp 8257–8263

Joy Debnath*, Swagata Dasgupta*, Tanmaya Pathak*

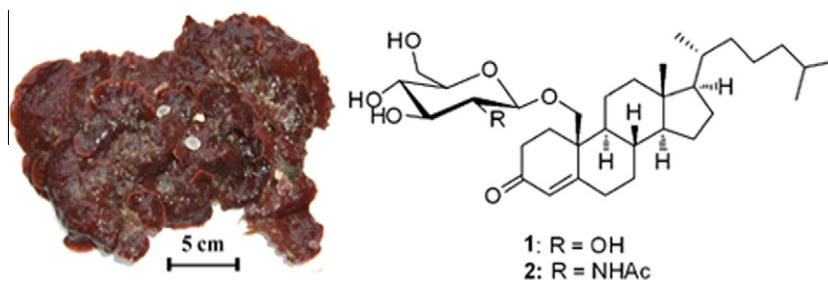


Modification of nucleoside molecules at 5'- and 3'-position with polar ionisable group improve their inhibitory potential on ribonuclease A.

**Structure and biological evaluation of novel cytotoxic sterol glycosides from the marine red alga *Peyssonnelia* sp.**

pp 8264–8269

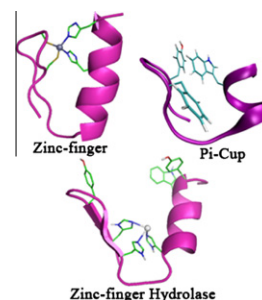
An-Shen Lin, Sebastian Engel, Benjamin A. Smith, Craig R. Fairchild, William Aalbersberg, Mark E. Hay, Julia Kubanek*



Zinc-finger hydrolase: Computational selection of a linker and a sequence towards metal activation with a synthetic $\alpha\beta$ protein

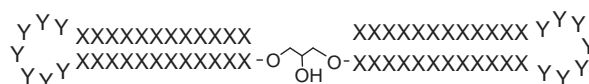
Kirti Patel, Kinshuk Raj Srivastava, Susheel Durani*

A minimal zinc-hydrolase: we present redesign of zinc-finger protein as an enzyme with zinc activated as a hydrolase. Leveraging the delinking of search of sequence over side chains and fold over main-chain, we report step wise exploration of folds over α and β structure, followed by functional fits over the alphabet in side chains.

**Synthesis, gene-silencing activity and nuclease resistance of 3'-3'-linked double short hairpin RNA**

pp 8277–8283

Hirofumi Masuda*, Naoki Watanabe, Haruna Naruoka, Seigo Nagata, Kazuchika Takagaki, Takeshi Wada, Junichi Yano

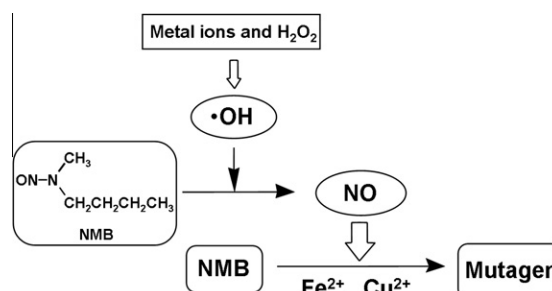


Short hairpin RNAs linked at their 3' ends by glycerol show structure-dependent gene-silencing activity as well as higher exonuclease resistance and lower induction of interferon- α than siRNA or canonical shRNA.

Activation mechanism for *N*-nitroso-*N*-methylbutylamine mutagenicity by radical species

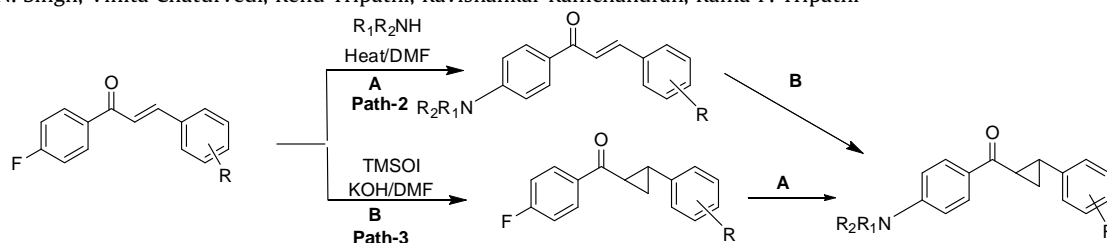
pp 8284–8288

Nozomi Tsutsumi, Keiko Inami, Masataka Mochizuki*

**Synthesis and bio-evaluation of alkylaminoaryl phenyl cyclopropyl methanones as antitubercular and antimalarial agents**

pp 8289–8301

Arya Ajay, Vandana Singh, Shubhra Singh, Swaroop Pandey, Sarika Gunjan, Divya Dubey, Sudhir Kumar Sinha, Bhupendra N. Singh, Vinita Chaturvedi, Renu Tripathi, Ravishankar Ramchandran, Rama P. Tripathi*



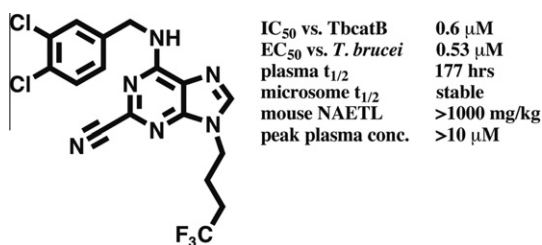
Antitubercular and antimalarial agents
FAS-II inhibitors, in silico screening



Optimization of purine-nitrile TbcA/B inhibitors for use in vivo and evaluation of efficacy in murine models

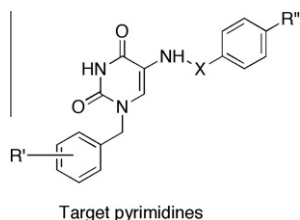
pp 8302–8309

Jeremy P. Mallari, Fangyi Zhu, Andrew Lemoff, Marcel Kaiser, Min Lu, Reto Brun, R. Kiplin Guy*

**1-Benzyl derivatives of 5-(arylamino)uracils as anti-HIV-1 and anti-EBV agents**

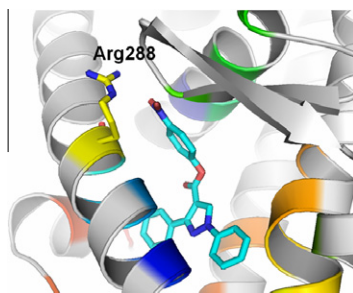
pp 8310–8314

Mikhail S. Novikov, Robert W. Buckheit Jr., Kartik Temburnikar, Anastasia L. Khandazhinskaya, Alexander V. Ivanov, Katherine L. Seley-Radtke*

**1,3-Diphenyl-1H-pyrazole derivatives as a new series of potent PPAR γ partial agonists**

pp 8315–8323

Jiwon Choi, Yunsun Park, Hui Sun Lee, Young Yang, Sukjoon Yoon*

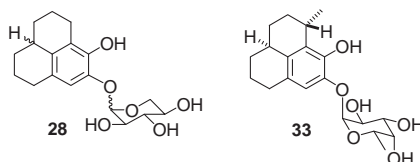


This study presents new findings of pyrazole derivatives as PPAR partial agonists and significantly improves the understanding of their SARs.

**Synthetic pseudopterosin analogues: A novel class of antiinflammatory drug candidates**

pp 8324–8333

Felix Flachsmann, Kurt Schellhaas, Claudia E. Moya, Robert S. Jacobs, William Fenical*

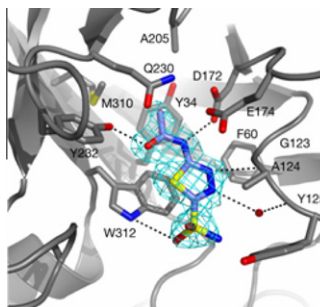


New synthetic pseudopterosin analogues have been shown to possess strong in vivo anti-inflammatory activity, which is conserved over a wide range of structural modifications.

Acetazolamide-based fungal chitinase inhibitors

pp 8334–8340

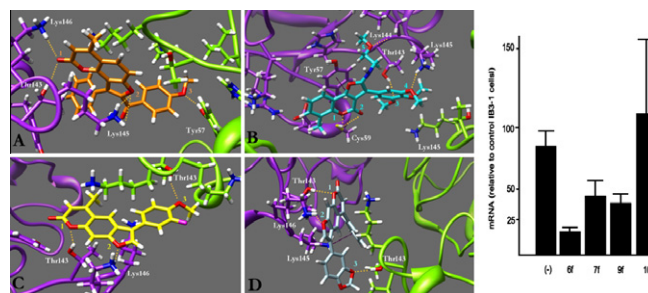
Alexander W. Schüttelkopf, Ludovic Gros, David E. Blair, Julie A. Frearson, Daan M. F. van Aalten*, Ian H. Gilbert*

**Virtual screening against nuclear factor κ B (NF- κ B) of a focus library: Identification of bioactive furocoumarin derivatives inhibiting NF- κ B dependent biological functions involved in cystic fibrosis**

pp 8341–8349

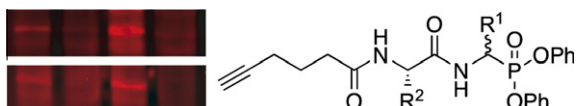
Laura Piccagli*, Monica Borgatti, Elena Nicolis, Nicoletta Bianchi, Irene Mancini, Ilaria Lampronti, Daniela Vevaldi, Francesco Dall'Acqua, Giulio Cabrini, Roberto Gambari*

Four commercial available furocoumarin derivatives were selected from VS studies of a focus library against NF- κ B for further biological evaluation. Three of the identified molecules (**6f**, **7f** and **9f**) significantly inhibited NF- κ B dependent biological functions and might be of interest for experimental therapy of cystic fibrosis.

**Towards the identification of unknown neuropeptide precursor-processing enzymes: Design and synthesis of a new family of dipeptidyl phosphonate activity probes for substrate-based protease identification**

pp 8350–8355

Eduard Sabidó, Teresa Tarragó, Ernest Giralt*

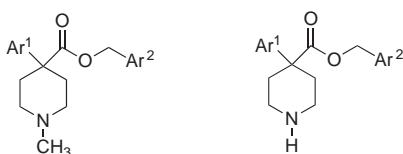


Eight dipeptidyl phosphonate probes were synthesized and used for substrate-based protease identification in soluble brain and pituitary gland proteomes.

**Synthesis and structure–activity studies of benzyl ester meperidine and normeperidine derivatives as selective serotonin transporter ligands**

pp 8356–8364

Xiaobo Gu, Sari Izenwasser, Dean Wade, Amy Housman, Gerard Gulasey, Jill B. Rhoden, Christopher D. Savoie, David L. Mobley, Stacey A. Lomenzo, Mark L. Trudell*



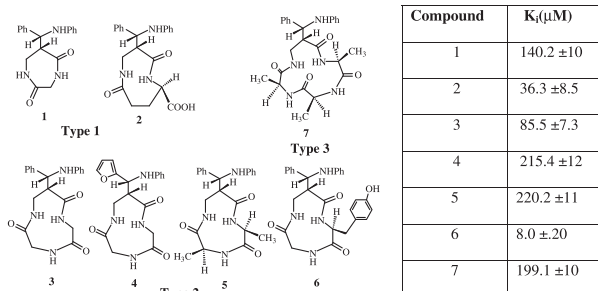
Ar¹ = 4-Cl-Ph, 3,4-Cl₂-Ph, 4-I-Ph, 2-naphthyl

Ar² = Ph, 4-BrPh, 4-I-Ph, 4-CH₃OPh, 4-NO₂Ph, 4-CF₃Ph, 4-Ph-Ph, 3,4-Cl₂Ph, 2-naphthyl

Design, synthesis and inhibition activity of novel cyclic peptides against protein tyrosine phosphatase A from *Mycobacterium tuberculosis*

pp 8365–8373

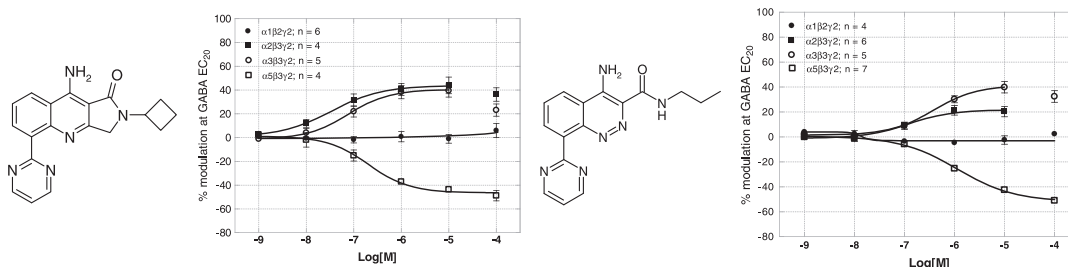
Koushik Chandra, Debajyoti Dutta, Amit K. Das*, Amit Basak*



Developing dual functional allosteric modulators of GABA_A receptors

pp 8374–8382

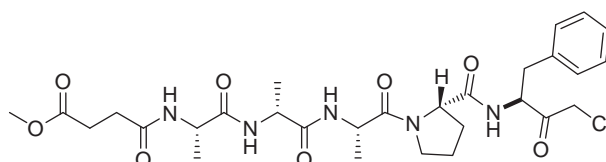
Xiaodong F. Liu*, Hui-Fang Chang, Richard Jon Schmiesing, Steven S. Wesolowski, Katharine S. Knappenberger, Jeffrey L. Arriza, Marc J. Chapdelaine

New structural classes of dual functional benzodiazepine-site allosteric modulators of GABA_A receptors are reported.

Design, synthesis and inhibitory effect of pentapeptidyl chloromethyl ketones on proteinase K

pp 8383–8387

Anilkumar R. Kore*, Muthian Shanmugasundaram

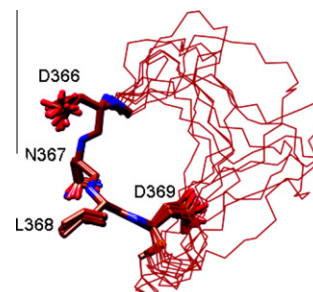
Design, synthesis and proteolytic inhibitor function of new modified pentapeptide MeOSuc-AAAPF-CH₂Cl **6** is described.

Cyclic peptide inhibitors of HIV-1 integrase derived from the LEDGF/p75 protein

pp 8388–8395

Zvi Hayouka, Mattan Hurevich, Aviad Levin, Hadar Benyamini, Anat Iosub, Michal Maes, Deborah E. Shalev, Abraham Loyter, Chaim Gilon, Assaf Friedler*

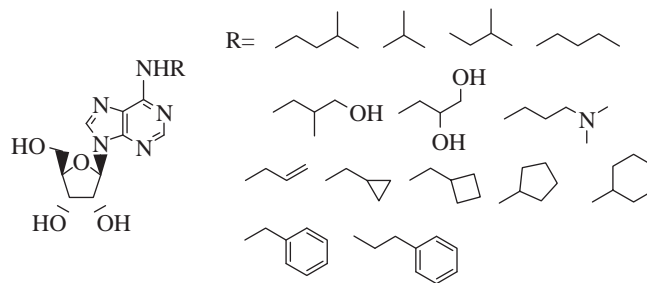
In this study we present the use of a cyclic peptide library with conformational diversity for selecting an active and stable peptide that mimics the structure and activity of the HIV-1 integrase (IN) binding loop from its cellular cofactor LEDGF/p75 (residues 361–370). Shown is the NMR solution structure ensemble of c(MZ 4-1), the most active LEDGF 361–370-derived cyclic peptide, in the presence of IN. The backbone RMSD for the final ensemble of structures of the unbound c(MZ 4-1) was 1.74 Å, and the local RMSD for residues 366–369 (sticks) was 0.46 Å. In the presence of IN the local RMSD of the same region decreased to 0.04 Å (sticks) while the rest of the cyclic peptide is flexible. Our results indicate that this cyclic peptide, when coupled with FDA-approved drugs, may show combined improved anti-HIV activity. c(MZ 4-1) mimics the bioactive conformation of LEDGF/p75 361–370.



N⁶-Alkyladenosines: Synthesis and evaluation of in vitro anticancer activity

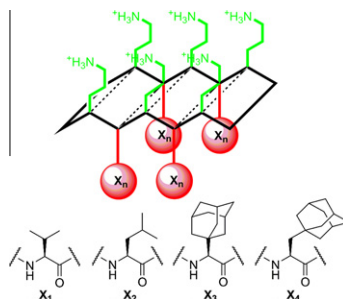
pp 8396–8402

Roberta Ottria, Silvana Casati, Erika Baldoli, Jeanette A. M. Maier, Pierangela Ciuffreda*

**Tuning hydrophobicity of highly cationic tetradecameric Gramicidin S analogues using adamantane amino acids**

pp 8403–8409

Annemiek D. Knijnenburg, Varsha V. Kapoerchan, Emile Spalburg, Albert J. de Neeling, Roos H. Mars-Groenendijk, Daan Noort, Gijs A. van der Marel, Herman S. Overkleef, Mark Overhand*

**OTHER CONTENT****Erratum**

p 8410

*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].

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