



Bioorganic & Medicinal Chemistry Volume 18, Issue 14, 2010

Contents

Publisher's Note

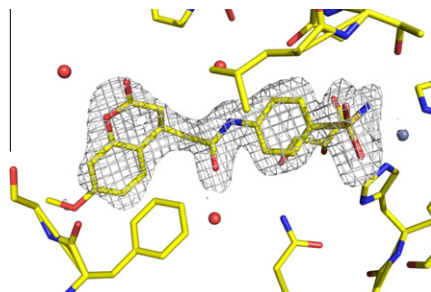
p 4872

ARTICLES

Coumarinyl-substituted sulfonamides strongly inhibit several human carbonic anhydrase isoforms: solution and crystallographic investigations

pp 4873–4878

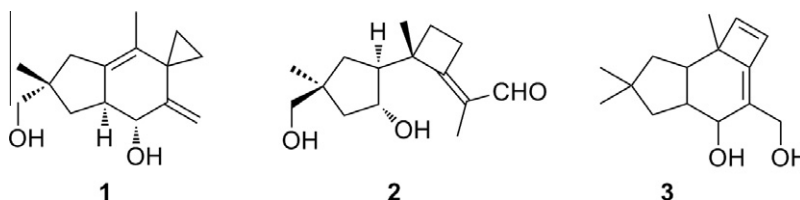
Jason Wagner, Balendu Sankara Avvaru, Arthur H. Robbins, Andrea Scozzafava, Claudiu T. Supuran*, Robert McKenna*



Antineoplastic agents 582. Part 1: Isolation and structure of a cyclobutane-type sesquiterpene cancer cell growth inhibitor from *Coprinus cinereus* (Coprinaceae)

pp 4879–4883

George R. Pettit*, Yanhui Meng, Robin K. Pettit, Delbert L. Herald, Fiona Hogan, Zbigniew A. Cichacz

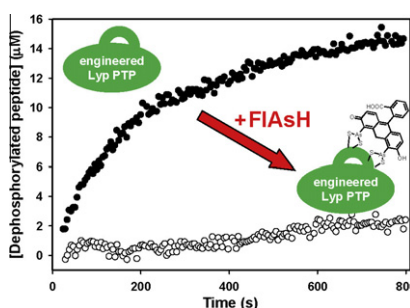


Three new sesquiterpenes were isolated from the multicellular basidiomycete *Coprinus cinereus*.

Target-specific control of lymphoid-specific protein tyrosine phosphatase (Lyp) activity

pp 4884–4891

Zandra E. Walton, Anthony C. Bishop*

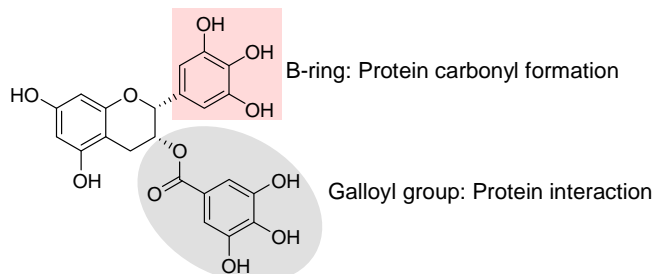


Structural characteristics of green tea catechins for formation of protein carbonyl in human serum albumin

pp 4892–4896

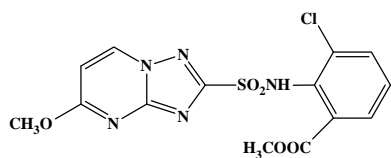
Takeshi Ishii*, Taiki Mori, Tatsuya Ichikawa, Maiko Kaku, Koji Kusaka, Yoshinori Uekusa, Mitsugu Akagawa, Yoshiyuki Aihara, Takumi Furuta, Toshiyuki Wakimoto, Toshiyuki Kan, Tsutomu Nakayama

The tea catechin structural elements contributing to protein carbonyl formation in human serum albumin (HSA) are the B-ring pyrogallol motif (protein carbonyl formation) and the galloyl group (HSA interaction).

**Syntheses and herbicidal activity of new triazolopyrimidine-2-sulfonamides as acetohydroxyacid synthase inhibitor**

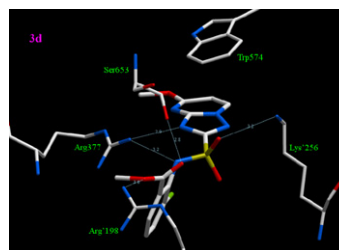
pp 4897–4904

Chao-Nan Chen, Qiong Chen, Yu-Chao Liu, Xiao-Lei Zhu, Cong-Wei Niu, Zhen Xi*, Guang-Fu Yang*



3d ($k_i = 1.61 \mu\text{M}$, At AHAS)

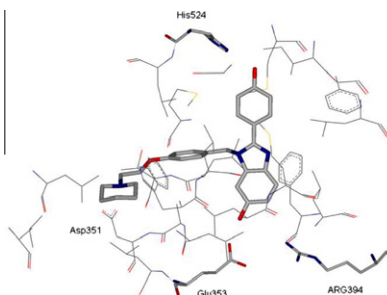
showing broad-spectrum herbicidal activity at 37.5 g.ai/ha

**2-Phenyl-1-[4-(2-piperidine-1-yl-ethoxy)benzyl]-1H-benzimidazoles as ligands for the estrogen receptor:**

pp 4905–4916

Synthesis and pharmacological evaluation

Sandra Dettmann, Katrin Szymanowitz, Anja Wellner, Anke Schiedel, Christa E. Müller, Ronald Gust*

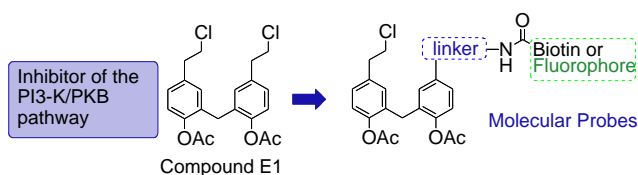


2-Phenyl-1H-benzimidazoles were synthesized as new lead structures for the design of SERM showing selective antiproliferative effects against hormone dependent tumor cells.

**Development of chemical probes: Toward the mode of action of a methylene-linked di(aryl acetate) E1**

pp 4917–4927

Mark E. B. Smith, Richard M. Gunn, Evelyn Rosivatz, Lok H. Mak, Rüdiger Woscholski, Helen C. Hailes*



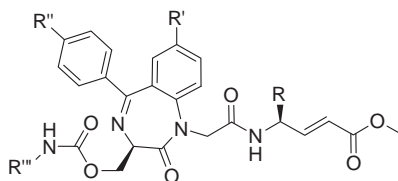
Preliminary SAR based on compound E1 was performed, and molecular probes designed and synthesized for applications in studies to identify the target of compound E1.



Constrained peptidomimetics as antiplasmodial falcipain-2 inhibitors

pp 4928–4938

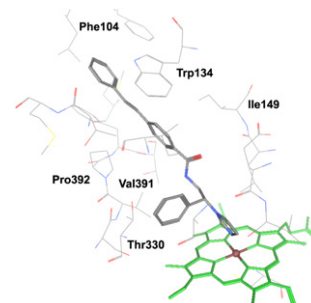
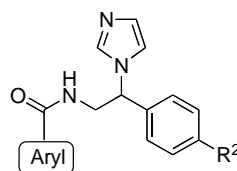
Floriana Bova, Roberta Ettari*, Nicola Micale, Caterina Carnovale, Tanja Schirmeister, Christoph Gelhaus, Matthias Leippe, Silvana Grasso, Maria Zappalà

**Synthesis and CYP24A1 inhibitory activity of *N*-(2-(1*H*-imidazol-1-yl)-2-phenylethyl)arylamides**

pp 4939–4946

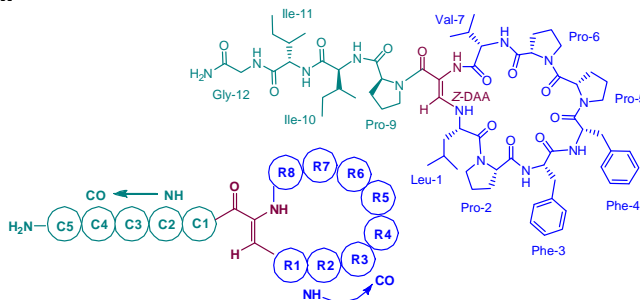
Ahmed S. Aboraia, Sook Wah Yee, Mohamed Sayed Gomaa, Nikhil Shah, Anna C. Robotham, Bart Makowski, David Prosser, Andrea Brancale, Glenville Jones, Claire Simons*

A series of *N*-(2-(1*H*-imidazol-1-yl)-2-phenylethyl)arylamides were prepared and evaluated for their inhibitory activity against human cytochrome P450C24A1 (CYP24A1) hydroxylase. The styryl derivative (**11c**) displayed enhanced activity ($IC_{50} = 0.3 \mu M$) compared with the standard ketoconazole, providing a useful lead.

**Callyaerins A–F and H, new cytotoxic cyclic peptides from the Indonesian marine sponge *Callyspongia aerizusa***

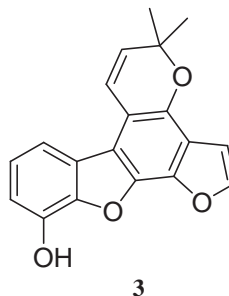
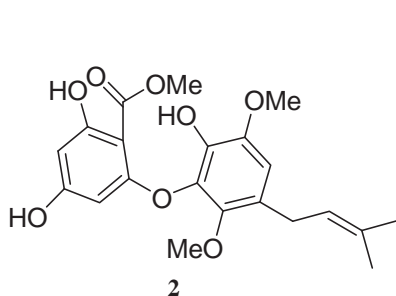
pp 4947–4956

Sabrin R. M. Ibrahim, Cho Cho Min, Franka Teuscher, Rainer Ebel, Christel Kakoschke, Wenhan Lin, Victor Wray*, RuAngelie Edrada-Ebel*, Peter Proksch*

**Identification and evaluation of apoptotic compounds from *Garcinia paucinervis***

pp 4957–4964

Xue-Mei Gao, Ting Yu, Fanny Shuk Fan Lai, Yan Zhou, Xin Liu, Chun-Feng Qiao, Jing-Zheng Song, Shi-Lin Chen, Kathy Qian Luo*, Hong-Xi Xu*

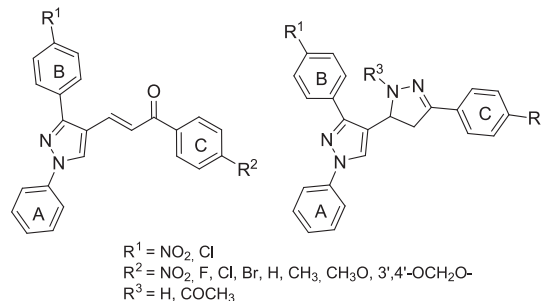


Synthesis of novel pyrazolic analogues of chalcones and their 3-aryl-4-(3-aryl-4,5-dihydro-1H-pyrazol-5-yl)-1-phenyl-1H-pyrazole derivatives as potential antitumor agents

pp 4965–4974

Braulio Insuasty*, Alexis Tigreros, Fabián Orozco, Jairo Quiroga, Rodrigo Abonía, Manuel Nogueras*, Adolfo Sanchez, Justo Cobo

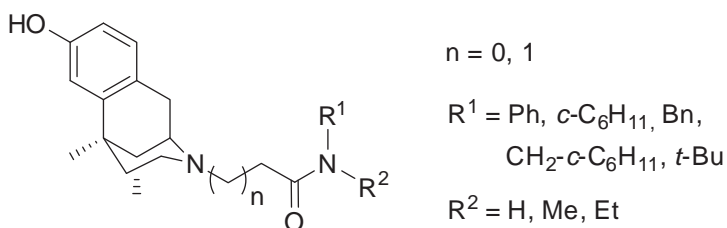
Novel pyrazolic analogues of chalcones and their dihydropyrazole derivatives were synthesized and screened as antitumoral. Some derivatives exhibited remarkable GI_{50} values ranging from 0.04 to 11.4 μ M from the in vitro assays.



Evaluation of N-substitution in 6,7-benzomorphan compounds

pp 4975–4982

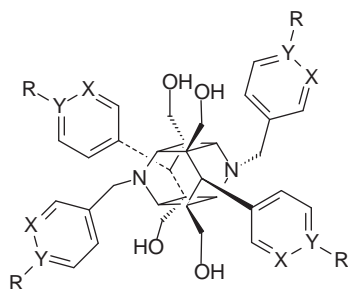
Lorella Pasquinucci*, Orazio Prezzavento, Agostino Marrazzo, Emanuele Amata, Simone Ronsisvalle, Zafiroula Georgoussi, Danai-Dionysia Fourla, Giovanna M. Scoto, Carmela Parenti, Giuseppina Aricò, Giuseppe Ronsisvalle



Novel structure–activity relationships and selectivity profiling of cage dimeric 1,4-dihydropyridines as multidrug resistance (MDR) modulators

pp 4983–4990

Claudius Coburger, Jörg Wollmann, Martin Krug, Christiane Baumert, Marianne Seifert, Josef Molnár, Hermann Lage, Andreas Hilgeroth*

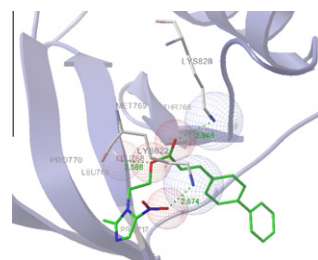


Synthesis, molecular modeling, and biological evaluation of cinnamic acid metronidazole ester derivatives as novel anticancer agents

pp 4991–4996

Yong Qian, Hong-Jia Zhang, Hao Zhang, Chen Xu*, Jing Zhao*, Hai-Liang Zhu*

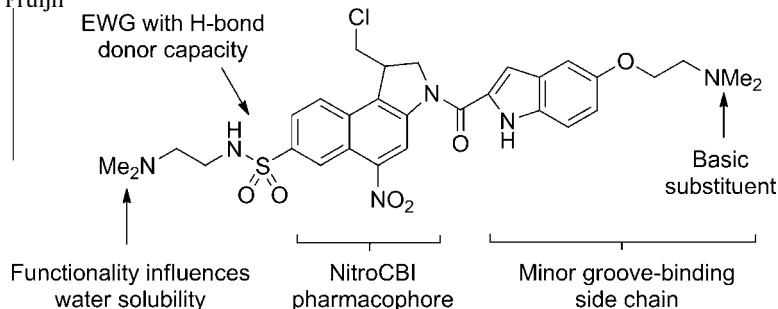
Compound **3h** showed the most potent biological activity ($IC_{50} = 0.62 \mu$ M for EGFR and $IC_{50} = 2.15 \mu$ M for HER-2). Docking simulation was performed to position compound **3h** into the EGFR active site to determine the probable binding model. Antiproliferative assay results demonstrated that some of these compounds possessed good antiproliferative activity against MCF-7. Compound **3h** with potent inhibitory activity in tumor growth inhibition may be a potential anticancer agent.



Hypoxic selectivity and solubility—investigating the properties of A-ring substituted nitro *seco*-1,2,9a-tetrahydrocyclopropa[*c*]benz[e]indol-4-ones (nitroCBI)s as hypoxia-activated prodrugs for antitumor therapy

pp 4997–5006

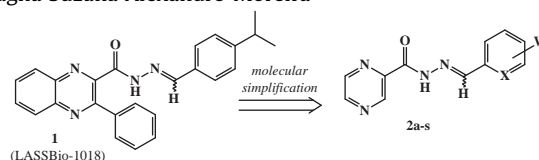
Moana Tercel*, Shangjin Yang, Graham J. Atwell, Eileen Smith, Yongchuan Gu, Robert F. Anderson, William A. Denny, William R. Wilson, Frederik B. Pruijn



Synthesis and pharmacological evaluation of pyrazine *N*-acylhydrazone derivatives designed as novel analgesic and anti-inflammatory drug candidates

pp 5007–5015

Yolanda Karla Cupertino da Silva, Cristina Villarinho Augusto, Maria Letícia de Castro Barbosa, Gabriela Muniz de Albuquerque Melo, Aline Cavalcanti de Queiroz, Thays de Lima Matos Freire Dias, Walfrido Bispo Júnior, Eliezer J. Barreiro, Lúcia Moreira Lima*, Magna Suzana Alexandre-Moreira*

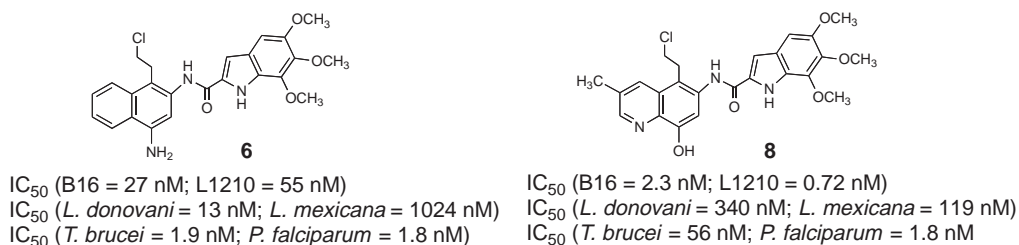


In this paper, we report the design, synthesis and pharmacological evaluation of a series of pyrazine *N*-acylhydrazone (NAH) derivatives (**2a–s**), planned by molecular simplification of prototype LASSBio-1018 (**1**). The series (**2a–s**) was evaluated in several animal models of pain and inflammation. All compounds presented important antinociceptive and anti-inflammatory profiles, especially compound **2o** (LASSBio-1181), presenting a trimethoxylated phenyl moiety. This derivative **2o** has shown better pharmacological profile than prototype **1**, being also active in adjuvant-induced arthritis test in rats.

A novel achiral *seco*-cyclopropylpyrido[*e*]indolone (CPyl) analog of CC-1065 and the duocarmycins: Synthesis, DNA interactions, in vivo anticancer and anti-parasitic evaluation

pp 5016–5024

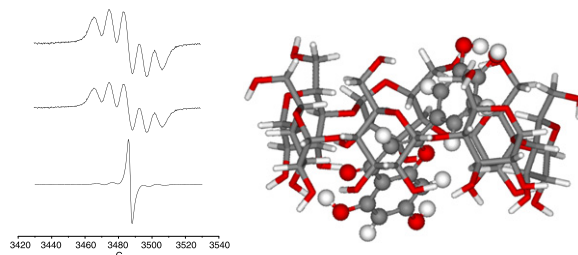
Sameer Chavda, Balaji Babu, Stephanie K. Yanow, Armando Jardim, Terry W. Spithill, Konstantinos Kiakos, Jerome Kluza, John A. Hartley, Moses Lee*



Spectroscopic characterization of the inclusion complexes of luteolin with native and derivatized β-cyclodextrin

pp 5025–5031

Carolina Jullian*, Constanza Cifuentes, Muriel Alfaro, Sebastián Miranda, Germán Barriga, Claudio Olea-Azar

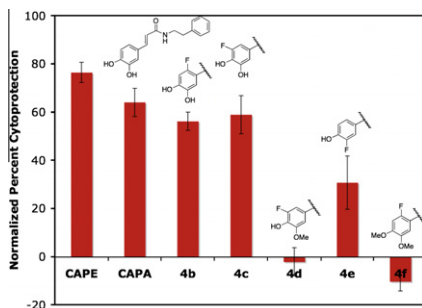


The inclusion complexes of Luteolin with cyclodextrins including β-cyclodextrin (βCD), hydroxypropyl-β-cyclodextrin and dimethyl-β-cyclodextrin, have been investigated using steady-state fluorescence, ¹H NMR, 2D NMR, ESR and molecular modeling studies.

Synthesis of a series of caffeic acid phenethyl amide (CAPA) fluorinated derivatives: Comparison of cytoprotective effects to caffeic acid phenethyl ester (CAPE)

pp 5032–5038

John Yang, Gwendolyn A. Marriner, Xinyu Wang, Phillip D. Bowman, Sean M. Kerwin*, Salomon Stavchansky*

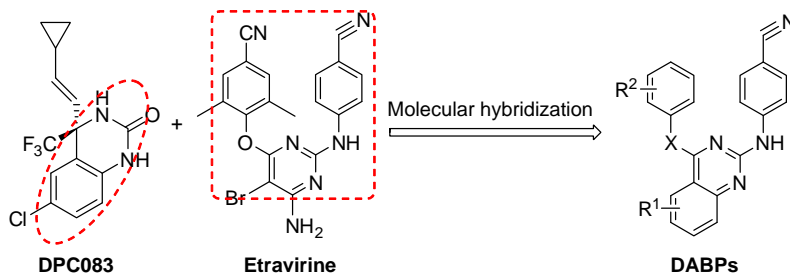


Hybrid diarylbenzopyrimidine non-nucleoside reverse transcriptase inhibitors as promising new leads for improved anti-HIV-1 chemotherapy

pp 5039–5047

Zhao-Sen Zeng, Qiu-Qin He, Yong-Hong Liang, Xiao-Qing Feng, Fen-Er Chen*, Erik De Clercq, Jan Balzarini, Christophe Pannecouque

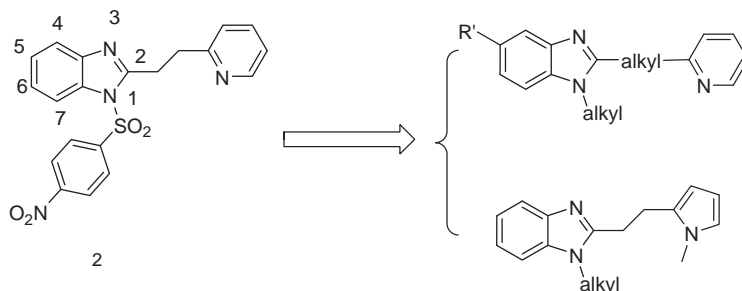
Molecular hybridization of the known anti-HIV-1 template DPC083 and etravirine based on docking modeling overlay has been set up to generate a novel series of diarylbenzopyrimidine analogues (DABPs).



Design and synthesis of novel benzimidazole derivatives as inhibitors of hepatitis B virus

pp 5048–5055

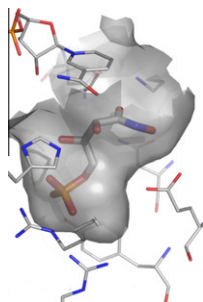
Yu Luo, Jia-Ping Yao, Li Yang, Chun-Lan Feng, Wei Tang, Gui-Feng Wang, Jian-Pin Zuo*, Wei Lu*



Virtual fragment screening for novel inhibitors of 6-phosphogluconate dehydrogenase

pp 5056–5062

Gian Filippo Ruda, Gordon Campbell, Vincent P. Alibu, Michael P. Barrett, Ruth Brenk*, Ian H. Gilbert*

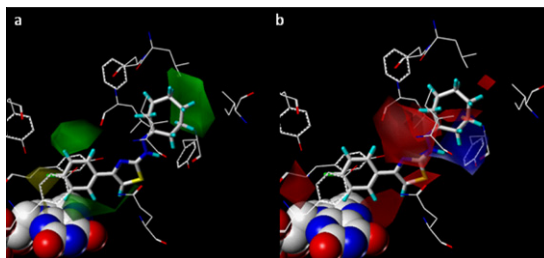


We report the identification of novel inhibitors of *Trypanosoma brucei* 6PGDH enzyme by virtual fragment screening.

Synthesis, semipreparative HPLC separation, biological evaluation, and 3D-QSAR of hydrazothiazole derivatives as human monoamine oxidase B inhibitors

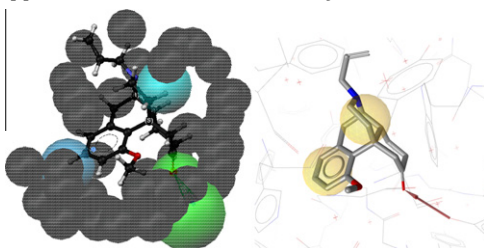
pp 5063–5070

Franco Chimenti, Daniela Secci*, Adriana Bolasco, Paola Chimenti, Arianna Granese, Simone Carradori, Elias Maccioni, M. Cristina Cardia, Matilde Yáñez, Francisco Orallo, Stefano Alcaro, Francesco Ortuso, Roberto Cirilli, Rosella Ferretti, Simona Distinto, Johannes Kirchmair, Thierry Langer

**Morphinans and isoquinolines: Acetylcholinesterase inhibition, pharmacophore modeling, and interaction with opioid receptors**

pp 5071–5080

Daniela Schuster, Mariana Spetea, Melisa Music, Silvia Rief, Monika Fink, Johannes Kirchmair, Johannes Schütz, Gerhard Wolber, Thierry Langer, Hermann Stuppner, Helmut Schmidhammer, Judith M. Rollinger*

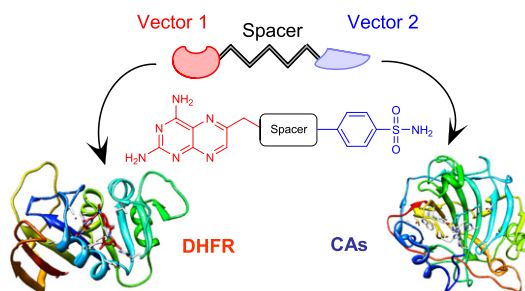


Rationalized discovery of acetylcholinesterase inhibitors from the chemical classes of morphinans and isoquinolins by pharmacophore modeling.

**Pteridine-sulfonamide conjugates as dual inhibitors of carbonic anhydrases and dihydrofolate reductase with potential antitumor activity**

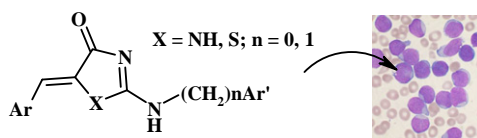
pp 5081–5089

Sérgio M. Marques, Éva A. Enyedy, Claudiu T. Supuran, Natalia I. Krupenko, Sergey A. Krupenko, M. Amélia Santos*

**Synthesis of 5-arylidene-2-amino-4-azolones and evaluation of their anticancer activity**

pp 5090–5102

Ivanna Subtel'na, Dmytro Atamanyuk, Ewa Szymańska, Katarzyna Kieć-Kononowicz, Borys Zimenkovsky, Olexandr Vasylenko, Andrzej Gzella, Roman Lesyk*

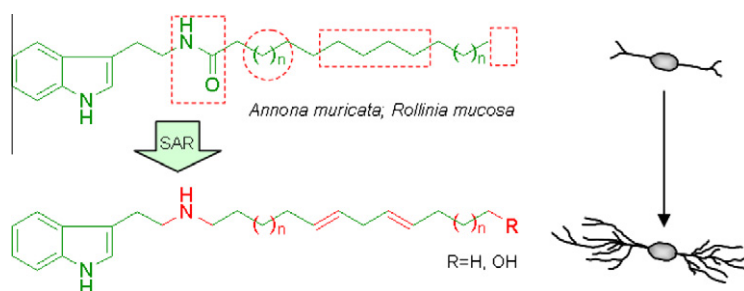


Synthesis, structural studies and anticancer activity of 5-arylidene-2-amino-4-azolones are discussed.

Tryptamine-derived alkaloids from Annonaceae exerting neurotrophin-like properties on primary dopaminergic neurons

pp 5103–5113

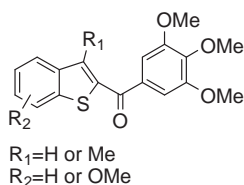
Fanny Schmidt*, Gael Le Douaron, Pierre Champy, Majid Amar, Blandine Séon-Méniel, Rita Raisman-Vozari, Bruno Figadère*



Substituted 2-(3',4',5'-trimethoxybenzoyl)-benzo[b]thiophene derivatives as potent tubulin polymerization inhibitors

pp 5114–5122

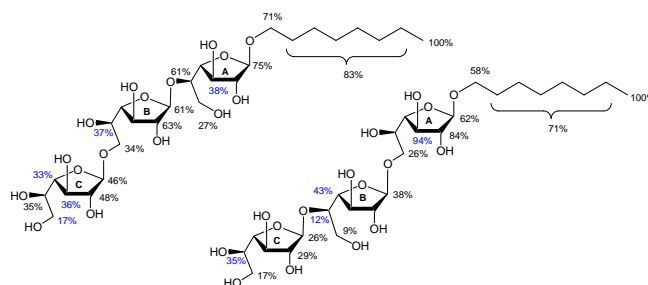
Romeo Romagnoli*, Pier Giovanni Baraldi*, Maria Dora Carrion, Olga Cruz-Lopez, Manlio Tolomeo, Stefania Grimaudo, Antonietta Di Cristina, Maria Rosaria Pipitone, Jan Balzarini, Andrea Brancale, Ernest Hamel



STD-NMR studies of two acceptor substrates of GlfT2, a galactofuranosyltransferase from *Mycobacterium tuberculosis*: Epitope mapping studies

pp 5123–5128

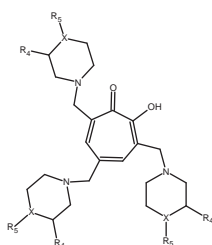
Monica G. Szczepina, Ruixiang B. Zheng, Gladys C. Completo, Todd L. Lowary*, B. Mario Pinto*



Studies on the anti-hepatitis C virus activity of newly synthesized tropolone derivatives: Identification of NS3 helicase inhibitors that specifically inhibit subgenomic HCV replication

pp 5129–5136

Andżelika Najda-Bernatowicz, Mariusz Krawczyk, Anna Stankiewicz-Drogoń, Maria Bretner*, Anna M. Boguszewska-Chachulska*



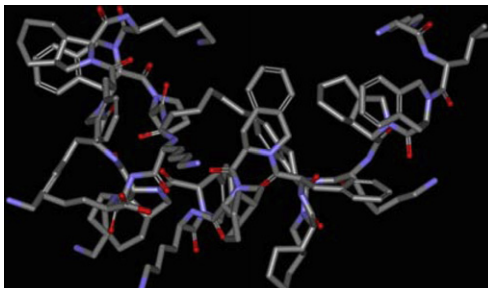
2: $X = \text{N}$, $R_1 = \text{H}$, $R_2 = \text{CH}_3$; $\text{EC}_{50} = 46.9 \mu\text{M}$, $\text{SI} > 21.3$
 6: $X = \text{CH}$, $R_1 = \text{H}$, $R_2 = \text{CH}_3$; $\text{EC}_{50} = 32.0 \mu\text{M}$, $\text{SI} = 17.4$
 7: $X = \text{CH}$, $R_1 = \text{CH}_3$, $R_2 = \text{H}$; $\text{EC}_{50} = 35.6 \mu\text{M}$, $\text{SI} = 9.8$



Novel antimicrobial peptides that exhibit activity against select agents and other drug resistant bacteria

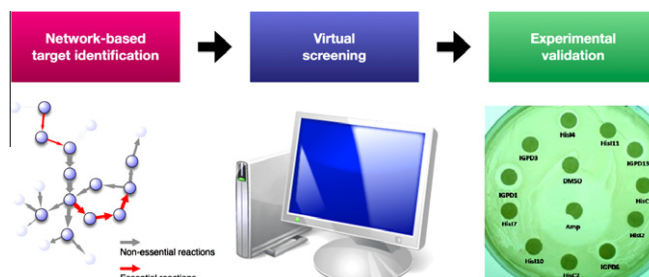
pp 5137–5147

Divakaramenon Venugopal, David Klapper, Antoine H. Srouji, Jayendra B. Bhonsle, Richard Borschel, Allen Mueller, Amanda L. Russell, Brittany C. Williams, Rickey P. Hicks*

**Identification of novel bacterial histidine biosynthesis inhibitors using docking, ensemble rescoring, and whole-cell assays**

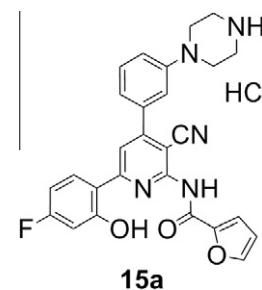
pp 5148–5156

S. T. Henriksen, J. Liu, G. Estiu, Z. N. Oltvai, O. Wiest*

**2-Acylamino-4,6-diphenylpyridine derivatives as novel GPR54 antagonists with good brain exposure and in vivo efficacy for plasma LH level in male rats**

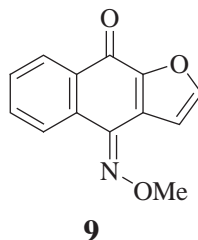
pp 5157–5171

Toshitake Kobayashi*, Satoshi Sasaki, Naoki Tomita, Seiji Fukui, Masaharu Nakayama, Atsushi Kiba, Masami Kusaka, Shin-ichi Matsumoto, Masashi Yamaguchi, Fumio Itoh, Atsuo Baba

A series of 2-acylamino-4,6-diphenylpyridine derivatives as small molecule GPR54 antagonists were synthesized, and led to compound **15a** with potent antagonistic activity, good brain exposure, and in vivo efficacy.**Synthesis and antiproliferative evaluation of certain iminonaphtho[2,3-b]furan derivatives**

pp 5172–5182

Chih-Hua Tseng, Yeh-Long Chen, Sheng-Huei Yang, Shin-I Peng, Chih-Mei Cheng, Chein-Hwa Han, Shinne-Ren Lin, Cherng-Chyi Tzeng*

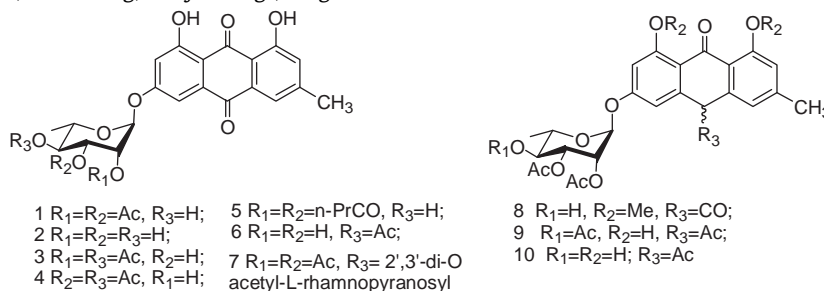


(*Z*)-4-Methoxyiminonaphtho[2,3-*b*]furan-9(4*H*)-one (**9**) exhibited a GI_{50} value of 0.60 μ M against the growth of K562 cells and was inactive against the normal fibroblast Detroit 551. The selectivity index (SI) on K562 cell for **9** was >166.67 which is comparable to daunorubicin (SI = 239) and is more favorable than camptothecin (SI = 16.5).

Synthesis and biological evaluation of cytotoxic activity of novel anthracene L-rhamnopyranosides

pp 5183–5193

Gaopeng Song, Hongchun Liu, Wei Zhang, Meiyu Geng*, Yingxia Li*

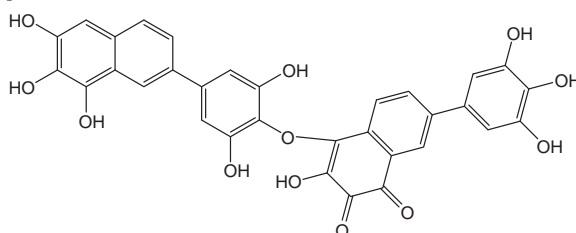


A series of anthracene L-rhamnopyranosides were designed and synthesized in a practical way. Most compounds exhibited both potent cytotoxicity against several tumor cell lines and high DNA binding capacity.

New 2-arylnaphthalenediols and triol inhibitors of HIV-1 integrase—Discovery of a new polyhydroxylated antiviral agent

pp 5194–5201

Cédric Maurin, Cédric Lion, Fabrice Bailly, Nadia Touati, Hervé Vezin, Gladys Mbemba, Jean François Mouscadet, Zeger Debyser, Myriam Witvrouw, Philippe Cotellet*

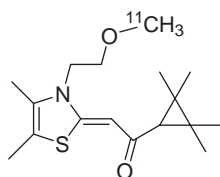


A series of 13 hydroxylated 2-arylnaphthalenes has been synthesized and evaluated as HIV-1 integrase inhibitors. 7-(3,4,5-Trihydroxyphenyl)naphthalene-1,2,3-triol was converted to a dimer. This dimer displays submicromolar activity against HIV-1 IN and was found to present antiviral properties with a low cytotoxicity on two different cell lines.

Synthesis and biodistribution of [^{11}C]A-836339, a new potential radioligand for PET imaging of cannabinoid type 2 receptors (CB₂)

pp 5202–5207

Andrew G. Horti*, Yongjun Gao, Hayden T. Ravert, Paige Finley, Heather Valentine, Dean F. Wong, Christopher J. Endres, Alena V. Savonenko, Robert F. Dannals

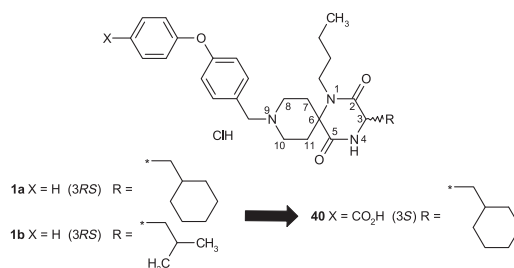


[^{11}C]A-836339, a new potential PET radioligand for imaging of cannabinoid subtype 2 receptors (CB₂), demonstrated high CB₂ specific binding in the mouse models of Alzheimer's disease and neuroinflammation.

**Discovery of orally available spirodiketopiperazine-based CCR5 antagonists**

pp 5208–5223

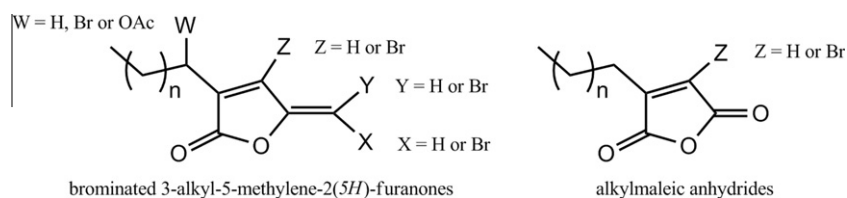
Rena Nishizawa*, Toshihiko Nishiyama, Katsuya Hisaichi, Keisuke Hirai, Hiromu Habashita, Yoshikazu Takaoka, Hideaki Tada, Kenji Sagawa, Shiro Shibayama, Kenji Maeda, Hiroaki Mitsuya, Hisao Nakai, Daikichi Fukushima, Masaaki Toda



Novel spirodiketopiperazine-based CCR5 antagonists, which showed improved pharmacokinetic (PK) profiles without reduction of antagonist activity, were identified.

Structure–activity relationship of brominated 3-alkyl-5-methylene-2(5*H*)-furanones and alkylmaleic anhydrides as inhibitors of *Salmonella* biofilm formation and quorum sensing regulated bioluminescence in *Vibrio harveyi* pp 5224–5233

Hans P. Steenackers, Jeremy Levin, Joost C. Janssens, Ami De Weerd, Jan Balzarini, Jos Vanderleyden, Dirk E. De Vos, Sigrid C. De Keersmaecker*

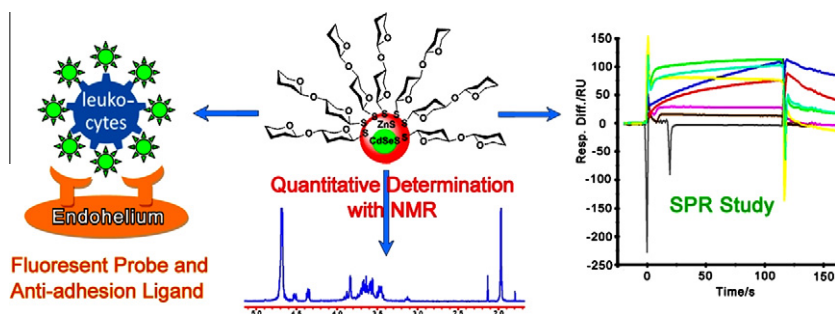


A library of 25 3-alkyl-5-methylene-2(5*H*)-furanones and two 3-alkylmaleic anhydrides was synthesized and tested for the antagonistic effect against the biofilm formation by *Salmonella* Typhimurium and the quorum sensing regulated bioluminescence of *Vibrio harveyi*.



Characterization of multivalent lactose quantum dots and its application in carbohydrate–protein interactions study and cell imaging pp 5234–5240

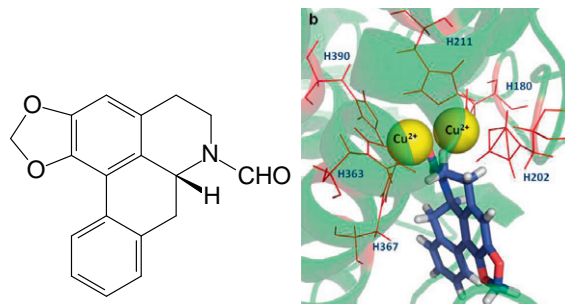
Yang Yang, Min Yu, Ting-Ting Yan, Zhi-Hui Zhao, Yin-Lin Sha*, Zhong-Jun Li*



(–)-*N*-Formylanonaine from *Michelia alba* as a human tyrosinase inhibitor and antioxidant pp 5241–5247

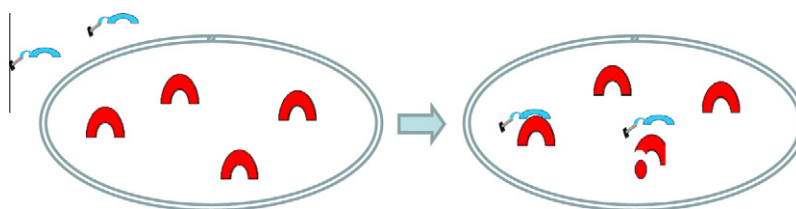
Hui-Min Wang*, Chung-Yi Chen, Chun-Yen Chen, Mei-Ling Ho, Yi-Ting Chou, Hou-Chien Chang, Chih-Hung Lee, Chau-Zen Wang, I-Ming Chu

The structure and proposed binding modes of (–)-*N*-formylanonaine. Left, is the structure of (–)-*N*-formylanonaine. Right, is the active site of human tyrosinase. The docking models were optimized by energy minimization.



Cell-penetration by Co(III)cyclen-based peptide-cleaving catalysts selective for pathogenic proteins of amyloidoses pp 5248–5253

Woo Suk Chei, Joo-Won Lee, Jae Bum Kim, Junghun Suh*

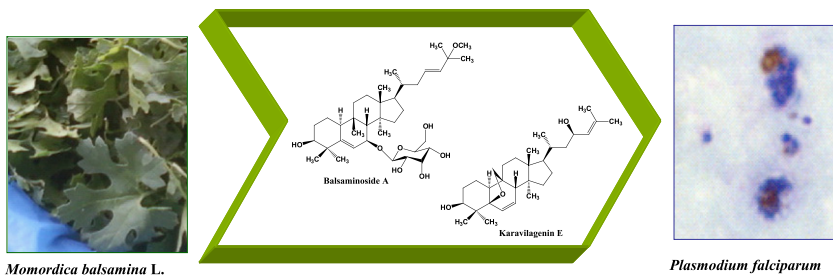


The ability of Co(III)cyclen-based peptide-cleaving catalysts to penetrate animal cells is demonstrated. Since the catalysts destroy pathogenic proteins for amyloidoses, they can be exploited as catalytic drugs for amyloidoses.

New antimalarials with a triterpenic scaffold from *Momordica balsamina*

pp 5254–5260

Cátia Ramalhete, Dinora Lopes, Silva Mulhovo, Joseph Molnár, Virgílio E. Rosário, Maria-José U. Ferreira*



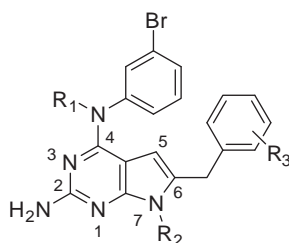
New compounds with a triterpenoid scaffold as potential leads for the development of antimalarials.



Design, synthesis and evaluation of 2-amino-4-*m*-bromoanilino-6-arylmethyl-7*H*-pyrrolo[2,3-*d*]pyrimidines as tyrosine kinase inhibitors and antiangiogenic agents¹

pp 5261–5273

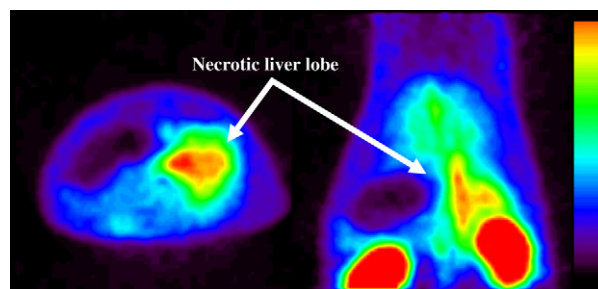
Aleem Gangjee*, Ying Zhao, Sudhir Raghavan, Michael A. Ihnat, Bryan C. Disch



Development and evaluation of a ⁶⁸Ga labeled pamoic acid derivative for in vivo visualization of necrosis using positron emission tomography

pp 5274–5281

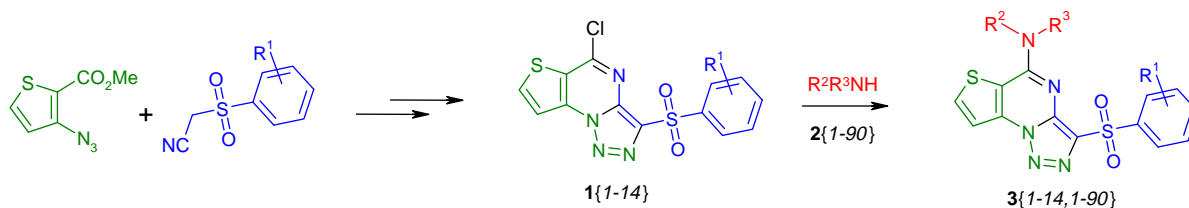
Kristof Prinsen*, Junjie Li, Hubert Vanbilloen, Peter Vermaelen, Ellen Devos, Luc Mortelmans, Guy Bormans, Yicheng Ni, Alfons Verbruggen

MicroPET image of a Wistar rat with a reperfused partial liver infarction 30 min pi of ⁶⁸Ga-bis-DTPA-PA.

Synthesis and biological study of 3-(phenylsulfonyl)thieno[2,3-*e*][1,2,3]triazolo[1,5-*a*]pyrimidines as potent and selective serotonin 5-HT₆ receptor antagonists

pp 5282–5290

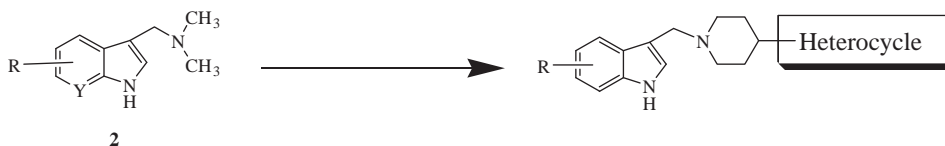
Alexandre V. Ivachtchenko, Elena S. Golovina, Madina G. Kadieva, Angela G. Koryakova, Sergiy M. Kovalenko, Oleg D. Mitkin*, Ilya M. Okun, Irina M. Ravnyeyko, Sergey E. Tkachenko, Oleg V. Zaremba



Synthesis and characterization of selective dopamine D₂ receptor antagonists. 2. Azaindole, benzofuran, and benzothiophene analogs of L-741,626

pp 5291–5300

Suwanna Vangveravong, Michelle Taylor, Jinbin Xu, Jinquan Cui, Wesley Calvin, Sonja Babic, Robert R. Luedtke, Robert H. Mach*



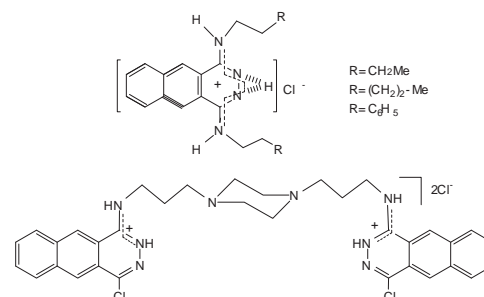
A series of indole, 7-azaindole, benzofuran, and benzothiophene compounds were prepared and evaluated for affinity at D₂-like dopamine receptors.

Synthesis and cytotoxic activity of a new potential DNA bisintercalator: 1,4-Bis[3-[N-(4-chlorobenzo[g]phthalazin-1-yl)aminopropyl]]piperazine

pp 5301–5309

Juan Galisteo, Pilar Navarro*, Lucrecia Campayo, María J. R. Yunta, Fernando Gómez-Contreras, Janny A. Villa-Pulgarin, Beatriz G. Sierra, Faustino Mollinedo, Jorge Gonzalez, Enrique Garcia-España

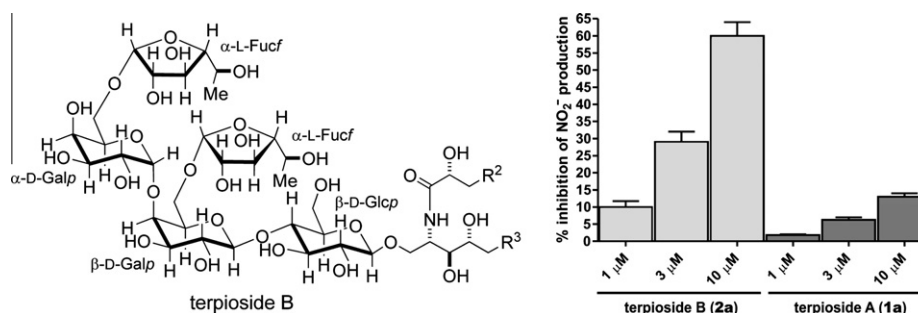
The synthesis of new 1,4-bis(alkylamino)- and 1-alkylamino-4-chloro-benzo[g]phthalazine derivatives is reported, and the in vitro activity of their mono- or diprotonated forms against human colon, breast and lung carcinoma cells, and also against human glioblastoma cells is tested.



Terpioside B, a difucosyl GSL from the marine sponge *Terpios* sp. is a potent inhibitor of NO release

pp 5310–5315

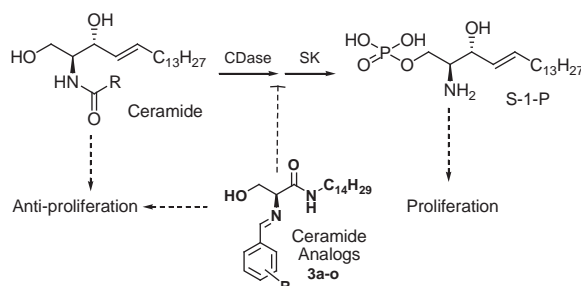
Valeria Costantino, Ernesto Fattorusso, Alfonso Mangoni*, Roberta Teta, Elisabetta Panza, Angela Ianaro



Novel anti-viability ceramide analogs: Design, synthesis, and structure–activity relationship studies of substituted (S)-2-(benzylideneamino)-3-hydroxy-N-tetradecylpropanamides

pp 5316–5322

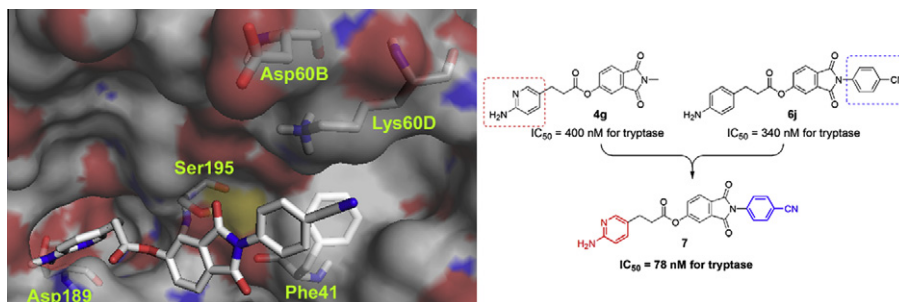
Jiawang Liu, James W. Antoon, Adharsh Ponnappakkam, Barbara S. Beckman, Maryam Foroozesh*



Development of tryptase inhibitors derived from thalidomide

pp 5323–5338

Masashi Tetsuhashi, Minoru Ishikawa, Mariko Hashimoto, Yuichi Hashimoto, Hiroshi Aoyama*

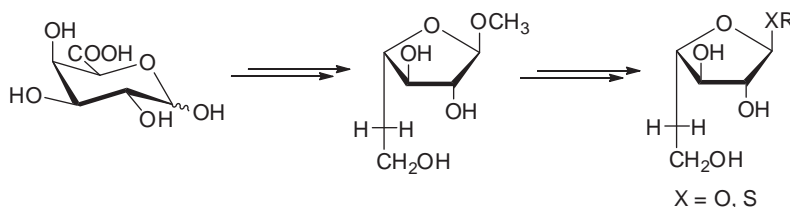


Compound 7, structurally derived from thalidomide, is a potent and selective tryptase inhibitor.

Synthesis of 5-deoxy- β -D-galactofuranosides as tools for the characterization of β -D-galactofuranosidases

pp 5339–5345

Andrea Bordon, Rosa M. de Lederkremer, Carla Marino*



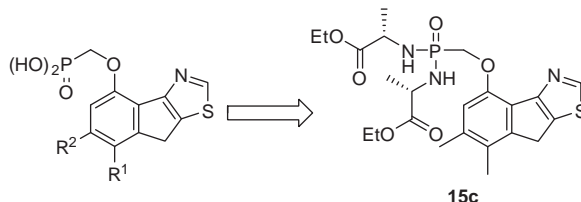
Starting from D-galacturonic acid, 5-deoxy- β -D-galactofuranosides were synthesized as tools for the characterization of β -D-galactofuranosidases. They were evaluated against the *exo*- β -D-galactofuranosidase from *Penicillium fellutanum*.



Discovery of potent and orally active tricyclic-based FBPase inhibitors

pp 5346–5351

Tomoharu Tsukada, Osamu Kanno, Takahiro Yamane, Jun Tanaka, Taishi Yoshida, Akira Okuno, Takeshi Shiiki, Mizuki Takahashi, Takahide Nishi*

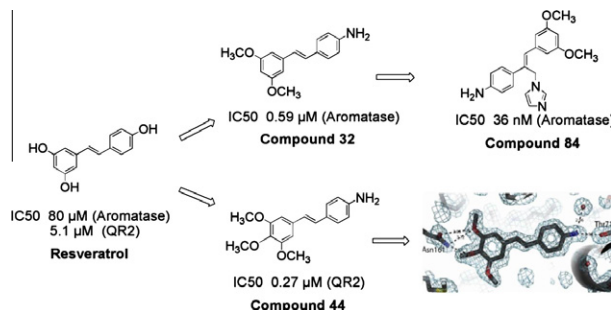


Introduction of prodrug moieties into tricyclic-based FBPase inhibitors led to the discovery of prodrug **15c**, which strongly inhibited glucose production in monkey hepatocytes. Furthermore, prodrug **15c** lowered blood glucose levels in fasted cynomolgus monkeys.

Design, synthesis, and biological evaluation of resveratrol analogues as aromatase and quinone reductase 2 inhibitors for chemoprevention of cancer

pp 5352–5366

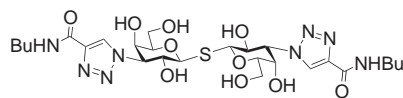
Bin Sun, Juma Hoshino, Katie Jermihov, Laura Marler, John M. Pezzuto, Andrew D. Mesecar, Mark Cushman*



1*H*-1,2,3-Triazol-1-yl thiodigalactoside derivatives as high affinity galectin-3 inhibitors

pp 5367–5378

Bader A. Salameh, Ian Cumpstey, Anders Sundin, Hakon Leffler, Ulf J. Nilsson*

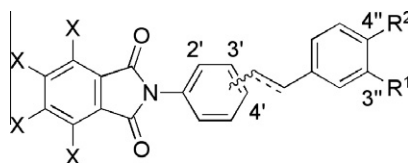


K_d 29 nM against galectin-3
 > 30x selectivity over galectin-7, 8N, and 9N

**Anti-influenza activity of phenethylphenylphthalimide analogs derived from thalidomide**

pp 5379–5390

Yuma Iwai, Hitoshi Takahashi, Dai Hatakeyama, Kazunori Motoshima, Minoru Ishikawa, Kazuyuki Sugita, Yuichi Hashimoto, Yuichi Harada, Shigeyuki Itamura, Takato Odagiri, Masato Tashiro, Yoshihisa Sei, Kentaro Yamaguchi, Takashi Kuzuhara*

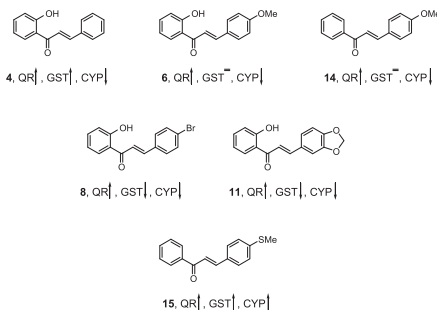


X = H, Cl
 R¹, R² = H or OH

**Identification of chalcones as in vivo liver monofunctional phase II enzymes inducers**

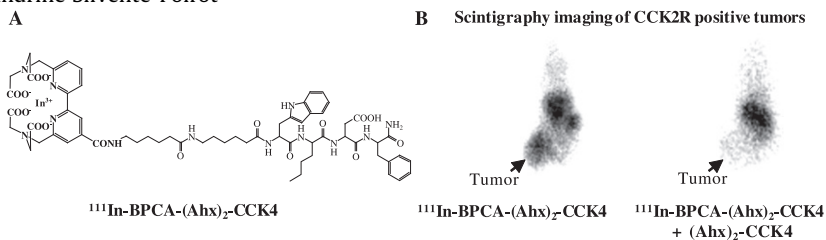
pp 5391–5399

Mauricio Cabrera, María Laura Lavaggi, Fiorela Croce, Laura Celano, Leonor Thomson, Marcelo Fernández, Cristina Pintos, Stella Raymondo, Mariela Bollati, Antonio Monge, Adela López de Ceráin, Oscar E. Piro, Hugo Cerecetto*, Mercedes González*

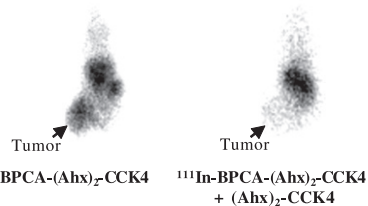
**Development of a new radioligand for cholecystokinin receptor subtype 2 scintigraphy: From molecular modeling to in vivo evaluation**

pp 5400–5412

Séverine Brillouet, Sandra Dorbes, Frédéric Courbon, Claude Picard, Jean Pierre Delord, Eric Benoist, Marc Poirot, Béatrice Mestre-Voegtli*, Sandrine Silvente-Poirot*



B Scintigraphy imaging of CCK2R positive tumors



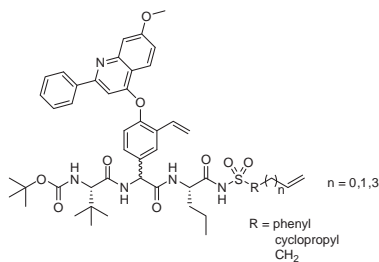
We synthesized ¹¹¹In-BPCA-(Ahx)₂-CCK4, a novel CCK4-based analog conjugated to an original bipyridine-chelator (A) which shows a high and specific targeting of CCK2R-expressing tumors with limited kidney uptake (B).



Improved P2 phenylglycine-based hepatitis C virus NS3 protease inhibitors with alkenylic prime-side substituents

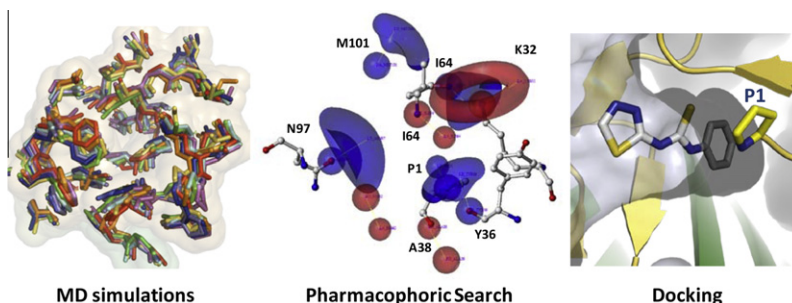
pp 5413–5424

Anna Lampa, Angelica E. Ehrenberg, Sofia S. Gustafsson, Aparna Vema, Eva Åkerblom, Gunnar Lindeberg, Anders Karlén, U. Helena Danielson, Anja Sandström*

**An integrative in silico methodology for the identification of modulators of macrophage migration inhibitory factor (MIF) tautomerase activity**

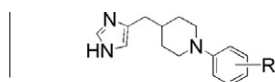
pp 5425–5440

Farah El Turk, Bruno Fauvet, Hajer Ouertatani-Sakouhi, Adrien Lugari, Stephane Betzi, Philippe Roche, Xavier Morelli*, Hilal A. Lashuel*

**Synthesis and structure–activity relationships of N-aryl-piperidine derivatives as potent (partial) agonists for human histamine H3 receptor**

pp 5441–5448

Makoto Ishikawa*, Takeshi Furuuchi, Miki Yamauchi, Fumikazu Yokoyama, Nobukazu Kakui, Yasuo Sato



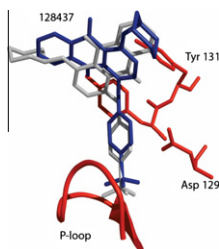
17d, $K_i = 1.8$ nM, $EC_{50} = 1.1$ nM, $ia = 59\%$
17h, $K_i = 5.4$ nM, $EC_{50} = 7.6$ nM, $ia = 77\%$

This paper reports the synthesis and in vitro biological evaluation of N-aryl-piperidine derivatives as new human histamine H3 receptor agonist.

Identification of novel inhibitors for a low molecular weight protein tyrosine phosphatase via virtual screening

pp 5449–5456


Kristoff T. Homan, Deepa Balasubramaniam, Adam P. R. Zabell, Olaf Wiest, Paul Helquist, Cynthia V. Stauffacher*



Computational screening with multiple scoring functions was used to identify novel small molecule inhibitors for the human low molecular weight protein tyrosine phosphatase.



*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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