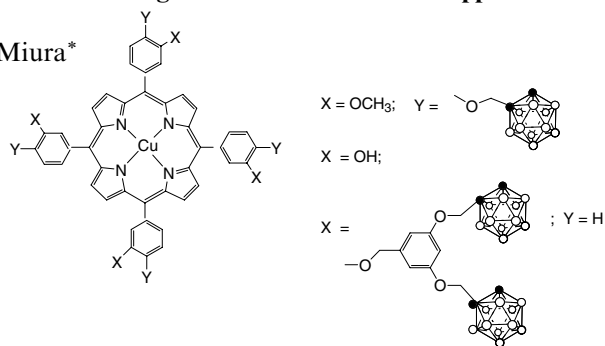


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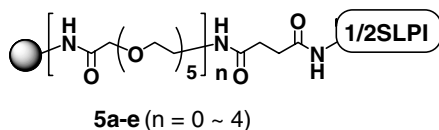
- Total syntheses of three copper (II) tetracarboranylphenylporphyrins containing 40 or 80 boron atoms and their biological properties in EMT-6 tumor-bearing mice** pp 5083–5092

Haitao Wu, Peggy L. Micca, Michael S. Makar and Michiko Miura\*



- Development of affinity chromatography using a bioactive peptide as a ligand** pp 5093–5098

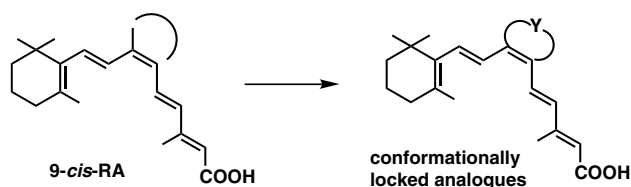
Minoru Furuya,\* Yu Tsushima, Shinobu Tani and Takashi Kamimura



By repeatedly introducing hydrophilic PEG spacer between affinity resin, composed of polymethacrylate, and a bioactive peptide (1/2SLPI), purification ability of target protein, elastase, was effectively improved.

- Thrombomodulin induction in cultured human endothelial cells by 9-*cis*-locked retinoic acid analogues** pp 5099–5109

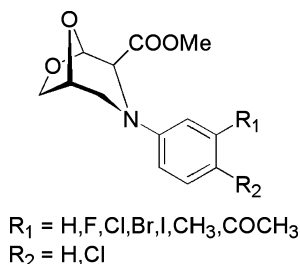
Shiro Ikegami,\* Takamasa Iimori, Minoru Sudo, Maroka Kitsukawa, Alireza Foroumadi, Takeshi Yonemura, Hideyo Takahashi, Keiichiro Kizaki and Hidemi Ishii



**3-Aza-6,8-dioxabicyclo[3.2.1]octanes as new enantiopure heteroatom-rich tropane-like ligands of human dopamine transporter**

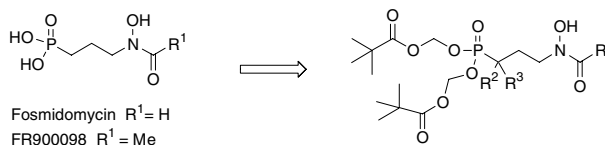
pp 5110–5120

Nicoletta Cini, Elisa Danieli, Gloria Menchi, Andrea Trabocchi, Anna Bottoncetti, Silvia Raspanti, Alberto Pupi and Antonio Guarna\*


**Synthesis and antimalarial activity of chain substituted pivaloyloxymethyl ester analogues of Fosmidomycin and FR900098**

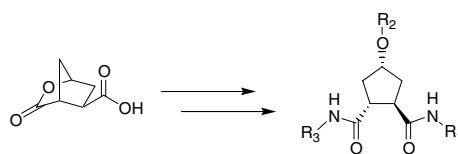
pp 5121–5135

Thomas Kurz,\* Katrin Schlüter, Uwe Kaula, Bärbel Bergmann, Rolf D. Walter and Detlef Geffken


**Potent inhibitors of the hepatitis C virus NS3 protease: Use of a novel P2 cyclopentane-derived template**

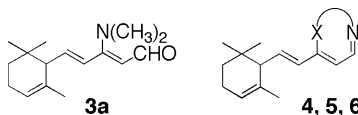
pp 5136–5151

Per-Ola Johansson, Marcus Bäck, Ingemar Kvarnström, Katarina Jansson, Lotta Vrang, Elizabeth Hamelink, Anders Hallberg, Å. Rosenquist\* and Bertil Samuelsson\*


**Synthesis and biological evaluation of novel heterocyclic ionone-like derivatives as anti-inflammatory agents**

pp 5152–5160

Alessandro Balbi,\* Maria Anzaldi, Mauro Mazzei, Mariangela Miele, Maria Bertolotto, Luciano Ottonello and Franco Dallegri

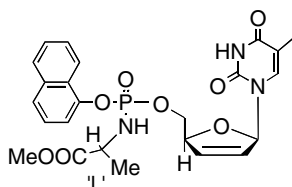


Five- and six-membered heterocyclic ionone-like derivatives **4–6** have been synthesised in one step and with good yield from the key intermediate **3a** and appropriate bifunctional reagents. Four were active as inhibitors of the respiratory burst of human neutrophils without affecting cell viability. The two most active compounds (**5a,d**) tested in neutrophil migration assays, were also found to be potent inhibitors of neutrophil chemotactic responsiveness. These two molecules could be considered as lead compounds of new drugs which can be an effective tool to treat psoriasis and related neutrophilic dermatoses.

**Synthesis and metabolism of naphthyl substituted phosphoramidate derivatives of stavudine**

pp 5161–5177

T. K. Venkatachalam, S. Qazi and F. M. Uckun\*

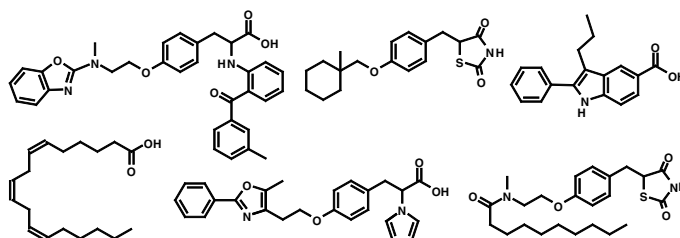


The synthesis of naphthylphosphoramidate derivatives of stavudine was achieved using a four-step procedure. The derivatives were subjected to several different enzymes including lipase, esterase, Subtilisin Carlsberg, and *Carica papaya*, and their hydrolysis rates were determined. Based on the rates of hydrolysis, we were able to differentiate between the chiralities at the phosphorus center of the phosphoramidate compounds.

**2D QSAR of PPAR $\gamma$  agonist binding and transactivation**

pp 5178–5195

Christoph Rücker,\* Marco Scarsi and Markus Meringer

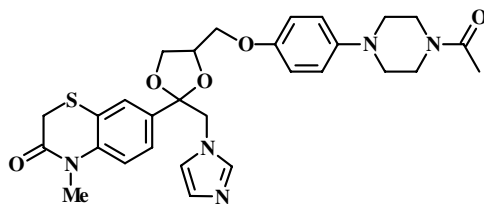


Binding affinity and gene transactivation of a large and diverse set of PPAR $\gamma$  agonists were subjected to a 2D QSAR treatment. Multilinear models of good quality and predictive power were obtained and thoroughly validated.

**Novel ketoconazole analogues based on the replacement of 2,4-dichlorophenyl group with 1,4-benzothiazine moiety: Design, synthesis, and microbiological evaluation**

pp 5196–5203

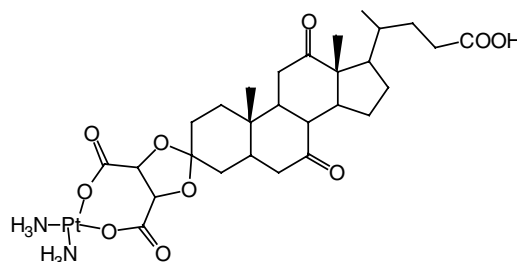
Fausto Schiaffella, Antonio Macchiarulo, Lara Milanese, Anna Vecchiarelli and Renata Fringuelli\*

**Effects on erythroid differentiation of platinum(II) complexes of synthetic bile acid derivatives**

pp 5204–5210

Ilaria Lampronti, Nicoletta Bianchi, Cristina Zuccato, Alessandro Medici, Paola Bergamini and Roberto Gambari\*

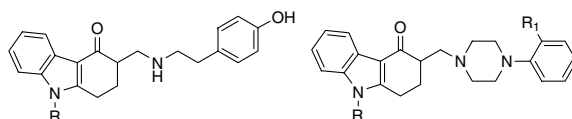
Several bile acid derivatives and their platinum(II) bonded forms were tested as potential inducers of erythroid differentiation of human leukemic K562 cells. *cis*-[(3-Dehydrocholanoyliden-L-tartrate)-diammineplatinum(II)] stimulates erythroid differentiation of K562 cells and an increase of fetal hemoglobin (HbF) production in erythroid precursor cells from peripheral blood.



### New 1,2,3,9-tetrahydro-4*H*-carbazol-4-one derivatives: Analogues of HEAT as ligands for the $\alpha_1$ -adrenergic receptor subtypes

pp 5211–5219

Giuseppe Romeo,\* Luisa Materia, Valeria Pittalà, Maria Modica, Loredana Salerno, Mariangela Siracusa, Filippo Russo and Kenneth P. Minneman



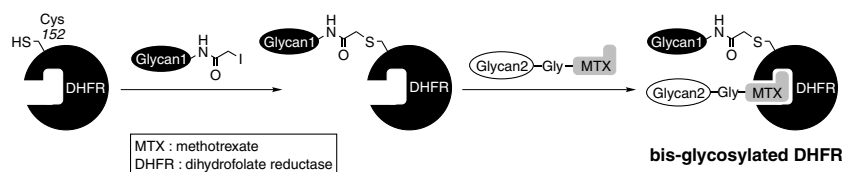
A series of new 1,2,3,9-tetrahydro-4*H*-carbazol-4-one derivatives structurally related to HEAT, a potent  $\alpha_1$ -adrenergic receptor antagonist, was synthesized. Binding affinities of new compounds for the human cloned  $\alpha_1$ -adrenergic receptor subtypes were evaluated.



### High-mannose-type glycan modifications of dihydrofolate reductase using glycan–methotrexate conjugates

pp 5220–5229

Kiichiro Totani, Ichiro Matsuo, Yoshito Ihara and Yukishige Ito\*



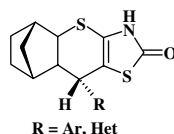
Artificial glycoproteins having structurally defined synthetic oligosaccharides were generated.



### Anticancer thiopyrano[2,3-*d*][1,3]thiazol-2-ones with norbornane moiety. Synthesis, cytotoxicity, physico-chemical properties, and computational studies

pp 5230–5240

Roman Lesyk,\* Borys Zimenkovsky, Dmytro Atamanyuk, Frank Jensen, Katarzyna Kieć-Kononowicz and Andrzej Gzella



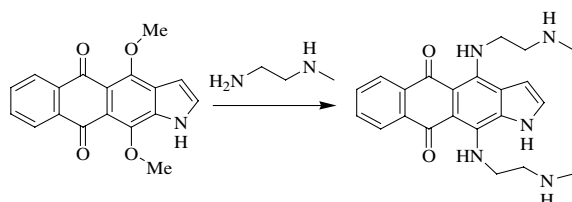
Synthesis, anticancer activity, lipophilicity, and QSAR studies for new thiopyrano[2,3-*d*][1,3]thiazol-2-ones with norbornane moiety and aryl- or heteroaryl-substituents are described.



### Synthesis and structure–activity relationship studies of 4,11-diaminonaphtho[2,3-*f*]indole-5,10-diones

pp 5241–5251

Andrey E. Shchekotikhin,\* Valeria A. Glazunova, Yuri N. Luzikov, Vladimir N. Buyanov, Olga Yu. Susova, Alexander A. Shtil and Maria N. Preobrazhenskaya

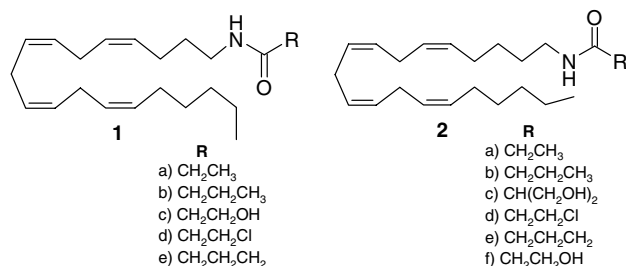


The preparation and cytotoxic properties of derivatives of 4,11-diaminonaphtho[2,3-*f*]indole-5,10-dione are described. The naphthoindoles carrying *N*-methyl- or *N,N*-dimethylamino groups have remarkable activity against Pgp-positive MDR cells and are also potent for colon carcinoma cell lines, regardless of the p53 status.

**Synthesis, cannabinoid receptor activity, and enzymatic stability of reversed amide derivatives of arachidonoyl ethanolamide**

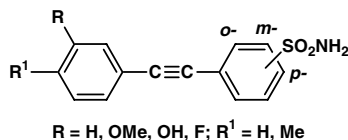
pp 5252–5258

Teija Parkkari,\* Juha R. Savinainen, Katri H. Raitio, Susanna M. Saario, Laura Matilainen, Tuomas Sirviö, Jarmo T. Laitinen, Tapio Nevalainen, Riku Niemi and Tomi Järvinen

**Synthesis and biological evaluation of linear phenylethynylbenzenesulfonamide regioisomers as cyclooxygenase-1/-2 (COX-1/-2) inhibitors**

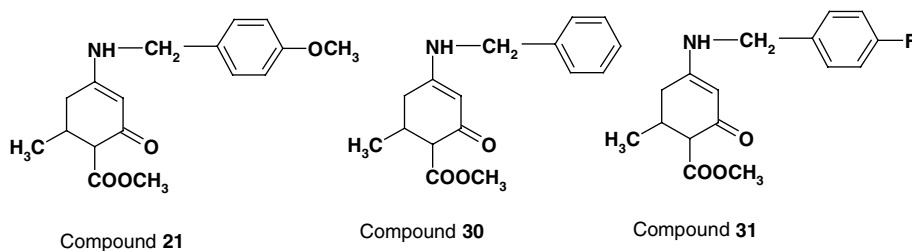
pp 5259–5265

Raymond Anana, P. N. Praveen Rao, Qiao-Hong Chen and Edward E. Knaus\*

**Anticonvulsant evaluation and mechanism of action of benzylamino enaminones**

pp 5266–5272

Ivan O. Edafioho,\* Kethireddy V. V. Ananthalakshmi and Samuel B. Kombian

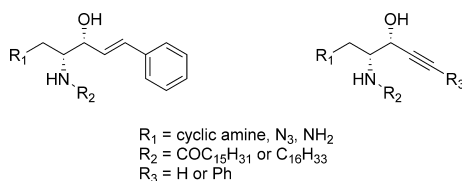


Anticonvulsant evaluation and electrophysiology data suggest that the anticonvulsant benzylamino enaminones inhibit a glutamate machinery and action potential firing in the central nervous system to produce their effects.

**Synthesis and biological evaluation of novel PDMP analogues**

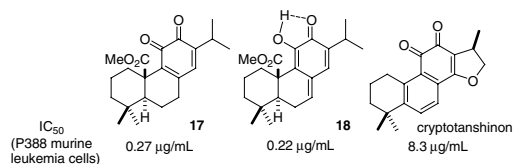
pp 5273–5284

Ulrik Hillaert, Svetlana Boldin-Adamsky, Jef Rozenski, Roger Busson, Anthony H. Futerman and Serge Van Calenbergh\*



## Cytotoxicity of abietane diterpenoids from *Perovskia abrotanoides* and of their semisynthetic analogues pp 5285–5291

Yutaka Aoyagi, Yoshinao Takahashi, Yudai Satake, Koichi Takeya,\* Ritsuo Aiyama, Takeshi Matsuzaki, Shusuke Hashimoto and Teruo Kurihara

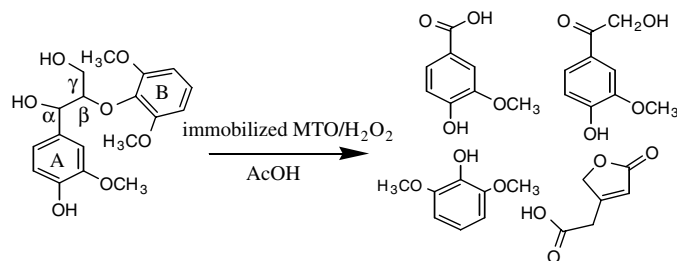


Seven known abietane diterpenoids and 11-*O*- and 12-*O*-acetylcarnosic acids were isolated from a methanol extract of *Perovskia abrotanoides* (Labiateae). Structure and cytotoxic activity relationships (SARs) of the natural and semisynthetic analogues of the presently isolated abietane diterpenoids were studied by using P388 murine leukemia cells.

## Immobilized methyltrioxo rhenium (MTO)/H<sub>2</sub>O<sub>2</sub> systems for the oxidation of lignin and lignin model compounds pp 5292–5302

Claudia Crestini,\* Maria Chiara Caponi, Dimitris S. Argyropoulos and Raffaele Saladino\*

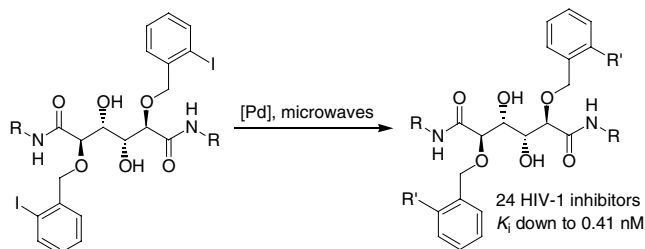
Heterogeneous MTO catalysts are able to extensively oxidize lignin model compounds and showed significant potential for H<sub>2</sub>O<sub>2</sub> delignification processes and environmentally sustainable lignin selective modification reactions.



## A new structural theme in C<sub>2</sub>-symmetric HIV-1 protease inhibitors: *ortho*-Substituted P1/P1' side chains pp 5303–5315

Johan Wannberg, Yogesh A. Sabnis, Lotta Vrang, Bertil Samuelsson, Anders Karlén, Anders Hallberg and Mats Larhed\*

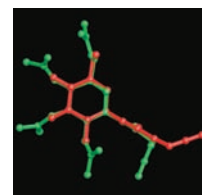
The syntheses of 24 novel HIV-1 protease inhibitors are presented. Computational methods were applied to rationalize the SAR.



## Crystallographic studies on *N*-azidoacetyl-β-D-glucopyranosylamine, an inhibitor of glycogen phosphorylase: Comparison with *N*-acetyl-β-D-glucopyranosylamine pp 5316–5324

Evangelia I. Petsalakis, Evangelia D. Chrysina, Costas Tiraidis, Theodoros Hadjiloi, Demetres D. Leonidas, Nikos G. Oikonomakos,\* Udayanath Aich, Babu Varghese and Duraikkannu Loganathan\*

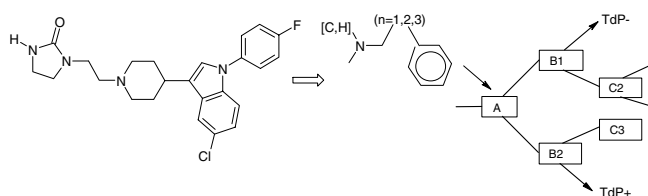
*N*-Azidoacetyl-β-D-glucopyranosylamine was found to inhibit rabbit muscle glycogen phosphorylase with a *K<sub>i</sub>* = 48.7 μM. The structural basis of inhibition is presented by analyzing the crystal structure of the enzyme in complex with the inhibitor at 2.03 Å, and compared with the structure of its lead compound *N*-acetyl-β-D-glucopyranosylamine.



**Determination of hERG channel blockers using a decision tree**

pp 5325–5332

Michael M. Gepp and Michael C. Hutter\*

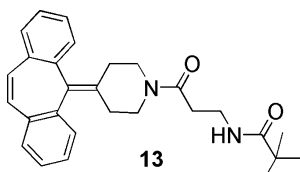


Among other descriptors, structural information of hERG channel blockers was used in a decision tree approach to classify potential Torsade de Pointes-causing substances.

**Discovery, structure–activity relationship study, and oral analgesic efficacy of cyproheptadine derivatives possessing N-type calcium channel inhibitory activity**

pp 5333–5339

Takashi Yamamoto, Seiji Niwa, Satoshi Iwayama, Hajime Koganei, Shin-ichi Fujita, Tomoko Takeda, Morikazu Kito, Yukitsugu Ono, Yuki Saitou, Akira Takahara, Seinosuke Iwata, Hiroshi Yamamoto and Masataka Shoji\*

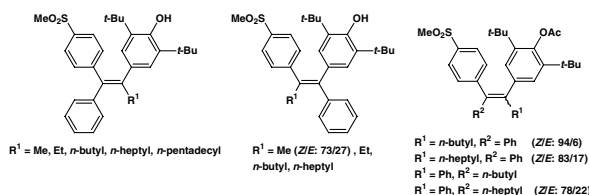


The synthesis, structure–activity relationship study, and biological testings of novel series of cyproheptadine derivatives with N-type calcium channel inhibitory activity were described.

**Synthesis and biological evaluation of acyclic triaryl (*Z*)-olefins possessing a 3,5-di-*tert*-butyl-4-hydroxyphenyl pharmacophore: Dual inhibitors of cyclooxygenases and lipooxygenases**

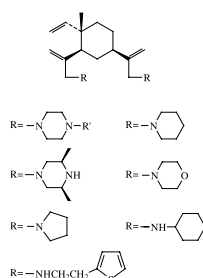
pp 5340–5350

Anne Moreau, P. N. Praveen Rao and Edward E. Knaus\*

**The synthesis and anti-proliferative effects of  $\beta$ -elemene derivatives with mTOR inhibition activity**

pp 5351–5356

Liyang Xu, Shujuan Tao, Xianming Wang, Zhiying Yu, Minwei Wang, Duo Chen, Yongkui Jing\* and Jinhua Dong\*

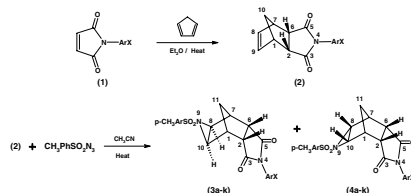




### Synthesis and antidepressant-like action of stereoisomers of imidobenzenesulfonylaziridines in mice evaluated in the forced swimming test

pp 5397–5401

Filipe S. Duarte, Evilazio da S. Andrade, Ricardo A. Vieira, Marina Uieara, Ricardo J. Nunes and Thereza C. M. de Lima\*

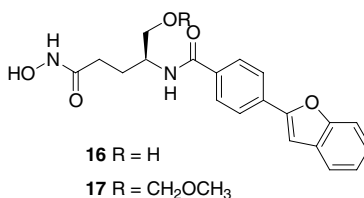


X = H (a); 4-Cl (b); 3,4-Cl<sub>2</sub> (c); 4-CH<sub>3</sub> (d); 4-OCH<sub>3</sub> (e); 4-Br (f); 4-NO<sub>2</sub> (g); 3-ethyl (h); 3-NO<sub>2</sub> (i); 4-F (j) and 4-OH (k).

### Design and synthesis of novel metalloproteinase inhibitors

pp 5402–5422

Shingo Nakatani,\* Masahiro Ikura, Shingo Yamamoto, Yoshitaka Nishita, Satoshi Itadani, Hiromu Habashita, Tsuneyuki Sugiura, Koji Ogawa, Hiroyuki Ohno, Kanji Takahashi, Hisao Nakai and Masaaki Toda

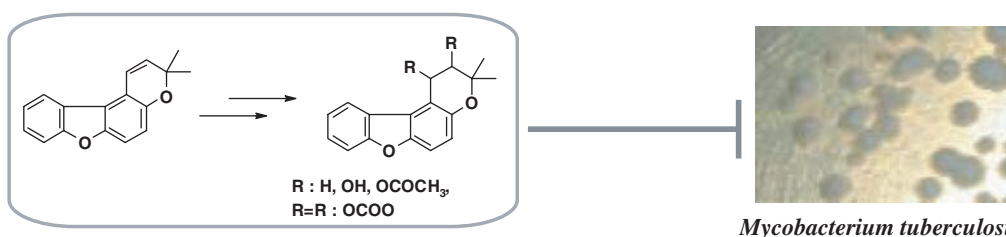


Discovery process of matrix metalloproteinase inhibitors **16** and **17**, which demonstrate highly potent inhibitory activity against MMP-2 and MMP-9, is presented.

### Benzofuro[3,2-f][1]benzopyrans: A new class of antitubercular agents

pp 5423–5428

Soizic Prado, Hervé Ledoit, Sylvie Michel, Michel Koch, Jacques Christian Darbord, Stewart T. Cole, François Tillequin\* and Priscille Brodin\*



Some benzofuro[3,2-f][1]benzopyran displayed significant activities when tested against *Mycobacterium tuberculosis* H37Rv and Beijing strains, with MIC<sub>99</sub> in the range of 1–10 µg/ml.

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\*Corresponding author

+ Supplementary data available via ScienceDirect

**COVER**

2006: The cover figure shows a synthetic multifunctional pore that is composed of rigid-rod staves (para-octiphenyls, tan) and beta-sheet hoops (arrows) and can be activated with external ligands (fullerenes, golden spheres) and closed with internal blockers (alpha-helix, red ribbon) [Gorteau, V.; Bollot, G.; Mareda, J.; Pasini, D.; Tran, D.-H.; Lazar, A. N.; Coleman, A. W.; Sakai, N.; Matile, S. *Bioorg. Med. Chem.* **2005**, 13, 5171–5180].



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