

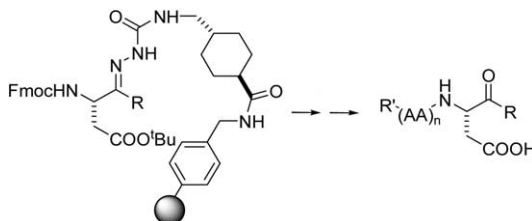
Contents

ARTICLES

Solid phase synthesis of selective caspase-3 peptide inhibitors

pp 845–851

Erich L. Grimm,* Bruno Roy,* Renee Aspiotis, Christopher I. Bayly, Donald W. Nicholson, Dita M. Rasper, Johanne Renaud, Sophie Roy, John Tam, Paul Tawa, John P. Vaillancourt, Steven Xanthoudakis and Robert J. Zamboni

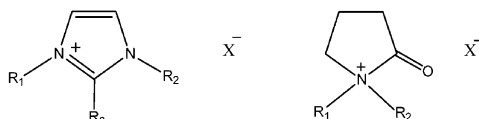


A robust method for the solid phase synthesis of a series of selective caspase-3 peptide inhibitors is described. The inhibitors can be obtained after cleavage from the solid support without further purification.

Synthesis and antimicrobial properties of imidazolium and pyrrolidinium salts

pp 853–857

D. Dembereinyamba, Ki-Sub Kim, Sukjeong Choi, Seung-Yeob Park, Huen Lee,* Chang-Jin Kim and Ick-Dong Yoo



$R_1 = C_8H_{17}, C_{10}H_{21}, C_{12}H_{25}, C_{14}H_{29}, C_{16}H_{33}$

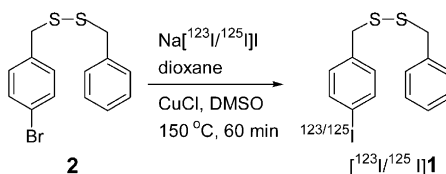
$R_2 = CH_3, CH_2CH_2OH$

$R_3 = H, CH_3 \quad X = Cl^-, Br^-$

Synthesis of radioiodine labeled dibenzyl disulfide for evaluation of tumor cell uptake

pp 859–864

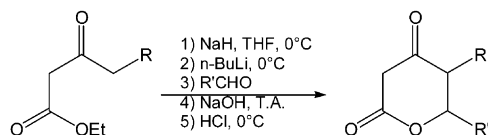
Eun Kyoung Ryu, Yearn Seong Choe,* Sang Sung Byun, Kyung-Han Lee, Dae Yoon Chi, Yong Choi and Byung-Tae Kim



Synthesis and evaluation of the molluscicidal activity of the 5,6-dimethyl-dihydro-pyran-2,4-dione and 6-substituted analogous

pp 865–869

Laura Cristiane de Souza, Aldenir Feitosa dos Santos, Antônio Euzébio Goulart Sant'Ana and Dennis de Oliveira Imbroisi*

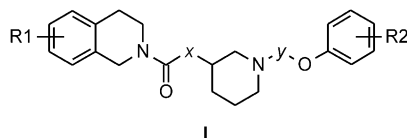


R = R' = Me, 48%, DL₉₀ = 96,95 ppm
 R = H; R' = Ph, 61%, DL₉₀ = 39,40 ppm
 R = H; R' = 2,3-(OMe)₂C₆H₃, 69%, DL₉₀ = 54,92 ppm
 R = H; R' = CH=CHCH₃, 80%, DL₉₀ = 30,73 ppm

Synthesis and pharmacological evaluation of *N*-acyl-1,2,3,4-tetrahydroisoquinoline derivatives as novel specific bradycardic agents

pp 871–882

Hideki Kubota,* Toshihiro Watanabe, Akio Kakefuda, Noriyuki Masuda, Kouichi Wada, Noe Ishii, Shuichi Sakamoto and Shinichi Tsukamoto

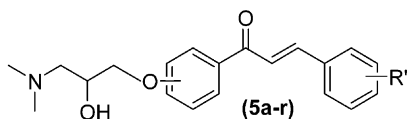


A series of *N*-acyl-1,2,3,4-tetrahydroisoquinoline derivatives (formula I) were synthesized and evaluated for their bradycardic activities in isolated guinea pig right atria and in urethane-anesthetized rats.

Synthesis and antihyperglycemic activity of chalcone based aryloxypropanolamines

pp 883–889

M. Satyanarayana, Priti Tiwari, Brajendra K. Tripathi, A. K. Srivastava and Ram Pratap*

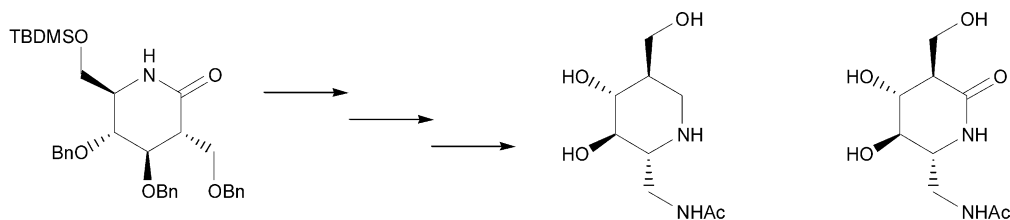


A series of chalcone based aryloxypropanolamines (**5a–r**) were synthesized and evaluated for antihyperglycemic activity. Among them compounds **5a**, **g**, **m**, **o**, **p** and **r** showed significant reduction in blood glucose levels in both sucrose loaded (SLM) and streptozotocin (STZ) induced diabetic animal models.

Design and synthesis of 2-acetamidomethyl derivatives of isofagomine as potential inhibitors of human lysosomal β -hexosaminidases

pp 891–902

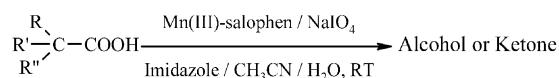
Richard J. B. H. N. van den Berg, Wilma Donker-Koopman, Jacques H. van Boom, Hans M. F. G. Aerts and Daan Noort*



Rapid and efficient oxidative decarboxylation of carboxylic acids with sodium periodate catalyzed by manganese (III) Schiff base complexes

pp 903–906

Valiollah Mirkhani,* Shahram Tangestaninejad, Majid Moghadam and Maryam Moghbel

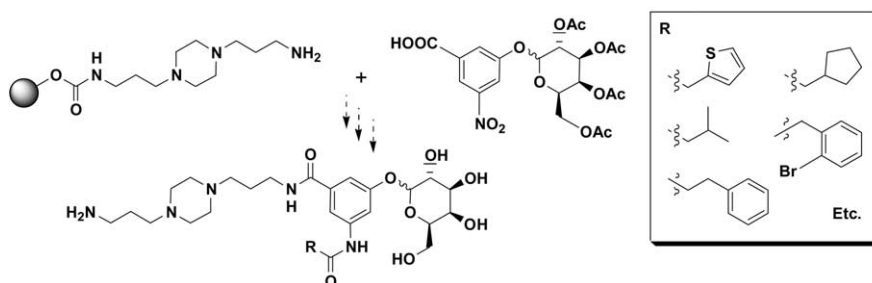


Oxidative decarboxylation of carboxylic acids catalyzed by Manganese (III) salophen complex to the corresponding carbonyl compounds with sodium periodate was investigated.

3,5-Substituted phenyl galactosides as leads in designing effective cholera toxin antagonists: synthesis and crystallographic studies

pp 907–920

Daniel D. Mitchell, Jason C. Pickens, Konstantin Korotkov, Erkang Fan* and Wim G. J. Hol*

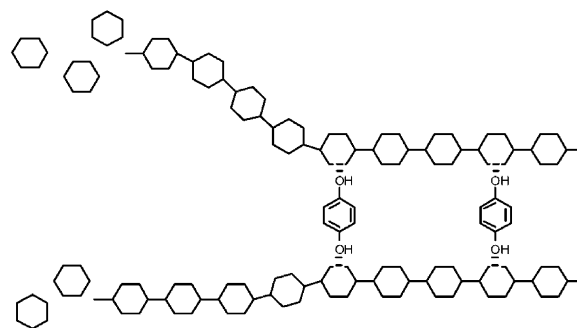


Hydroquinone, a control agent of agglutination and adherence of *Streptococcus mutans* induced by sucrose

pp 921–925

Masaki Himejima, Ken-ichi Nihei and Isao Kubo*

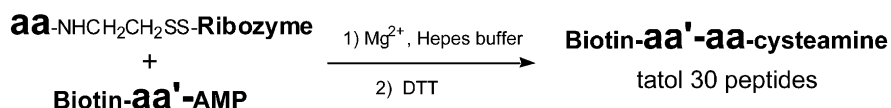
Hydroquinone was found to alter agglutination of *Streptococcus mutans* induced by sucrose. The newly formed agglutination product produced by hydroquinone does not kill this cariogenic bacterium and the formation is reversible. The agglutination altering activity of hydroquinone seems to be specific for strains of *S. mutans*. As a result, hydroquinone inhibits sucrose-induced adherence of *S. mutans*.



A peptidyl transferase ribozyme capable of combinatorial peptide synthesis

pp 927–933

Zhiyong Cui, Lele Sun and Biliang Zhang*



A structure-based strategy to identify new molecular scaffolds targeting the bacterial ribosomal A-site

pp 935–947

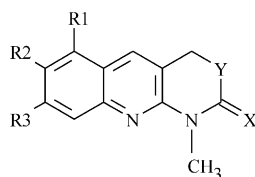
Nicolas Foloppe,* I-Jen Chen, Ben Davis, Adam Hold, Dave Morley and Rob Howes



Synthesis of novel 2,3-dihydro-1,4-dioxino[2,3-g]quinoline derivatives as potential antitumor agents

pp 949–956

M. T. Vázquez, M. Romero and M. D. Pujol*

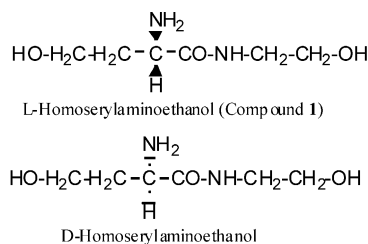


1. X=H,H Y=O, R2-R3= O(CH₂)₂O
2. X=O Y=O, R2-R3= O(CH₂)₂O
3. X=O Y=N-CH₃, R2-R3= O(CH₂)₂O
4. X=H,H Y=N-CH₃, R2-R3= O(CH₂)₂O
5. X=H,H Y=O, R1-R2= O(CH₂)₂O
6. X=O Y=O, R1-R2= O(CH₂)₂O
7. X=O, Y=NCH₃, R1-R2= O(CH₂)₂O
8. X=H,H Y=NCH₃, R1-R2= O(CH₂)₂O

L-Homoserylalminoethanol, a novel dipeptide alcohol inhibitor of eukaryotic DNA polymerase ε from a plant cultured cells, *Nicotina tabacum* L.

pp 957–962

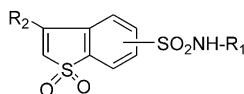
Isoko Kuriyama, Naoki Asano, Ikuo Kato, Masahiko Oshige, Akio Sugino, Yasuhiro Kadota, Kazuyuki Kuchitsu, Hiromi Yoshida, Kengo Sakaguchi and Yoshiyuki Mizushima*



Synthesis and cytotoxic activity of lipophilic sulphonamide derivatives of the benzo[b]thiophene 1,1-dioxide

pp 963–968

R. Villar, I. Encio,* M. Migliaccio, M. J. Gil and V. Martinez-Merino*

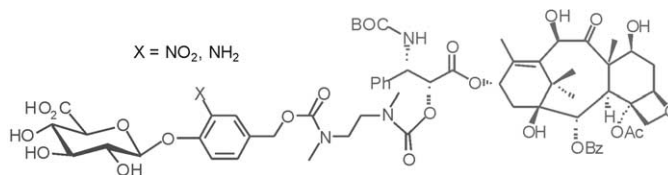


Several structural modifications were analysed on benzo[b]thiophenesulphonamide 1,1-dioxide system to find new potential antineoplastic compounds. Lipophilic substituents on the sulphonamide group significantly increased cytotoxicity against a panel of tumour cell lines. The most active compound showing GI50 values of 1–9 nM against HT-29, CCRF-CEM, K-562 and MEL-AC cells and of 200 nM against HTB-54 cells was the *N*-4-methoxyphenyl derivative **15**.

First enzymatically activated Taxotere prodrugs designed for ADEPT and PMT

pp 969–977

Emmanuel Bouvier, Sylvie Thiot, Frédéric Schmidt* and Claude Monneret

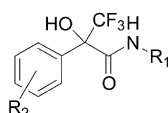


The synthesis and biological evaluation of the first two enzymatically activated prodrugs of Taxotere® are reported. They fulfil all the requirements for an ADEPT or a PMT strategy in cancer chemotherapy.

Design, synthesis and evaluation of novel hydroxyamides as orally available anticonvulsants

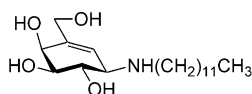
pp 979–993

Hilary A. Schenck, Paul W. Lenkowski, Indrani Choudhury-Mukherjee, Seong-Hoon Ko, James P. Stables, Manoj K. Patel and Milton L. Brown*

**Convenient synthesis and evaluation of glycosidase inhibitory activity of α - and β -galactose-type valienamines, and some *N*-alkyl derivatives**

pp 995–1002

Seiichi Ogawa,* Yuko Sakata, Naoyuki Ito, Maiko Watanabe, Kazuya Kabayama, Masayoshi Itoh and Takashi Korenaga

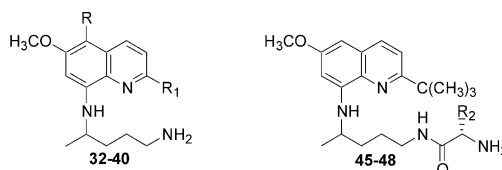


IC₅₀ 0.01 μ M
 β -Galactosidase (Bovine liver)

Synthesis and blood-schizontocidal antimalarial activities of 2-substituted/2,5-disubstituted-8-quinolinamines and some of their amino acid conjugates

pp 1003–1010

Meenakshi Jain, Suryanarayana Vangapandu, Sandeep Sachdeva and Rahul Jain*

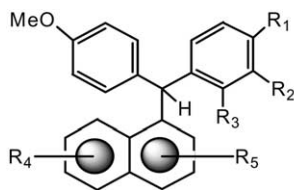


Synthesis and in vivo antimalarial activities of ring-substituted 8-quinolinamines and some of their L-amino acid conjugates against drug-sensitive and multi-drug-resistant strains are described.

Diaryl naphthyl methanes a novel class of anti-implantation agents

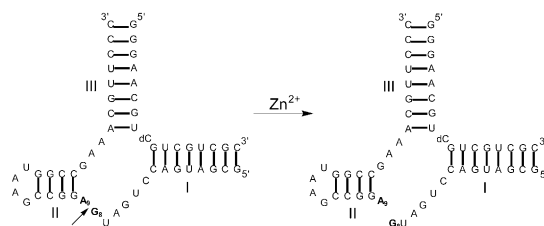
pp 1011–1021

Neeta Srivastava, Sangita, S. Ray, M. M. Singh, Anila Dwivedi and Atul Kumar*

R₄ / R₅ Optionally reduced ring**Interactions of the antibiotics neomycin B and chlortetracycline with the hammerhead ribozyme as studied by Zn²⁺-dependent RNA cleavage**

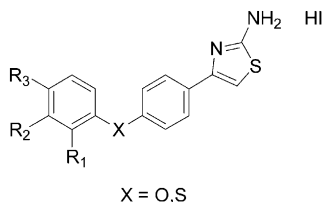
pp 1023–1028

Emily J. Borda and Snorri Th. Sigurdsson*

**Synthesis and evaluation of substituted 4-aryloxy- and 4-arylsulfanyl-phenyl-2-aminothiazoles as inhibitors of human breast cancer cell proliferation**

pp 1029–1036

Michael J. Gorczynski, Rachel M. Leal, Susan L. Mooberry, John H. Bushweller and Milton L. Brown*



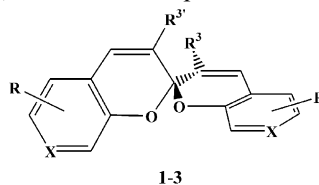
X = O, S

Spirobipyridopyrans, spirobinaphthopyrans, indolinospiropyridopyrans, indolinospironaphthopyrans and indolinospironaphtho-1,4-oxazines: synthesis, study of X-ray crystal structure, antitumoral and antiviral evaluation

pp 1037–1045

Silvana Raić-Malić, Linda Tomašković, Draginja Mrvoš-Sermek, Biserka Prugovečki, Mario Cetina, Mira Grdiša, Krešimir Pavelić, Albrecht Mannschreck, Jan Balzarini, Erik De Clercq and Mladen Mintas*

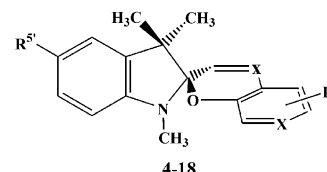
The present study deals with various, structurally closely related types of the *spiro*-compounds: spirobipyridopyran (**1**), spirobinaphthopyrans (**2** and **3**), indolinospironaphthopyrans (**4–10**), indolinospironaphthopyrans (**11–14**), indolinospiropyridopyran (**15**) and indolinospironaphtho-1,4-oxazines (**16–18**) and their cytostatic and antiviral activities.



1-3

R³ / R³' = (CH₂)₃, C₆H₅/C₆H₅R = CH₃, benzo

X = CH, N



4-18

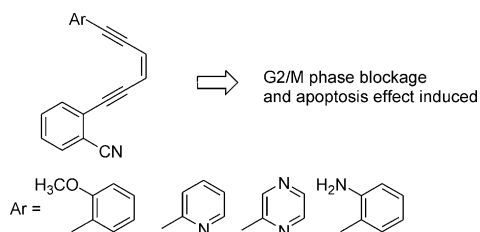
R⁵' = H, NO₂, ClR = NO₂, OCH₃, benzo

X = CH, N

Remarkable G2/M phase arrest and apoptotic effect performed by 2-(6-aryl-3-hexen-1,5-diynyl)benzonitrile antitumor agents

pp 1047–1053

Yu-Hsiang Lo, Chi-Fong Lin, Ming-Chu Hsieh and Ming-Jung Wu*

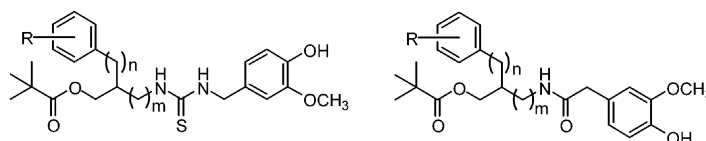


Several 2-(6-aryl-3-hexen-1,5-diynyl)benzonitriles showed growth inhibition effects on a full panel of sixty human cancer cell lines in low micro-concentrations together with a significant G2/M arrest in the cell growth cycle and an apoptotic progress induction.

Structure–activity relationships of simplified resiniferatoxin analogues with potent VR1 agonism elucidates an active conformation of RTX for VR1 binding

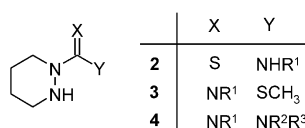
pp 1055–1069

Jeewoo Lee,* Su Yeon Kim, Soyoung Park, Ju-Ok Lim, Ji-Min Kim, Myungshim Kang, Jiyoung Lee, Sang-Uk Kang, Hyun-Kyung Choi, Mi-Kyung Jin, Jacqueline D. Welter, Tamas Szabo, Richard Tran, Larry V. Pearce, Attila Toth and Peter M. Blumberg

**Synthesis, structural investigations and biological evaluation of novel hexahydropyridazine-1-carboximidamides, -carbothioamides and -carbothioimidic acid esters as inducible nitric oxide synthase inhibitors**

pp 1071–1089

Olaf Morgenstern,* Heike Wanka, Ilka Röser, Antje Steveling and Beate Kuttler

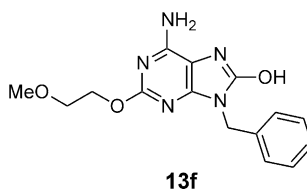
R¹ - R³: alkyl, aryl

A series of variously substituted hexahydropyridazine-1-carbothioamides **2**, -carbothioimidic acid methyl ester hydroiodides **3** and -carboximidamides hydroiodides **4** was synthesized and dose-dependently evaluated as potential iNOS inhibitors with insulin-producing RIN-5AH cells.

Synthesis and evaluation of 2-substituted 8-hydroxyadenines as potent interferon inducers with improved oral bioavailabilities

pp 1091–1099

Ayumu Kurimoto,* Tetsuhiro Ogino, Shinji Ichii, Yoshiaki Isobe, Masanori Tobe, Haruhisa Ogita, Haruo Takaku, Hironao Sajiki, Kosaku Hirota and Hajime Kawakami

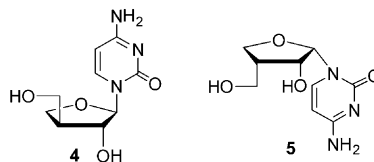


Compound **13f** exhibited a potent IFN inducing activity both in vitro and in vivo. Compound **13f** induced IFN from the dosage of 0.03 mg/kg by oral administration in mouse, and showed an excellent bioavailability (F=40%).

Synthesis of D- and L-apio nucleoside analogues with 2'-hydroxyl group as potential anti-HIV agents

pp 1101–1109

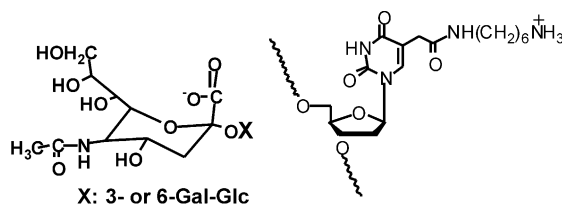
Dong Zhe Jin, Sung Hee Kwon, Hyung Ryong Moon, Prashantha Gunaga, Hea Ok Kim, Dae-Kee Kim, Moon Woo Chun* and Lak Shin Jeong



Sialyllactose-binding modified DNA aptamer bearing additional functionality by SELEX

pp 1111–1120

Mohammad Mehedi Masud, Masayasu Kuwahara, Hiroaki Ozaki and Hiroaki Sawai*

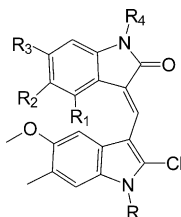


Sialyllactose-binding DNA aptamer was obtained from a library of modified DNA containing thymidine analogue bearing a positively charged amino group, which could enhance the binding with sialyllactose that contains a negatively charged carboxyl group.

Substituted *E*-3-(2-chloro-3-indolylmethylene)1,3-dihydroindol-2-ones with antitumor activity

pp 1121–1128

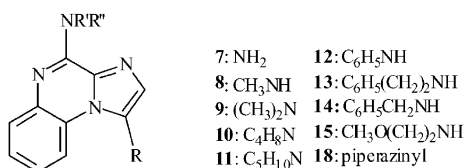
Aldo Andreani,* Massimiliano Granaola, Alberto Leoni, Alessandra Locatelli, Rita Morigi, Mirella Rambaldi, Vida Garaliene, Giovanna Farruggia and Lanfranco Masotti



Design and synthesis of novel imidazo[1,2-*a*]quinoxalines as PDE4 inhibitors

pp 1129–1139

Carine Deleuze-Masquéfa, Grégori Gerebtzoff, Guy Subra, Jean-Roch Fabreguettes, Annabel Ovens, Maëlle Carraz, Marie-Paule Strub, Jacques Bompard, Pascal George and Pierre-Antoine Bonnet*

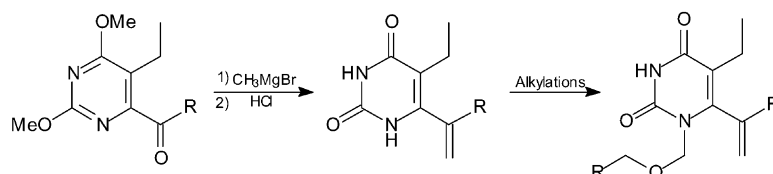


New imidazo[1,2-*a*]quinoxaline derivatives have been synthesised by condensation of an appropriate α -aminoalcohol with a quinoxaline followed by intramolecular cyclisation and nucleophilic substitutions. Several of them revealed powerful inhibition properties of PDE4.

Synthesis of 6-arylvinyl analogues of the HIV drugs SJ-3366 and Emivirine

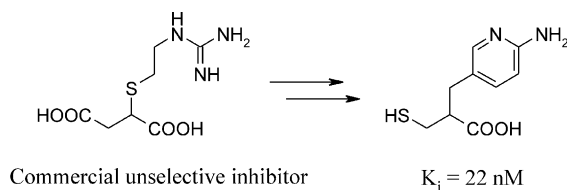
pp 1141–1149

Michael Wamberg, Erik B. Pedersen,* Nasser R. El-Brollosy and Claus Nielsen

**Design and synthesis of potent, orally active, inhibitors of carboxypeptidase U (TAFIa)**

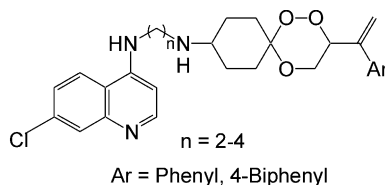
pp 1151–1175

Magnus O. Polla,* Louise Tottie, Carita Nordén, Marcel Linschoten, Djordje Müsil, Susanne Trumpp-Kallmeyer, Inger R. Aukrust, Rune Ringom, Kjetil H. Holm, Siren M. Neset, Marcel Sandberg, John Thurmond, Peng Yu, Georgeta Hategan and Herb Anderson

**Synthesis and antimalarial activity of a new series of trioxaquinones**

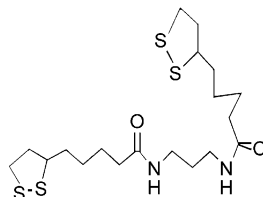
pp 1177–1182

Chandan Singh,* Heetika Malik and Sunil K. Puri

**Synthesis and characterization of new and potent α -lipoic acid derivatives**

pp 1183–1190

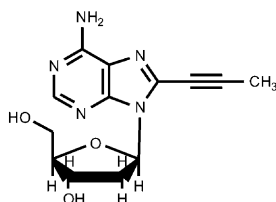
Arie Gruzman, Adel Hidmi, Jehoshua Katzhendler,* Abdalla Haj-Yehie and Shlomo Sasson



Structural study of four-stranded quadruplex structures containing 2'-deoxy-8-(propyn-1-yl)adenosine

pp 1191–1197

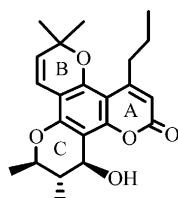
Veronica Esposito, Antonio Randazzo, Aldo Galeone, Michela Varra and Luciano Mayol*



Anti-HIV natural product (+)-calanolide A is active against both drug-susceptible and drug-resistant strains of *Mycobacterium tuberculosis*

pp 1199–1207

Ze-Qi Xu,* William W. Barrow, William J. Suling, Louise Westbrook, Esther Barrow, Yuh-Meei Lin and Michael T. Flavin



(+)–Calanolide A

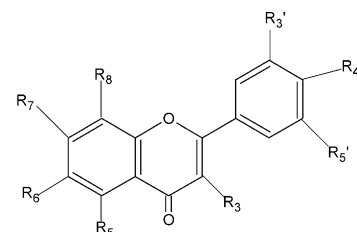
Naturally occurring anti-HIV-1 agent (+)-calanolide A was found to be active against all of the strains of *Mycobacterium tuberculosis* tested, including those resistant to the standard antitubercular drugs.

QSAR study of flavonoid derivatives as p56lck tyrosinkinase inhibitors

pp 1209–1214

Abhilash Thakur,* S. Vishwakarma and Mamta Thakur

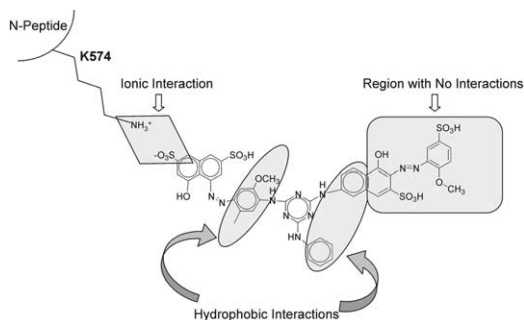
QSAR studies on 104 flavonoids derivatives as p56lck protein tyrosin kinase inhibitors were performed using hydration energy and hydrophobic parameters. The obtained results demonstrated in detail, which specify that hydration energy and hydrophobic parameters of the compounds play a significant role in their binding. The significance of presence and absence of substituents on particular positions is successfully explored with the help of indicator parameters. The results are critically discussed on the basis of multiple linear regression parameters.



Synthesis and anti-HIV-1 activity of 4-[4-(4,6-bisphenylamino-[1,3,5]triazin-2-ylamino)-5-methoxy-2-methylphenylazo]-5-hydroxynaphthalene-2,7-disulfonic acid and its derivatives

pp 1215–1220

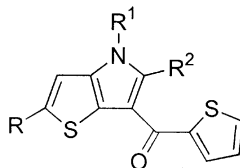
Kannan P. Naicker, Shibo Jiang, Hong Lu, Jiahong Ni, Louise Boyer-Chatenet, Lai-Xi Wang* and Asim K. Debnath*



Synthesis and biological evaluation of thiophene [3,2-*b*] pyrrole derivatives as potential anti-inflammatory agents

pp 1221–1230

P. Rajender Kumar, S. Raju, P. Satish Goud, M. Sailaja, M. R. Sarma, G. Om Reddy,*
M. Prem Kumar, V. V. R. M. Krishna Reddy, T. Suresh and Pragathi Hegde

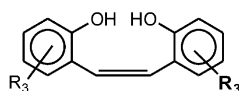


A series of Thiophene [3,2-*b*] pyrrole derivatives have been synthesized and the anti-inflammatory effect was described. the results pointed out the critical role of the group linked in the N-1 position and 2,5 positions of thiophene [3,2-*b*] pyrrole with different functional groups.

A mechanistic study on the nuclease activities of some hydroxystilbenes

pp 1231–1237

Mahesh Subramanian, Uma Shadakshari and Subrata Chattopadhyay*

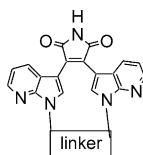


Two new hydroxy stilbenes showed impressive nuclease activities providing dsb in DNA. The nuclease activities of the compounds could be correlated with their superoxide radical generating capacities, which, again were strongly dependent on the oxygenation in the aromatic rings.

Synthesis and biological evaluation of novel macrocyclic bis-7-azaindolylmaleimides as potent and highly selective glycogen synthase kinase-3 β (GSK-3 β) inhibitors

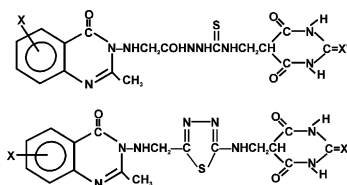
pp 1239–1255

Lan Shen, Catherine Prouty, Bruce R. Conway, Lori Westover, Jun Z. Xu, Richard A. Look, Xin Chen, Mary Pat Beavers, Jerry Roberts, William V. Murray, Keith T. Demarest and Gee-Hong Kuo*

**Synthesis of some newer derivatives of substituted quinazolinonyl-2-oxo/thiobarbituric acid as potent anticonvulsant agents**

pp 1257–1264

Archana, V. K. Srivastava and Ashok Kumar*




Substitutedquinazolinonyl-2-oxo-/thiobarbituric acid were designed and prepared as potent anticonvulsant agents. Pharmacological evaluation were performed on the synthesized compounds.

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*Corresponding author

+ Supplementary data available via ScienceDirect

COVER

2004: Overlaps of the eight known aldolase alpha-beta barrels in 2-Deoxyribose-5-phosphate aldolase (DERA). Ribbon model for DERA is shown in green, with key Lys residues capable of Schiff base formation highlighted in stick figure. Reactive Lys167 is shown in yellow. DeSantis, G.; Liu, J.; Clark, D. P.; Heine, A.; Wilson, I. A.; and Wong, C.-H. *Bioorganic & Medical Chemistry* **2003**, *11*, 43–52.



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