

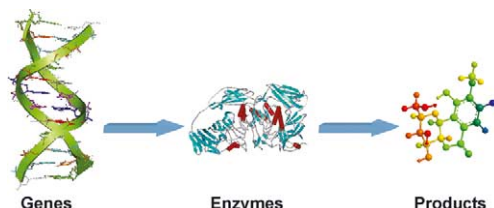
## Contents

### REVIEW

#### Enzymes in the synthesis of bioactive compounds: the prodigious decades

pp 1817–1834

Eduardo García-Junceda,\* Juan Francisco García-García, Agatha Bastida and  
Alfonso Fernández-Mayoralas



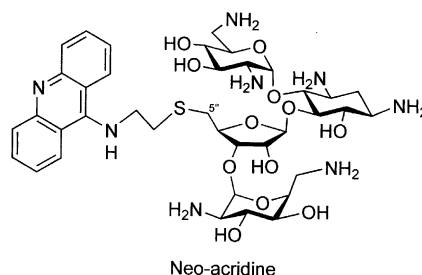
In this review, our intention is to highlight the main landmarks of the last 20 years that have led to transfer the chemical efficiency shown by the enzymes in the cell to the synthesis of bioactive molecules in the laboratory.

### ARTICLES

#### Specificity of neomycin analogues bound to the packaging region of human immunodeficiency virus type 1 RNA

pp 1835–1843

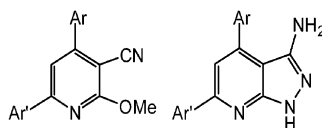
Mark P. McPike, Jerry Goodisman and James C. Dabrowiak\*



#### Synthesis, antimicrobial activity and conformational analysis of novel substituted pyridines: BF<sub>3</sub>-promoted reaction of hydrazine with 2-alkoxy pyridines

pp 1845–1852

Fatma E. Goda,\* Alaa A.-M. Abdel-Aziz and Omer A. Attetf

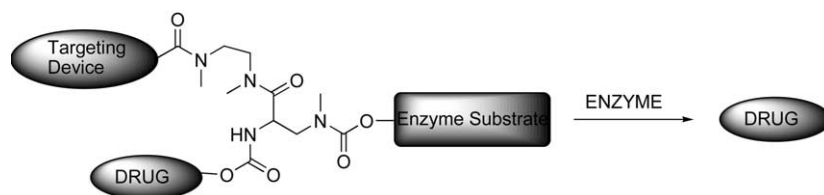


Lewis acid-catalyzed reaction of hydrazine (99%) with 2-methoxy-3-cyano-4,6-diarylpyridines afforded the corresponding 1H-pyrazolo[3,4-b]pyridines under mild conditions.

### New chemical adaptor unit designed to release a drug from a tumor targeting device by enzymatic triggering

pp 1853–1858

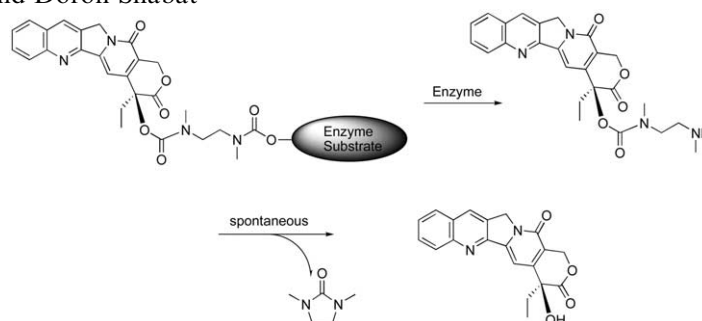
Anna Gopin, Christoph Rader and Doron Shabat\*



### Bioactivation of carbamate-based 20(S)-camptothecin prodrugs

pp 1859–1866

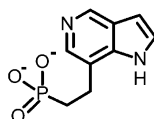
Neta Pessah, Mika Reznik, Marina Shamis, Ferda Yantiri, Hong Xin, Katherine Bowdish, Noam Shomron, Gil Ast and Doron Shabat\*



### Inhibition studies with rationally designed inhibitors of the human low molecular weight protein tyrosine phosphatase

pp 1867–1880

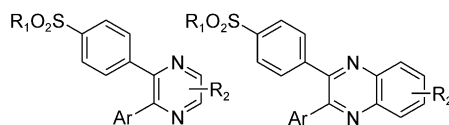
Adam P. R. Zabell, Steven Corden, Paul Helquist, Cynthia V. Stauffacher and Olaf Wiest\*



### Synthesis and biological evaluation of 2,3-diarylpyrazines and quinoxalines as selective COX-2 inhibitors

pp 1881–1893

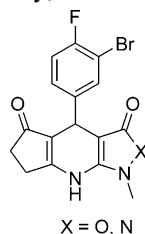
Sunil K. Singh,\* V. Saibaba, V. Ravikumar, Santosh V. Rudrawar, Pankaj Daga, C. Seshagiri Rao, V. Akhila, P. Hegde and Y. Koteswar Rao\*



**Structure–activity studies for a novel series of tricyclic dihydropyridopyrazolones and dihydropyridoisoaxazolones as K<sub>ATP</sub> channel openers**

pp 1895–1904

Irene Drizin,\* Robert J. Altenbach, Steven A. Buckner, Kristi L. Whiteaker, Victoria E. Scott, John F. Darbyshire, Venkata Jayanti, Rodger F. Henry, Michael J. Coghlan, Murali Gopalakrishnan and William A. Carroll

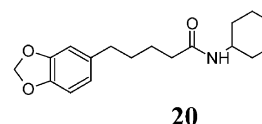
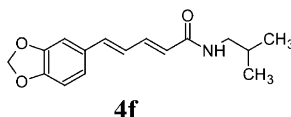
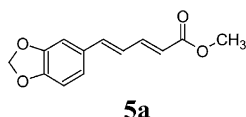


SAR for a new class of K<sub>ATP</sub> channel openers is described. The compounds exhibited great potency and were metabolically stable.

**Effects of piperine analogues on stimulation of melanocyte proliferation and melanocyte differentiation**

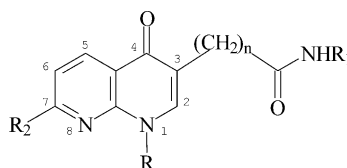
pp 1905–1920

Radhakrishnan Venkatasamy, Laura Faas, Antony R. Young, Amala Raman and Robert C. Hider\*

**Synthesis and biological evaluation of 1,8-naphthyridin-4(1H)-on-3-carboxamide derivatives as new ligands of cannabinoid receptors**

pp 1921–1933

Pier Luigi Ferrarini,\* Vincenzo Calderone, Tiziana Cavallini, Clementina Manera, Giuseppe Saccomanni, Luca Pani, Stefania Rui and Gian Luigi Gessa

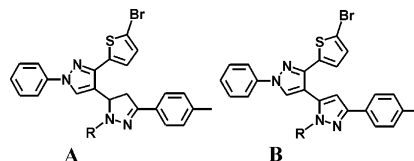


Radioligand binding data show that the naphthyridine derivatives examined generally exhibit a higher affinity for the CB<sub>2</sub> receptor than for the CB<sub>1</sub> receptor.

**Design, synthesis and biological evaluation of some pyrazole derivatives as anti-inflammatory-antimicrobial agents**

pp 1935–1945

Adnan A. Bekhit\* and Tarek Abdel-Aziem



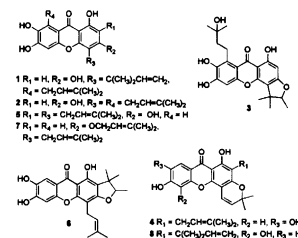
The synthesis of novel series of structurally related 1H-pyrazolyl derivatives is described. All the newly synthesized compounds were tested for their anti-inflammatory and antimicrobial activities. In addition, COX-1 and COX-2 inhibitory activities, ulcerogenic effects and acute toxicity were determined.

**Cytotoxic isoprenylated xanthenes from *Cudrania tricuspidata***

pp 1947–1953

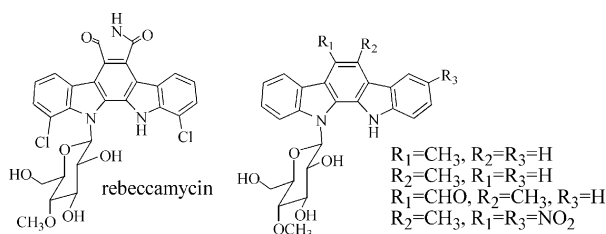
Ying-Shu Zou, Ai-Jun Hou,\* Guo-Fu Zhu, Yan-Feng Chen, Han-Dong Sun and Qin-Shi Zhao

Eight new xanthenes, cudratricusxanthenes A–H (1–8), and ten known compounds (9–18) were isolated from the roots of *Cudrania tricuspidata*. 5, 7, cudraxanthone M (10), and toxylloxanthone C (12) showed inhibitory effects on HCT-116, SMMC-7721, SGC-7901, and BGC-823 cell lines ( $IC_{50}$  = 1.6–11.8  $\mu$ g/mL). 2, 4, and xanthone V<sub>1a</sub> (11) displayed significant cytotoxicity against HCT-116, SMMC-7721, and SGC-7901 ( $IC_{50}$  = 1.3–9.8  $\mu$ g/mL).

**Analogues of antifungal tjipanazoles from rebeccamycin**

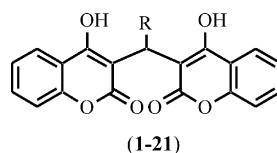
pp 1955–1962

Aline Voltaire, Pascale Moreau, Martine Sancelme, Maria Matulova, Stéphane Léonce, Alain Pierré, John Hickman, Bruno Pfeiffer, Pierre Renard, Nathalie Dias, Christian Bailly and Michelle Prudhomme\*

**Biscoumarin: new class of urease inhibitors; economical synthesis and activity**

pp 1963–1968

Khalid Mohammed Khan,\* Sajid Iqbal, Muhammad Arif Lodhi, Ghulam Murtaza Maharvi, Zia-Ullah, Muhammad Iqbal Choudhary, Atta-ur-Rahman and Shahnaz Perveen



A variety of biscoumarins (1–21) with variable substituents at C-11 were synthesized with an improved method and evaluated as urease inhibitors.

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\*Corresponding author

 Supplementary data available via ScienceDirect

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**COVER**

Advances in biocatalysis and recombinant DNA technologies, made during the last 20 years, have enabled researchers to go from genes to compounds and to apply enzyme catalysis in a variety of approaches to new bioactive compounds. The graphic was designed from the following PDB entries: 1FUA (Dreyer, M. K.; Schulz, G. E. *J. Mol. Biol.* (1996) **259**, 458–466) and 112D (Brown, T., Hunter, W. N., Kneale, G., Kennard, O. *Proc. Natl. Acad. Sci. USA* (1986) **83**, 2402), using the program ViewerPro 4.2. © 2004 E. García-Junceda. Published by Elsevier Ltd.



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