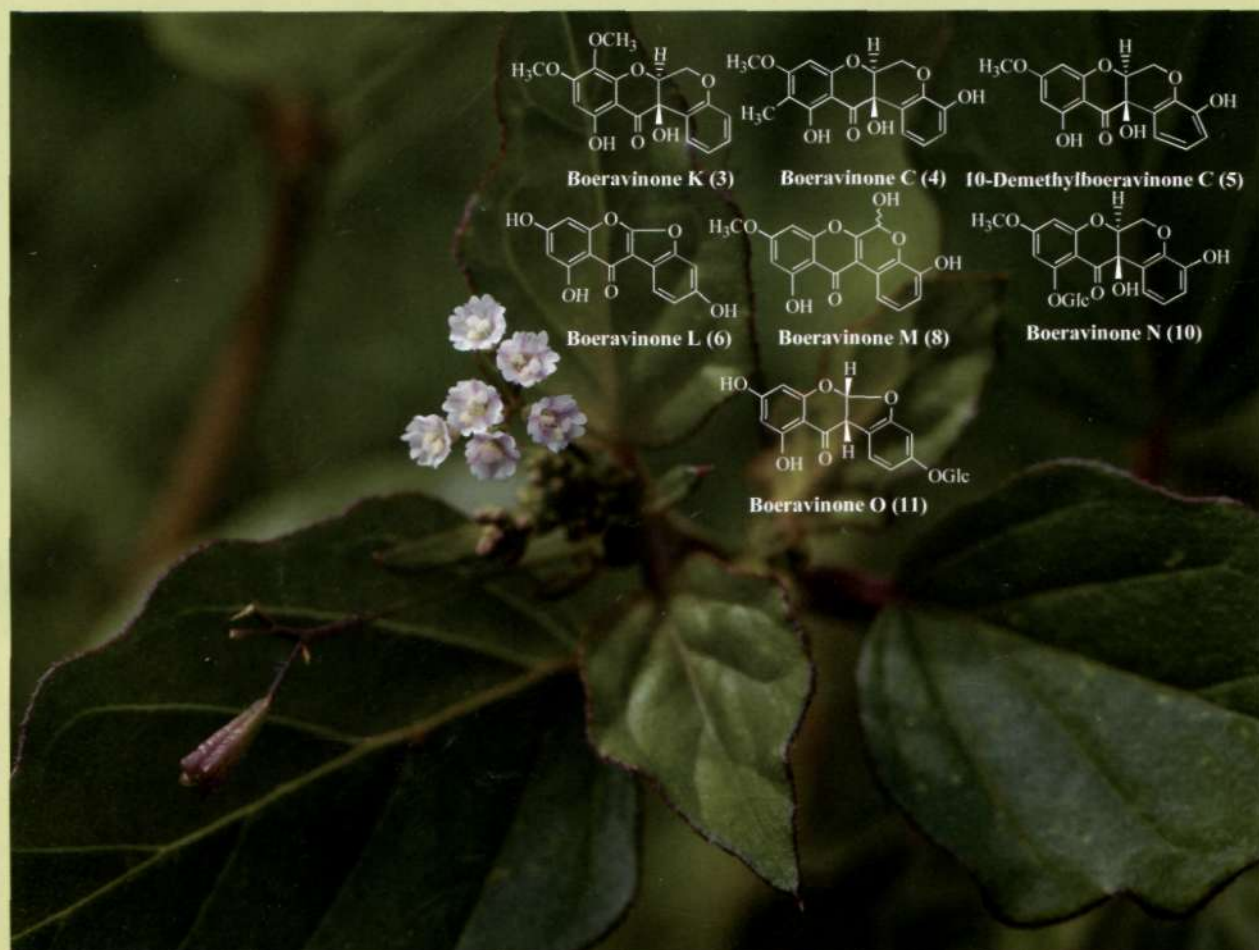


# Chemical and Pharmaceutical Bulletin

June 2013

CPBTAL 61 (6) 599-678 (2013)

Vol. 61 No. 6



New Rotenoids and Coumaronochromonoids from the Aerial Part of *Boerhaavia erecta*

pp. 624-630



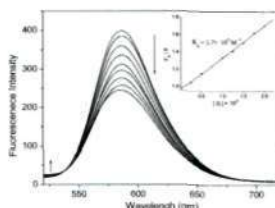
THE PHARMACEUTICAL SOCIETY OF JAPAN

<http://cpb.pharm.or.jp>

## Regular Articles

### Antitumor Activity and DNA-Binding Investigations of Isoeuxanthone and Its Piperidinyl Derivative

H. Wang, L. Wei, H. Yan, X. Gao, B. Xu, and N. Tang



The binding mode and affinity of isoeuxanthone (1,6-dihydroxyxanthone) (1) and its piperidinyl derivative (1-hydroxy-6-(2-(1-piperidinyl)ethoxy)xanthone) (2) with calf thymus DNA were studied using spectrophotometric methods and viscosity measurements. Results indicate that the binding affinity of 2 is stronger than 1. In addition, the cytotoxic effects of both compounds were evaluated with the human cervical cancer cell line (HeLa) and human hepatocellular liver carcinoma cell line (HepG2) using acid phosphatase assay. Analyses show that the piperidinylethoxy substituted xanthones exhibit more effective cytotoxic activity than isoeuxanthone against the two cancer cells. The effects on the inhibition of tumor cells *in vitro* agree with the studies of DNA-binding.

pp. 599–603

### The Antimicrobial Activities of Phenylbutyrates against *Helicobacter pylori*

C.-Y. Lo, H.-L. Cheng, J.-L. Hsu, M.-H. Liao, R.-L. Yen, and Y.-C. Chen

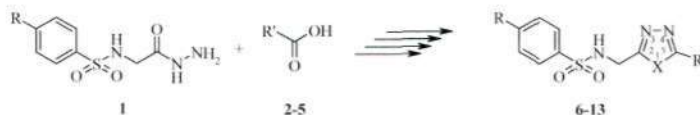
Inhibitory effect of phenyl butyrates on *Helicobacter pylori*

Bacterial strain/compound	Inhibition zone (mm)		
	1	2	3
<i>Helicobacter pylori</i> ATCC 43504	32.7 ± 2.5	33.5 ± 2.5	34.0 ± 2.6
<i>Helicobacter pylori</i> No. 258 <sup>b</sup>	40.0 ± 1.7	43.0 ± 1.0	41.7 ± 0.6
<i>Escherichia coli</i> ATCC 25922	32.3 ± 0.6	22.5 ± 1.5	21.7 ± 1.2
<i>Bifidobacterium bifidum</i> ATCC 14614	8.0 ± 0	8.0 ± 0	8.0 ± 0
<i>Lactobacillus reuteri</i> JCT1112	8.0 ± 0	8.0 ± 0	8.0 ± 0

pp. 604–610

### Synthesis and Antioxidant Activity of a Variety of Sulfonamidomethane Linked 1,3,4-Oxadiazoles and Thiadiazoles

M. Swapna, C. Premakumari, S. Nagi Reddy, A. Padmaja, and V. Padmavathi

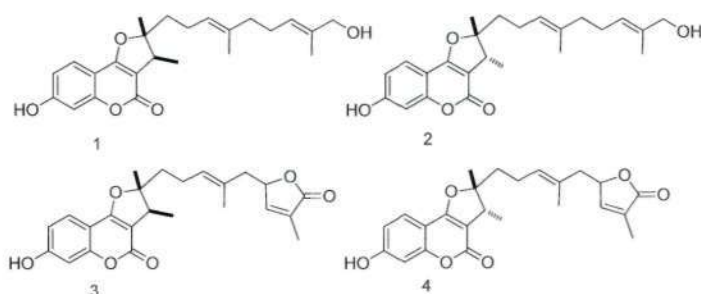


<b>R'</b>	<b>6 / 7 / 8 / 9: X = O</b>	<b>R</b> a = H
<b>2 / 6 / 10</b> CH <sub>2</sub> Ph	<b>10 / 11 / 12 / 13: X = S</b>	b = Me
<b>3 / 7 / 11</b> CH <sub>2</sub> SO <sub>2</sub> Ph		c = Cl
<b>4 / 8 / 12</b> CH <sub>2</sub> NHCOPh		
<b>5 / 9 / 13</b> CH <sub>2</sub> NHSO <sub>2</sub> Ph		

pp. 611–617

### Sesquiterpene Coumarins from *Ferula fukanensis* and Their Proinflammatory Cytokine Gene Expression Inhibitory Effects

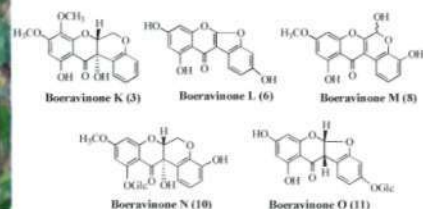
T. Motai, A. Daikonya, and S. Kitanaka



pp. 618–623

### New Rotenoids and Coumaronochromonoids from the Aerial Part of *Boerhaavia erecta*

T. M. L. Do, A. V. Truong, T. G. Pinnock, L. M. Pratt, S. Yamamoto, H. Watarai, D. Guillaume, and K. P. P. Nguyen

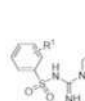


pp. 624–630

### Design, Synthesis and Antiviral Activity of 2-(3-Amino-4-piperazinylphenyl)chromone Derivatives as Potential Antitumor Topoisomerase I Inhibitors

K. Shou, J. Li, Y. Jin, and Y. Lv

In the present study, a series of novel quinolone derivatives (**6a–6n**) were designed, synthesized, and evaluated for antitumor activities on three cancer cell lines. Among these compounds, **6j** showed the most inhibition on cancer cell lines. Docking simulation was performed to insert compound **6j** into the crystal structure of Top 1 to determine the probable binding model.



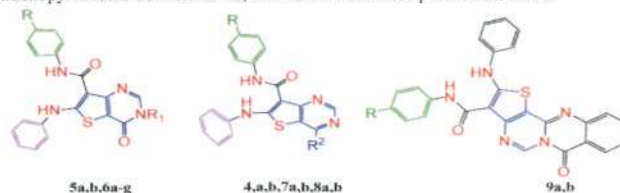
	R <sup>1</sup> =	R <sup>2</sup> =
<b>6a</b>	H	C <sub>2</sub> H <sub>5</sub>
<b>6b</b>	H	<i>o</i> -C <sub>2</sub> H <sub>5</sub>
<b>6c</b>	4-CH <sub>3</sub>	C <sub>2</sub> H <sub>5</sub>
<b>6d</b>	4-CH <sub>3</sub>	<i>o</i> -C <sub>2</sub> H <sub>5</sub>
<b>6e</b>	4-Cl	C <sub>2</sub> H <sub>5</sub>
<b>6f</b>	4-Cl	<i>o</i> -C <sub>2</sub> H <sub>5</sub>
<b>6g</b>	4-CF <sub>3</sub>	C <sub>2</sub> H <sub>5</sub>
<b>6h</b>	4-CF <sub>3</sub>	<i>o</i> -C <sub>2</sub> H <sub>5</sub>
<b>6i</b>	2-Cl	C <sub>2</sub> H <sub>5</sub>
<b>6j</b>	2-Cl	<i>o</i> -C <sub>2</sub> H <sub>5</sub>
<b>6k</b>	2-CF <sub>3</sub>	C <sub>2</sub> H <sub>5</sub>
<b>6l</b>	2-CF <sub>3</sub>	<i>o</i> -C <sub>2</sub> H <sub>5</sub>
<b>6m</b>	3-Cl	C <sub>2</sub> H <sub>5</sub>
<b>6n</b>	3-Cl	<i>o</i> -C <sub>2</sub> H <sub>5</sub>

pp. 631–636

### Synthesis of Some Novel Thieno[3,2-*d*]pyrimidines as Potential Cytotoxic Small Molecules against Breast Cancer

M. Kandeel, M. K. Abdelhameid, K. Eman, and M. B. Labib

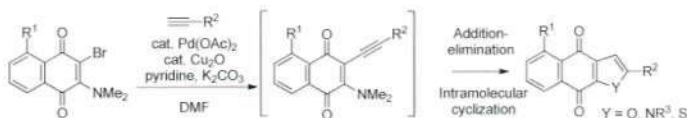
The study aim is to investigate the thienopyrimidine derivatives as cytotoxic molecules so a variety of novel thieno [3,2-*d*]pyrimidines was synthesized. The newly synthesized compounds were evaluated for their *in vitro* cytotoxic activity against MCF7. The thienopyrimidine derivatives **4a**, **5a** and **9a** were more potent than DOX.



pp. 637–647

### Concise Synthesis of Heterocycle-Fused Naphthoquinones by Employing Sonogashira Coupling and Tandem Addition-Elimination/Intramolecular Cyclization

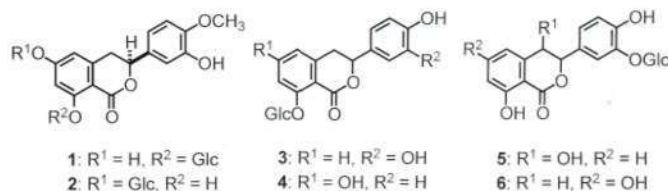
K. Ueda, M. Yamashita, K. Sakaguchi, H. Tokuda, and A. Iida



pp. 648–654

### Medicinal Flowers. XXXX. Structures of Dihydroisocoumarin Glycosides and Inhibitory Effects on Aldose Reductase from the Flowers of *Hydrangea macrophylla* var. *thunbergii*

J. Liu, S. Nakamura, Y. Zhuang, M. Yoshikawa, G. M. E. Hussein, K. Matsuo, and H. Matsuda



pp. 655–661

