

TM  
B60/P6

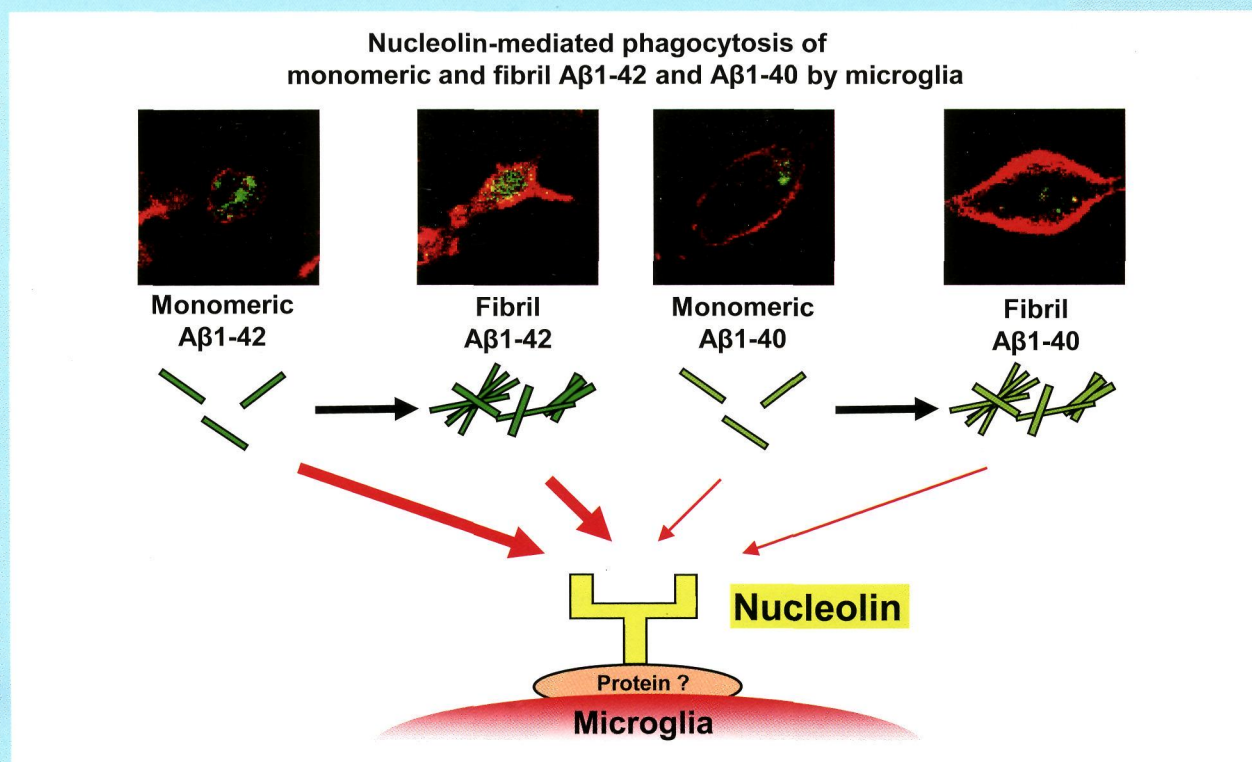
# Biological and Pharmaceutical Bulletin

October 2013

BPBLEO 36 (10) 1525-1652 (2013)

Vol. 36 No. 10

Biological and Pharmaceutical Bulletin succeeds to Journal of Health Science from 2012.



**Cover Figure** Clearance of Amyloid  $\beta$  Peptide 1-42 by Microglia

*pp.* 1587-1593

- Highlighted Paper** • Clearance of Amyloid  $\beta$  Peptide 1-42 by Microglia  
(Daisuke Ozawa *et al.*) *pp.* 1587-1593
- PCB-Mediated Decrease in Serum Thyroxine Level  
(Yoshihisa Kato *et al.*) *pp.* 1594-1601



THE PHARMACEUTICAL SOCIETY OF JAPAN

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



# Biological and Pharmaceutical Bulletin

Vol. 36, No. 10      October 2013

© Copyright, 2013, by the Pharmaceutical Society of Japan.

## Contents

### Communication to the Editor

- Possible Involvement of Pirfenidone Metabolites in the Antifibrotic Action of a Therapy for Idiopathic Pulmonary Fibrosis  
**K. Togami, Y. Kanehira, and H. Tada** ..... 1525

### Regular Articles

- Sodium Alginate Inhibits Methotrexate-Induced Gastrointestinal Mucositis in Rats  
**A. Yamamoto, T. Itoh, R. Nasu, E. Kajiwara, and R. Nishida** ..... 1528
- Anti-*Helicobacter pylori* and Antiulcerogenic Activities of the Root Cortex of *Paeonia suffruticosa*  
**J. Jung, K. H. Bae, and C.-S. Jeong** ..... 1535
- Sesamin Induces Cell Cycle Arrest and Apoptosis through the Inhibition of Signal Transducer and Activator of Transcription 3 Signalling in Human Hepatocellular Carcinoma Cell Line HepG2  
**P. Deng, Chen Wang, L. Chen, Cheng Wang, Y. Du, X. Yan, M. Chen, G. Yang, and G. He** ..... 1540
- Naringenin Inhibits Angiotensin II-Induced Vascular Smooth Muscle Cells Proliferation and Migration and Decreases Neointimal Hyperplasia in Balloon Injured Rat Carotid Arteries through Suppressing Oxidative Stress  
**C. Xu, J. Chen, J. Zhang, X. Hu, X. Zhou, Z. Lu, and H. Jiang** ..... 1549
- Repeated Heat Exposure Impairs Nigrostriatal Dopaminergic Neurons in Mice  
**H. G. Kim, T. Kim, G. Park, T. H. Lee, and M. S. Oh** ..... 1556
- Tetrandrine Potentiates the Hypoglycemic Efficacy of Berberine by Inhibiting P-Glycoprotein Function  
**Y.-Q. Shan, Y.-P. Zhu, J. Pang, Y.-X. Wang, D.-Q. Song, W.-J. Kong, and J.-D. Jiang** ..... 1562
- Alpha-Lipoic Acid Treatment Reverses 2-Deoxy-D-ribose-Induced Oxidative Damage and Suppression of Insulin Expression in Pancreatic Beta-Cells  
**G. Koh, E.-J. Yang, M.-K. Kim, S. A. Lee, and D.-H. Lee** ..... 1570
- Comparison of (–)-Epigallocatechin-3-*O*-gallate (EGCG) and *O*-Methyl EGCG Bioavailability in Rats  
**Y. Oritani, Y. Setoguchi, R. Ito, H. Maruki-Uchida, T. Ichiyangi, and T. Ito** ..... 1577
- Effects of Estrogen on Neuronal KCNQ2/3 Channels Expressed in PC-12 Cells  
**X. Dai, Y. Liu, C. Wang, Y. Luo, X. Li, and Z. Shen** ..... 1583
- \* Shuttling Protein Nucleolin Is a Microglia Receptor for Amyloid Beta Peptide 1-42  
**D. Ozawa, T. Nakamura, M. Koike, K. Hirano, Y. Miki, and M. Beppu** ..... 1587
- \* A Possible Mechanism for 2,3',4,4',5'-Pentachlorobiphenyl-Mediated Decrease in Serum Thyroxine Level in Mice  
**Y. Kato, M. Onishi, K. Haraguchi, S. Ikushiro, C. Ohta, N. Koga, T. Endo, S. Yamada, and M. Degawa** ..... 1594
- A Potential Mechanism of a Cationic Cyclopeptide for Enhancing Insulin Delivery across Caco-2 Cell Monolayers  
**M. Chang, X. Li, Y. Sun, F. Cheng, Y. Li, W. Zhao, and Q. Wang** ..... 1602
- Inhalation of the Essential Oil of *Piper guineense* from Cameroon Shows Sedative and Anxiolytic-Like Effects in Mice  
**J. M. Tankam and M. Ito** ..... 1608

\* *Highlighted Paper selected by Editor-in-Chief*

*The selection is based upon originality, scientific contributions, methodological pertinence, and composition.*

Elucidating the Mechanism by Which <i>Gypsum fibrosum</i> , a Traditional Chinese Medicine, Maintains Cutaneous Water Content N. Ikarashi, N. Ogiue, E. Toyoda, M. Nakamura, R. Kon, Y. Kusunoki, T. Aburada, M. Ishii, Y. Tanaka, Y. Machida, W. Ochiai, and K. Sugiyama .....	1615
Identification of the Risk Factors Associated with Hypocalcemia Induced by Denosumab N. Okada, K. Kawazoe, K. Teraoka, T. Kujime, M. Abe, Y. Shinohara, and K. Minakuchi.....	1622
Assessment of Effects of Chronic Hydrogen Sulfide Poisoning on Cytochrome P450 Isoforms Activity of Rats by Cocktail Approach X. Wang, X. Chen, M. Chen, G. Hu, J. Ma, J. Pan, L. Hu, and G. Lin .....	1627
Anti-fatigue Effect of Ginsenoside Rb1 on Postoperative Fatigue Syndrome Induced by Major Small Intestinal Resection in Rat S. Tan, F. Zhou, N. Li, Q. Dong, X. Zhang, X. Ye, J. Guo, B. Chen, and Z. Yu .....	1634

### Notes

The Polymerization Agent, 2-Methyl-4'-(methylthio)-2-morpholinopropiophenone Induces Caspases-3/7 in Human Blood Mononuclear Cells <i>in Vitro</i> Y. Kawasaki, K. Yagi, C. Tsuboi, M. Morizane, Y. Kitamura, and T. Sendo.....	1640
6-Demethoxynobiletin, a Nobiletin-Analog Citrus Flavonoid, Enhances Extracellular Signal-Regulated Kinase Phosphorylation in PC12D Cells J. Kimura, K. Nemoto, A. Yokosuka, Y. Mimaki, M. Degawa, and Y. Ohizumi.....	1646
Electrophysiological Effects of an Anti-influenza Drug Oseltamivir on the Guinea-Pig Atrium: Comparison with Those of Pilsicainide A. Takahara, S. Suzuki, M. Hagiwara, S. Nozaki, and A. Sugiyama .....	1650

**About the cover:** Nucleolin-mediated phagocytosis of A $\beta$  peptide 1-42 and 1-40 by microglia. A $\beta$ s taken up by mouse microglial EOC2 cells were identified using confocal laser scanning fluorescence microscopy. Red area; EOC2 cell surface. Green; carboxyfluorescein-labeled monomeric A $\beta$ 1-42, fibril A $\beta$ 1-42, monomeric A $\beta$ 1-40, and fibril A $\beta$ 1-40. Monomeric and fibril A $\beta$ 1-42 were phagocytosed by EOC2 cells, but only slightly phagocytosed monomeric and fibril A $\beta$ 1-40, through microglia cell-surface receptor nucleolin. See the article by Ozawa *et al.* on page 1587 of this issue.