

# Most-Accessed Articles

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Editor: Richard N. Armstrong, Vanderbilt University School of Medicine

**Farnesyl Diphosphate Synthase: Altering the Catalytic Site To Select for Geranyl Diphosphate Activity**  
Suzanne M. Stanley-Fernandez, Brenda A. Kellogg, and C. Dale Poulter  
(Article), 2008, 39 (5), 15316-15321  
DOI: 10.1021/bi8004305

**Free-Energy Landscape of Enzyme Catalysis**  
Stephen J. Berkovic, Gordon C. Hammes, and Sharon Hammes-Schiffer  
(New Concepts), 2008, 47 (11), 3317-3321  
DOI: 10.1021/bi800049z

**The Glycophosphatidylinositol Anchor: A Complex Membrane-Anchoring Structure for Proteins**  
Margot G. Paulick, and Carolyn R. Bertozzi  
(Current Topics/Perspectives), 2008, 47 (27), 6991-7000  
DOI: 10.1021/bi800632a

**AFM: A Nanotool in Membrane Biology**  
Daniel J. Muller  
(Current Topics/Perspectives), 2008, 47 (31), 7986-7998  
DOI: 10.1021/bi800753x

**DNA Polymerases as Therapeutic Targets**  
Anthony J. Berdis  
(Current Topics/Perspectives), 2008, 47 (32), 8253-8260  
DOI: 10.1021/bi801179f

**Phospholamban Thiols Play a Central Role in Activation of the Cardiac Muscle Sarcoplasmic Reticulum Calcium Pump by Nitroxyl**  
Jeffrey P. Froehlich, James E. Mahaney, Gizem Keceli, Christopher M. Pavlos, Russell Goldstein, Abiona I. Redwood, Carlota Sumbilla, Dong J. Lee, Carlo G. Tocchetti, David A. Kass, Nazareno Paolocci, and John P. Toscano  
(Rapid Report), 2008, 47 (50), 13150-13152  
DOI: 10.1021/bi801925p

**Misfolding of the Cystic Fibrosis Transmembrane Conductance Regulator and Disease**  
Joanne C. Cheung and Charles M. Deber  
(Current Topics/Perspectives), 2008, 47 (6), 1465-1473  
DOI: 10.1021/bi702209s

**Residence Time of Receptor-Ligand Complexes and Its Effect on Biological Function**  
Peter J. Turmino and Robert A. Copeland  
(Current Topics/Perspectives), 2008, 47 (20), 5481-5492  
DOI: 10.1021/bi8002023

**Analysis of Hsp90 Cochaperone Interactions Reveals a Novel Mechanism for TPR Protein Recognition**  
Ahmed Chadi, Elizabeth S. Bruinsma, Bridget Stensgaard, and David Ioff  
(Article), 2008, 47 (9), 2850-2857  
DOI: 10.1021/bi702333z

**Revisiting Heme Mechanisms: A Perspective on the Mechanisms of Nitric Oxide Synthase (NOS), Heme Oxygenase (HO), and Cytochrome P450s (CYP450s)**  
Yanqiu Zhu, and Richard B. Silverman  
(Current Topics/Perspectives), 2008, 47 (8), 2231-2243  
DOI: 10.1021/bi7023817

## RECENT PESTICIDE RESEARCH IN CHINA

- 2613 **China: Forward to the Green Pesticides via a Basic Research Program**  
*Xuhong Qian,\* Phillip W. Lee, and Song Cao*
- 2624 **Design and Synthesis of Novel Insecticides Based on the Serotonergic Ligand 1-(4-Aminophenyl)ethyl-4-[3-(trifluoromethyl)phenyl]piperazine (PAPP)**  
*Mingyi Cai, Zhong Li,\* Feng Fan, Qingchun Huang, Xusheng Shao, and Gonghua Song\**
- 2630 **Synthesis, Crystal Structure, and Biological Activity of 4-Methyl-1,2,3-thiadiazole-Containing 1,2,4-Triazolo[3,4-b][1,3,4]thiadiazoles**  
*Zhijin Fan,\* Zhikun Yang, Haikuo Zhang, Na Mi, Huan Wang, Fei Cai, Xiang Zuo, Qingsiang Zheng, and Haibin Song*
- 2637 **Comparable Susceptibilities of Human 293 Cells and Insect Tn-5B1-4 Cells to Photoactivated  $\alpha$ -Terthienyl**  
*Qingchun Huang,\* Yang Liu, Tatsong Zhan, Yunfei Dong, and Yuan He*
- 2643 **Design, Synthesis, and 3D-QSAR Analysis of Novel 1,3,4-Oxadiazol-2(3H)-ones as Protoporphyrinogen Oxidase Inhibitors**  
*Li-Li Jiang, Ying Tan, Xiao-Lei Zhu, Zhi-Fang Wang, Yang Zuo, Qiong Chen, Zhen Xi, and Guang-Fu Yang\**
- 2652 **Synthesis, Biological Activity, and Hologram Quantitative Structure-Activity Relationships of Novel Allatostatin Analogues**  
*Zhen-peng Kai, Juan Huang, Yong Xie, Stephen S. Tobe,\* Yun Ling, Li Zhang, Yi-chen Zhao, and Xin-ling Yang\**
- 2659 **Synthesis, Fungicidal Activity, and Structure-Activity Relationship of Spiro-Compounds Containing Macrolactam (Macrolactone) and Thiaziazoline Rings**  
*Jian-Jun Li, Xiao-Mei Liang, Shu-Hui Jin, Jian-Jun Zhang, Hui-Zhu Yuan, Shu-Hua Qi, Fu-Heng Chen, and Dao-Quan Wang\**
- 2664 **Synthesis and Biological Activity of New (*E*)- $\alpha$ -(Methoxymino)benzeneacetate Derivatives Containing a Substituted Pyrazole Ring**  
*Miao Li, Chang-Ling Liu,\* Ji-Chuan Yang, Jin-Bo Zhang, Zhi-Nian Li, Hong Zhang, and Zheng-Ming Li*
- 2668 **Synthesis of 1-Acyl-3-isopropenylbenzimidazolone Derivatives and Their Activity against *Botrytis cinerea***  
*Sheng-Kun Li, Zhi-Qin Ji, Ji-Wen Zhang, Zheng-Yao Gao, and Wen-Jun Wu\**
- 2673 **Screening Rules for Leads of Fungicides, Herbicides, and Insecticides**  
*Bin Liu, Fucheng Zhu, Ying Huang, Yuhai Wang, Fei Yu, Botao Fan, and Jianhua Yao\**

- 2685 **Design, Synthesis, and Herbicidal Activities of Novel 2-Cyanoacrylates Containing Isoxazole Moieties**  
*Yuxin Liu, Zhipeng Cai, Bin Liu, Baoli Cai, Yonghong Li, and Qingmin Wang\**
- 2690 **Synthesis, Crystal Structure, and Insecticidal Activities of Highly Congested Hexahydroimidazo[1,2-*a*]pyridine Derivatives: Effect of Conformation on Activities**  
*Xusheng Shao, Zhiping Xu, Xianfeng Zhao, Xiaoyong Xu,\* Liming Tao, Zhong Li,\* and Xuhong Qian*
- 2696 **Divalent and Oxabridged Neonicotinoids Constructed by Diallyldehydes and Nitromethylene Analogues of Imidacloprid: Design, Synthesis, Crystal Structure, and Insecticidal Activities**  
*Xusheng Shao, Hua Fu, Xiaoyong Xu,\* Xinglei Xu, Zewen Liu, Zhong Li,\* and Xuhong Qian*
- 2703 **Synthesis and Antiviral Activities of Phenanthroindolizidine Alkaloids and Their Derivatives**  
*Kailiang Wang, Bo Su, Ziwen Wang, Meng Wu, Zheng Li, Yanna Hu, Zhijin Fan, Na Mi, and Qingmin Wang\**
- 2710 **Isolation and Identification of Novel Macrocytic Lactones from *Streptomyces avermitilis* NEAU1069 with Acaricidal and Nematocidal Activity**  
*Xiang-Jing Wang, Ming Wang, Ji-Dong Wang, Ling Jiang, Ji-Jia Wang, and Wen-Sheng Xiang\**
- 2715 **Synthesis and Biological Activity of Organotin 4-Methyl-1,2,3-thiadiazole-5-carboxylates and Benzo[1,2,3]thiadiazole-7-carboxylates**  
*Zhi-Hong Wang,\* Yan-Zhao Guo, Jun Zhang, Lin Ma, Hui-Bin Song, and Zhi-Jin Fan\**
- 2720 **Study of Inhibitory Effects and Action Mechanism of the Novel Fungicide Pyrimorph against *Phytophthora capsici***  
*Xiaojing Yan, Weicai Qin, Lipeng Sun, Shuhua Qi, Daibin Yang, Zhaohai Qin, and Hui-zhu Yuan\**
- 2726 **Primary Study on Mode of Action for Macrocytic Fungicide Candidates (7B3, D1) against *Rhizoctonia solani* Kühn**  
*Xiaojing Yan, Xiaomei Liang, Shuhui Jin, Jinping Lv, Chunxin Yu, Wenyang Qi, Baoju Li, Hui-zhu Yuan,\* Shuhua Qi, Yanxia Shi, Jingping Wu, Fuheng Chen, and Duoquan Wang\**
- 2730 **Synthesis and Antiviral Bioactivities of 2-Cyano-3-substituted-amino(phenyl) Methylphosphonylacrylates (Acrylamides) Containing Alkoxyethyl Moieties**  
*Jia-Qiang Yang, Bao-an Song,\* Pinaki S. Bhadury, Zhuo Chen, Song Yang, Xue-Jian Cai, De-Yu Hu, and Wei Xue*
- 2736 **Synthesis and Insecticidal Activity of Heptafluoroisopropyl-Containing Benzoylphenylurea Structures**  
*Jian Zhang, Xuhong Tang, Isaac Ishaaya, Song Cao,\* Jingjing Wu, Jinlong Yu, Hui Li, and Xuhong Qian*
- 2741 **Design, Multicomponent Synthesis, and Bioactivities of Novel Neonicotinoid Analogues with 1,4-Dihydropyridine Scaffold**  
*Wenwen Zhang, Xiaobao Yang, Weidong Chen, Xiaoyong Xu, Lu Li, Hongbin Zhu,\* and Zhong Li\**
- 2746 **Photodegradation of Novel Nitromethylene Neonicotinoids with Tetrahydropyridine-Fixed Cis Configuration in Aqueous Solution**  
*Xianfeng Zhao, Xusheng Shao, Zhuyuan Zou, and Xiaoyong Xu\**
- 2755 **Synthesis of 4-Methyl-1,2,3-thiadiazole Derivatives via Ugi Reaction and Their Biological Activities**  
*Xiang Zuo, Na Mi, Zhijin Fan,\* Qingxiang Zheng, Huikui Zhang, Huan Wang, and Zhikun Yang*

## ANALYTICAL METHODS

- 2763 **Extraction and Analysis of Auxins in Plants Using Dispersive Liquid-Liquid Microextraction Followed by High-Performance Liquid Chromatography with Fluorescence Detection**  
*Qiaomei Lu, Lihui Chen, Minghua Lu, Guonan Chen, and Lan Zhong\**
- 2771 **Fast Separation and Determination of Sterols in Vegetable Oils by Ultraperformance Liquid Chromatography with Atmospheric Pressure Chemical Ionization Mass Spectrometry Detection**  
*Maria Jesús Lerma-García, Ernesto Francisco Simó-Alfonso, Alberto Méndez, Josep Lluís Lliberia, and José Manuel Herrero-Martínez\**
- 2777 **Characterization and Comparative Analysis of Wheat High Molecular Weight Glutenin Subunits by SDS-PAGE, RP-HPLC, HPCE, and MALDI-TOF-MS**  
*Liyun Gao, Wujun Ma,\* Jing Chen, Ke Wang, Jing Li, Shunli Wang, Frank Bekes, Rudi Appels, and Yueming Yan\**
- 2787 **Introducing Capillary Electrophoresis with Laser-Induced Fluorescence (CE-LIF) as a Potential Analysis and Quantification Tool for Galactooligosaccharides Extracted from Complex Food Matrices**  
*Simone Albrecht, Henk A. Schols, Bert Klarenbeek, Alphons G. J. Voragen, and Harry Gruppen\**
- 2795 **Modeling and Optimization of Phenylalanine Ammonia Lyase Stabilization in Recombinant *Escherichia coli* for the Continuous Synthesis of L-Phenylalanine on the Statistical-Based Experimental Designs**  
*Bing-Zhi Zhang, Jian-Dong Cui,\* Gui-Xia Zhao, and Shi-Ru Jia*
- 2801 **A Class-Specific Enzyme-Linked Immunosorbent Assay Based on Magnetic Particles for Multiresidue Organophosphorus Pesticides**  
*Yin Hu, Guoqing Shen,\* Honglin Zhu, and Guoxin Jiang*
- 2807 **Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometric Determination of Quassin and Nequassin in Fruits and Vegetables**  
*Giorgia Sarati, Maurizio Coscu, Simona Vargiu, Paolo Cabras, and Pierluigi Caboni\**
- 2812 **Comparison of Five Endogenous Reference Genes for Specific PCR Detection and Quantification of *Brassica napus***  
*Gang Wu, Li Zhang, Yuhua Wu, Yinglong Cao, and Changming Lu\**
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- 2824 **Acetylcholinesterase Inhibitory Activity of Volatile Oil from *Peltophorum dasyrachis* Kurz ex Baker (Yellow Batai) and Bisabolane-Type Sesquiterpenoids**  
*Mai Fujiwara, Nobuo Yagi, and Mitsuo Miyazawa\**
- 2830 **Determination of Digestibility, Tissue Deposition, and Metabolism of the Omega-3 Fatty Acid Content of Krill Protein Concentrate in Growing Rats**  
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- 2838** ■ **Bowman-Birk Proteinase Inhibitor from *Cajanus cajan* Seeds: Purification, Characterization, and Insecticidal Properties**  
*Elaprolu R. Prasad, H. Merzendorfer, C. Madhurekha, A. Datta-Gupta, and K. Padmasree\**
- 2848** **Preparation of Curcumin Sub-micrometer Dispersions by High-Pressure Homogenization**  
*Francesco Donsi, Yuwen Wang, Ji Li, and Qingrong Huang\**
- 2854** **Tomato (*Lycopersicon esculentum*) Seeds: New Flavonols and Cytotoxic Effect**  
*Federico Ferreres, Marcos Taveira, David M. Pereira, Patricia Valentião, and Paula B. Andrade\**
- 2862** **Subcritical Solvent Extraction of Anthocyanins from Dried Red Grape Pomace**  
*Jean K. Monrad, Luke R. Howard,\* Jerry W. King, Keerthi Srinivas, and Andy Mauromoustakos*
- 2869** **Relationship between Hydrophobicity and Antioxidant Ability of "Phenolipids" in Emulsion: A Parabolic Effect of the Chain Length of Rosmarinate Esters**  
*Mickaël Laguerre, Luis J. López Giraldo, Jérôme Lecomte, María-Cruz Figueroa-Espinoza, Bruno Baréa, Jochen Weiss, Eric A. Decker, and Pierre Villeneuve\**
- 2877** **Anthocyanins in Purple-Orange Carrots (*Daucus carota* L.) Do Not Influence the Bioavailability of  $\beta$ -Carotene in Young Women**  
*Sara A. Arscott, Philipp W. Simon, and Sherry A. Tammingherdjo\**
- 2882** **3-(4-Methylfuran-3-yl)propan-1-ol: A White-Spotted Stinkbug (*Eysarcoris ventralis*) Repellent Produced by an Endophyte Isolated from Green Foxtail**  
*Hironitsu Nakajima,\* Atsushi Ishihara, Yuji Sawa, and Emi Sakuno*
- 2886** **Evaluation of Anti-invasion Effect of Resveratrol and Related Methoxy Analogues on Human Hepatocarcinoma Cells**  
*Chia-Jui Weng, Cheng-Feng Wu, Hsiao-Wen Huang, Chi-Hao Wu, Chi-Tang Ho, and Gow-Chin Yen\**
- 2895** **Angiotensin I-Converting Enzyme Inhibitory Peptides Generated from *In Vitro* Gastrointestinal Digestion of Pork Meat**  
*Elizabeth Escudero, Miguel Angel Santandreu, Keizo Arihara, and Fidel Toldrà\**
- 2902** **Polyphenols, Including the New Prepolyphenols A-C, from Pea Root Exudates Stimulate *Orobanche foetida* Seed Germination**  
*Antonio Evidente,\* Alessio Cimmino, Monica Fernández-Aparicio, Anna Andolfi, Diego Rubiales, and Andrea Motta*

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*Shu-Wei Chang, Wei-Hsin Chang, Mao-Rong Lee, Tzung-Jie Yang, Nu-Yi Yu, Chin-Shuh Chen,\* and Jei-Fu Shaw\**
- 2915** **Lignin Extraction from Straw by Ionic Liquids and Enzymatic Hydrolysis of the Cellulosic Residues**  
*Donghao Fu, Giuseppe Mazza,\* and Yukihiko Tamaki*

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*Aiko Kimura, Mary Rose G. Tandang-Silvas, Takako Fukuda, Cerrone Cabanos, Yasuhiro Takegawa, Maho Amano, Shin-Ichiro Nishinara, Yasuki Matsuura, Shigeru Utsami, and Nobuyuki Murayama\**
- 2931** **Biotransformation of Plant Secondary Metabolite Decursin by *Mycobacterium* sp. PYR1001**  
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- 2935** **Benzyl Isothiocyanate (BITC) Inhibits Migration and Invasion of Human Colon Cancer HT29 Cells by Inhibiting Matrix Metalloproteinase-2/-9 and Urokinase Plasminogen (uPA) through PKC and MAPK Signaling Pathway**  
*Kuang-Chi Lai, An-Cheng Huang, Shu-Chun Hsu, Chao-Lin Kuo, Jai-Sing Yang, Shin-Hwar Wu, and Jing-Gung Chung\**
- 2943** **Gallic Acid Induces Apoptosis of Lung Fibroblasts via a Reactive Oxygen Species-Dependent Ataxia Telangiectasia Mutated-p53 Activation Pathway**  
*Cheng-Yen Chuang, Hsiang-Chun Liu, Li-Chen Wu, Chiu-Yuan Chen, Jinghua Tsai Chang,\* and Shih-Lan Hsu\**

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- 2958** **Influence of Brewing Method and Acidity Regulators on the Antioxidant Capacity of Coffee Brews**  
*Mónica Pérez-Martínez, Bettina Caemmerer, M. Paz De Peña,\* Concepción Cid, and Lothar W. Kroh*
- 2966** **Analysis, Distribution, and Dietary Exposure of Glyoxal and Methylglyoxal in Cookies and Their Relationship with Other Heat-Induced Contaminants**  
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- 2973** **Oxidative Stability at High Temperatures of Oleoyl and Linoleoyl Residues in the Forms of Phosphatidylcholines and Triacylglycerols**  
*Julie Le Grandois, Eric Marchionni,\* Minjie Zhao, Francesca Guffrida, Safa Ennahar, and Françoise Binler*
- 2980** **Relationship between Fresh-Packaged Spinach Leaves Exposed to Continuous Light or Dark and Bioactive Contents: Effects of Cultivar, Leaf Size, and Storage Duration**  
*Gene E. Lester,\* Donald J. Mukus, and D. Mark Hodges*
- 2988** **Physicochemical and Emulsifying Properties of Whey Protein Isolate (WPI)-Dextran Conjugates Produced in Aqueous Solution**  
*Dan Zhu, Srinivasan Damodaran, and John A. Lucey\**
- 2995** **Using Neural Networks to Estimate the Losses of Ascorbic Acid, Total Phenols, Flavonoid, and Antioxidant Activity in Asparagus during Thermal Treatments**  
*Hongfei Lu,\* Hong Zheng, Heqiang Lou, Lingling Jiang, Yong Chen, and Shuangshuang Fang*

- 3002 **Isoflavones in Coffee: Influence of Species, Roast Degree, and Brewing Method**  
*Rita C. Alves,\* Ivone M. C. Almeida, Susana Casal, and M. Beatriz P. P. Oliveira*

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- 3012 **Effects of Crop Nutrition on Wheat Grain Composition and End Use Quality**  
■ *Dan Godfrey, Malcolm J. Hawkesford, Stephen J. Powers, Sam Millar, and Peter R. Shewry\**

- 3022 **Influence of the Input System (Conventional versus Organic Farming) on Metabolite Profiles of Maize (*Zea mays*) Kernels**  
*Richard M. Röhlig and Karl-Heinz Engel\**

- 3031 **Flavonoid Composition and Antioxidant Activity of Juices from Chinotto (*Citrus × myrtifolia* Raf.) Fruits at Different Ripening Stages**  
*Daide Barreca, Ersilia Bellocco, Corrado Caristi, Ugo Leuzzi, and Giuseppe Gattuso\**

## CROP AND ANIMAL PROTECTION CHEMISTRY

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*Ying Li, Bao-Ju Li, Yun Ling,\* Hong-Jian Miao, Yun-Xia Shi, and Xin-Ling Yang\**

- 3043 **Effects of *Fusarium* Infection on the Phenolics in Emmer and Naked Barley**  
*Kai Eggert,\* Jürgen Hollmann, Beate Hiller, Hans-Peter Kruse, Hushudrai M. Rawel, and Elke Pawelzik*

- 3050 **Purification of Legumin-Like Proteins from *Coffea arabica* and *Coffea racemosa* Seeds and Their Insecticidal Properties toward Cowpea Weevil (*Callosobruchus maculatus*) (Coleoptera: Bruchidae)**  
*Mirela Batista Coelho, Maria Lígia Rodrigues Macedo, Sérgio Marangoni, Desiree Soares da Silva, Igor Cesarino, and Paulo Mazzafra\**

- 3056 **Synthesis of Nalidixic Acid Based Hydrazones as Novel Pesticides**  
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- 3062 **Influence of Soil Factors on the Dissipation of a New Pyrimidinyloxybenzoic Herbicide ZJ0273**  
*Wei Wang, Qing-Fu Ye,\* Wei Ding, Ai-Liang Han, Hai-Yan Wang, Long Lu,\* and Jay Gan*

- 3068 **Indirect Photodegradation of Clothodim in Aqueous Media. Byproduct Identification by Quadrupole Time-of-Flight Mass Spectrometry**  
*Beatriz Sevilla-Morán, José L. Alonso-Prados, José M. García-Baudín, and Pilar Saadín-España\**

- 3077 **Persistence of Polybrominated Diphenyl Ethers in Agricultural Soils after Biosolids Applications**  
■ *Natasha A. Andrade, Laura L. McConnell, Alba Torrents,\* and Mark Ramirez*

- 3085 **Utilization of a Factorial Design To Study the Composting of Hydrolyzed Grape Marc and Vinification Lees**  
*Remigio Paradelo,\* Ana B. Moldes, and Maria T. Barral*

- 3093 **Discrimination of Farm Waste Contamination by Fluorescence Spectroscopy Coupled with Multivariate Analysis during a Biodegradation Study**  
*Muhammad Bilal, Anne Jaffrezic,\* Yves Dudal, Cédric Le Guillou, Safya Menasseti, and Christian Walter*

- 3101 **Sorption-Desorption Behavior of Atrazine on Soils Subjected to Different Organic Long-Term Amendments**  
*Diana L. D. Lima, Rudolf J. Schneider, Heinrich W. Scherer, Armando C. Duarte, Eduarda B. H. Santos, and Valdemar I. Esteves\**

## FLAVORS AND AROMAS/CHEMOSENSORY PERCEPTION

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*Daan Salson,\* David P. De Schutter, Nele Vanbeneden, Luk Daenen, Filip Delvaux, and Freddy R. Delvaux*

- 3116 **Investigation of the Aroma-Active Compounds Formed in the Maillard Reaction between Glutathione and Reducing Sugars**  
*Sang Mi Lee, Ye-Jin Jo, and Young-Suk Kim\**

## FOOD CHEMISTRY/BIOCHEMISTRY

- 3125 **Improvement of Water Barrier Property of Paperboard by Coating Application with Biodegradable Polymers**  
*Jaejoon Han, Stéphane Salmieri, Canh Le Tien, and Monique Lacroix\**

- 3132 **Synergistic Effect and Structure-Activity Relationship of 3-Hydroxy-3-methylglutaryl Coenzyme A Reductase Inhibitors from *Crataegus pinnatifida* Bge.**  
*Xiao-Li Ye, Wen-wen Huang, Zhu Chen, Xue-Gang Li,\* Ping Li, Ping Lan, Lijang Wang, Ying Gao, Zhong-Qi Zhao, and Xin Chen*

- 3139  **$\delta^{34}\text{S}$ -Value Measurements in Food Origin Assignments and Sulfur Isotope Fractionations in Plants and Animals**  
*Nicole Turtz and Hanns-Ludwig Schmidt\**

- 3147 **Kinetic Modeling of the Thermal Inactivation of Bacteriocin-Like Inhibitory Substance P34**  
*Voltaire Sant'Anna, Michele Utpott, Florencia Cladera-Olivera, and Adriano Brandelli\**

- 3153 **Antrocamphin A, an Anti-inflammatory Principal from the Fruiting Body of *Taiwanofungus camphoratus*, and Its Mechanisms**  
■ *Yu-Hsin Hsieh, Fang-Hua Chu, Ya-Shin Wang, Shih-Chang Chien, Shang-Tzen Chang, Jui-Fu Shaw, Chieh-Yin Chen, Wen-Wei Hsiao, Yueh-Hsiung Kuo,\* and Sheng-Yang Wang\**

- 3159 **Vinyletechin Dimers Are Much Better Copigments for Anthocyanins than Catechin Dimer Procyanidin B3**  
*Luís Cruz, Natércia F. Brás, Natércia Teixeira, Nuno Mateus, Maria João Ramos, Olivier Dangles, and Victor De Freitas\**

- 3167 **GC-MS Profiling of Diterpene Compounds in Mediterranean Propolis from Greece**  
*Milena Petkova Popova, Konstantina Graikou, Joanna Chinos, and Vassya Stefanova Bankova\**

## China: Forward to the Green Pesticides via a Basic Research Program<sup>†</sup>

The 973 Program is China's keystone national research program established to support basic research in natural and physical sciences. In addition to promoting the development of core technology and scientific infrastructure needed to enable China to meet the social and economic challenges of the 21st century, the training and mentoring of the new generation of China's young scientists are also important objectives of this national program. The green chemical pesticide research program is a part of the 973 Program. The main objectives of stage 1 of the green chemical pesticide research program (2003–2008) are to establish China's capability to conduct basic research in the discovery of "green" crop protection chemicals that are not only novel in mode of action and highly selective to pest species that are unique to China's agricultural situation but also possess favorable environmental and human hazard and risk potentials. The target-based discovery strategy was selected as the main discovery platform. This strategy not only provided this research program the best chance to discover new products but also provided members of this research team opportunities to establish core technologies in chemoinformatics/computation-aided pesticide design using QSAR, QAPR, sensitive and selective bioassay methodology, combinatorial synthesis, hit to lead optimization, and biological targets that were derived from resistance-ACHE, IGR, nAChR, etc. On the basis of the learning from stage 1, stage 2 (2010–2014) of this program will focus on the molecular target-oriented innovation of green chemical pesticides. This commentary presents key learnings and accomplishments from the stage 1 of China's green chemical pesticide research program. It is hoped that this information will stimulate further constructive collaborations between pesticide scientists from China and abroad.

**KEYWORDS:** Green chemistry; pesticides; crop protection; molecular design; hit to lead optimization

### 1. PREFACE: ORIGIN OF THE CHINESE BASIC RESEARCH (973) PROGRAM AND STRATEGIC SIGNIFICANCE

The first stage of China's National 973 Basic Research Program, green pesticide research project, was recently completed. To celebrate this project milestone, we are pleased to present some of the significant scientific findings in this special issue of the *Journal of Agricultural and Food Chemistry (JAFC)*. We wish to use this opportunity to stimulate scientific collaboration with the international pesticide research community. The purpose of this commentary is to introduce the Chinese 973 Green Pesticide Research Program and to highlight some of the key research projects and significant findings.

Since the early 1980s, China's new economic reform policy had promoted a rapid expansion of social and economic growth. This progress was fueled, in part, by unprecedented changes in China's educational and research systems. To stimulate the advancement of innovative basic and applied research, China implemented three major national science and technology plans: (1) 973, Key Basic Research; (2) 863, High Technology Development; and (3) R&D Support for Industrialization. The 973 Program is designed to build long-term (10+ years) discovery capability, whereas the 863 Program supports ongoing invention and R&D. These national research programs provided the Chinese scientific community a stable research funding system to promote scientific innovation across the vast natural and physical scientific disciplines.

<sup>†</sup>Part of the ECUST-Qian Pesticide Cluster.

### 3177 Differential Inhibitory Effects of Conjugated Linoleic Acid Isomers on Mouse Forestomach Neoplasia Induced by Benzo(a)pyrene

Yuang S. Kim, Seck J. Kim, Tae W. Oh, Jue I. Byeon, Gon S. Kim, David B. Min, Joung S. Jang, and Yeong L. Ha\*

### 3184 An Acidophilic and Acid-Stable $\beta$ -Mannanase from *Phialophora* sp. P13 with High Mannan Hydrolysis Activity under Simulated Gastric Conditions

Junqi Zhao, Pengjun Shi, Huiying Luo, Peilong Yang, Heng Zhao, Yingguo Bai, Huoqing Huang, Hui Wang, and Bin Yao\*

### 3191 Effect of Anthocyanin-Rich Extract from Black Rice (*Oryza sativa* L. Japonica) on Chronically Alcohol-Induced Liver Damage in Rats

Zhaohua Hua, Peiyu Qin, and Guixing Ren\*

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### 3197 Biological Response of Hepatomas to an Extract of *Fagopyrum esculentum* M. (Buckwheat) Is Not Mediated by Inositols or Rutin

Julianne M. Curran, Danielle M. Stringer, Brenda Wright, Carla G. Taylor, Roman Przybylski, and Peter Zahradka\*

### 3205 Isoliquiritigenin Entails Blockade of TGF- $\beta$ 1-SMAD Signaling for Retarding High Glucose-Induced Mesangial Matrix Accumulation

Jing Li, Sang-Wook Kang, Jung-Lye Kim, Hye-Young Sung, In-Sook Kwon, and Young-Hee Kang\*

### 3213 In Vitro Intestinal Absorption of Carotenoids Delivered as Molecular Inclusion Complexes with $\beta$ -Cyclodextrin Is Not Inhibited by High-Density Lipoproteins

Elisabet Fernández-García, Irene Carvajal-Lerida, Francisco Rincón, José J. Ríos, and Antonio Pérez-Gálvez\*

#### TOXICOLOGY IN AGRICULTURE AND FOOD

### 3222 In Vitro Digestion of CryIAb Proteins and Analysis of the Impact on Their Immunoreactivity

Valeria Guimarães, Marie-Françoise Drumare, Didier Lerechus, Michel Gohar, Patricia Lamourette, Marie-Claire Nevers, Marie-Lisa Valsanen-Tunkelrott, Hervé Bernard, Blanche Guillon, Christophe Crémillon, Jean-Michel Wal, and Karine Adel-Patient\*

### 3232 Effect of Dissolved Organic Matters on Napropamide Availability and Ecotoxicity in Rapeseed (*Brassica napus*)

Rui Zhang, Jing Cui, Hong Mei Zhu, and Hong Yang\*

#### ADDITIONS AND CORRECTIONS

### 3241 Correction to Characterization of Flavor Modulating Effects in Complex Mixtures via High Temperature Liquid Chromatography

Katharina V. Reichelt, Regina Peter, Susanne Paetz, Michael Roloff, Jakob P. Ley,\* Gerhard E. Krammer, and Karl-Heinz Engel

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