

# Food & Function

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## IN THIS ISSUE

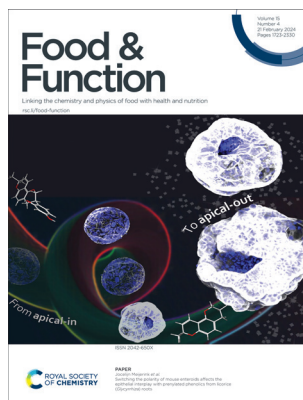
ISSN 2042-650X CODEN FFOUAI 15(4) 1723–2330 (2024)



### Cover

See Zhe Zhang,  
Lanwei Zhang *et al.*,  
pp. 1840–1851.

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2024, **15**, 1840.



### Inside cover

See Jocelijn Meijerink *et al.*,  
pp. 1852–1866.

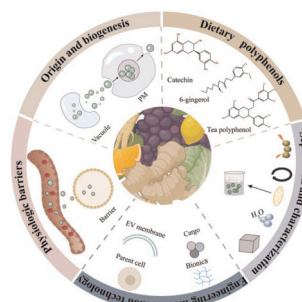
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Dinteren and Jocelijn Meijerink  
from *Food Funct.*,  
2024, **15**, 1852.

## REVIEWS

1737

### Engineered plant extracellular vesicles for natural delivery across physiological barriers

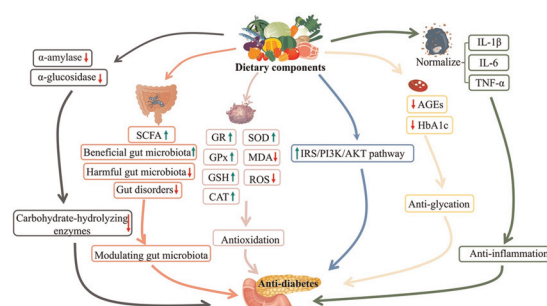
Yu Wang, Yifang Wu, Si Shen, Yinyin Liu, Ying Xia,  
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1758

### Effects and mechanisms of anti-diabetic dietary natural products: an updated review

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Xiao-Yu Xu, Guo-Yi Tang, Si-Yu Huang, Dan-Dan Zhou,  
Hua-Bin Li,\* Yibin Feng\* and Ren-You Gan\*



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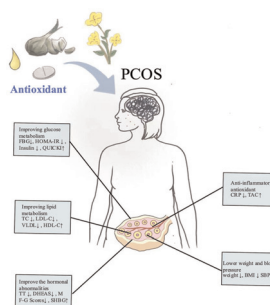
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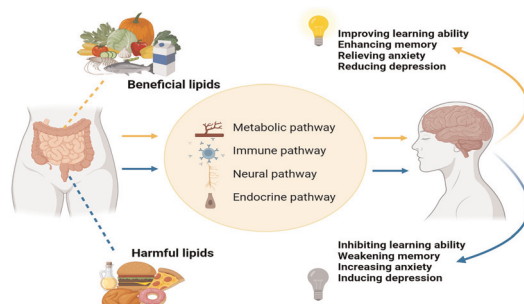
Junhui He, Renhe Deng, Yanhong Wei, Shun Zhang,  
Mingxuan Su, Masong Tang, Jinyuan Wang,  
Weihua Nong\* and Xiaocan Lei\*

Junhui He, Renhe Deng, Yanhong Wei, Shun Zhang,  
Mingxuan Su, Masong Tang, Jinyuan Wang,  
Weihua Nong\* and Xiaocan Lei\*



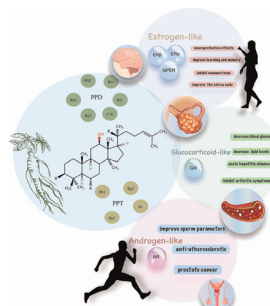
Chenhan Fan, Jingxuan Xu, Haoxiang Tong,  
Yucheng Fang, Yiming Chen, Yangzhuo Lin, Rui Chen,  
Fuhao Chen and Guoqing Wu\*

Chenhan Fan, Jingxuan Xu, Haoxiang Tong,  
Yucheng Fang, Yiming Chen, Yangzhuo Lin, Rui Chen,  
Fuhao Chen and Guoqing Wu\*



Jun Li, Jiarui Zhao, Xinhe Wang, Zhi Lin, He Lin\* and  
Zhe Lin\*

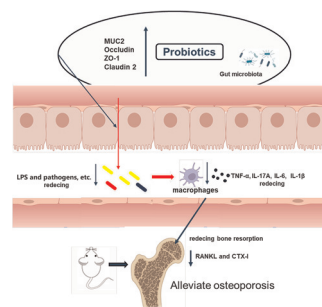
Jun Li, Jiarui Zhao, Xinhe Wang, Zhi Lin, He Lin\* and  
Zhe Lin\*



## 1840

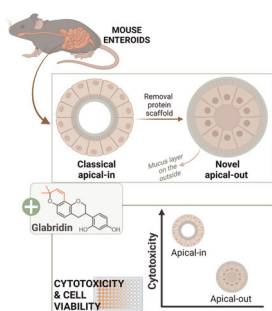
Jincan Zhang, Xi Liang, Xiaoying Tian, Maozhen Zhao,  
Yunjuan Mu, Huaxi Yi, Zhe Zhang\* and Lanwei Zhang\*

Jincan Zhang, Xi Liang, Xiaoying Tian, Maozhen Zhao,  
Yunjuan Mu, Huaxi Yi, Zhe Zhang\* and Lanwei Zhang\*



## PAPERS

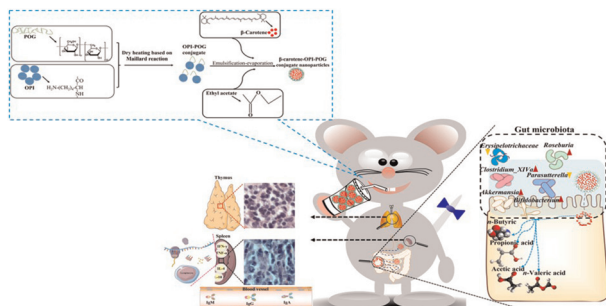
1852



### Switching the polarity of mouse enteroids affects the epithelial interplay with prenylated phenolics from licorice (*Glycyrrhiza*) roots

Sarah van Dinteren, Carla Araya-Cloutier, Edyta Robaczewska, Melody den Otter, Renger Witkamp, Jean-Paul Vincken and Jocelijn Meijerink\*

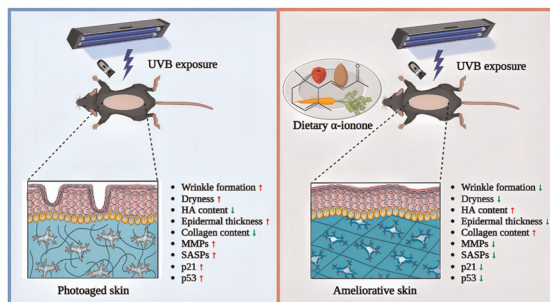
1867



### Oat protein isolate-*Pleurotus ostreatus* $\beta$ -glucan conjugate nanoparticles bound to $\beta$ -carotene effectively alleviate immunosuppression by regulating gut microbiota

Lei Zhong, Qiuhui Hu,\* Qiping Zhan, Mingwen Zhao and Liyan Zhao

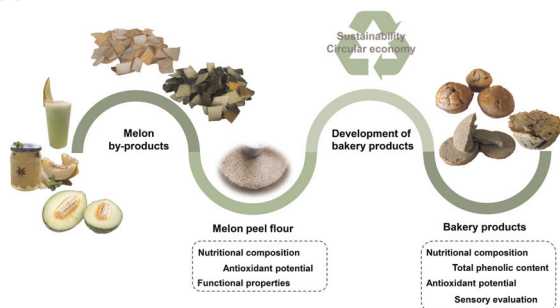
1884



### Dietary supplementation with $\alpha$ -ionone alleviates chronic UVB exposure-induced skin photoaging in mice

Ruixuan Geng, Seong-Gook Kang, Kunlun Huang and Tao Tong\*

1899



### Melon peel flour: utilization as a functional ingredient in bakery products

Mafalda Alexandra Silva, Tânia Gonçalves Albuquerque,\* Rita Carneiro Alves, M. Beatriz P. P. Oliveira and Helena S. Costa

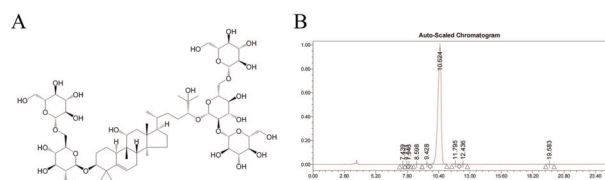


## PAPERS

1909

**Mogroside V alleviates inflammation response by modulating miR-21-5P/SPRY1 axis**

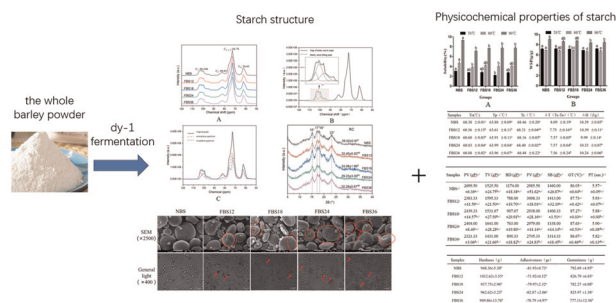
Mengjie Han, Haiping Liu, Guoxiang Liu, Xiaojuan Li, Luwei Zhou, Yisa Liu, Tong Dou, Sijie Yang, Wei Tang, Yan Wang, Linjun Li, Hongfang Ding, Zhangchi Liu, Juan Wang\* and Xu Chen\*



1923

**Effects of *Lactiplantibacillus plantarum* dy-1 fermentation on multi-scale structure and physicochemical properties of barley starch**

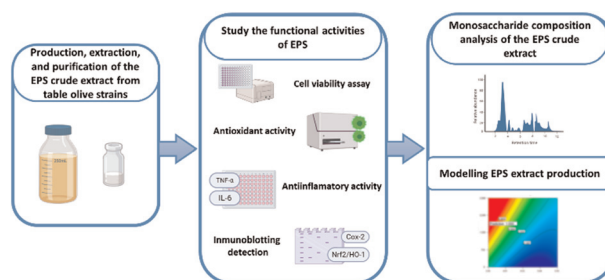
Jiayan Zhang, Yuhao Liu, Mengting Liu, Yansheng Zhao, Ying Zhu, Shumao Cui and Xiang Xiao\*



1938

**Functional features of the exopolysaccharide extracts produced by *Lactiplantibacillus* strains isolated from table olives**

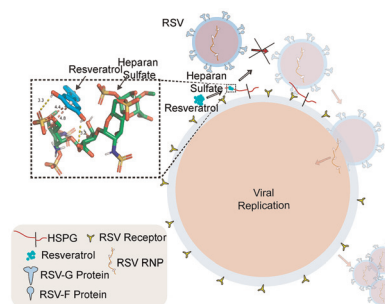
Elio López-García,\* Ana Marín-Gordillo, Marina Sánchez-Hidalgo, Javier Ávila-Román, Verónica Romero-Gil, Alejandra Bermúdez-Oria, Antonio Benítez-Cabello, Antonio Garrido-Fernández, Francisco Rodríguez-Gómez and Francisco Noé Arroyo-López



1948

**Resveratrol inhibits respiratory syncytial virus replication by targeting heparan sulfate proteoglycans**

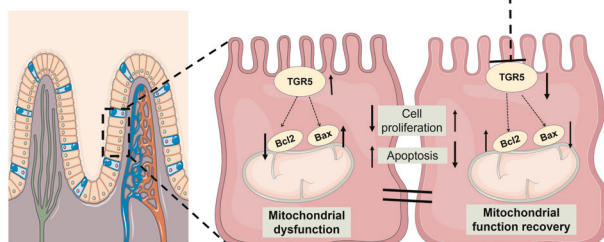
Yingcai Xiong, Keyu Tao, Tao Li, Weiying Ou, Yinghui Zhou, Wenyang Zhang, Shouchuan Wang,\* Ruogu Qi\* and Jianjian Ji\*





## PAPERS

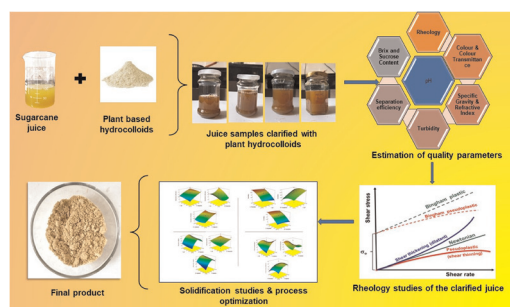
1963

Intestinal inflammation  
and injury

### Oleanolic acid alleviate intestinal inflammation by inhibiting Takeda G-coupled protein receptor (TGR) 5 mediated cell apoptosis

Zhenya Zhai,\* Yichun Liu, Kaimin Niu, Weirong Zeng, Ruxia Wang, Xiongchang Guo, Chong Lin and Linfang Hu

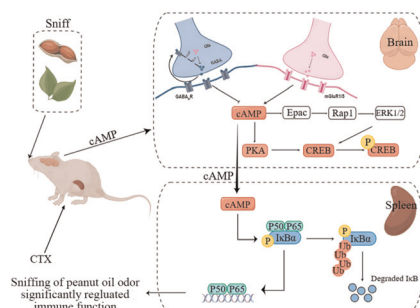
1977



### Plant-based hydrocolloids for efficient clarification of cane juices: rheological analysis and solidification studies

Venkatesh T.,\* Alphonsa George, Rishi Kesav S., Sajeev M. S. and Anjineyulu Kothakota\*

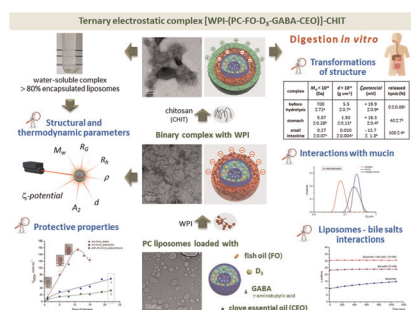
1994



### Peanut oil odor enhances the immunomodulatory effect on immunosuppressed mice by regulating the cAMP signaling pathway via the brain–spleen axis

Yijin Wang, Jianfu Wu, Ying Gong, Huiting Wang, Tao Wu, Rui Liu, Wenjie Sui and Min Zhang\*

2008



### Key structural factors and intermolecular interactions underlying the formation, functional properties and behaviour in the gastrointestinal tract *in vitro* of the liposomal form of nutraceuticals coated with whey proteins and chitosan

M. G. Semenova,\* A. S. Antipova, E. I. Martirosova, N. P. Palmina, D. V. Zelikina, S. A. Chebotarev, N. G. Bogdanova, M. S. Anokhina and V. V. Kasparov

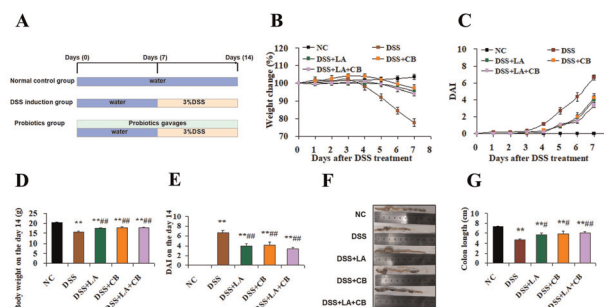


## PAPERS

2022

## The antioxidant strain *Lactiplantibacillus plantarum* AS21 and *Clostridium butyricum* ameliorate DSS-induced colitis in mice by remodeling the assembly of intestinal microbiota and improving gut functions

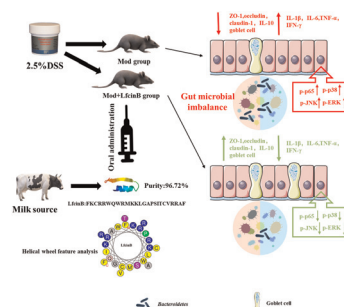
Wenyuan Li, Ying Zhang, Mengyan Chen, Xusheng Guo\* and Zitong Ding\*



2038

## Oral administration of LfcinB alleviates DSS-induced colitis by improving the intestinal barrier and microbiota

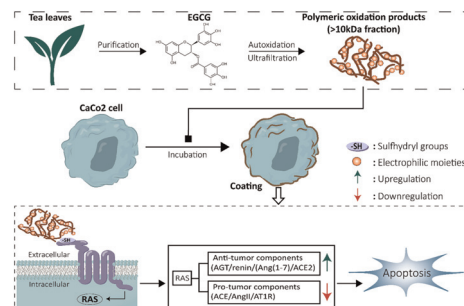
Zhineng Liu, Xinyun Qin, Keyi Nong, Xin Fang, Bin Zhang, Wanyan Chen, Zihan Wang, Yijia Wu, Huiyu Shi, Xuemei Wang and Haiwen Zhang\*



2052

## EGCG oxidation-derived polymers induce apoptosis in digestive tract cancer cells via regulating the renin-angiotensin system

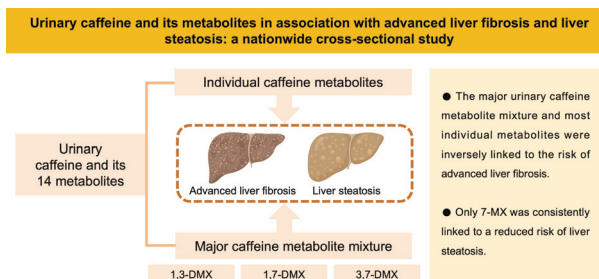
Mingchuan Yang, Ximing Wu, Yufeng He, Xiuli Li, Lumin Yang, Tingting Song, Fuming Wang, Chung S. Yang\* and Jinsong Zhang\*



2064

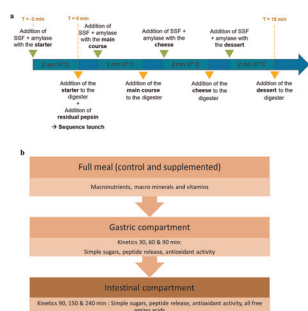
## Urinary caffeine and its metabolites in association with advanced liver fibrosis and liver steatosis: a nationwide cross-sectional study

Rui Dong, Ru Zhang, Chao Shen, Ya Shen, Zhengkai Shen, Ting Tian\* and Jie Wang\*



## PAPERS

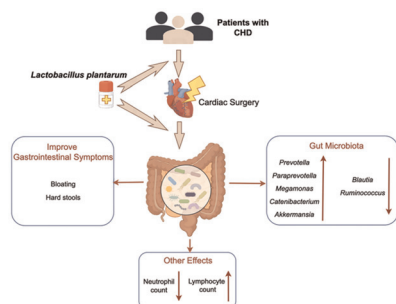
2078



### Utilizing the influence of protein enrichment of meal components as a strategy to possibly prevent undernutrition in the elderly: an *in vitro* approach

Angeline Duval, Thierry Sayd, Sylvie Bourillon, Laurent Aubry, Vinciane Mosconi, Vincenza Ferraro and Véronique Santé-Lhoutellier\*

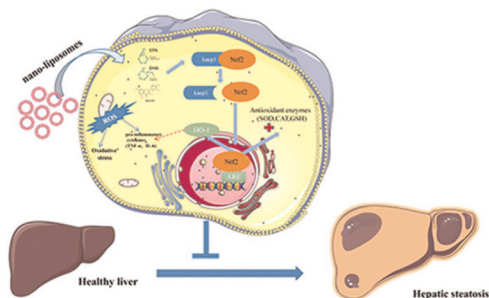
2090



### *Lactobacillus plantarum* 24-7 improves postoperative bloating and hard stools by modulating intestinal microbiota in patients with congenital heart disease: a randomized controlled trial

Heng Yang, Wanqi Lan, Chao Luo, Qin Huang, Zhiwang Zhong, Juesheng Yang, Haiyan Xiang, Tingtao Chen\* and Yanhua Tang\*

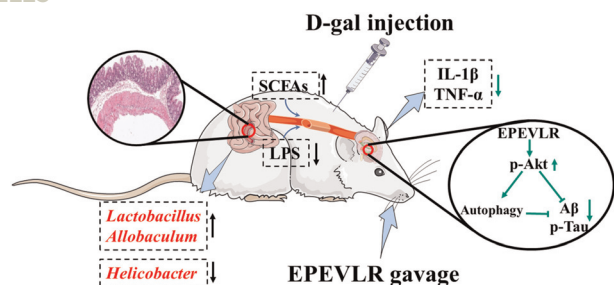
2103



### Preparation and characterization of Antarctic krill oil/quercetin co-loaded liposomes and their protective effect on oleic acid-induced steatosis and oxidative stress *in vitro*

Yu-Jie Li, Hai Chi and Guo-Qin Liu\*

2115



### Effects of an Akt-activating peptide obtained from walnut protein degradation on the prevention of memory impairment in mice

Like Lin, Cong Li,\* Yujiao Zhang, Li Zhang, Lu Gao, Lihua Jin, Yu Shu and Yehua Shen\*



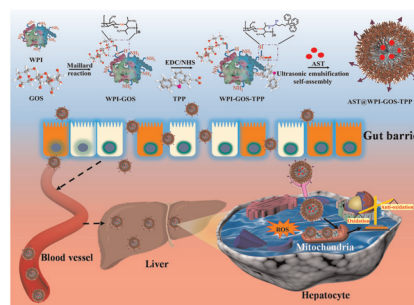


## PAPERS

2131

### Orally administered dual-targeted astaxanthin nanoparticles as novel dietary supplements for alleviating hepatocyte oxidative stress

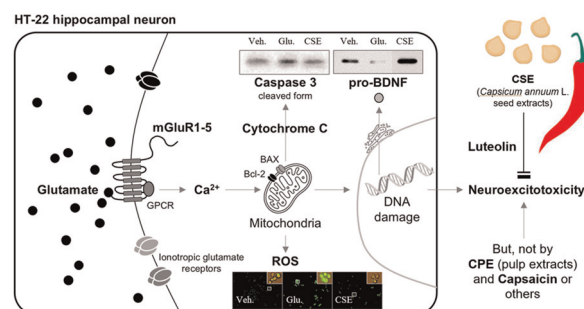
Xiumin Zhang, Mahwish Shaukat, Ronggang Liu, Liyang Peng, Yuxiao Wang, Wentao Su, Yukun Song\* and Mingqian Tan



2144

### A *Capsicum annuum* L. seed extract exerts anti-neuroexcitotoxicity in HT22 hippocampal neurons

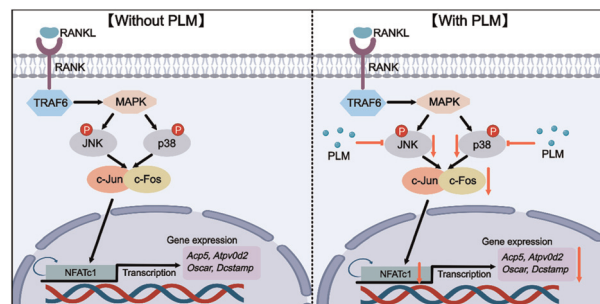
Ji-Yun Kang, Ji-Yeon Gu, Dong-Cheol Baek, Chang-Gue Son\* and Jin-Seok Lee\*



2154

### Piperlongumine, a *Piper longum*-derived amide alkaloid, protects mice from ovariectomy-induced osteoporosis by inhibiting osteoclastogenesis via suppression of p38 and JNK signaling

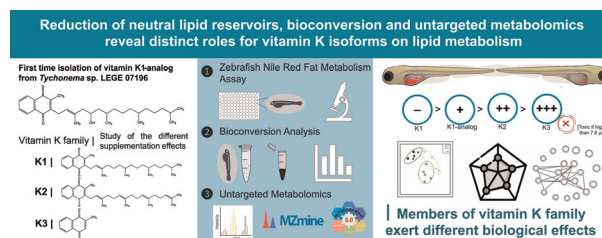
Na Luo, Lei Zhang, Chunmei Xiu, Xi Luo, Siyuan Hu, Kaizhong Ji, Qingbai Liu\* and Jianquan Chen\*



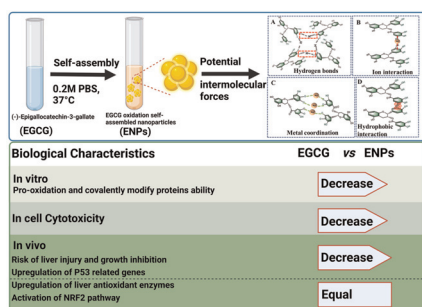
2170

### Reduction of neutral lipid reservoirs, bioconversion and untargeted metabolomics reveal distinct roles for vitamin K isoforms on lipid metabolism

Natália Gonçalves Silva, Marco Preto, Vitor Vasconcelos and Ralph Urbatzka\*



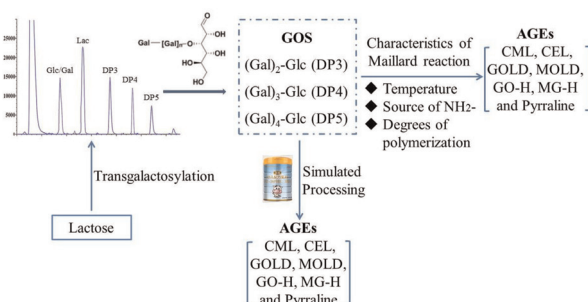
2181



### Formation of EGCG oxidation self-assembled nanoparticles and their antioxidant activity *in vitro* and hepatic REDOX regulation activity *in vivo*

Ximing Wu, Yijun Wang, Dongxu Wang, Ziqi Wang, Mingchuan Yang, Lumin Yang, Fuming Wang, Wei Wang\* and Xiangchun Zhang\*

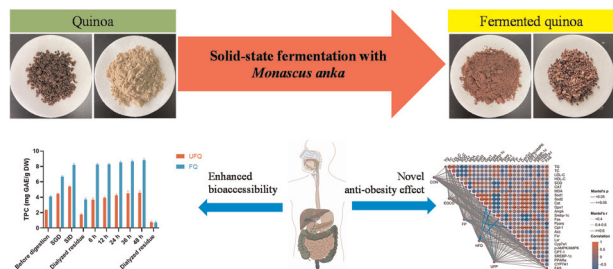
2197



### Galactooligosaccharides in infant formulas: Maillard reaction characteristics and influence on formation of advanced glycation end products

Feifei Shang, Rugang Zhu,\* Huan Li, Tianyi Zhen, Tiejing Li, Lifeng Song, Zhongtian Pan, Qiao Zhang, Haijing Lan and Zhenhua Duan

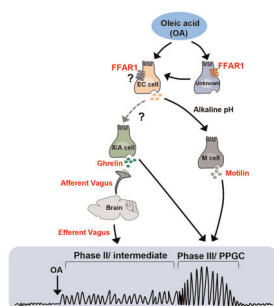
2208



### Benefits of *Monascus anka* solid-state fermentation for quinoa polyphenol bioaccessibility and the anti-obesity effect linked with gut microbiota

Kai Huang, Guoqiang Chu, Pei Yang, Yongyong Liu, Yu Zhang, Xiao Guan,\* Sen Li, Hongdong Song and Ying Zhang

2221



### The role of free fatty acid receptor-1 in gastric contractions in *Suncus murinus*

Jin Huang, Miu Suzuki, Ami Endo, Ayumi Watanabe and Ichiro Sakata\*

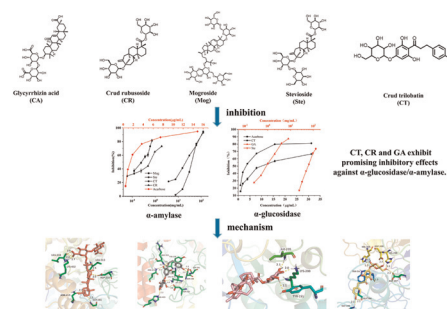


## PAPERS

2234

**In vitro inhibitory effect of five natural sweeteners on  $\alpha$ -glucosidase and  $\alpha$ -amylase**

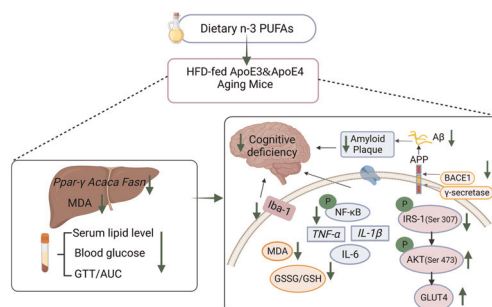
Jiequn Jiang, Heliang Fan, Jie Zhou, Jingkai Qin, Zhongyi Qin, Mei Chen, Yuanyuan Shen and Xiaoling Liu\*



2249

**Effects of the ApoE genotype on cognitive function in aging mice fed with a high-fat diet and the protective potential of n-3 polyunsaturated fatty acids**

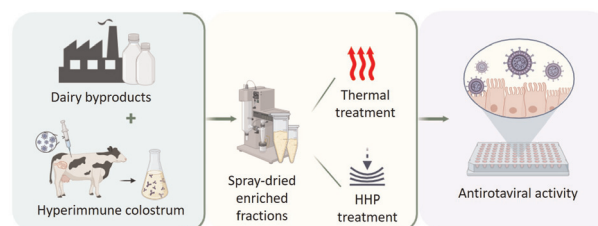
Xin Zhang, Tianzhi Xie, Shuang Zhou, Yingxuan Yuan, Weixuan Chen, Jie Zheng, Xuebo Liu, Tian Yuan,\* Yanhui Lu\* and Zhigang Liu\*



2265

**Antiviral activity of dairy byproducts enriched in fractions from hyperimmune bovine colostrum: the effect of thermal and high hydrostatic pressure treatments**

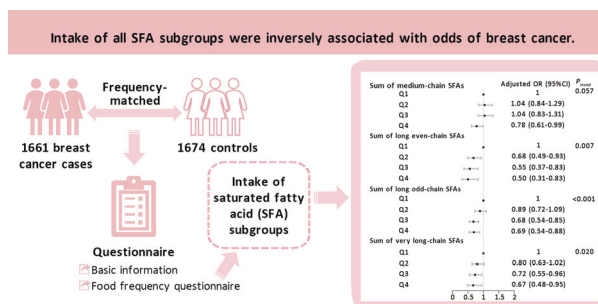
Dimitra Graikini, Laura García, Inés Abad, María Lavilla, Eduardo Puértolas, María Dolores Pérez and Lourdes Sánchez\*



2282

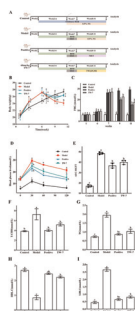
**Association between dietary intake of saturated fatty acid subgroups and breast cancer risk**

Ying Jiang, Lan-Ting Li, Si-Han Hou, Le-Ning Chen and Cai-Xia Zhang\*



## PAPERS

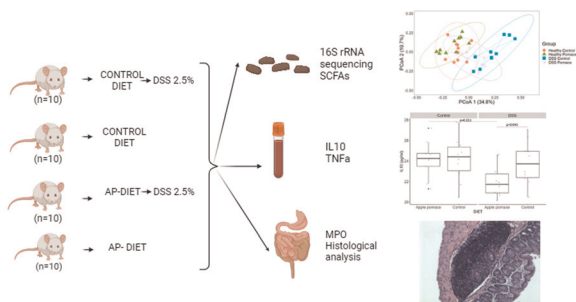
2295



### Therapeutic effects of a walnut-derived peptide on NLRP3 inflammasome activation, synaptic plasticity, and cognitive dysfunction in T2DM mice

Yanru Li, Qiao Dang, Yue Shen, Linxin Guo, Chunlei Liu, Dan Wu, Li Fang, Yue Leng\* and Weihong Min\*

2314



### Gut microbiota modulation and effects of a diet enriched in apple pomace on inflammation in a DSS-induced colitis mouse model

Inés Calvete-Torre, Carlos Sabater, Begoña Cantabrana, Abelardo Margolles, Manuel Sánchez and Lorena Ruiz\*

## CORRECTIONS

2327

### Correction: Differences in carotid to femoral pulse wave velocity and carotid intima media thickness between vegetarian and omnivorous diets in healthy subjects: a systematic review and meta-analysis

Alicia Saz-Lara, Maurizio Battino, Andrea del Saz Lara,\* Iván Caveno-Redondo, Alberto Dávalos, María-Carmen López de Las Hazas, Francesco Visioli, Maribel Lucerón-Lucas-Torres and Francesca Giampieri

2328

### Correction: *Lactobacillus fermentum* F40-4 ameliorates hyperuricemia by modulating the gut microbiota and alleviating inflammation in mice

Jiayuan Cao, Ting Wang, Yisuo Liu, Wei Zhou, Haining Hao, Qiqi Liu, Boxing Yin\* and Huaxi Yi\*

