

# Food & Function

rsc.li/food-function

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

## IN THIS ISSUE

ISSN 2042-650X CODEN FFOUAI 16(1) 1–332 (2025)



**Cover**  
See Yilin You *et al.*,  
pp. 40–53.

Image reproduced by  
permission of Kexin Hong  
and Yilin You from  
*Food Funct.*, 2025, **16**, 40.



**Inside cover**  
See Wei Xu *et al.*, pp. 54–70.

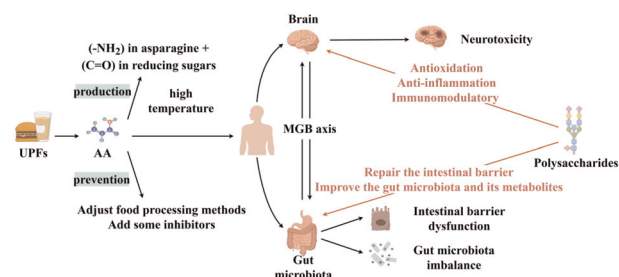
Image reproduced by  
permission of Wei Xu from  
*Food Funct.*, 2025, **16**, 54.

## REVIEWS

10

### The neurotoxicity of acrylamide in ultra-processed foods: interventions of polysaccharides through the microbiota–gut–brain axis

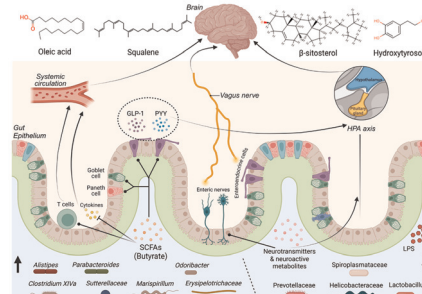
Chen Cai, Zheyi Song, Xinrui Xu, Xin Yang, Siyu Wei, Fang Chen, Xu Dong, Xin Zhang\* and Yuchen Zhu\*



24

### Unveiling the neuroprotective impact of virgin olive oil ingestion via the microbiota–gut–brain axis

Luna Barrera-Chamorro, Africa Fernandez-Prior, Carmen M. Claro-Cala, Jose L. del Rio-Vazquez, Fernando Rivero-Pino\* and Sergio Montserrat-de la Paz



**GOLD  
OPEN  
ACCESS**

# EES Solar

**Exceptional research on solar  
energy and photovoltaics**

Part of the EES family

**Join  
in**

Publish with us

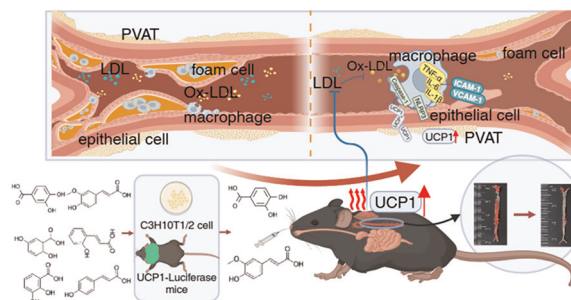
[rsc.li/EESolar](https://rsc.li/EESolar)

## PAPERS

40

### Ferulic acid and protocatechuic acid alleviate atherosclerosis by promoting UCP1 expression to inhibit the NLRP3-IL-1 $\beta$ signaling pathway

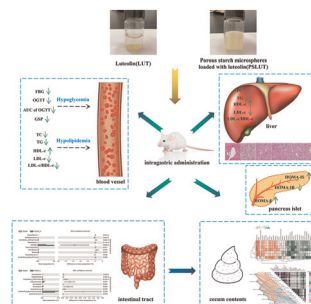
Kexin Hong, Jiting Wang, Xiping Kang, Huimin Xue, Yunxiao Gao, Heming Liang, Weidong Huang, Jicheng Zhan and Yilin You\*



54

### Porous starch microspheres loaded with luteolin exhibit hypoglycemic activities and alter gut microbial communities in type 2 diabetes mellitus mice

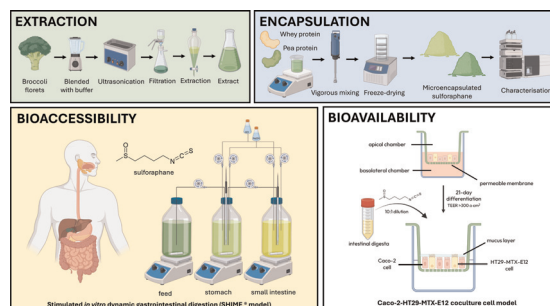
Xiaodong Ge, Tingting Liu, Yaolin Wang, Huanhuan Wen, Zirui Huang, Ligen Chen, Jianda Xu, Hongcheng Zhou, Qin Wu, Chao Zhao, Rong Shao and Wei Xu\*



71

### Microencapsulation of broccoli sulforaphane using whey and pea protein: *in vitro* dynamic gastrointestinal digestion and intestinal absorption by Caco-2-HT29-MTX-E12 cells

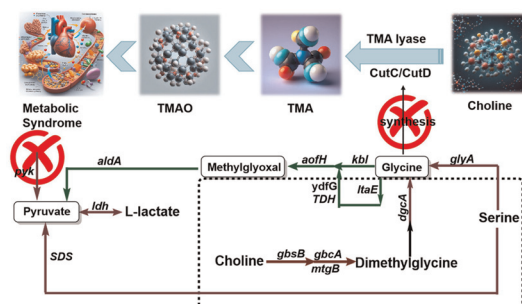
Ali Ali Redha,\* Luciana Torquati, John R. Bows, Michael J. Gidley and Daniel Cozzolino

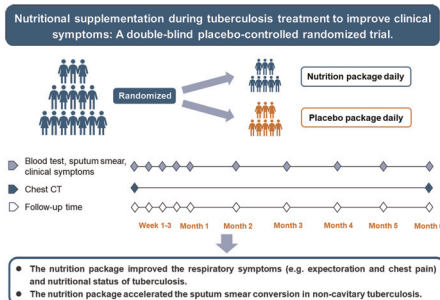


87

### *In vivo* mechanism of the interaction between trimethylamine lyase expression and glycolytic pathways

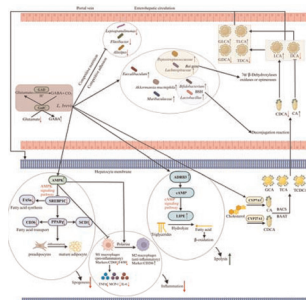
Qian Li, Di Wu, Yu Song, Lu Zhang, Ting Wang, Xiaoxu Chen and Min Zhang\*





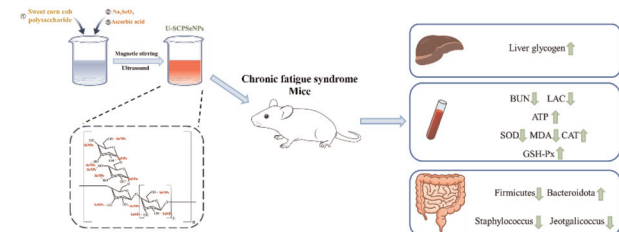
## Nutritional supplementation during tuberculosis treatment to improve clinical symptoms: a double-blinded placebo-controlled randomized trial

Yang Yang, Jing Cai, Xinfang Wang, Kuan Zhao, Zhixuan Lei, Wenge Han, Xiangyu Yin, Kun Yan, Yidan Hu, Bo Zhang, Lei Xu, Xin Guo, Yanqiu Xu, Ke Xiong, Tianlin Gao, Yan Ma, Feng Zhong, Qiuzhen Wang, Yongye Sun, Jinyu Wang\* and Aiguo Ma\*



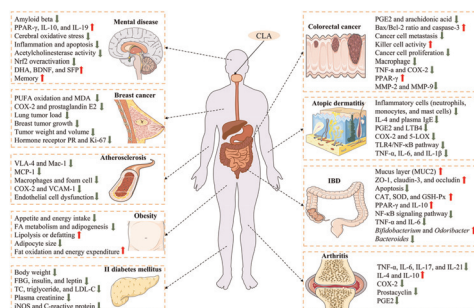
## Probiotic interventions with highly acid-tolerant *Levilactobacillus brevis* strains improve lipid metabolism and gut microbial balance in obese mice

Liping Zhou, Luchan Gong, Zhihao Liu, Jinfeng Xiang, Cong Ren\* and Yan Xu



## Ultrasound-assisted preparation of sweet corn cob polysaccharide selenium nanoparticles alleviates symptoms of chronic fatigue syndrome

Jingyang Wang, Xin Wang,\* Weiye Xiu, Chenchen Li, Shiyu Yu, Haobin Zhu, Chenxi Yang, Kechi Zhou and Yongqiang Ma



## Exploiting conjugated linoleic acid for health: a recent update

Yang Chen, Junfeng Xiao, Xiaoqing Zhu, Xin Fan, Mingye Peng, Yang Mu, Chao Wang, Lusha Xia and Mengzhou Zhou\*

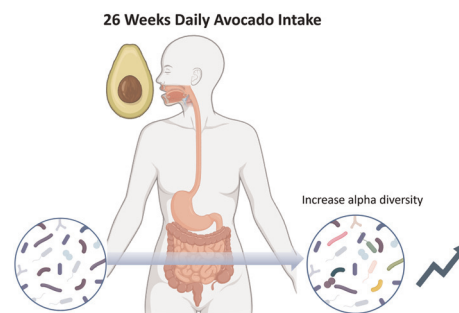


## PAPERS

168

### Impact of daily avocado consumption on gut microbiota in adults with abdominal obesity: an ancillary study of HAT, a randomized controlled trial

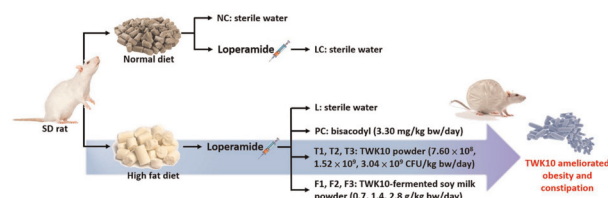
Jieping Yang, On Kei Lei, Shrikant Bhute, Penny M. Kris-Etherton, Alice H. Lichtenstein, Nirupa R. Matthan, Kristina S. Petersen, Joan Sabaté, David M. Reboussin, Laura Lovato, Mara Z. Vitolins, Sujatha Rajaram, Jonathan P. Jacobs, Jianjun Huang, Meileen Taw, Scarlet Yang and Zhaoping Li\*



181

### *Lactobacillus plantarum* TWK10 relieves loperamide-induced constipation in rats fed a high-fat diet via modulating enteric neurotransmitters, short-chain fatty acids and gut microbiota

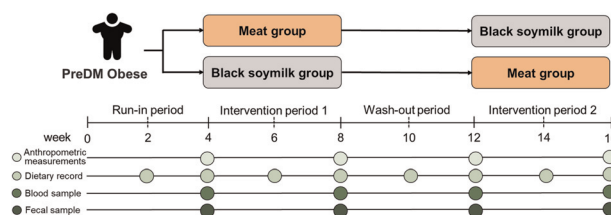
Te-Hua Liu, Guan-Li Chen, Chih-Hui Lin, Tsung-Yu Tsai and Meng-Chun Cheng\*



195

### Substituting animal protein with black soymilk reduces advanced glycation end product level and improves gut microbiota composition in obese prediabetic individuals: a randomized crossover intervention trial

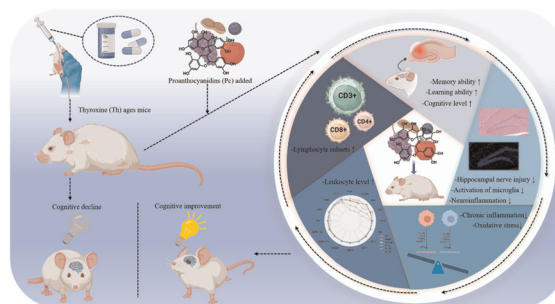
Yu-Ho Chang, Pei-Ni Lee, Cheng-Hsu Chen, Hsin-Yi Yang, Chi-Hao Wu, Jia-Yau Doong and Wan-Ju Yeh\*



207

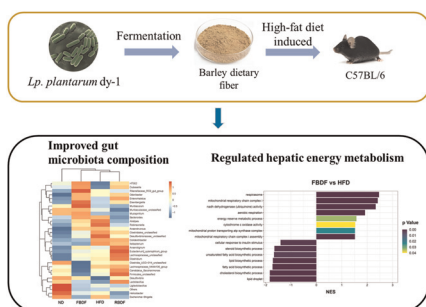
### Effect of proanthocyanidins on cognitive improvement in thyroxine-induced aging mice

Chong Yuan, Hongtao Ren, Kexin Hu, Linlin Chen, Ke Yue, Kunmiao He, Qiying Yu,\* Na Wang\* and Gaiping Zhang



## PAPERS

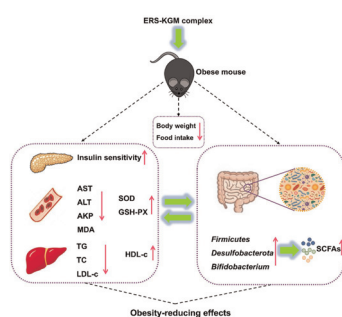
219



### Comparative analysis of barley dietary fiber fermented with and without *Lactiplantibacillus plantarum* dy-1 in promoting gut health and regulating hepatic energy metabolism in high-fat diet-induced obese mice

Ying Zhu, Kai Ba, Xiaodong Li, Yufeng He, Yanshun Zhang, Lianzhong Ai, Jiayan Zhang, Yansheng Zhao and Xiang Xiao\*

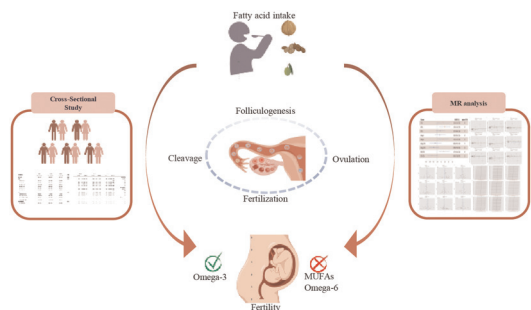
232



### Complexation of starch and konjac glucomannan during screw extrusion exhibits obesity-reducing effects by modulating the intestinal microbiome and its metabolites

Fanrui Liu, Hao Wan, Honghao Fan,\* Zhihong Zhang, Hua Dai and Hai He\*

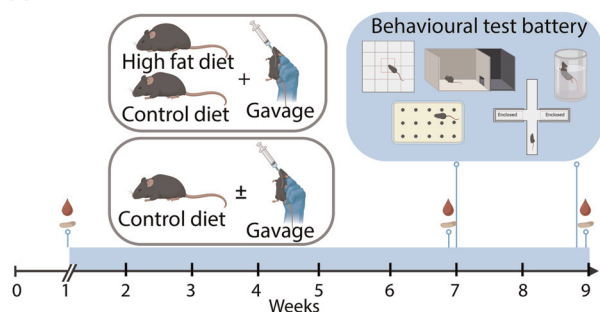
249



### Association between fatty acids and female infertility: dual evidence from a cross-sectional study and Mendelian randomization analysis

Qiaorui Yang, Jing Tao, Shengxiao Jia and Zhenliang Fan\*

268



### Obesity phenotype and gut microbiota alterations are not associated with anxiety-like behaviour in high-fat diet-fed mice

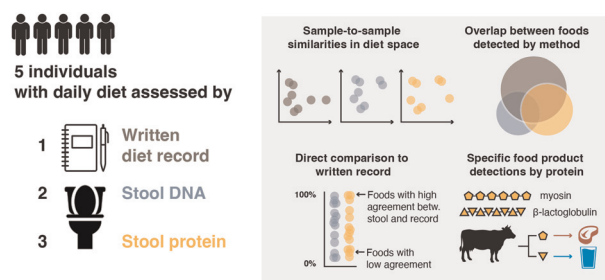
Giselle C. Wong, Bertrand Bearzatto, Jean-Luc Gala, Nathalie M. Delzenne, Matthias Van Hul and Patrice D. Cani\*



282

## A pilot study of metaproteomics and DNA metabarcoding as tools to assess dietary intake in humans

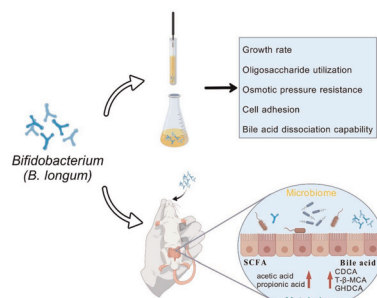
Brianna L. Petrone, Alexandria Bartlett, Sharon Jiang, Abigail Korenek, Simina Vintila, Christine Tenekjian, William S. Yancy, Jr., Lawrence A. David\* and Manuel Kleiner\*



297

## *Bifidobacterium longum* subsp. *longum* relieves loperamide hydrochloride-induced constipation in mice by enhancing bile acid dissociation

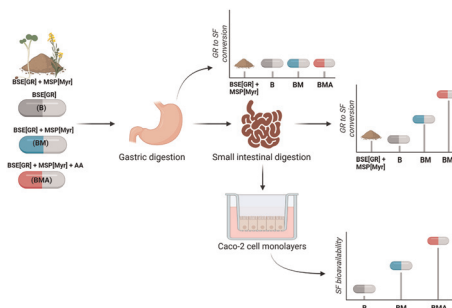
Chenyue Zhang, Linlin Wang, Xiaoming Liu,\* Gang Wang, Jianxin Zhao and Wei Chen



314

## Optimization of sulforaphane bioavailability from a glucoraphanin-rich broccoli seed extract in a model of dynamic gastric digestion and absorption by Caco-2 cell monolayers

Wei Zhu, Eleonora Cremonini, Angela F. Mastaloudis, Alyson E. Mitchell,\* Gail M. Bornhorst\* and Patricia I. Oteiza\*



## CORRECTION

329

## Correction: Melatonin as an inducer of arecoline and their coordinated roles in anti-oxidative activity and immune responses

Xiaojian Yin, Yunxie Wei, Wei Song, He Zhang, Guoyin Liu, Yan Chen, Lan-Zhu Li, Raphael N. Alolga, Gaoxiang Ma, Russel J. Reiter, Jia Li\* and Haitao Shi\*

