

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.

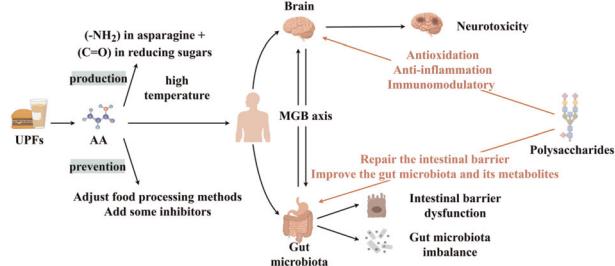
Image reproduced by permission of Wei Xu from *Food Funct.*, 2025, **16**, 54.

REVIEWS

10

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

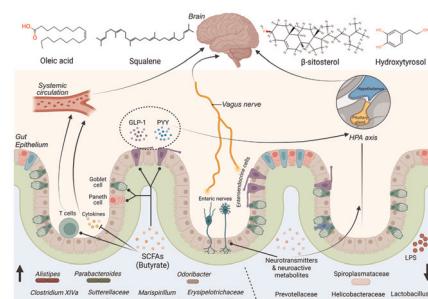
Chen Cai, Zheyi Song, Xinrui Xu, Xin Yang, Siyu Wei, Fang Chen, Xu Dong, Xin Zhang* and Yuchen Zhu*



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



EES Solar

**Exceptional research on solar
energy and photovoltaics**

Part of the EES family

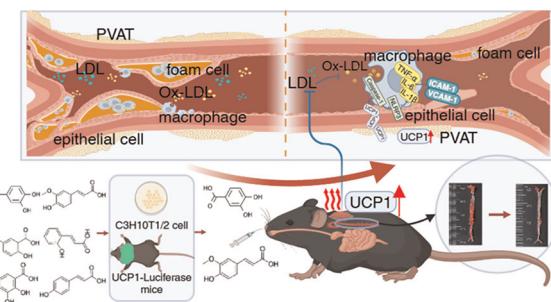
**Join
in** | Publish with us
rsc.li/EESSolar

PAPERS

40

Ferulic acid and protocatechuic acid alleviate atherosclerosis by promoting UCP1 expression to inhibit the NLRP3-IL-1 β signaling pathway

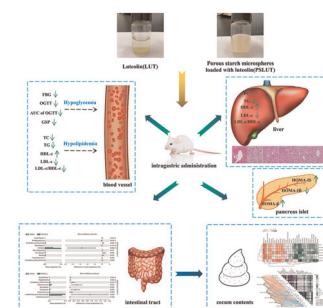
Kexin Hong, Jiting Wang, Xiping Kang, Huimin Xue, Yunxiao Gao, Heming Liang, Weidong Huang, Jicheng Zhan and Yilin You*



54

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

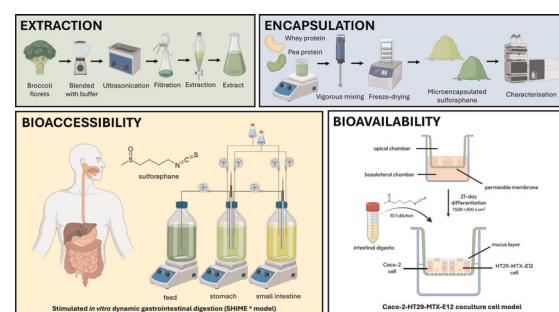
Xiaodong Ge, Tingting Liu, Yaolin Wang, Huanhuan Wen, Zirui Huang, Ligen Chen, Jianda Xu, Hongcheng Zhou, Qin Wu, Chao Zhao, Rong Shao and Wei Xu*



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

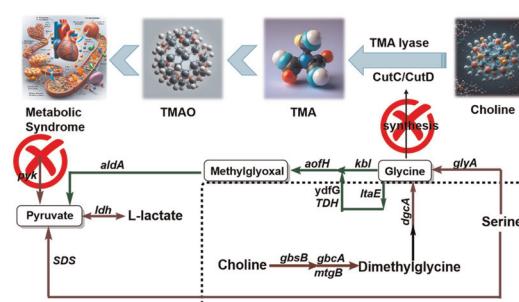
Ali Ali Redha,* Luciana Torquati, John R. Bows, Michael J. Gidley and Daniel Cozzolino



87

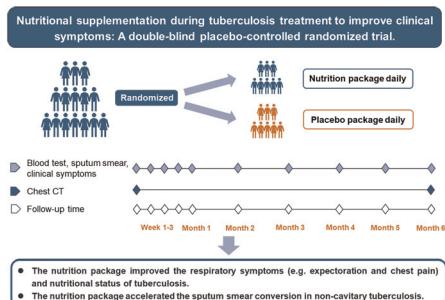
In vivo mechanism of the interaction between trimethylamine lyase expression and glycolytic pathways

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



PAPERS

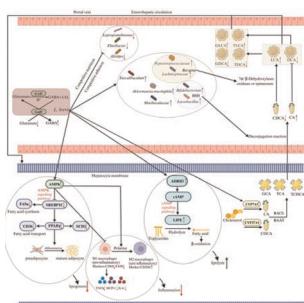
102



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*

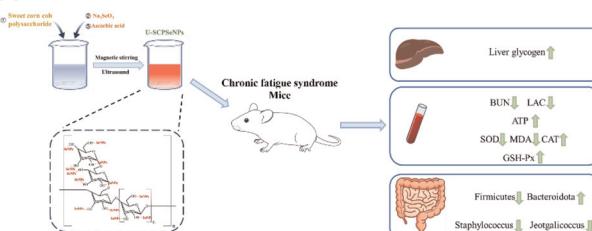
112



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

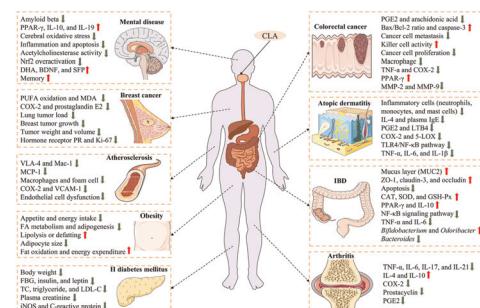
133



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

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

147



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*

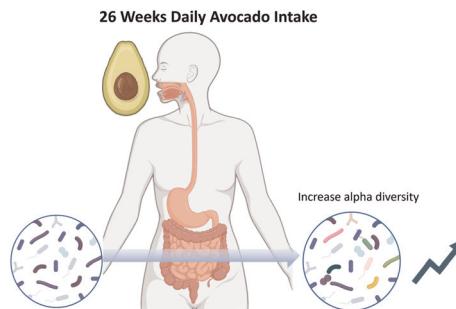


PAPERS

168

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

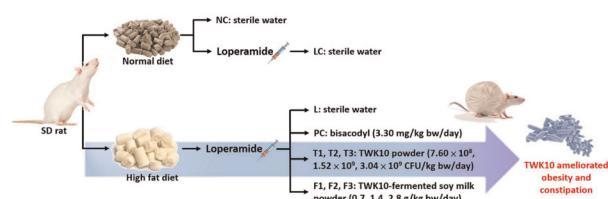
Jieping Yang, On Kei Lei, Shrikant Bhute, Penny M. Kris-Etherton, Alice H. Lichtenstein, Nirupa R. Matthan, Kristina S. Petersen, Joan Sabaté, David M. Rebouissin, Laura Lovato, Mara Z. Vitolins, Sujatha Rajaram, Jonathan P. Jacobs, Jianjun Huang, Meileen Taw, Scarlet Yang and Zhaoping Li*



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

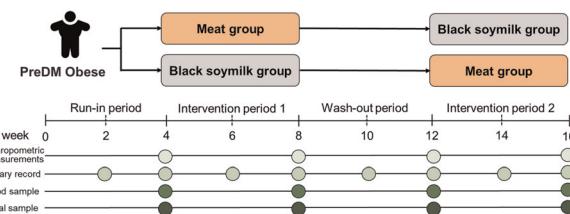
Te-Hua Liu, Guan-Li Chen, Chih-Hui Lin, Tsung-Yu Tsai and Meng-Chun Cheng*



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

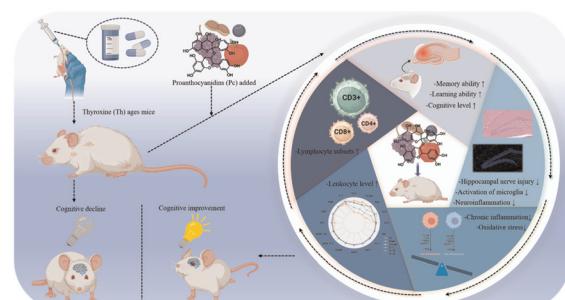
Yu-Ho Chang, Pei-Ni Lee, Cheng-Hsu Chen, Hsin-Yi Yang, Chi-Hao Wu, Jia-Yau Doong and Wan-Ju Yeh*



207

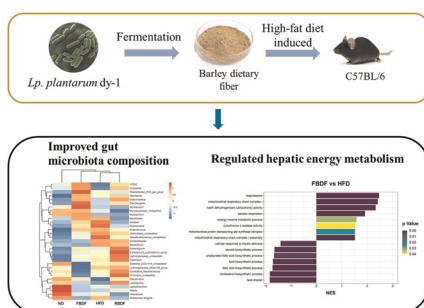
Effect of proanthocyanidins on cognitive improvement in thyroxin-induced aging mice

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



PAPERS

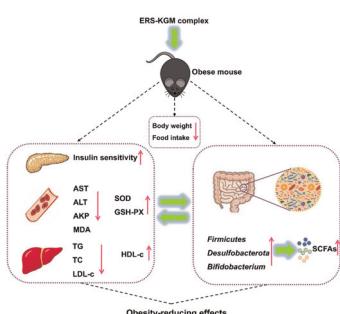
219



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*

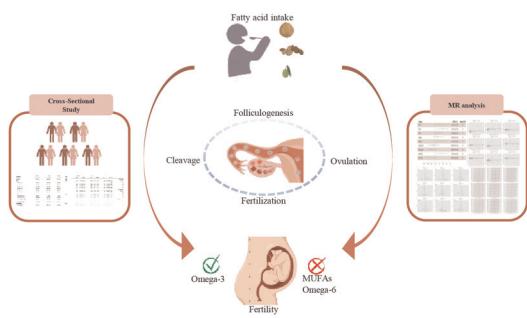
232



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*

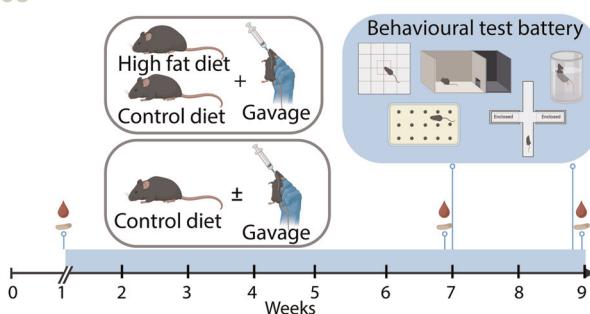
249



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*

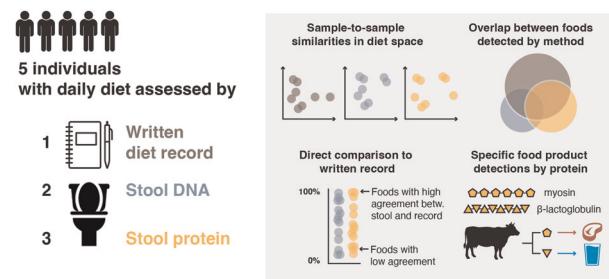


PAPERS

282

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

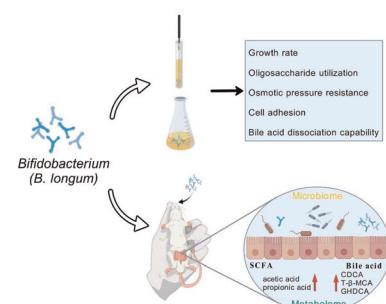
Brianna L. Petrone, Alexandria Bartlett, Sharon Jiang, Abigail Korenek, Simina Vintila, Christine Tenekjian, William S. Yancy, Jr., Lawrence A. David* and Manuel Kleiner*



297

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

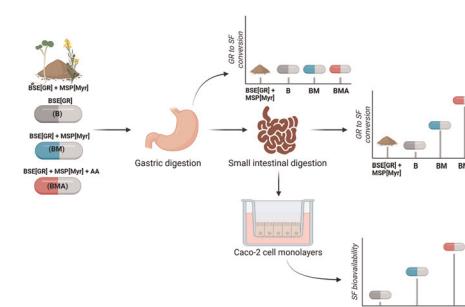
Chenyue Zhang, Linlin Wang, Xiaoming Liu,* Gang Wang, Jianxin Zhao and Wei Chen



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*

