

# Omega-3转化研究和技术创新:从实验室到临床 Omega-3 Translational Research and Technology Innovation: From Bench to Bedside

2024.11.8-9 中国东莞 Nov. 8-9, 2024 Dongguan, China







世易医健(eChinaHealth)是国际医学培训和服务机构, 业务包括:医学新媒体,会议活动,国际医学培训,国际科研服务。

我们与顶尖国际行业学会合作,赋能助力中国医生和创新药企 链接全球医学资源扩展国际学术交流和合作!



与美国MJH医疗媒体战略合作发行《世易医学汇》, 向中国医生以及专业人士提供及时国际医学新闻资讯 ,世易医健也为MJH提供中国医学新闻,帮助中国学 者和企业在国际主流医学媒体上"发出中国声音,讲好 中国故事"。



与多家国际医学教育机构合作,将国际医学教育培训 课程引入中国,帮助肿瘤科和内分泌科以及其他相关 科室医生、医学相关从业人员和在校医学生拓展国际视 野,提高医学水平。



拥有美国临床肿瘤学会(ASCO)和美国内分泌学会(ES)大中华区 官方授权,组织系列 ASCO Direct™ China 和 ENDO Direct™ China品牌会议,让中国医生和专业人员不出国门也能学习国 际医学最前沿的科学研究进展。并在国际知名医学会议期间组 织中国主题会议和晚宴酒会,为中外医学交流合作架起桥梁。



邀请国际科研大PI和国际期刊主编/编委/审稿人等,打造面向中 国医生的科研课程,并提供定制化科研辅导;同时,帮助中国 医生走出国门,开展参访/访学活动,显著提升中国医生的国际 科研能力。



#### 扫 一 扫 , 世 界 医 讯 易 览 无 余



# 承上启下,2024 (第四届) Omega-3 科技与产业国际会议正式开启

金秋时节,硕果累累!继 2021世界 Omega-3 科技大会、2022 Omega-3 脂肪酸与抗衰老国 际论坛、2023 Omega-3 与全球健康国际论坛之后,2024 Omega-3 科技与产业国际会议于 11 月 8-9 日在东莞举行!

Omega-3 脂肪酸作为人体不能合成而必需从食物中摄取的营养素,是维持人类生命周期中 各阶段健康不可缺乏的物质,在预防和治疗现代慢性疾病中发挥着重要作用。故其在健康管理和 产业发展中的关注度和重视度与日俱增!

Omega-3 脂肪酸既是食品,也可作为保健品和药品,其产业涉及多个领域,包括农业、渔业, 海洋生物、饲料养殖、合成生物技术、基因工程、食品和饮料产业、婴儿奶粉、保健品、医药、 临床营养和特医食品、化验检测、健康管理(优生优育、慢病防治、养老抗衰)、美容化妆品、 宠物营养品等等,蕴藏着一个庞大的产业生态链。同时,Omega-3 产业也面临着许多挑战,如 原料资源的可持续性问题、产品质量问题、技术创新滞后、消费者认知不足等。未来,其挑战和 机遇都有待我们去探讨。

我们热忱邀请了对 Omega-3 科技与产业感兴趣的各界人士,齐聚东莞,共同商讨 Omega-3 科技与产业发展的挑战和机遇!

康景轩 教授

Omega-3科技与产业国际会议主席 Omega-3与全球健康研究院 (OGHI) 创始人和院长 国际 Omega-3研究学会 (ISOR) 主席 广东医科大学 Omega-3研究与转化中心主任

Following the success of the 2021 World Congress of Omega-3 Science & Technology, the 2022 International Forum on "Omega-3 Fatty Acids & Anti-Aging", and the 2023 International Forum on Omega-3 and Global Health, the 2024 International Conference on Omega-3 Science and Industry is held on Nov. 8-9th.

Omega-3 fatty acids, as essential nutrients that cannot be synthesized by the human body and must be obtained from food, are indispensable for maintaining health at all stages of the human life cycle and play a crucial role in the prevention and treatment of modern chronic diseases. Due to their importance to human health and their pivotal role in disease management, omega-3 fatty acids are receiving increasing attention from the public and industry.

Omega-3 fatty acids are not only dietary nutrients, but can also be used as health supplements and medicines. Its industry involves many fields, including agriculture, fisheries, marine life, feed farming, synthetic biotechnology, genetic engineering, food and beverage industry, infant formula, health products, medicine, clinical nutrition and special medical food, laboratory testing, health management (eugenics, chronic disease prevention and treatment, elderly care and anti-aging), beauty cosmetics, pet nutrition products, and more. This vast industrial ecosystem provides many opportunities for industry development, but also faces various challenges such as the sustainability of raw material resources, product quality issues, lagging technological innovation, and insufficiency of consumer awareness. In short, opportunities and challenges coexist in the future and require our further attention.

We sincerely invite all those interested in omega-3 research and industry to gather in Dongguan to discuss the challenges and opportunities of omega-3 research and industry development.

# Prof. Jing X. Kang

Chair, 2024 International Conference on Omega-3 Science and Technology Founder and President of the Omega-3 and Global Health Institute (OGHI) President of the International Society for Omega-3 Research (ISOR) Director of the Center for Omega-3 Clinical and Translational Research at Guangdong Medical University



#### 会议现场

会议期间请将手机调至震动或者静音

#### 保持会场安静

未经允许,禁止对报告内容进行录音或者录像,请自觉遵守会场及酒店的相关规章制度,会议资料(参会证、会议手册等相关 物料)请妥善保管,丢失不补(特别备注:参会证是各位参会代表参加本次会议的标志,请随身佩戴,为维护会场的良好秩序, 保证各位参会代表的利益,参会证不能更换及交予他人使用)

### 会场位置分布指南



自助午餐 请前往一楼高派扒房(THE COPPER GRILL) 凭餐卷用餐

**Buffet Lunch** Venue: The Copper Grill, Ground Floor

#### 会场 Wifi **WIFI** Connection

酒店 WiFi 名称: Hyatt\_WiFi 密码: event

User Name: Hyatt\_WiFi Password: event



本次会议全程同传在线,请扫描左侧二维码 通过手机耳机 享受实时同传服务

Scan QR code to listen English/Chinese simultaneous interpreting.





# 11月8日 Nov.8th 开幕式 Opening Ceremony 主持人:王俊艳,世易医健中国区总经理 MC: Sammi Wang, General Manager, eChinaHealth 08:30-08:45 开幕致辞 Opening Remarks Omega-3 研究与转化重大项目启动仪式 08:45-09:15 Launching Ceremony of Major Omega-3 Translational Research Projects 开幕主题报告 Keynote Speech 合成生物学技术与 Omega-3 的生物制造 09:15-10:00 Synthetic Biology for the Bio-Production of Omega-3 黄和 教授 中国工程院院士 南京师范大学副校长、食品与制药工程学院院长 Prof. He Huang Academician of Chinese Academy of Engineering Vice President and Dean of School of Food and Pharmaceutical Engineering, Nanjing Normal University 主题一: 运用 Fat-1 转基因动物模型研究 Omega-3 作用的 20 年成果报告 Session 1: The 20-year Achievements of Using Fat-1 Transgenic Animal Model to Study the Effects of **Omega-3** 主持人: 李祥勇 教授, 广东医科大学基础医学院副院长 MC: Prof. Xiangyong Li, Vice Dean of The School of Basic Medical Sciences of Guangdong Medical University 主旨报告 Keynote Speech Fat-1 动物模型的创建及其对 Omega-3 研究的影响 10:00-10:30 The Creation of Fat-1 Animal Model and Its Impact on Omega-3 Research 康景轩 教授 Omega-3 与全球健康研究院 (OGHI) 创始人和院长 国际 Omega-3 研究学会 (ISOR) 主席 广东医科大学 Omega-3 研究与转化中心主任 Prof. Jing X. Kang

Founder and President of the Omega-3 and Global Health Institute (OGHI) President of the International Society for Omega-3 Research (ISOR) Director of the Center for Omega-3 Clinical and Translational Research at Guangdong Medical University





#### 专题报告 Special Reports 利用 Fat -1 小鼠模型助力胃肠道药物的研发 10:30-10:50 Using the Fat-1 Mouse Model to Advance GI-Medicine Karsten-H. Weylandt 教授 德国布兰登堡医学院科学与研究副院长 / 胃肠病学系主任 Prof. Karsten-H. Weylandt Vice-Dean for Research at Brandenburg Medical School, Germany Omega-3 脂肪酸在乳腺癌预防和轻度创伤性脑损伤中的作用 10:50-11:10 Role of Omega-3 Fatty Acids in Breast Cancer Prevention and Mild Traumatic Brain Injury David Ma 教授 加拿大圭尔夫大学家庭健康研究 (GFHS) 主任 加拿大营养学会前任主席 Prof. David Ma Director of the Guelph Family Health Study, University of Guelph Past-President of the Canadian Nutrition Society Omega-3 脂肪酸代谢产物与炎症和组织稳态的调控 11:10-11:30 Omega-3 Fatty Acid Cascade that Controls Inflammation and Tissue Homeostasis Makoto Arita 教授 日本庆应义塾大学药学院院长 Prof. Makoto Arita Dean of the Faculty of Pharmacy at Keio University 聚焦肠道通透性在 Omega-3 不饱和脂肪酸预防饮食性肥胖和相关疾病中的作用 11:30-11:50 Prevention of Dietary Obesity and Associated Disorders by Omega-3 PUFAs: Focus on Intestinal Permeability. Jerome Bellenger 教授 法国勃艮第大学 ----" 脂质、营养、肿瘤 " 实验室 Prof. Jérôme Bellenger University of Burgundy | UB · Laboratoire de Lipides, Nutrition, Cancer FAT-1 小鼠中 Omega-3-PUFA 水平的提高可减轻酒精诱导的肝病: 潜在机制和未来方向 11:50-12:10 Endogenous Enrichment in Omega-3 PUFAs in Fat-1 Mice is Associated with Attenuation of Alcoholmediated Liver Disease: Potential Mechanisms and Future Directions Irina A. Kirpich 教授 美国路易斯维尔大学微生物学与免疫学系酒精性肝病研究中心主任 Prof. Irina A. Kirpich Department of Microbiology and Immunology at University of Louisville 自助午餐 12:10-13:30 **Buffet Lunch**





13:30-13:50	Fat-1 小鼠内源 Omega-3 不饱和脂肪酸通过纠正神经炎症和代谢异常治疗抑郁样的行为和病理变化 Endogenous Omega-3 Fatty Acids in Fat-1 Mice Treat Depression-like Pathological Changes Through Remedying Neuroinflammation and Metabolomic Abnormalities 宋采 教授 杭州华大生命科学研究院 脑科学中心首席科学家 东莞第七人民医院特聘教授 Prof. Cai Song Chief Scientist of Hangzhou BGI, Neuroscience Research Center Distinguish Professor of No 7 Dongguan People's Hospital, Dongguan Mental Health Center
13:50-14:10	应用 Fat-1 小鼠研究多不饱和脂肪酸的神经保护作用 Using Fat-1 Mice to Study Neuroprotection of Omega-3 Polyunsaturated Fatty Acids 苏焕兴教授 澳门大学中华医药研究院 Prof. Huanxing Su Institute of Chinese Medical Sciences, University of Macau
14:10-14:30	FAT-1 小鼠模型:研究 Omega-6和 Omega-3多不饱和脂肪酸对肠道微生物组和慢性疾病影响的创新策略 FAT-1 Mouse Model: An Innovative Strategy to Study the Effects of Omega-6 and Omega-3 PUFA on the Gut Microbiome and Chronic Disease Kanakaraju Kaliannan 研究员 美国哈佛医学院脂质医学与技术研究室 Dr. Kanakaraju Kaliannan Research Fellow in the Laboratory for Lipid Medicine and Technology (LLMT) at Massachusetts General Hospital (MGH) and Harvard Medical School
14:30-14:50	内源性 Omega-3 多不饱和脂肪酸保护缺血再灌注小鼠心脏 Endogenous Omega-3 Polyunsaturated Fatty Acids Protect Mouse Hearts from Ischemia-Reperfusion Injury 杨丰华 研究员 广东省实验动物监测所心血管疾病模型研究中心主任 Prof. Fenghua Yang Director of the Cardiovascular Disease Model Research Center at the Guangdong Laboratory Animal Monitoring Institute

主持人: 李祥勇 教授, 广东医科大学基础医学院副院长 MC: Prof. Xiangyong Li, Vice Dean of The School of Basic Medical Sciences of Guangdong Medical University





14:50-15:30	圆桌论坛:Fat-1 动物研究成果的转化应用价值 Panel Discussion: Translational and Application Values of Fat-1 Animal Research Results	
	李文德 研究员 广东省科技合作研究促进中心副主任 Prof. Wende Li Deputy Director of the Guangdong Science and Technology Cooperation Research Promotion Center	
	万建波 教授 澳门大学中华医药研究院 中药质量研究国家重点实验室 Prof. Jian-Bo Wan State Key Laboratory of Quality Research in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau	
	王斌 教授 深圳龙岗中心医院临床营养科主任 Prof. Bin Wang Director of Department of Clinical Nutrition at Shenzhen Longgang Central Hospital	
	李祥勇 教授 广东医科大学基础医学院副院长 Prof. Xiangyong Li Vice Dean of The School of Basic Medical Sciences of Guangdong Medical University	
15:30-15:50	茶歇 Coffee Break	
主题二:Omega-3 转化医学研究和临床应用 Session 2: Omega-3 Translational Research and Clinical Applications		
主持人:杨波 研究员,温州医科大学脂类医学研究所所长 MC: Prof. Bo Yang, Director of Institute of Lipids Medicine, Wenzhou Medical University		
主旨报告 Keynote Speech		
15:50-16:20	组织中 Omega-6/Omega-3 比值与糖尿病风险的相关性 Relationship Between Tissue Omega-6/Omega-3 Ratio and Diabetes Risk 李铎 教授 青岛大学营养学首席教授、营养与健康研究院常务副院长 英国皇家化学学会会士、国际营养科学联合会院士 Prof. Duo Li Chief Professor of the Institute of Nutrition & Health, Qingdao University Fellow of the Royal Society of Chemistry (FRSC), Fellow of International Union of Nutritional Science (FIUNS)	





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会议日程 Agenda		
	杨波 研究员 温州医科大学脂类医学研究所所长   Prof. Bo Yang   Director of Institute of Lipids Medicine, Wenzhou Medical University   王斌 教授 深圳龙岗中心医院临床营养科主任   Prof. Bin Wang   Director of Department of Clinical Nutrition at Shenzhen Longgang Central Hospital   罗海清 教授 广东医科大学附属医院头颈部肿瘤专科副主任(主持工作)   Prof. Haiqing Luo   Deputy Director of the Head and Neck Tumor Department (Presided over the work), Affiliated Hospital of Guangdong Medical University   夏永慧 博士 远洋椿萱茂首席健康官 中国健康管理协会临床营养与健康分会副会长 Yonghui Nie, MD Chief Health Officer of Senior Living L'Amore   Vice President of the Society of Clinical Nutrition and Health Expert of the Chinese Geriatrics Society	
19:00-20:30	全体晚宴 Conference Banquet Omega-3 产业联盟活动 Omega-3 Industry Alliance Events	
	11 月 9 日 Nov. 9th	
	主题三:技术创新与产业发展 Session 3: Technology Innovation and Industry Development	
	主持人: 聂永慧 博士, 远洋椿萱茂首席健康官 MC: Yonghui Nie, MD, Chief Health Officer of Senior Living L'Amore	
主旨报告 Keynote Speech		
09:00-09:30	Omega-6/Omega-3 脂肪酸的比值对冠心病的发生发展的影响及其在未来健康食品开发中的重要性 The Impact of the Ratio of Omega-6/Omega-3 Fatty Acids on Development of Coronary Heart Disease and Its Importance in Future Healthy Food Production 王兴国 教授 江南大学脂质营养与安全国际联合实验室主任 中国粮油学会首席专家、中国粮油学会油脂分会常务副会长	
	Director of International Joint Research Laboratory on Lipid Nutrition and Safety, Jiangnan University Chief Scientist, Executive Vice President of Oil and Fat Branch of the Chinese Cereals and Oils Association	





9:30-10:00	亚麻籽 ALA 的提质加工与增效利用 Quality Improvement Processing and Enhanced Utilization of ALA from Flaxseed 邓乾春 研究员 中国农业科学院油料作物研究所副所长 农业农村部油料加工重点实验室副主任 Prof. Qianchun Deng Deputy director of the Oil Crop Research Institute of the Chinese Academy of Agricultural Sciences Deputy director of the Key Laboratory of Oil Processing of the Ministry of Agriculture and Rural Affairs
	Omega-3 产业论坛 Omega-3 Industry Forum
10:00-10:15	亚麻籽营养特性与全质化绿色低温加工 Nutritional Characteristics and Whole-quality Green Low-temperature Processing of Flaxseed (Linum usitatissimum) 刘元法 教授 江南大学食品科学与资源挖掘全国重点实验室常务副主任 Prof. Yuanfa Liu Executive vice director of The State Key Laboratory of Food Science and Resources at Jiangnan University
10:15-10:30	Omega-3+ 组合产品的研发及其在心血管健康中的应用 Development of Omega-3+ Combination Products and Their Applications in Cardiovascular Health 唐林志 博士 广东清脂康科技有限公司董事长 Dr. Linzhi Tang Chairman of Guangdong Qingzhikang Technology Co., Ltd
10:30-10:50	茶歇 Coffee Break
10:50-11:00	AI 技术在精准营养干预中的应用 The Application of AI Technology in Precision Nutrition Intervention 孙朝南 瘦吧集团快康 AI 创始人 广东省网商协会人工智能应用赋能中心专家 Chaonan Sun Founder of Kuaikang Tech.
11:00-11:10	Omega-3 多不饱和脂肪酸强化鸡蛋技术研发 Research and Development of Eggs Fortified with Omega-3 Polyunsaturated Fatty Acids 齐莎日娜博士 四川圣迪乐村生态食品股份有限公司产品技术总监 Dr. Qisharina CTO of Sichuan Sundaily Farm Ecological Food Co.,Ltd.





11:10-11:25	脂肪谱检测技术在 Omega-3 应用中的重要性 The Importance of Fatty Acid Profiling in the Application of Omega-3s 赵锋 博士 浙江大学苏工院脂肪谱与慢病研发中心主任 Dr. Feng Zhao Director of the Center of Fatty Acids and Chronic Disease at the School of Engineering, Zhejiang University	
11:25-11:40	聚焦 Omega-3 产业难点,助力产研创新发展 Addressing Challenges of Omega-3 Industry and Promoting Innovation of Research and Development 李鹏婧 成都圆大生物科技有限公司合成生物工程中心院长 Peggy Li Director of Biology Synthetic Engineering Center, Chengdu Skuny Bioscience Co., Ltd.	
11:40-12:10	闭幕式:产业发展的思考 Closing Ceremony: Reflections on Omega-3 Industry Development	
12:10-13:30	自助午餐 Buffet Lunch	
13:45-15:50 东莞参观活动 Visit		

\* 按演讲顺序排列





黄和 教授 中国工程院院士 南京师范大学副校长 食品与制药工程学院院长

#### **Prof. He Huang**

Academician of Chinese Academy of Engineering Vice President and Dean of School of Food and Pharmaceutical Engineering, Nanjing Normal University



#### 康景轩 教授

Omega-3 与全球健康研究院 (OGHI) 创始人和院长 国际 Omega-3 研究学会 (ISOR) 主席 广东医科大学 Omega-3 研究与转化中心主任

#### **Prof. Jing X. Kang**

Founder and President of the Omega-3 and Global Health Institute (OGHI) President of the International Society for Omega-3 Research (ISOR) Director of the Center for Omega-3 Clinical and Translational Research at Guangdong Medical University



Karsten-H. Weylandt 教授 德国布兰登堡医学院科学与研究副院长 胃肠病学系主任

Prof. Karsten-H. Weylandt Vice-Dean for Research at Brandenburg Medical School, Germany



David Ma 教授 加拿大圭尔夫大学家庭健康研究 (GFHS) 主任 加拿大营养学会前任主席

**Prof. David Ma** Director of the Guelph Family Health Study, University of Guelph Past-President of the Canadian Nutrition Society





Makoto Arita 教授 日本庆应义塾大学药学院院长

**Prof. Makoto Arita** Dean of the Faculty of Pharmacy at Keio University



Jerome Bellenger 教授 法国勃艮第大学 ----" 脂质、营养、肿瘤 " 实验室

Prof. Jérôme Bellenger University of Burgundy | UB · Laboratoire de Lipides, Nutrition, Cancer



Irina A. Kirpich 教授 美国路易斯维尔大学 微生物学与免疫学系酒精性肝病研究中心主任

**Prof. Irina A. Kirpich** Department of Microbiology and Immunology at University of Louisville



宋采 教授 杭州华大生命科学研究院 脑科学中心首席科学家 东莞第七人民医院特聘教授

#### **Prof. Cai Song**

Chief Scientist of Hangzhou BGI, Neuroscience Research Center Distinguish Professor of No 7 Dongguan People's Hospital, **Dongguan Mental Health Center** 



苏焕兴 教授 澳门大学中华医药研究院

#### **Prof. Huanxing Su**

Institute of Chinese Medical Sciences, University of Macau



Kanakaraju Kaliannan 研究员 美国哈佛医学院脂质医学与技术研究室

#### Dr. Kanakaraju Kaliannan

Research Fellow in the Laboratory for Lipid Medicine and Technology (LLMT) at Massachusetts General Hospital (MGH) and Harvard Medical School





杨丰华 研究员 广东省实验动物监测所心血管疾病模型研究中心主任

#### **Prof. Fenghua Yang**

Director of the Cardiovascular Disease Model Research Center at the Guangdong Laboratory Animal Monitoring Institute



万建波 教授 澳门大学中华医药研究院 中药质量研究国家重点实验室

#### Prof. Jian-Bo Wan

State Key Laboratory of Quality Research in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau



李文德 研究员 广东省科技合作研究促进中心副主任

#### **Prof. Wende Li**

IDeputy Director of the Guangdong Science and Technology **Cooperation Research Promotion Center** 



王斌 教授 深圳龙岗中心医院 临床营养科主任

#### **Prof. Bin Wang**

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李祥勇 教授 广东医科大学 基础医学院副院长

#### **Prof. Xiangyong Li**

Vice Dean of The School of Basic Medical Sciences of **Guangdong Medical University** 



李铎 教授 青岛大学营养学首席教授、营养与健康研究院常务副院长 英国皇家化学学会会士、国际营养科学联合会院士

#### Prof. Duo Li

Chief Professor of the Institute of Nutrition & Health, Qingdao University

Fellow of the Royal Society of Chemistry (FRSC), Fellow of International Union of Nutritional Science (FIUNS)





#### 苏冠宾 教授 中国医药大学 安南医院副院长

#### **Prof. Kuan-Pin Su**

Deputy Superintendent of An-Nan Hospital, China Medical University



黄涛 教授 北京大学公共卫生学院 教育部分子心血管病学重点实验室首席研究员

#### **Prof. Tao Huang**

Department of Epidemiology and Biostatics, School of Public Health, Peking University Principal Investigator of Key Laboratory of Molecular Cardiovascular Diseases of Ministry of Education, China



郝磊 教授 美国宾州印第安纳大学联合与公共卫生系医学影像学和医学技 术项目主任 北美华人营养学会会长,董事会主席

#### **Prof. Lei Hao**

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#### 刘庆芝 教授

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#### **Prof. Qingzhi Liu**

Founder of the Reproductive Immunology Comprehensive Department of Shenzhen Maternal and Child Health Hospital President of the Multidisciplinary Branch of Reproductive Health of Shenzhen Health Management Association



杨波 研究员 温州医科大学脂类医学研究所所长

#### **Prof. Bo Yang**

Director of Institute of Lipids Medicine, Wenzhou Medical University



罗海清 教授 广东医科大学附属医院头颈部肿瘤专科副主任(主持工作)

#### **Prof. Haiging Luo**

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聂永慧 博士 远洋椿萱茂首席健康官 中国健康管理协会临床营养与健康分会副会长

#### Yonghui Nie, MD

Chief Health Officer of Senior Living L'Amore Vice President of the Society of Clinical Nutrition and Health, **Expert of the Chinese Geriatrics Society** 



#### 王兴国 教授 江南大学脂质营养与安全国际联合实验室主任 中国粮油学会首席专家、中国粮油学会油脂分会常务副会长

#### **Prof. Xingguo Wang**

Director of International Joint Research Laboratory on Lipid Nutrition and Safety, Jiangnan University Chief Scientist, Executive Vice President of Oil and Fat Branch of the Chinese Cereals and Oils Association



邓乾春 研究员 中国农业科学院油料作物研究所副所长 农业农村部油料加工重点实验室副主任

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刘元法 教授 江南大学食品科学与资源挖掘 全国重点实验室常务副主任

#### **Prof. Yuanfa Liu**

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唐林志 博士 广东清脂康科技有限公司 董事长

#### **Dr. Linzhi Tang**

Chairman of Guangdong Qingzhikang Technology Co., Ltd



孙朝南 瘦吧集团快康 AI 创始人 广东省网商协会人工智能应用赋能中心专家

**Chaonan Sun** Founder of Kuaikang Tech.





齐莎日娜 博士 四川圣迪乐村生态食品股份有限公司产品技术总监

**Dr. Qisharina** CTO of Sichuan Sundaily Farm Ecological Food Co.,Ltd.



赵锋 博士 浙江大学苏工院脂肪谱与慢病研发中心主任

**Dr. Feng Zhao** Director of the Center of Fatty Acids and Chronic Disease at the School of Engineering, Zhejiang University



李鹏婧 成都圆大生物科技有限公司合成生物工程中心院长

Peggy Li Director of Biology Synthetic Engineering Center, Chengdu Skuny Bioscience Co., Ltd.



王俊艳 世易医健中国区总经理

Sammi Wang General Manager, eChinaHealth 2024 OMEGA-3 科技与产业国际会议

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黄和 教授

中国工程院院士 南京师范大学副校长、食品与制药工程学院院长

Prof. He Huang

Academician of Chinese Academy of Engineering Vice President and Dean of School of Food and Pharmaceutical Engineering, Nanjing Normal University

现任南京师范大学副校长,教授、博士生导师,获批国家杰出青年基金及多项国家级人才项目。长期从事工业 微生物的代谢工程及合成生物学相关研究,研究成果以第一完成人获国家技术发明奖二等奖 2 项、教育部技术发明 一等奖 2 项,获何梁何利基金科学与技术青年创新奖、闵恩泽能源化工杰出贡献奖、全国商业最高科学技术奖和比 尔及梅琳达·盖茨基金会青年科学家奖等。2014-2023 年连续入选 Elsevier 化学工程领域中国高被引学者榜单。

Prof. He Huang, vice president of Nanjing Normal University, professor and Ph.D supervisor. He has been honored with approvals from the National Fund for Distinguished Young Scholars and several national talent programs. Over an extended period, he has dedicated himself to research in metabolic engineering and synthetic biology, focusing on industrial microorganisms. His pioneering research accomplishments have led him to secure 2 second prizes at the National Technical Invention Award and 2 first prizes at the Technical Invention Award of the Ministry of Education, where he served as the primary completer. He has been recognized with numerous prestigious awards, including the Heliang and Heli Foundation Science and Technology Youth Innovation Award, the Min Enze Award for Outstanding Contribution to the Energy and Chemical Industry, the National Business Top Science and Technology Award, and the Bill & Melinda Gates Foundation Young Scientist Award. From 2014 to 2023, Elsevier consecutively listed him among China's Highly Cited Scholars in Chemical Engineering.

演讲题目: 合成生物学技术与 Omega-3 的生物制造 Topic: Synthetic Biology for the Bio-Production of Omega-3 Omega-3 是重要的功能性高值脂肪酸,在改善认知功能、降低心脑血管风险等方面发挥着重要的作用,但其主要来源于深海鱼油提取。利用海洋微藻发酵定向生产功能性油脂,可提高产品质量的安全性和可控性。但野生藻种 合成脂肪酸的含量较低,难以满足市场需求。

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项目组率先开展了以裂殖壶菌为新菌种来源的 DHA 油脂的研究,发明了基于油脂高通量检测的高产 DHA 菌种 定向选育方法,创制了基于改变糖代谢和呼吸途径通量定向选育裂殖壶菌的技术,获得了高生产性能的裂殖壶菌, 实现了高品质 DHA 油脂的规模化生产。进一步地,项目组通过代谢重构将裂殖壶菌从 DHA 细胞工厂拓展到 EPA 细 胞工厂,并结合人工智能与机器学习方法,极大的缩短菌株优化时间,不断推动 Omega-3 的生物制造与应用创新。

Omega-3 is a crucial high-value fatty acid with significant functional benefits, particularly for improving cognitive function and reducing the risks associated with cardiovascular and cerebrovascular diseases. However, its primary source remains deep-sea fish oil. Fermentation of marine microalgae to produce functional oils offers enhanced safety and product quality controllability. Nonetheless, wild algal species synthesize fatty acids in limited quantities, posing a challenge to meeting market demands.

Our team is dedicated to researching the DHA oil produced by Schizochytrium. Through high-throughput detection, we have developed a targeted breeding method for high-yield DHA strains. Additionally, we have developed a technology for targeted breeding of Schizochytrium based on alterations in glucose metabolism and respiratory pathway flux, yielding high-performance fungi and enabling large-scale production of premium DHA oil. Furthermore, the project extended the capabilities of the cell factory from DHA to EPA through metabolic remodeling, integrating artificial intelligence and machine learning techniques. This approach significantly accelerated strain optimization and continuously drove innovation in omega-3 bioproduction and application.

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# 康景轩 教授

Omega-3 与全球健康研究院 (OGHI) 创始人和院长 国际 Omega-3 研究学会 (ISOR) 主席 广东医科大学 Omega-3 研究与转化中心主任

#### **Prof. Jing X. Kang**

Founder and President of the Omega-3 and Global Health Institute (OGHI) President of the International Society for Omega-3 Research (ISOR) Director of the Center for Omega-3 Clinical and Translational Research at Guangdong Medical University

Omega-3 与全球健康研究院创始人和院长,国际 Omega-3 研究学会主席,哈佛医学院麻省总医院脂质医学与 技术研究室创始主任,中国教育部长江学者讲座教授(浙江大学);广东医科大学 Omega-3 研究与转化中心主任、 首席科学家。

康教授长期致力于 Omega-3 脂肪酸与人类健康的前沿研究,他利用生物技术首次将动物体内多余的 Omega-6 脂肪酸转化为 Omega-3 脂肪酸,这一生物技术已对 Omega-3 的基础研究及应用产生了革命性的影响。他领导的研 究团队至今已在脂类生物技术、营养基因组学、脂类代谢组学和肠道菌群调控等领域做了多项开创性研究。他现已 在 Nature、Science 和 PNAS 等高水平期刊上累计发表 SCI 论文 230 多篇,被引用次数已达 25,000 多次,现学术 指数 (H-Index) 为 83 (Google Scholar)。研究成果曾两次被美国《Discover》杂志列入"世界百项重大科技发现"之一, 被美国 Esquire 杂志选为 "2007 年全美最优秀、最睿智的人物" 之一。获首届世界 Omega-3 生物科技杰出贡献奖。 被 ExpertScape 列为 Omega-3 研究领域的世界顶级专家。

康教授多年来组办了一系列大型 Omega-3 科研与产业国际会议并担任大会主席,致力提高人们对 Omega-3 重要性的认识,促进产研合作,推动以 Omega-3 为核心的新型干预方案去帮助解决重大的全球性健康问题。

Dr. Kang is a leading scientist in the field of omega-3 research and currently serves as founder and president of the Omega-3 and Global Health Institute (OGHI), and the president of the International Society for Omega-3 Research (ISOR). Previously, he was the director of the Laboratory for Lipid Medicine and Technology at Massachusetts General Hospital and a professor of medicine at Harvard Medical School. He obtained his medical training from the Guangdong Medical University, received his Ph.D. in medical sciences (Nutrition and Metabolism) from the University of Alberta and completed his postdoctoral training with Dr. Alexander Leaf at Harvard Medical School. Dr. Kang is also currently the director of the Center for Omega-3 Clinical and Translational Research at Guangdong Medical University.

Dr. Kang has had a long interest in omega-3 fatty acids and nutrigenomics. He studies the health effects of omega-3 fatty acids, how they work and how they can be used properly to benefit human health. He is an expert in using genetically modified animals to study the effects of omega-6/omega-3 fatty acid ratio on health and disease. His research has made several pioneering discoveries, including systematic demonstration of the preventive and therapeutic effects of omega-3 fatty acids on cardiac sudden death, and the creation of a transgenic technology for converting omega-6 to omega-3 fatty acids in animals. To date, he has published more than 230 scientific papers in high impact scientific journals including Nature, Science, and PNAS. His publications have been cited more than 25,000 times with an h-index of 83 (Google Scholar). Dr. Kang and his work have been recognized among the "Top 100 Science Stories" by Discover, "The Best and Brightest" by Esquire, winner of the Global Award for Omega-3 Research and listed as a top World Expert in the field of omega-3 research by Expertscape. (For more detailed information about his research and publications, please google "Jing Kang Omega-3" or visit: http://www.llmt-harvard.org)

Dr. Kang's current research interest focuses on clinical and translational research to develop cost-effective and safe interventions for the management of chronic diseases.

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# 演讲题目: Fat-1 动物模型的创建及其对 Omega-3 研究的影响 Topic: The Creation of Fat-1 Animal Model and Its Impact on Omega-3 Research

Fat-1 转基因小鼠是经过基因工程改造的小鼠,可以自行将 omega-6 脂肪酸转化为 omega-3 脂肪酸,从而导 致这些小鼠组织中 omega-3 与 omega-6 脂肪酸的比例升高。这种能力是通过将秀丽隐杆线虫的 fat-1 基因引入小鼠 基因组来实现的。

Fat-1 小鼠模型的创建为 omega-3 研究开辟了新领域。这种独特的模型使得人们能够在不受饮食混杂因素影响 的情况下研究 omega-6 和 omega-3 脂肪酸的真实生物学功能。使用 fat-1 小鼠可消除饮食补充 omega-3 可能产生 的变异性,从而提供更一致的研究结果。这种一致性对于了解 omega-3 脂肪酸在细胞和分子水平上的精确机制尤为 重要。自 2004 年问世以来,Fat-1 小鼠模型已被全球 100 多个实验室广泛用于研究从肥胖到癌症等各种疾病(超过 70 种不同的健康状况)。迄今为止,顶级期刊上已发表了 260 多篇基于使用 Fat-1 转基因小鼠的科学论文,这些论 文为组织中 omega-3 脂肪酸的生物学效应提供了大量知识。

Fat-1 转基因小鼠有助于我们进一步了解 omega-3 脂肪酸对健康的影响及其在疾病预防和治疗中的作用。它们为研究人员提供了一个强大的科研工具,可以探索内源性 omega-3 脂肪酸如何影响各种健康结果,从而可能带来基于 omega-3 代谢的更有针对性的治疗方法。

Fat-1 transgenic mice are genetically engineered mice that can convert omega-6 fatty acids to omega-3 fatty acids on their own, leading to an elevated ratio of omega-3 to omega-6 fatty acids in the tissues of these mice. This capability is achieved by introducing a fat-1 gene from the Caenorhabditis elegans into the mouse genome.

The creation of the Fat-1 mouse model has opened new frontiers for omega-3 research. This unique model made it possible to study the authentic biological functions of omega-6 and omega-3 fatty acids without the confounding factors of diet. Using fat-1 mice eliminates the variability that can arise from diet-based omega-3 supplementation, providing more consistent results in research. This consistency is particularly important in understanding the precise mechanisms of omega-3 fatty acids at the cellular and molecular levels. Since it became available in 2004, the Fat-1 mouse model has been widely used by more than 100 laboratories worldwide to study a variety of diseases (over 70 different health conditions) ranging from obesity to cancer. So far, more than 260 scientific papers based on the use of fat-1 transgenic mice have been published in top journals, which have generated a vast pool of knowledge about the biological effects of elevated tissue omega-3 fatty acids.

Fat-1 transgenic mice are instrumental in advancing our understanding of the health impacts of omega-3 fatty acids and their role in disease prevention and treatment. They offer a powerful tool for researchers to explore how endogenous omega-3 production may influence various health outcomes, potentially leading to more targeted therapeutic approaches based on omega-3 metabolism.



# Karsten-H. Weylandt 教授 德国布兰登堡医学院科学与研究副院长 / 胃肠病学系主任

Prof. Karsten-H. Weylandt Vice-Dean for Research at Brandenburg Medical School, Germany

Medical School in Heidelberg, London, Berlin and Basel.

DPhil in Clinical Biochemistry in Oxford with Chris Higgins.

1995/96 and 2009-2011 Research Fellow at Massachusetts General Hospital in Boston with Alexander Leaf and Jing X. Kang.

2002-2017 Fellow and Attending Physician in Internal Medicine, Gastroenterology and Lipidology at Charité Berlin.

Since 2017 Full Professor for Gastroenterology at Brandenburg Medical School, Germany.

Since 2019 Vice-Dean for Research at Brandenburg Medical School, Germany.

演讲题目:利用 Fat-1 小鼠模型助力胃肠道药物的研发 **Topic: Using the Fat-1 Mouse Model to Advance GI-Medicine** 

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**David Ma 教授** 加拿大圭尔夫大学家庭健康研究 (GFHS) 主任 加拿大营养学会前任主席

#### **Prof. David Ma**

Director of the Guelph Family Health Study, University of Guelph Past-President of the Canadian Nutrition Society

David Ma 教授是加拿大圭尔夫大学家庭健康研究 (GFHS) 主任,研究涵盖了从癌症的细胞和实验模型到家庭营养的广泛主题。他的实验研究有助于加深我们对 Omega-3 脂肪酸在基因、细胞、疾病多个层面作用的理解,重点是乳腺癌的预防。最近的工作已经扩展到包括大脑健康和 Omega-3 脂肪酸在轻度创伤性脑损伤中的保护作用。作为 GFHS 主任,他创建了一个由研究员和培训专家组成的团队,以更好地了解健康的决定因素,目标是开发工具和方法来支持预防慢性病的健康行为。他领导了一个由三方机构资助的健康城市和实施科学国家培训项目。他是加拿大营养学会前任主席,积极推进加拿大的营养教育和研究。

Dr. David Ma is a Professor in the department of Human Health and Nutritional Sciences and Director of the Guelph Family Health Study (GFHS) at the University of Guelph. His research spans a wide range of topics from cells and experimental models of cancer to family nutrition. His experimental research has helped to increase our understanding of the role of omega-3 fatty acids at multiple levels of the gene, cell, whole body and disease with a focus on breast cancer prevention. Recent work has expanded to encompass brain health and the protective role of omega-3 fatty acids in mild traumatic brain injury. As the Director of the GFHS, a longitudinal cohort study of families with young children, he leads a team of investigators and trainees to better understand determinants of health. The goal is to develop tools and approaches to support healthy behaviours for the prevention of chronic diseases. In support of training, he leads a tri-agency funded national training program in Healthy Cities and Implementation Science. Professionally, he is active in advancing nutrition education and research in Canada through the Canadian Nutrition Society and is a Past-President of the society.

# 演讲题目: Omega-3 脂肪酸在乳腺癌预防和轻度创伤性脑损伤中的作用 Topic: Role of Omega-3 Fatty Acids in Breast Cancer Prevention and Mild Traumatic Brain Injury

The fat-1 mouse model has enabled our laboratory to investigate the direct contribution of omega-3 fatty acids to major causes of mortality and morbidity. Diet, including the lack of omega-3 fatty acids is a major contributor to many cancers including breast cancer. Our work was the first to show a direct link between lifelong exposure to omega-3 fatty acids and breast cancer prevention in a mouse model of human breast cancer leading to a ~25 reduction in tumour numbers and size. Our work has expanded to also consider the role of omega-3 fatty acids in daily living and sport. The occurrence of brain injuries far exceeds many chronic diseases and very little support is available for their prevention and treatment. Our recent work has contributed novel understanding of how omega-3 fatty acids may protect and enhance recovery after one or multiple brain injuries in a mouse model of mild traumatic brain injury. Overall, our research highlights broad ranging benefits of omega-3 fatty acids contributing to the prevention of major life altering diseases such as cancer and protection against accidental brain injury due to falls and collisions.

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Makoto Arita 教授 日本庆应义塾大学药学院院长

**Prof. Makoto Arita** Dean of the Faculty of Pharmacy at Keio University

Dr. Makoto Arita received his Ph.D. from the Graduate School of Pharmaceutical Sciences, University of Tokyo in 1997. Currently he is a Dean of the Faculty of Pharmacy and a Professor of Physiological Chemistry and Metabolism at Keio University, and a Team Leader of RIKEN Center for Integrative Medical Sciences. Dr. Arita has experience leading multidisciplinary research teams as a principal investigator for "Biology of LipoQuality" a program project supported by JSPS Grant-in-aid for Scientific Research on Innovative Areas (FY2015-2020). He serves as an Executive Editor for the Progress in Lipid Research. Now he is leading JST-ERATO Lipidome Atlas Project (FY2021-2026) to pioneer the spatiotemporal biology of lipid diversity through a creation of the Lipidome Atlas, and to discover unknown molecules associated with important biological processes. Also, he is a Core Director of the Keio University World Premier International Research Center Initiative (WPI-Bio2Q) (FY2022-2032) to integrate human biology, microbiome research, and quantum computing to explore the foundations of healthy longevity.

演讲题目: Omega-3 脂肪酸代谢产物与炎症和组织稳态的调控 Topic: Omega-3 Fatty Acid Cascade that Controls Inflammation and Tissue Homeostasis

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Jerome Bellenger 教授 法国勃艮第大学 ---" 脂质、营养、肿瘤 " 实验室

**Prof. Jérôme Bellenger** University of Burgundy | UB · Laboratoire de Lipides, Nutrition, Cancer

Jerome Bellenger 是法国勃艮第大学教授,于2002年获得博士学位的论文题目是不饱和脂肪酸生物合成的调控 膳食脂肪酸的影响和 SHR 大鼠高血压效应。2003 年在美国国立卫生研究院担任博士后,进行 P450 CYP2C29 新 型敲除小鼠模型的基因型和表型特征的研究。自 2004 年起,在法国勃艮第大学进行 fat-1 鼠标模型的研究。

I obtained my PhD in 2002 on "Regulation of the biosynthesis of unsaturated fatty acids: influence of dietary fatty acids and hypertension effects in SHR rat"

I moved in 2003 to NIH (North Carolina, USA) for a postdoctoral position entitled "Genotype and phenotype characterization of a new knock-out mouse model for P450 CYP2C29"

I obtained a permanent position at the University of Burgundy in 2004 as an Assistant Professor. Ever since, I have been working on the fat-1 mouse model as a model for all my projects.

# 演讲题目:聚焦肠道通透性在 Omega-3 不饱和脂肪酸 预防饮食性肥胖和相关疾病中的作用

Topic: Prevention of Dietary Obesity and Associated Disorders by Omega-3 PUFAs: Focus on Intestinal Permeability.

During the onset of dietary obesity, a dysbiosis of gut microbiota contributes to alteration of intestinal barrier function by increasing intestinal epithelium permeability and altering the colonic mucus layer. In this context, we studied the impact of Omega-3 PUFA on the colonic mucus layer in order to prevent alterations of the barrier function. The relative contribution of microbiota has been assessed. We evidenced that WT HFD mice exhibit thicker and altered structure of the mucus layer, whereas fat-1 HFD mice (protected against dietary obesity and intestinal permeability) present a mucus layer as thick as that of controls and a highly stratified outer mucus layer, keeping bacteria away from epithelial cells. Similar protection was observed by transferring fat-1 microbiome to WT. We evidenced that such prevention occurred mainly through ER stress alleviation. These new findings highlight a novel feature of the preventive effects of Omega-3 PUFA against intestinal permeability occurring in obesity-related conditions. It still remains to decipher how Omega-3-modified microbiome influences the formation process, the structure and the functionality of the mucus layer.

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Irina A. Kirpich 教授 美国路易斯维尔大学 微生物学与免疫学系酒精性肝病研究中心主任

#### **Prof. Irina A. Kirpich** Department of Microbiology and Immunology at University of Louisville

Kirpich 博士是美国路易斯维尔大学微生物学和免疫学系的教授。她的研究重点是营养、代谢、微生物组和肝脏 疾病之间的相互作用。她专注于酒精相关性肝病的分子机制,包括识别新的生物标志物和治疗靶点。她的实验室研 究了饮食中 Omega-3 和 Omega-6 脂肪酸和生物活性脂质介质在炎症中的作用,以及酒精诱导的肠道微生物群、肠 道通透性和肝损伤的改变。Kirpich 博士的研究整合了基础研究、转化研究和临床研究。

Dr. Kirpich is a Professor in the Department of Microbiology and Immunology at the University of Louisville. Her research focuses on the interplay between nutrition, metabolism, microbiome, and liver diseases. She is particularly interested in the molecular mechanisms underlying alcohol-associated liver disease, including the identification of new biomarkers and therapeutic targets. Her laboratory investigates the role of dietary n3 and n6 fatty acids and bioactive lipid mediators in inflammation, as well as ethanol-induced alterations in the gut microbiota, intestinal permeability, and liver injury. Dr. Kirpich's research integrates basic, translational, and clinical studies.

#### 演讲题目: FAT-1 小鼠中 Omega-3-PUFA 水平的提高可减轻酒精诱导的肝病: 潜在机制和未来方向

Topic: Endogenous Enrichment in Omega-3 PUFAs in Fat-1 Mice is Associated with Attenuation of Alcohol-mediated Liver Disease: Potential Mechanisms and Future Directions 2024 OMEGA-3 科技与产业国际会议

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#### 宋采 教授

杭州华大生命科学研究院 脑科学中心首席科学家 东莞第七人民医院特聘教授

#### **Prof. Cai Song**

Chief Scientist of Hangzhou BGI, Neuroscience Research Center Distinguish Professor of No 7 Dongguan People's Hospital, Dongguan Mental Health Center

爱尔兰国立大学博士,加拿大 McGill 大学博士后。华大生命科学研究院首席科学家。加拿大精神神经免疫学首 席科学家,深圳国家级领军人才,教育部海外名师,创立了广东海洋大学海洋药物研究所、深圳研究院海洋医药中心, 博导。获全球 8 项名人录"杰出贡献科学家",辉瑞国际精神病研究奖、中国 2022 海洋科技奖等。2019-2023 连续 5 年入选中国高被引学者。2023、2024 年入选全球 2% 顶尖科学家,终身科学影响力科学家,2020、2021 全球万 人顶尖科学家(在中国基础医学研究中排名 102、106)。多次首次揭示了神经系统对免疫系统的调控及免疫炎症导 致精神和神经疾病的机制,长期从事新药和海洋药物的研发。发表包括 Nature 子刊、Mol Psychiatry 等 SCI 文章约 200 篇(影响因子:3-34)。曾任国际杂志《Curr Res Behav Sci》总编,现任《Int Funct Food》总编,8个国际杂 志编辑及编委。获得国家、省级研究经费16 项。培养博后、博、硕研究生 50 余名。国际、国内会议特邀演讲70 余次。

Cai Song (PhD), Chief Scientist and Prof. BGI Research, Hangzhou, China. She was continually selected as "Chinese Highly Cited Scientist" for 5 years (2019-2023), 2% World Top Scientists and "Lifelong Scientific Impact Scientists in 2022-2024. She obtained PhD in Neuropharmacology from National Univ. Ireland, and postdoctoral training in McGill and Carleton Univ., Canada. She was an Assistant Prof. in Psychiatry Dept. UBC, Associate Prof. and Canada Research Chair in Canada NRC and UPEI, and Distinguished Prof. in China Medical Univ., Taiwan. Since 1991, Prof. Song have been working on Psychoneuroimmunology, published 200 papers with IF 3-36, 3 books (including world first text book "Fundamental of Psychoneuroimmunology" by John Wiley), and 16 book chapters. She trained more than 60 graduate students and PDFs, and was invited to lectures in 70 international and national conferences. She received many awards, including a Pfizer Psychiatry Award, UK, Young Scientist Award, Yong Investigate Award, Science and Technology Award in Canada, "Oversea Famous Professor", China, several Chinese Government Friendship awards and National Leading Scientist awards from Shenzhen Government. She was editor-in-chiefs for <Curr Res Behav Sci> and <Herbal Process and Health>, associated editors for Frontiers Cell Neurosci and Neuroimmunodulation, and currently serving for 8 international journals as associated editors and board members.

演讲题目: Fat-1 小鼠内源 Omega-3 不饱和脂肪酸 通过纠正神经炎症和代谢异常治疗抑郁样的行为和病理变化 Topic: Endogenous Omega-3 Fatty Acids in Fat-1 Mice Treat Depression-like Pathological Changes Through Remedying Neuroinflammation and Metabolomic Abnormalities 2024 OMEGA-3 科技与产业国际会议

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**苏焕兴教授** 澳门大学中华医药研究院

**Prof. Huanxing Su** Institute of Chinese Medical Sciences, University of Macau

苏焕兴博士现任澳门大学中华医药研究院教授、博士生导师。多年来从事于神经系统疾病尤其是神经退行性疾 病治疗药物筛选的研究。以通讯作者在《Molecular Psychiatry》、《Cell Reports》、《EBioMedicine》、《Brain Behavior and Immunity》等 SCI 学术期刊发表 100 多篇学术论文。以课题负责人承担国家 973 计划, 澳门特区 政府科学技术发展基金,国家自然科学基金联合项目。目前担任 Aging and Disease 副主编, Brain Behavior and Immunity 编委。

Dr. Su Huanxing is a professor at the Institute of Chinese Medical Sciences, University of Macau. His research focuses mainly on drug screening for the treatment of neurological diseases, especially neurodegenerative diseases. He has published over 100 papers as corresponding author in SCI journals such as Molecular Psychiatry, Cell Reports, EBioMedicine, Brain Behavior and Immunity. As a PI, He has received research funding from the National 973 Program, Macao SAR Government Science and Technology Development Fund, and National Natural Science Foundation. He is currently serving as associate editor in Aging and Disease, and Editorial Board Member of Brain Behavior and Immunity.

# 演讲题目:应用 Fat-1 小鼠研究多不饱和脂肪酸的神经保护作用 Topic: Using Fat-1 Mice to Study Neuroprotection of Omega-3 Polyunsaturated Fatty Acids

Fat-1 转基因小鼠携带源于线虫的 fat-1 基因,可以把 omega-6 脂肪酸转化为 omega-3 脂肪酸。因此,Fat-1 小 鼠提供了一种理想的动物模型研究体内 omega-3 脂肪酸生物学作用。应用 Fat-1 转基因小鼠,我们对 Omega-3 脂 肪酸的神经保护作用做了一系列研究,包括 Omega-3 脂肪酸保护全脑缺血引起的海马神经元凋亡和促进脑功能恢复, 保护轻度持续性的脑损伤,有效抑制 LPS 介导的神经炎症,从而改善焦虑和抑郁症状,有效减缓微梗的形成和发展, 改善微梗损伤后的认知功能。这些研究说明了 Fat-1 小鼠是研究 omega-3 脂肪酸神经保护作用的一种可靠的动物模 型。

Fat-1 transgenic mice which carry the fat-1 gene derived from C. elegans, can convert omega-6 fatty acids into omega-3 fatty acids. Fat-1 mice are considered to be an ideal animal model for studying the biological effects of omega-3 fatty acids. Using fat-1 transgenic mice, our lab has conducted a series of studies on the neuroprotective effects of omega-3 fatty acids in various neurological diseases, including global cerebral ischemia, mild traumatic brain injury, anxiety and depression, and vascular dementia. Our studies demonstrate that Fat-1 mice are a reliable animal model for studying the neuroprotective effects of omega-3 fatty acids.

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# Kanakaraju Kaliannan 研究员

美国哈佛医学院脂质医学与技术研究室

#### Dr. Kanakaraju Kaliannan

Research Fellow in the Laboratory for Lipid Medicine and Technology (LLMT) at Massachusetts General Hospital (MGH) and Harvard Medical School

Kanakaraju Kaliannan, MD, serves as a Quality Control (QC) Data Reviewer in the field of biologics manufacturing at Rentschler Biopharma in the United States. Prior to this role, he held the position of Senior Scientist at Takeda Pharmaceuticals, where he specialized in Live Biotherapeutic Products, and functioned as a QC Data Reviewer at Sarepta Therapeutics, focusing on gene and RNA therapies.

Dr. Kaliannan has also undertaken a Research Fellowship in the Laboratory for Lipid Medicine and Technology (LLMT) at Massachusetts General Hospital (MGH) and Harvard Medical School. He completed his Postdoctoral Research Fellowship in the Laboratory of Gastrointestinal Epithelial Biology at MGH. During this fellowship, he developed a novel microbiome-based strategy for the prevention and treatment of high-fat diet-induced metabolic syndrome (MetS) in murine models, resulting in a first-author publication in the Proceedings of the National Academy of Sciences (PNAS) and facilitating the acquisition of grants and awards totaling \$350,000.

Throughout his tenure at LLMT, he integrated multi-omics technologies with innovative transgenic mouse models to elucidate critical associations between omega-6/omega-3 fatty acid imbalances and chronic diseases. Moreover, he identified microbiome-derived biomarkers for disease assessment. To date, Dr. Kaliannan has authored and co-authored over 20 scientific papers published in high-impact journals, including PNAS and Microbiome. He has been invited to present at international conferences such as the Cambridge Healthtech Institute's Targeting the Microbiome (2018 and 2019), and the Rhode Island Microbiome Symposium, where he received accolades including 'Posters of Distinction' and 'Posters of Excellence.' Additionally, he currently serves as a reviewer for reputable journals such as Digestive Disease Science, European Journal of Medical Research, and BMC Microbiology.

## 演讲题目: FAT-1 小鼠模型: 研究 Omega-6 和 Omega-3 多不饱和脂肪酸 对肠道微生物组和慢性疾病影响的创新策略

#### Topic: FAT-1 Mouse Model: An Innovative Strategy to Study the Effects of Omega-6 and Omega-3 PUFA on the Gut Microbiome and Chronic Disease

Metabolic endotoxemia (ME), commonly derived from gut microbial dysbiosis, is a primary cause of chronic low-grade inflammation (CLGI) that underlies many chronic diseases. Here we show that mice fed a diet high in n-6 fatty acids exhibit higher levels of ME and systemic LGI, while transgenic conversion of tissue n-6 to n-3 PUFA dramatically reduces endotoxemic and inflammatory status. These opposing effects of tissue n-6 and n-3 PUFA can be eliminated by antibiotic treatment suggesting the involvement of the gut microbiota. Also, elevated tissue n-3 PUFA enhance IAP, which induces changes in the gut microbiome resulting in decreased LPS production and gut permeability, and ultimately, reduced ME and LGI. Our findings uncover an interaction between host tissue fatty acid composition and gut microbiota as a novel mechanism for the anti-inflammatory effect of n-3 PUFA. We show evidence FAT-1 mice represent an innovative animal model to analyze the gut microbiome changes and relevant health implications in chronic diseases associated with high tissue n-6/n-3 ratio as FAT-1 mice overcome the use of dietary manipulation helpful for avoiding any confounding dietary elements brought by diets.

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# 杨丰华 研究员

广东省实验动物监测所心血管疾病模型研究中心主任

Yang, Feng Hua, PhD Director of the Cardiovascular Disease Model Research Center at the Guangdong Laboratory Animal Monitoring Institute

研究员,博士毕业于加拿大 University of Guelph 生物医学科学心脏分子生物学方向,现任职广东省实验动物监测所心血管疾病模型研究中心主任、所学术委员会委员、所实验动物伦理委员会委员,为广东省外籍高层次人才、 《Frontiers in Cardiovascular Medicine》《中国实验动物学报》《中国比较医学杂志》期刊编委、中国病理生理学 会心血管专业委员会 / 国际心脏研究学会中国分会委员。

Ph.D. in Biomedical Sciences with a specialization in Cardiovascular Molecular Biology from the University of Guelph, Canada. Currently the Director of the Cardiovascular Disease Model Research Center at the Guangdong Laboratory Animal Monitoring Institute, where she is an active member of both the Academic and Animal Ethics Committees. Recognized as a Foreign High-Level Talent in Guangdong Province, she also serves on the editorial boards of Frontiers in Cardiovascular Medicine, Acta Laboratorium Animalis Scientia Sinica, and the Chinese Journal of Comparative Medicine. Her professional affiliations include membership in the Cardiovascular Specialty Committee of the Chinese Society of Pathophysiology and the Chinese Section of the International Society for Heart Research.

演讲题目: 内源性 Omega-3 多不饱和脂肪酸保护缺血再灌注小鼠心脏 Topic: Endogenous Omega-3 Polyunsaturated Fatty Acids Protect Mouse Hearts from Ischemia-Reperfusion Injury

本研究旨在识别 Omega-3 多不饱和脂肪酸(Omega-3 PUFAs)在缺血再灌注(IR)心脏中激活的潜在受体, 并探讨这些受体参与的调控机制。研究结果表明,内源性 Omega-3 PUFAs 对 IR 心脏的结构和功能具有保护作 用,调节了肌丝磷酸化及胞内磷酸化信号通路。RNA 测序分析进一步显示,内源性 Omega-3 PUFAs 影响了 IR 心 脏中的多种生物过程,并预测其靶向 Apelin 受体(Aplnr)。Aplnr 受体抑制剂 ML221 在野生型 IR 心脏中可同步 激活 PI3K-AKT-mTOR 信号通路,抑制 PKCō 表达及 p38a 磷酸化,并上调肌丝磷酸化水平。相反,Aplnr 激动剂 Apelin-13 则扰乱了 fat-1 IR 心脏中 PI3K-AKT-mTOR 信号通路的同步激活。此外,体外实验也表明,二十碳五烯酸(EPA) 处理缺氧再灌注的心肌细胞能同步激活磷酸化信号通路。综上所述,内源性 Omega-3 PUFAs 通过抑制 Aplnr 受体, 实现 PI3K-AKT-mTOR 信号轴的同步激活,进而防止 IR 后心肌损伤,并维持心脏的收缩功能。 2024 OMEGA-3 科技与产业国际会议

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This study aimed to identify potential receptors activated by Omega-3 PUFAs in ischemia-reperfusion (IR) hearts to explore their regulatory mechanisms. The results demonstrated that endogenous Omega-3 PUFAs preserved cardiac structure and function in post-IR hearts by modulating myofilament phosphorylation and intracellular signaling pathways. RNA-seq analysis indicated that Omega-3 PUFAs impacted various biological processes and suggested inhibition of the apelin receptor (Aplnr). As a result, the Aplnr antagonist ML221 synchronized the activation of the PI3K-AKT-mTOR signaling pathway, suppressed PKCō expression and phosphorylated p38α, upregulated or restored myofilament phosphorylation, and prevented myocardial injury and contractile dysfunction in WT IR hearts. Additionally, apelin-13 disrupted the PI3K-AKT-mTOR signaling pathway in post-IR fat-1 hearts. Similar phosphorylation signaling changes were observed in HR cells treated with eicosatetraenoic acid (EPA). In conclusion, endogenous Omega-3 PUFAs protect against post-IR injury and maintain cardiac contractile function by inhibiting APLNR. This inhibition aligns the PI3K-AKT-mTOR axis, reduces harmful phosphorylation signaling, and enhances or restores myofilament phosphorylation in post-IR hearts.

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# 李文德研究员 广东省科技合作研究促进中心副主任

#### Prof. Wende Li

Deputy Director of the Guangdong Science and Technology Cooperation Research Promotion Center

李文德,博士,研究员,现任广东省科技合作研究促进中心副主任,博士研究生导师,博士后合作导师。哈佛 大学医学院麻省总医院 Research Fellow(Staff),广东省海外高层次留学人才(广东省外专局),广东省欧美同 学会理事。曾担任广东省基础与应用基础研究基金委员会第一任项目部部长、广东省实验动物监测所副所长。主持 国家重点研发计划专项1项(首席科学家)、国家自然科学基金面上项目3项、广东省科技平台计划项目1项,广 东省粤港项目1项,主持广东省自然科学基金1项及科技计划项目4项;参与专著1本,第一发明人获得授权专利1项。 云南省科技进步一等奖及中国实验动物学会科学技术一等奖各1项。通讯作者发表论文在 Cell Research、STTT 等 杂志。目前专注于自发性强直性脊柱炎模型开展研究,最新的研究进展发表在 Annals of the Rheumatic Diseases 杂志。

Wende Li, Ph.D., Researcher, currently serving as the Deputy Director of the Guangdong Science and Technology Cooperation Research Promotion Center, doctoral supervisor, and postdoctoral cooperation mentor. A Research Fellow (Staff) at Massachusetts General Hospital, Harvard Medical School, a High-level Overseas Returnee Talent in Guangdong Province (Guangdong Provincial Foreign Experts Bureau), and a board member of the Guangdong Association of Returned Overseas Students from Europe and America. Formerly served as the first Project Department Minister of the Guangdong Basic and Applied Basic Research Fund Committee and Deputy Director of the Guangdong Laboratory Animal Monitoring Institute. Led one National Key R&D Program (as the chief scientist), three National Natural Science Foundation of China general projects, one Guangdong Science and Technology Platform Plan project, one Guangdong-Hong Kong project, one Guangdong Natural Science Foundation project, and four science and technology plan projects.; participated as a key member in one US NIH project, two NCI projects. Contributed to one specialized book, obtained one authorized patent as the first inventor. Awarded the First Prize for Scientific and Technological Progress in Yunnan Province and the First Prize for Science and Technology by the Chinese Association for Laboratory Animal Sciences. Published papers as the corresponding author in journals such as Cell Research and STTT. Currently focusing on research using spontaneous ankylosing spondylitis models, with the latest research progress published in the Annals of the Rheumatic Diseases.

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**万建波教授** 澳门大学中华医药研究院 中药质量研究国家重点实验室

#### **Prof. Jian-Bo Wan** State Key Laboratory of Quality Research in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau

澳门大学中华医药研究院、中药质量研究国家重点实验室 教授、课程主任。主要从事中药质量系统评价、基于 化学衍生 LC-MS 代谢组学研究。担任中国中西医结合学会中药专业委员会委员,中国药理学会一分析药理专业委 员会委员、青年委员会副主任委员等学术兼职。在 Nat. Commun., Acta Pharm. Sin. B, Redox Biol., Anal. Chem. 等 杂志上发表 SCI 论文 210 余篇,引用超过 6800 余次, h-index 47。连续四年(2021-2024)入选全球 Top 2% 科 学家年度榜单。担任《Chinese Medicine》(IF5.3)杂志执行主编及编辑部主任。

Dr. Jian-Bo Wan is currently a Professor of the Institute of Chinese Medical Sciences (ICMS) and State Key Laboratory of Quality Research in Chinese Medicine at University of Macau (UM). Dr. Wan graduated from Wuhan University in 2001, received his Ph.D. in Biomedical Sciences from University of Macau in 2008, and undertook his postdoctoral training in Laboratory for Lipid Medicine and Technology at Massachusetts General Hospital, an affiliated hospital of Harvard Medical School, in 2011. Dr. Wan's research mainly focuses on chemical derivatization strategy for mass spectrometry-based lipidomics and metabolomics, and pharmacological study on natural products for the prevention of fatty liver. Up to now, more than 210 peer-reviewed papers have been published in journals, such as Nat. Commun., Acta Pharm. Sin. B, Redox Biol., Anal. Chem., with total citations of over 6,800 and h-index of 47. He has been listed in the global Top 2% of scientists for four consecutive years (2021-2024). Dr. Wan also serve as the Executive Editor and Head of the Editorial Board for Chinese Medicine (IF 5.3).

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**王斌教授** 深圳龙岗中心医院临床营养科主任

**Prof. Bin Wang** Director of Department of Clinical Nutrition at Shenzhen Longgang Central Hospital

王斌, 医学博士、哈佛医学院博士后, 博士后联合培养导师、全国首批临床营养示范单位负责人, 现任深圳市 龙岗中心医院临床营养科主任。从事营养相关医疗、科研、教学工作 20 余年, 主要研究方向为膳食营养与慢病防治, 主持国家、省市级课题 16 项, 发表 SCI 论文 30 余篇。研究成果获中华医学科技奖一等奖、重庆市科技进步一等奖, 担任国自然基金评审专家及多个 SCI 期刊审稿人。获中国营养行业先进工作者、深圳市高层次人才、深圳市医疗保 障专家、深圳市医养结合专家等荣誉。担任中国营养学会青年委员、中国健康管理协会植物营养与健康分会副会长、 深圳市医师协会营养医师分会副会长等学术任职。

Dr. Bin Wang is the director of Department of Clinical Nutrition and associate professor in Shenzhen Longgang Central Hospital. Dr. Wang received his MD from the Third Military Medical University in Chongqing, and completed a postdoctoral fellowship in Lipid Medicine at Massachusetts General Hospital in Harvard Medical School.

Dr. Wang has been working in the nutritional related fields of medical therapy, scientific research and public education for more than 20 years. His major research interests include dietary nutrition and chronic disease management, omega-3 applications, chronic low grade inflammation control and gut microbiota regulation. He has published 12 textbooks and more than 30 peer-reviewed papers, and won the First Prize of Chinese Medical Science and Technology Award and the First Prize of Chongqing Science and Technology Progress.

Owing to the above achievements, Dr. Wang has received numerous honors, including the Advanced Worker in the Chinese nutrition industry, the high-level talent in Shenzhen, and the expert in medical and health integration in Shenzhen. He also holds several academic positions, including Young Member of the Chinese Nutrition Society, Vice President of the Plant Nutrition and Health Branch of the China Health Management Association, and Vice President of the Nutrition Physician Branch of the Shenzhen Medical Doctor Association.
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**李祥勇教授** 广东医科大学基础医学院副院长

**Prof. Xiangyong Li** Vice Dean of The School of Basic Medical Sciences of Guangdong Medical University

李祥勇, 医学博士、哈佛医学院博士后, 生物化学与分子生物学教授, 现任广东医科大学基础医学院副院长, 广东省教育厅医学生物活性分子研究重点实验主任。从事基础医学教学、科研工作 19 年, 主要研究方向为慢病发病 机制及 Omega-3 营养干预治疗, 主持国家、省市级课题 16 项, 发表 SCI 论文 50 余篇。研究成果获湛江市科技一 等奖、"创新湛江"科技进步二等奖; 获国家授权发明专利 2 项; 获广东省"扬帆计划"培养高层次人才、湛江市 A 类 高层次人才, 湛江市人才驿站高层次专家等荣誉称号。担任广东省生物化学与分子生物学学会理事、广东省生物化 学与分子生物学学会教学专业委员会副主任委员, 湛江市乡村振兴协会顾问委员会委员, 国际 omega-3 研究协会会 员, 中国细胞生物学会会员等学术任职。

Dr. Xiangyong Li is the Vice Dean of The School of Basic Medical Sciences of Guangdong Medical University, and the Director of Key Laboratory for Biologically Active Moleculars of Department of Education of Guangdong Province. Dr. Li received his MD from the Wuhan University in Wuhan, and completed a postdoctoral fellowship in Lipid Medicine at Massachusetts General Hospital in Harvard Medical School.

Dr. Li has been working in the Basic Medical Sciences related fields of public education and scientific research for 19 years. His major research interests include chronic disease pathogenesis and Omega-3 nutritional intervention and treatment. Dr. Li has presided over 16 national, provincial and municipal projects, and published more than 50 SCI papers, and won the first prize of Zhanjiang Science and Technology and the second prize of "Innovative Zhanjiang" Science and Technology Progress, and had 2 national authorized invention patents.

Owing to the above achievements, Dr. Li has received numerous honors, including the High-level talents of Guangdong Province "Sailing Plan", high-level talents of Zhanjiang City, high-level experts of Zhanjiang Talent Station. He also holds several academic positions, including the Trustee of the Guangdong Society of Biochemistry and Molecular Biology, Vice Chairman of teaching Professional Committee of Guangdong Society of Biochemistry and Molecular Biology, and Member of the Advisory Committee of Zhanjiang Rural Revitalization Association.

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# 李铎 教授

青岛大学营养学首席教授、营养与健康研究院常务副院长 英国皇家化学学会会士、国际营养科学联合会院士

# **Prof. Duo Li**

Chief Professor of the Institute of Nutrition & Health, Qingdao University Fellow of the Royal Society of Chemistry (FRSC), Fellow of International Union of Nutritional Science (FIUNS)

英国皇家化学学会会士 (Fellow of the Royal Society of Chemistry)、国际营养科学联合会院士 (Fellow of IUNS)、营养学博士 (澳大利亚 RMIT 大学)、青岛大学营养学首席教授、营养与健康研究院常务副院长、博士生 导师、浙江大学食品科学与营养系荣休教授、澳大利亚莫纳什 (Monash University)营养、膳食与食品系兼职教授、WHO 营养专家咨询委员会委员 (WHO Expert Advisory Panel on Nutrition)、联合国粮农组织和世界卫生组织 (FAO/WHO)营养专家组专家、中国营养学会常务理事和食物与烹饪营养分会主任委员、中国健康管理协会常务理事和膳 食营养健康分会会长。《Asia Pacific Journal of Clinical Nutrition》主编、9 份国际和 5 份国内学术期刊编委。主要 研究方向为脂质和脂肪酸营养学。在同行评议学术期刊发表学术文章 490 余篇 (SCI 收录文章 350 余篇,其中第一和通讯作者 SCI 文章 290 余篇)、著作 17 部 / 章、授权发明专利 23 项。获 2007 年亚太临床营养学会年度奖,连续十年入选为中国高被引学者 (2015-),连续五年入选 Stanford University 全球顶尖 2% 科学家 (2020-),连续三年入选 Elsevier 全球顶尖科学家 (2021-),Stanford University 联合 Elsevier 发布的终身科学影响力排行榜"(2023、2024),全球学者库终身学术影响力榜 (2023)。

Fellow of the Royal Society of Chemistry (FRSC), Fellow of International Union of Nutritional Science (FIUNS). Duo is the chief professor of nutrition in the Institute of Nutrition & Health, Qingdao University, China; professor emeritus of nutrition in the Department of Food Science & Nutrition at Zhejiang University, China; and adjunct professor in the Department of Nutrition, Dietetics and Food at Monash University, Australia. As an expert consultant, Duo has participated the Joint FAO/WHO Expert Consultation on Fats and Fatty Acids in Human Nutrition in 2008, and involved in the development of Fats and Fatty Acids in Human Nutrition. As a member of WHO Expert Advisory Panel on Nutrition and WHO Nutrition Guidance Expert Advisory Group (NUGAG) Subgroup on Diet and Health, Duo has been involved in the development of WHO Dietary Guideline (2010-). Duo is the Editor-in-Chief of the Asia Pacific Journal of Clinical Nutrition (2017-), and has also served on numerous editorial boards. He is the immediate past-president of Asia Pacific Nutrigenetics and Nutrigenomics. He is a standing council member of Chinese Nutrition Society, and Chairmen of Branch of Dietary & Cuisine Nutrition (DCN, 2018-); a standing council member of Chinese Health Association, and President of Dietary Nutrition and Health Society (DNHS, 2018-). Duo has published more than 490 peer reviewed journal publications (more than 350 papers with impact factors and over 290 articles as the first and corresponding authors), 17 books or book chapters and 23 inventive patents. Duo has received Asia Pacific Clinical Nutrition Society Award in 2007Since 2015, Duo has been selected as the Most-Cited Chinese Scholar for 10 consecutive years by Elsevier. World's top 2% of scientists for the 5 consecutive year (2020-) in terms of publications - as judged by Stanford University. World's Top Scientists for the 4 consecutive year (2021-) (Elsevier). The "Lifetime Academic Influence Rankings" (2023, 2024) and "Annual Academic Influence Rankings" (2023, 2024) jointly released by Stanford University and Elsevier, as well as the Global Scholar Pool Lifetime Academic Influence Rankings (2023).

# 2024 OMEGA-3 科技与产业国际会议 (4th) International Conference on OMEGA-3 Science and Industry

# 演讲题目:组织中 Omega-6/Omega-3 比值与糖尿病风险的相关性 Topic: Relationship Between Tissue Omega-6/Omega-3 Ratio and Diabetes Risk

由于个体在遗传、消化、吸收和代谢方面的差异,膳食脂肪酸的摄入不能完全反映人体组织的组成。我们测定 了 186 名 2 型糖尿病(T2D) 患者和 180 名健康受试者以及 210 名代谢综合征(MS) 患者和 719 名健康受检者 的血浆磷脂脂肪酸组成。健康组血浆磷脂 Omega-3: Omega-6 PUFA 比例、总 Omega-3 PUFA、18:3 Omega-3、 20:5 Omega-3 和 22:6 Omega-3 显著高于 T2D 组, 而 18:2 Omega-6、20:4 Omega-6 和总 Omega-6 PUFA 显 著低于 T2D 组(p<0.0001)。空腹血清胰岛素浓度与血浆磷脂 Omega-3: Omega-6 PUFA 比例、总 Omega-3 PUFA、20:5 Omega-3 和 22:6 Omega-3 呈显著负相关(p<0.01)。在性别、年龄和 BMI 控制的偏相关中, T2D 患者的 HOMA-IR 和血糖与血浆磷脂 Omega-3: Omega-6 PUFA 比例、总 Omega-3 PUFA、20:5 Omega-3 和 22:6 Omega-3 呈显著负相关(p<0.01),与 Omega-6 PUFA(p<0.001)和饱和脂肪酸(p<0.05)呈显著正相关。MS 组血浆磷脂 Omega-3: Omega-6 PUFA 比例、总 Omega-3 PUFA 和总 PUFA 显著低于(p<0.001)健康组。血浆 磷脂 Omega-3 PUFA 与 MS 呈显著负相关(p=0.013)。目前的结果表明,组织中 Omega-3: Omega-6 PUFA 比例 的增加与 T2D 和 MS 风险的降低有关。

Due to differences in genetics, digestion, absorption, and metabolism among individuals, the intake of dietary fatty acids cannot fully reflect the composition of tissues. We have determined plasma phospholipids (PL) fatty acid composition of 186 patients with type 2 diabetes (T2D) and 180 healthy subjects, and 210 patients with metabolic syndrome (MS) and 719 healthy subjects in China. Plasma PL ratio of Omega-3: Omega-6 PUFA, total Omega-3 PUFA, 18:3Omega-3, 20:5Omega-3 and 22:60mega-3 were significantly higher, while 18:20mega-6, 20:40mega-6 and total Omega-6 PUFA were significantly lower in the healthy group than in the T2D group (p<0.0001). Fasting serum concentration of insulin was significantly negatively correlated with plasma PL ratio of Omega-3:Omega-6 PUFA, total Omega-3 PUFA, 20:5Omega-3 and 22:6Omega-3 and (p<0.01). HOMA-IR and blood glucose was significantly negatively correlated with plasma PL ratio of Omega-3:Omega-6 PUFA, total Omega-3 PUFA, 20:50mega-3 and 22:60mega-3 (p<0.01), and positively correlated with Omega-6 PUFA (p<0.001) and saturated fatty acid (p<0.05) in the diabetes patients in the sex, age and BMI controlled partial correlation. Plasma PL ratio of Omega-3:Omega-6 PUFA, total Omega-3 PUFA and total PUFA (p<0.001) were significantly lower in MS group compared to healthy group. Plasma PL Omega-3 PUFA was significantly inversely associated with MS (p=0.013). The present results indicated that increased ratio of Omega-3:Omega-6 PUFA in tissues is associated with decreased risk of T2D and MS.

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苏冠宾教授 中国医药大学安南医院副院长

**Prof. Kuan-Pin Su** Deputy Superintendent of An-Nan Hospital, China Medical University

Prof Kuan-Pin Su's research focuses on Translational Brain Research, which connects bedside to bench with novel interdisciplinary approaches of AI technology, neuroimages, genomic, randomized-controlled trials (RCTs), cellular and molecular biology, by integrating basic sciences and clinical significance (e.g. pharmaceuticals, nutraceuticals, phytochemicals, acupuncture, photobiomodulation and transcranial magnetic stimulation).

Prof Su is a pioneer in nutritional psychiatric research. He is the founding president of Taiwanese Society of Nutritional Psychiatry Research (TSNPR), and current Vice President and one of the five founding committee members of International Society of Nutritional Psychiatry Research (ISNPR). His significant contribution on the role of omega-3 fatty acids has opened the excitement and innovation of therapeutic strategies and provided major insights into the biological mechanisms of depression. To help the physicians to apply omega-3 in daily practice, Prof Su invited high-cited PIs to work together in a panel of ISNPR and published the "Practice guideline of omega-3 fatty acids in depression treatment." According the h-index (ELSVIER in 2021) in the research field of "omega-3 fatty acids in depression", Prof Su is the top one cited PI in the world. He is a Board Director of the International Society for the Study of Fatty Acids (ISSFAL), and an Associate Editor of the Brain, Behavior, and Immunity (BBI).

# 演讲题目: Omega-3 之严谨临床实证引领忧郁症及失智症的整合治疗 Topic: Omega-3 Fatty Acids in Depression and Dementia: Translational Research Consolidate Mechanisms to Clinical Practice

Major depressive disorder (MDD) and dementia pose significant challenges due to their complex etiologies and limited effective treatments. Omega-3 polyunsaturated fatty acids (Omega-3 PUFAs), particularly eicosapentaenoic acid (EPA), have shown promise as anti-inflammatory and neuroprotective agents with potential therapeutic benefits.

In this keynote speech, I will present a series of translational research studies exploring the efficacy and underlying mechanisms of Omega-3 PUFAs in treating depression and dementia. Our work contributed to the development of international guidelines recommending EPA-rich formulations for MDD. EPA's effects are potentially through modulating endocannabinoid, inflammation, and SPM systems. By bridging clinical practice and basic science, our translational research highlights the potential of Omega-3 PUFAs as adjunctive therapies in depression and dementia.

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**黄涛教授** 北京大学公共卫生学院 教育部分子心血管病学重点实验室首席研究员

# **Prof. Tao Huang** Department of Epidemiology and Biostatics, School of Public Health, Peking University Principal Investigator of Key Laboratory of Molecular Cardiovascular Diseases of Ministry of Education, China

黄涛,博士,博士生导师,北京大学长聘正教授,博雅特聘教授,教育部长江学者特聘教授,国家重点研发计 划项目负责人、首席科学家。任职于北京大学公共卫生学院流行病与卫生统计学系、教育部重大疾病流行病学重点 实验室、北京大学第三医院神经内科(双聘教授),担任北京大学人工智能研究院智慧公众健康研究中心助理主任、 北京大学健康医疗大数据国家研究院流行病学数据共享中心副主任、中国队列共享平台负责人。

研究领域为慢性病流行病学,主要研究结果发表在 BMJ, Diabetes Care, PLOS Medicine, Annals of Neurology, Diabetes, AJCN, JAMA Network Open 等杂志。

他目前是中国营养学会和美国营养学会的会员,担任 SCI 杂志 Asia Pacific Journal of Clinical Nutrition 统计编辑、 Lipids in Health and Disease 副主编以及 Journal of Diabetes Research 和 Diseases Marker 杂志 Guest Editor。

Dr. Huang joined the Department of Epidemiology and Biostatics, School of Public Health, Peking University and Key Laboratory of Molecular Cardiovascular Diseases of Ministry of Education (Peking University), China as a Principal Investigator in 2017. He came from the Saw Swee Hock School of Public Health, and Yong Loo Lin School of Medicine, National University of Singapore where he was an assistant professor in epidemiology and medicine. Prior to that he was a research fellow in the Department of Nutrition, Harvard T.H. Chan School of Public Health, the Department of Epidemiology, Tulane University, and the Johns Hopkins Global Center on Childhood Obesity, Department of International Health at Johns Hopkins Bloomberg School of Public Health. He received his PhD in nutrition and genomics from Zhejiang University/JM-HNRCA at Tufts University (a joint PhD program) in 2011. He has published 170 peer reviewed papers in leading scientific journals such as BMJ, Diabetes Care, Plos Medicine, Annals of Neurology, Clinical Chemistry, AJCN, Diabetes. Currently, he serves as a member of American Nutrition Society and Chinese Nutrition Society, a managing editor of editorial board for Journal of Vegetarian Nutrition, an associate editor of Asian Pacific Journal of Clinical Nutrition and Lipids in Disease and Health.

演讲题目:基于队列研究的 Omega-3 多不饱和脂肪酸与慢性病防控 Topic: Omega-3 Polyunsaturated Fatty Acids and Chronic Diseases Prevention and Control: Results from Cohort Study 队列研究和临床试验发现,Omega-3多不饱和脂肪酸(PUFA)对慢性疾病具有预防作用。然而,以往关于 Omega-3 PUFA 作用的研究大多集中在观察性研究,Omega-3 脂肪酸对慢性疾病的作用机制尚未完全阐明。使用 与 Omega-3 PUFA 相关的多组学数据来解释其机制。首先,Omega-3 PUFA 影响代谢组、蛋白质组、甲基化水平 和与人类慢性疾病或途径相关的基因表达水平。然后,进行了孟德尔随机化分析,以确定多不饱和脂肪酸在调节肠 道微生物组等微生物水平变化方面对慢性疾病结果的影响是否存在因果关系。我们讨论 Omega-3 多不饱和脂肪酸 对慢性疾病的影响部分是由肠道微生物组介导的,以及 Omega-3 多饱和脂肪酸在慢性疾病预防中的机制。

Previous cohort studies and clinical trials found that Omega-3 polyunsaturated fatty acids (PUFA) have preventive effects on chronic diseases. However, most of previous studies on the effects of Omega-3 PUFA are focused on observations, and the mechanism of Omega-3 fatty acids on chronic diseases has not been fully elucidated. Use multi-omics data related to Omega-3 PUFA was used in order to interpret the mechanisms. First, Omega-3 PUFA affects metabolome, proteome, methylation levels and expression levels of genes associated with chronic diseases or pathways in humans. Then, a Mendelian randomization analysis was conducted to determine whether there is a causal relationship between the effect of PUFA on chronic diseases outcomes in modulating omic levels changes such as the gut microbiome. We discussed the impact of Omega-3 PUFA on chronic diseases is partially mediated by the gut microbiome and mechanisms of Omega-3 PUFA in chronic diseases prevention.

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# 郝磊 教授

美国宾州印第安纳大学联合与公共卫生系医学影像学和医学技术 项目主任 北美华人营养学会会长,董事会主席

# **Prof. Lei Hao**

Director of Medical Imaging and Medical Technology Program, Department of Allied and Public Health, Indiana University of Pennsylvania President of North American Chinese Association for Nutrition

郝磊博士是宾夕法尼亚州印第安纳大学公共卫生健康系终身制副教授, 医学影像和医学检验项目主任。他的研 究兴趣集中在通过生活方式医学预防和干预慢性病, 如肥胖和非酒精性脂肪肝病。郝博士是《国际维生素与营养研 究杂志》的副主编, 同时担任《精准营养》和《人类营养与新陈代谢》的编辑委员会成员。他曾担任《营养肿瘤学 杂志》的执行主编。郝博士也是北美华人营养学会会长和董事会主席。郝博士 2013 年在宾夕法尼亚州立大学获得 营养学博士学位, 并于 2016 年在哈佛医学院完成博士后训练。

Dr. Lei Hao is an associate professor in the Department Allied and Public Health at Indiana University of Pennsylvania. His research interests are focused on the prevention and intervention of chronic diseases, such as obesity and nonalcoholic fatty liver disease, through lifestyle medicine. Dr. Hao serves as an associate editor of the International Journal for Vitamin and Nutrition Research and is a member of the editorial boards of Precision Nutrition and Human Nutrition & Metabolism. He previously held the position of executive editor-in-chief for the Journal of Nutritional Oncology. Dr. Hao is President of the North America Chinese Association for Nutrition. Dr. Hao earned his PhD from The Pennsylvania State University and completed his postdoctoral training at Harvard Medical School.

# 演讲题目:从科学到实践:Omega-6/Omega-3比例平衡 对健康管理和产业创新的启示

# Topic: From Science to Practice: Insights on the Balance of Omega-6/Omega-3 Ratios for Health Management and Industry Innovation

本报告将探讨 Omega-6 和 Omega-3 脂肪酸在常见慢性病中的关键作用,重点分析两者的比例平衡对人体健康 的影响。近年来,随着现代饮食中 Omega-6 脂肪酸摄入量的显著增加,Omega-6/Omega-3 比例失衡问题日益突 出,这种失衡被认为与多种慢性疾病的发病率上升密切相关。报告将结合基础研究和临床研究的数据,阐明适宜的 Omega-6/Omega-3 比例如何在降低炎症、肥胖、脂肪肝等慢性病方面产生积极效果。

此外,报告还将探讨在健康管理中维持适当的 Omega-6/Omega-3 比例对个体化营养干预的实际应用,并展望 这一领域未来的研究方向。结合健康产业的最新动态,探讨如何将科学研究转化为创新型产品和服务,为消费者提 供更加健康的膳食选择。

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This report will explore the critical roles of Omega-6 and Omega-3 fatty acids in common chronic diseases, with a focus on analyzing the balance of their ratios and its impact on human health. In recent years, with the significant increase in Omega-6 fatty acid intake in modern diets, the issue of an imbalanced Omega-6/Omega-3 ratio has become more prominent, and this imbalance is closely linked to the rising incidence of various chronic diseases. The report will combine data from basic and clinical research to explain how an appropriate Omega-6/Omega-3 ratio can have positive effects on reducing inflammation, obesity, fatty liver disease, and other chronic conditions.

Additionally, the report will explore the practical application of maintaining an optimal Omega-6/Omega-3 ratio in personalized nutrition interventions and will forecast future research directions in this field. It will also discuss how scientific findings can be transformed into innovative products and services, offering consumers healthier dietary choices in line with the latest developments in the health industry.

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# 刘庆芝 教授

深圳市妇幼保健院生殖免疫综合科首任科主任 深圳市健康管理协会生殖健康多学科分会会长

# Prof. Qingzhi Liu

Founder of the Reproductive Immunology Comprehensive Department of Shenzhen Maternal and Child Health Hospital President of the Multidisciplinary Branch of Reproductive Health of Shenzhen Health Management Association

刘庆芝教授,深圳市妇幼保健院生殖免疫综合科首任科主任、香港大学深圳医院生殖医学科顾问医生。刘教授 多年来一直从事妇产及生殖健康相关研究与教学工作,对复发性流产、反复种植失败等生殖内分泌疾病诊疗具有丰 富的临床经验。重视疾病规范化诊疗及生殖疑难问题多学科诊疗,从优生优育,合理安胎、心理干预、代谢、营养 等整体医学角度分析和诊疗生育疑难问题。2018 年开始带领团队率先在深圳市定期开展了一站式生殖疑难问题多学 科 MDT 会诊。 2021 年联合主编《反复流产相关疾病多学科诊疗病案分析》一书,主持参与多项科研课题,发表学 术论文数篇。担任深圳市健康管理协会生殖健康多学科(MTD)分会会长、深圳女医师协会风湿免疫专委会副主任 委员、中国妇幼健康研究会生殖免疫学专业委员会委员等。

Prof. Liu Qingzhi, is the founder of the Reproductive Immunology Comprehensive Department of Shenzhen Maternal and Child Health Hospital and a consultant physician in the Department of Reproductive Medicine of the University of Hong Kong Shenzhen Hospital. Prof. Liu has been engaged in research and teaching relating to gynecology and reproductive health for many years and has abundant clinical experience in the diagnosis and treatment of repeated pregnancy loss, recurrent implantation failures and other reproductive endocrine diseases. Prof. Liu attaches emphasis to standardized diagnosis and treatment of diseases and multidisciplinary diagnosis and treatment of reproductive problems, and analyzes and treats fertility problems from the perspective of eugenics, reasonable fetal safety, psychological intervention, metabolism, nutrition and other holistic medicine, etc. She has been leading the team to carry out the one-stop multidisciplinary MDT consultation of reproductive problems in Shenzhen regularly since 2018. In 2021, she co-edited the book "Multidisciplinary Diagnosis and Treatment Case Analysis of Diseases Related to Repeated Miscarriages", presided over and participated in a number of scientific research projects, and published several academic papers. She serves as the president of the Multidisciplinary (MTD) Branch of Reproductive Health of Shenzhen Health Management Association, the vice-chairman of the Rheumatology and Immunology Specialized Committee of Shenzhen Women Physicians Association, and a member of the Reproductive Immunology Specialized Committee of the Chinese Society for Maternal and Child Health Research.

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**杨波研究员** 温州医科大学脂类医学研究所所长

**Prof. Bo Yang** Director of Institute of Lipids Medicine, Wenzhou Medical University

浙江大学 - 哈佛大学脂类医学与技术研究中心合作培养营养学博士、台湾中国医药大学身心介面研究中心博士 后研究员。现任温州医科大学脂类医学研究所所长、校聘研究员。兼任国际营养医学与健康促进中心营养与健康传 播专家;中国老年学与老年医学会营养食品分会副理事长;中国营养学会运动营养分会常务理事;中国健康管理协 会临床营养与健康分会理事;中国营养学会肥胖防控分会委员;台湾营养精神医学研究会会员。研究领域涉及全生 命周期健康管理、营养流行病学、脂类营养和保健食品功能评价等;主持和参与近10项科研项目,在国内外各类医 学期刊发表超过 70 余篇学术论文,第一或通讯作者发表 SCI 论文近 40 篇,单篇最高 IF=21.60, British Journal of Nutrition 统计学副主编。

Dr. Bo Yang took PhD. degree from Zhejiang University in 2016 and a post-doctor from China Medical University (Taiwan) between 2018 and 2019. Dr. Yang is currently offered the Research Professor & Director of Institute of Lipids Medicine in Wenzhou Medical University. Research interests focus on functional lipids and psychosomatic health. He has published more than 70 articles including about 40 publications of first-author or corresponding author status and served as an excellent reviewer in many journals such as Brain, Behavior & Immunity and Food & Function. Based on his academic achievements in Nutrition Epidemiology, Dr. Yang has been appointed to the Statistic Editor in British Journal of Nutrition.

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# **罗海清教授** 广东医科大学附属医院头颈部肿瘤专科副主任(主持工作)

# **Prof. Haiqing Luo**

Deputy Director of the Head and Neck Tumor Department (Presided over the work), Affiliated Hospital of Guangdong Medical University

广东医科大学附属医院头颈部肿瘤专科副主任(主持工作),党支部书记,博士,哈佛医学院博士后,主任医师, 副教授,博士研究生导师,博士后合作导师

广东省医院协会放射治疗科管理专业委员会副主委

广东省临床医学学会头颈部肿瘤综合治疗专业委员会副主委

广东省器官医学与技术学会肿瘤放疗专业委员会副主委

中国抗癌协会鼻咽癌整合康复协会委员

广东省医学会肿瘤精准诊疗分会常委

岭南名医, 广东医研究生教育优秀导师, 第一作者 / 通讯作者发表 SCI 论文 25 篇, 中文论著 17 篇, 国家发明 专利 1 项, 广东医学科技奖三等奖及 "创新湛江"科学技术奖二等奖(第一完成人)。2024 年获邀在美国临床肿瘤 学会 (ASCO) 做壁报展示, 发起 IIT 项目 2 项。

Chief Physician, Associate Professor, Doctoral Supervisor, and Postdoctoral Collaborative Supervisor

Deputy Director of the Head and Neck Tumor Department (Presided over the work), Affiliated Hospital of Guangdong Medical University

Postdoctoral Fellow at Harvard Medical School

Vice Chairman of the Radiotherapy Management Professional Committee, Guangdong Province Hospital Association

Vice Chairman of the Comprehensive Treatment Professional Committee for Head and Neck Tumors, Guangdong Clinical Medical Association

Member of the Nasopharyngeal Cancer Integrated Rehabilitation Association, Chinese Anti-Cancer Association

Standing Committee Member of the Precision Cancer Diagnosis and Treatment Branch, Guangdong Medical Association Lingnan Famous Doctor, Excellent supervisor of Guangdong medical graduate education, Dr. Luo published 25 SCI papers as first author/corresponding author, 17 Chinese monographs, 1 national invention patent, third prize of Guangdong Medical Science and Technology Award and second prize of "Innovation Zhanjiang" Science and Technology Award (first author). In 2024, she was invited to give a poster presentation at the American Society of Clinical Oncology (ASCO) and launch two Investigator Initiated Trial (IIT) projects.

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**聂永慧 博士** 远洋椿萱茂首席健康官 中国健康管理协会临床营养与健康分会副会长

# Yonghui Nie, MD Chief Health Officer, Senior Living L'Amore Vice President of the Society of Clinical Nutrition and Health, Expert of the Chinese Geriatrics Society

神经病学博士,哈佛医学院麻省总医院博士后,副主任医师(原解放军总医院 301 医院) 担任中国健康管理协会临床营养与健康分会副会长,中国老年医学学会标准化专家库成员,中国老年医学学会 认知障碍分会常委,中国老年保健协会阿尔茨海默病分会(ADC)委员。

从事老年健康管理、认知障碍临床研究及工作经验23年,擅长常见慢病预防及管理、老年营养管理、脑健康管理、 老年帕金森病、阿尔茨海默病预防和专业照护指导。

专业高端养老机构运营服务经验7年,擅长养老机构服务标准化、数字化服务体系和服务产品设计、专业养老 服务人才培养。

Neurologist, M.D, Associate Professor, Postdoctoral Fellow of Laboratory for Lipid Medicine and Technology, MGH

Vice President of the Society of Clinical Nutrition and Health, Expert of the Chinese Geriatrics Society, a member of the Cognitive Disorder Society of the Geriatrics, and a member of the Alzheimer's Disease Chinese (ADC)

With 23 years of experience in geriatric health management and cognitive disorder clinical research, be skilled in the prevention and management of chronic diseases, especially Alzheimer's disease

With 7 years of experience in the operation and service of senior care facilities, be good at designing the service system and service product for elderly. Have been trained more than 1000 professional caregivers in recent years.

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# 王兴国 教授

江南大学脂质营养与安全国际联合实验室主任 中国粮油学会首席专家、中国粮油学会油脂分会常务副会长

# **Prof. Xingguo Wang** Director of International Joint Research Laboratory on Lipid Nutrition and Safety, Jiangnan University Chief Scientist, Executive Vice President of Oil and Fat Branch of the Chinese Cereals and Oils Association

江南大学教授,博士生导师,享受国务院特殊津贴,入选国家新世纪百千万人才工程,获全国优秀科技工作者称号。

在油脂工程技术和成果转化一线工作 35 年,主持油脂领域首个"863"重点项目和国家科技支撑重大项目;开发 出多项具有自主知识产权的研究成果,在全国 20 多个省 100 余家企业转化应用。主持起草国家标准 11 项、行业标 准 16 项;第十二届光华工程科技奖、第三届全国创新争先奖、第四届科学精神奖获得者;荣获国家技术发明二等奖 1 项、国家科技进步二等奖 4 项;授权国家发明专利 112 件;发表论文 780 篇,其中 SCI 收录论文 450 篇;撰写论 著 10 部、科普书籍 4 部;培养博硕士 200 多人。

Xingguo Wang is the professor and PhD supervisor of Jiangnan University, and has obtained the special allowances from the State Council. He has been selected as the National New Century People's Ten Thousand Talents Program, and also awarded the National Outstanding Scientific and Technical Worker.

Prof. Wang has been working on the front line of engineering technology and achievement transformation of oil and fat for 35 years, and has successfully led the first "863" key program and National Science and Technology Support Program in the field of oil and fat. He has developed multiple research achievements with independent intellectual property rights, which have been transformed and applied in more than 100 enterprises from 20 provinces. He has led the drafting of 11 national standards and 16 industry standards, and gotten the 12th Guanghua Engineering Science and Technology Award, the 3rd National Innovation Competition Award and the 4th Scientific Spirit Award. He has won a "second prize of National Technology Invention Award" and four "second prize of National Science and Technology Progress Award". He has authorized 112 national invention patents, and published 780 papers including 450 papers indexed by SCI. He has written 10 academic works and 4 popular science books, and supervised more than 200 PhD and master's students.

# 演讲题目: Omega-6/Omega-3 脂肪酸的比值对冠心病的发生发展的影响 及其在未来健康食品开发中的重要性

Topic: The Impact of Omega-6/Omega-3 Fatty Acid Ratio on the Development of Coronary Heart Disease and Its Importance in R & D of Future Healthy Food

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# 邓乾春 研究员

中国农业科学院油料作物研究所副所长农业农村部油料加工重点实验室副主任

# Prof. Qianchun Deng

Deputy director of the Oil Crop Research Institute of the Chinese Academy of Agricultural Sciences Deputy director of the Key Laboratory of Oil Processing of the Ministry of Agriculture and Rural Affairs

邓乾春,博士,研究员,博士生导师,全国人大代表,民革中央委员,民革湖北省委会副主委,国家特色油 料产业技术体系岗位科学家,中国农业科学院"农科英才领军人才",中国农业科学院油料作物研究所副所长、油料 品质化学与加工利用创新团队常务执行首席,农业农村部油料加工重点实验室副主任,国家健康油脂产业技术创新 联盟秘书长。入选中组部"国家万人计划科技领军人才"、科技部"创新人才推进计划中青年科技创新领军人才"、农 业农村部"神农青年英才"、山东省"泰山产业领军人才"。现任湖北省食品科学技术学会副理事长、中国人体健康科 技促进会临床营养专委会副主任委员、中国营养学会油脂营养产业分会副主任委员,《Food Science and Human Wellness》、《Critical Reviews in Food Science and Nutrition》编委,《中国油料作物学报》副主编,《食品科学》、《轻 工学报》编委。主要从事特色油料加工与营养学研究,先后主持国家重点研发计划项目、国家自然科学基金、湖北 省重点研发计划、新疆自治区重大科技专项课题、武汉市应用基础前沿项目、产学研合作课题等 20 余项,重点以 亚麻籽、核桃、油茶、芝麻、紫苏、火麻仁、沙棘等特色油料为研究对象,开展全组分提质加工和产业化应用研究, 创制了适于不同人群的国产保健食品、植物乳、营养健康油脂等新产品 20 余个,获授权国家发明专利 30 余件,以 第一作者、通讯作者在《Adv. Colloid Interface Sci.》《Prog. Lipid Res.》、《Compr. Rev. Food Sci. Food Saf.》、《Food Hydrocoll.》、《Food Chem.》、《食品科学》等国内外期刊发表收录论文 100 余篇,获得国家科技进步二等奖、 省部级一等奖等科技奖励 4 项。

Deng Qianchun, PhD., professor, doctoral supervisor, deputy of the National People's Congress, member of the Central Committee of the National Democratic Reform Party, deputy chairman of the Hubei Provincial Committee of the National Democratic Reform Party, post scientist of the national characteristic oil industry technology system, "Leading Talents in Agricultural Sciences" of the Chinese Academy of Agricultural Sciences, deputy director of the Oil Crop Research Institute of the Chinese Academy of Agricultural Sciences, executive chief of the Oil Quality Chemistry and Processing Innovation Team, deputy director of the Key Laboratory of Oil Processing of the Ministry of Agriculture and Rural Affairs, secretary-general of the National Technology Innovation Alliance of Healthy Oil Industry. He was selected as "National Thousand Talents Plan Science and Technology Leading Talents" of the Organization Department of the CPC Central Committee, "Young and Middleaged Science and Technology Innovation Leading Talents in the Innovative Talents Promotion Plan" of the Ministry of Science and Technology, "Shennong Young Talents" of the Ministry of Agriculture and Rural Affairs, and Shandong Province "Taishan Industry Leading talents". He is now the vice chairman of the Hubei Food Science and Technology Association, the deputy chairman of the Clinical Nutrition Special Committee of the Chinese Association for the Promotion of Human Health Science and Technology, Vice Chairman of the Chinese Society of Nutrition, Oil and Nutrition Industry branch, the editorial board of "Food Science and Human Wellness", "Critical Reviews in Food Science and Nutrition", the deputy editor of the "Chinese Journal of Oil Crops", the editorial board of "Food Science", and the "Journal of Light Industry". He is mainly engaged in the research of processed oils and nutrition. He has presided over more than 20 projects, including the National Key Research and Development Program, the National Natural Science Foundation,

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Foundation, the Key Research and Development Program of Hubei Province, the major special scientific and technological projects of Xinjiang Autonomous Region, the Wuhan Applied Basic Frontier Project, and the industry-university-research cooperation projects. He focuses on the processed oils of flax seed, walnut, camellia, sesame, perilla, fire hemp, sea buckthorn and other featured oils as the research objects, and carries out the research of whole-component quality improvement and industrial application, and created more than 20 new products such as domestic health food, plant milk, and nutritional and healthy oils suitable for different groups. He has obtained more than 30 national invention patents, and published more than 100 papers as first and corresponding authors in "Adv. Colloid Interface Sci.", "Prog. Lipid Res.", "Compr. Rev. Food Sci. Food Saf.", "Food Hydrocoll.", "Food Chem.", etc. As the second finisher he has won four scientific and technological awards, including the second prize of National Science and Technology Progress Award, the first prize of Ministerial and Provincial Academic Achievement Award, etc.

# 演讲题目:亚麻籽 ALA 的提质加工与增效利用 Topic: Quality Improvement Processing and Enhanced Utilization of ALA from Flaxseed

α-亚麻酸 (ALA) 作为 n-3 PUFAs 系列唯一的人体必需脂肪酸,具有抗炎、干预慢性疾病发生发展等健康功效, 且能够作为前体在体内合成 EPA 和 DHA。我国亚麻籽产量位于世界前列,亚麻籽油中 ALA 含量高达 60% 左右, 但存在 1) 亚麻籽油易产生苦味、腥味等不良风味,2) 其 ALA 作为多不饱和脂肪酸,易氧化变质,3)人体内 ALA 向 EPA、DHA 等 n-3 PUFAs 的转化率有限,4)提质增效与多元化加工利用不足;基于此,本研究1)建立了亚麻 籽油高效脱苦、反胶束稳态化、ALA 酶法修饰改性、木酚素协同纳米乳化等提质增效加工技术,2)形成了全籽(粉) 灭酶促稳、脱毒增香、自稳定乳化等亚麻籽全价精深加工技术,3)结合功效评价和分子调控机制研究,创制了脱苦 亚麻籽油、ALA 甾醇酯、ALA 强化营养油、保健食品、食用亚麻籽(粉)、亚麻籽乳等多元化富含 ALA 的营养健 康产品。

Alpha-linolenic acid (ALA), as the only essential fatty acid in the n-3 PUFAs series, has health effects such as antiinflammation and intervention in the occurrence and development of chronic diseases. The production of flaxseed in China is among the top in the world, and ALA content of flaxseed oil is up to about 60%. However, 1) flaxseed oil might have bitter, fishy taste resulting in poor flavor, 2) ALA, as a polyunsaturated fatty acid, is susceptible to oxidative deterioration, 3) the conversion rate of ALA to EPA, DHA and other omega-3 fatty acids in human body is limited, and 4) quality enhancement and diversification of processing and utilization are insufficient. Based on this, this study 1) carried out in-depth research on the synergic molecular mechanism of microwave fragrance generation, interfacial antioxidant, nano-emulsion to improve ALA transformation in vivo, etc. 2) The full-value and deep processing technology of flaxseed, such as eliminating enzyme, promoting stability, detoxifying and enhancing fragrance, and self-stabilizing emulsification, has been formed. 3) Combined with the efficacy evaluation and molecular regulation mechanism study, a variety of ALA rich nutrition and health products were created, such as debitter flaxseed oil, ALA sterol ester, ALA fortified nutrition oil, health food, edible flaxseed (powder), flaxseed milk.

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**刘元法教授** 江南大学食品科学与资源挖掘全国重点实验室常务副主任

# **Prof. Yuanfa Liu**

Executive vice director of The State Key Laboratory of Food Science and Resources at Jiangnan University

刘元法,教授/博导,江南大学食品科学与资源挖掘全国重点实验室常务副主任,教育部国家级人才计划、国 家高层次人才特殊支持计划、科技部中青年领军人才计划入选者。担任中国粮油学会油脂分会副会长、全国食品质 量控制与管理标准化技术委员会委员、中国焙烤食品糖制品工业协会副理事长。近年来,主持国家"十三五"与"十四五" 国家重点研发计划项目、"十二五"国家科技支撑计划项目课题、国家 863 计划重点项目课题、国家自然科学基金及 企业合作课题等国家、部省级和企业课题 16 项。目前,已发表学术论文 200 余篇,申请国内外发明专利 70 余件, 主编 / 参编《食品专用油脂》、《油料科学原理》、《食品产业科技创新发展战略》、《未来食品科学与技术》等教材、 专著 5 部;曾以第一或主要完成人获国家技术发明二等奖 1 项、国家科技进步二等奖各 3 项。

Professor Liu Yuanfa, PhD, is the Executive vice director of the State Key Laboratory of Food Science and Resource at Jiangnan University. He is also a participant in the national talent program of the Ministry of Education, the national highlevel talent special support program, and the young and middle-aged leading talents program of the Ministry of Science and Technology. Professor Liu serves as the Vice President of the Oil and Fat Branch of the China Cereals and Oils Association, a member of the National Technical Committee on Control and Management of Standardization Administration of China, and the Vice Chairman of the China Bakery and Sugar Products Industry Association.

In recent years, Professor Liu has been leading 16 projects at the national, provincial, and enterprise levels, including the National Key R&D Program projects for the 13th and 14th Five-Year Plans, the projects of the National Science and Technology Support Program for the 12th Five-Year Plan, key projects of the National 863 Program, projects funded by the National Natural Science Foundation, and collaborative projects with enterprises. He has published over 200 academic papers, filed more than 70 domestic and international invention patents, and authored or co-authored 5 textbooks and monographs, including "Special Oils and Fats for Food," "Principles of Oilseed Science," "Strategies for Innovative Development of the Food Industry Science and Technology," and "Future Food Science and Technology." Professor Liu has received numerous awards, including one second prize of the National Technology Invention Award and three second prizes of the National Science and Technology Progress Award as the first or main contributor.

# 演讲题目: 亚麻籽营养特性与全质化绿色低温加工

Topic: Nutritional Characteristics and Whole-quality Green Low-temperature Processing of Flaxseed (Linum usitatissimum)

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唐林志博士 广东清脂康科技有限公司董事长

**Dr. Linzhi Tang** Chairman of Guangdong Qingzhikang Technology Co., Ltd

唐林志,企业家,广东润源中天有限公司董事长、复旦大学与香港城市大学联合培养工商管理博士。广州市工 商联(总商会)十六届执委、香港亚洲商学院广州分院院长、广东省卫生经济学会健康促进与传播专业委员会第二 届副主委。2015 年起,担任中国保健协会常务理事;2016 健康产业科技创新领军人物。《辅酶 Q10 与心脏健康》 副主编、《心脏康复营养处方》副主编。

Linzhi Tang, an entrepreneur, chairman of Guangdong Runyuan Zhongtian Co., Ltd., jointly trained a doctorate in business administration by Fudan University and City University of Hong Kong. The 16th Executive Committee of the Guangzhou Federation of Industry and Commerce (General Chamber of Commerce), the dean of the Guangzhou Branch of the Hong Kong Asian Business School, and the second deputy chairman of the Health Promotion and Communication Professional Committee of the Guangdong Health Economics Association. Since 2015, he has served as the executive director of the China Health Care Association; the leading figure in scientific and technological innovation in the health industry in 2016. Deputy editor-in-chief of Coenzyme Q10 and Heart Health, deputy editor-in-chief of Cardiac Rehabilitation Nutrition Prescription.

演讲题目:Omega-3+组合产品的研发及其在心血管健康中的应用 Topic: Development of Omega-3+ Combination Products and Their Applications in Cardiovascular Health 2024 (4th) OMEGA-3 科技与产业国际会议 International Conference on OMEGA-3 Science and Industry





孙朝南 瘦吧集团快康 AI 创始人 广东省网商协会人工智能应用赋能中心专家

**Chaonan Sun** Founder of Kuaikang Tech.

快康科技 创始人 腾讯 平台内容事业部 总监 Uber, Linkedin 等公司多年 算法,数据,工程 经验 Kuaikang Tech. Founder Tencent PCG, technical director Uber, Linkedin several years of experience in Machine learning, big data, and engineeringr.

# 演讲题目: AI 技术在精准营养干预中的应用 **Topic: The Application of AI Technology in Precision Nutrition Intervention**

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**齐莎日娜 博士** 四川圣迪乐村生态食品股份有限公司产品技术总监

**Dr. Qisharina** CTO of Sichuan Sundaily Farm Ecological Food Co.,Ltd.

四川农业大学动物营养与饲料科学博士毕业,目前担任圣迪乐产品技术总监,"国家蛋鸡产业技术体系"综合试 验站站长,"四川省家禽产业技术研究院"执行副院长,四川农业大学动物营养研究所硕士企业导师。

负责和参与国家、省级科研项目 10 多项,获得四川省科技进步一、二、三等奖各 1 项,神农中华农业科技奖一 等奖 1 项,发表获授权专利 12 项,带领团队获得全国妇联"巾帼文明岗"、全国总工会"全国工人先锋号"称号。

She graduated from Sichuan Agricultural University with a doctor degree in Animal Nutrition and Feed science, and currently serves as the CTO of Sichuan Sundaily Farm Ecological Food Co.,Ltd., the head of the comprehensive experimental station of "National Layer Industrial Technology System", the executive vice president of "Sichuan Poultry Industry Technology Research Institute", and the master enterprise tutor of Animal Nutrition Research Institute of Sichuan Agricultural University.

She held and participated in more than 10 national and provincial scientific research projects, won the first, second and third prizes of Sichuan Province science and Technology progress, the first prize of Shennong Chinese Agricultural Science and Technology Award, published 12 authorized patents, and led the team to win the All-China Women's Federation "Women's Civilized Post" and All-China Federation of Trade Unions "National Worker Pioneer" title.

演讲题目:Omega-3 多不饱和脂肪酸强化鸡蛋技术研发 Topic: Research and Development of Eggs Fortified with Omega-3 Polyunsaturated Fatty Acids

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# **赵锋 博士** 浙江大学苏工院脂肪谱与慢病研发中心主任

# **Dr. Feng Zhao**

Director of the Center of Fatty Acids and Chronic Disease at the School of Engineering, Zhejiang University

赵锋博士现任浙江大学苏工院脂肪谱与慢病研发中心主任、西安文理学院生物制药专业特聘教授、国际元宇宙 医学协会理事及营养与健康管理示范基地主任、中国老年学及老年医学学会营养分会常务理事

近5年主要成就:

2023年度血脂异常医学营养管理专家共识主要执笔人

2022年度国家海洋局海洋科学技术奖二等奖

# 共同组织了三届(2017、2018、2019)脂肪酸与人类健康国际论坛,任秘书长

Feng Zhao, Ph.D., currently serves as the Director of the Center of Fatty Acids and Chronic Disease at the School of Engineering, Zhejiang University, and is an invited Professor of Biopharmaceuticals at Xi'an University of Arts and Science. He is also a board member of the International Metaverse Medical Association, Director of the Nutrition and Health Management Demonstration Base, and an Executive Member of the Nutrition Branch of the Chinese Gerontology and Geriatrics Society.

Major achievements in the past five years:

Lead author of the 2023 Expert Consensus on Medical Nutrition Management of Dyslipidemia

Second Prize in the 2022 National Marine Science and Technology Award from the State Oceanic Administration

Co-organized three International Forums on Fatty Acids and Human Health (2017, 2018, 2019), serving as Secretary-General.

# 演讲题目: 脂肪谱检测技术在 Omega-3 应用中的重要性 Topic: The Importance of Fatty Acid Profiling in the Application of Omega-3s

人体不同脂肪酸的相对构成对炎症和肠道菌群平衡具有根本性影响,是心血管、甲状腺、疼痛、癌症、结节、 生殖障碍等慢病的深层病因。以 Omega-3 为代表的脂代谢平衡个性化精准营养方案在改善慢病的机理和临床效果 提升上十分重要。我们从 omega-3 与不同食物的结合方案入手,改善脂代谢的失衡状况,从而改善了各类慢病的症状。

The relative composition of different fatty acids in the human body has a fundamental impact on inflammation and the balance of the gut microbiota. This serves as a deep-rooted cause of chronic diseases such as cardiovascular disease, thyroid disorders, pain, cancer, nodules, and reproductive issues. Personalized and precise nutritional solutions that target lipid metabolism balance, with a focus on Omega-3, play a crucial role in improving the mechanisms of chronic diseases and enhancing clinical outcomes. We start by exploring the combination of Omega-3 with different foods to address lipid metabolism imbalances, thereby alleviating the symptoms of various chronic conditions.

(4th) International Conference on OMEGA-3 Science and Industry





### **李鹏婧** 武规图士生版科林左四八回人学生生于

成都圆大生物科技有限公司合成生物工程中心院长

# Peggy Li

Director of Biology Synthetic Engineering Center, Chengdu Skuny Bioscience Co., Ltd.

长期从事生物活性成分分离纯化和微生物发酵技术研究,担任成都市人大代表、四川省微生物学会合成生物学 专业委员会委员,先后获得"蒲江工匠"、"成都工匠"等荣誉称号。主导或参与省市区 30 余个科研项目,带领团队完 成《四川省科技创新项目》1 项次;拥有发明专利 7 项,实用新型专利 10 项,学术论文 7 篇。

Peggy Li, BSEC Director, long engaged in biological active ingredients purification and microbial fermentation technology research, as the peoples congress of Chengdu and Sichuan microbial microbiology professional committee, has won the "pujiang craftsman", "Chengdu craftsman" and other honorary titles. Led or participated in more than 30 Provinces, municipalities and districts scientific research projects, led the team to complete 1 Sichuan Province Science and Technology Innovation Project; owned 7 invention patents and 10 utility model patents, and led the publication of 7 papers.

# 演讲题目:聚焦 Omega-3 产业难点,助力产研创新发展

Topic: Addressing Challenges of Omega-3 Industry and Promoting Innovation of Research and Development













# 2024(第四届)Omega-3科技与产业 国 际 会 议

# 广东清脂康科技有限公司





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# 关于我们 🕥

国药集团天目湖药业有限公司成立于 2013 年, 集科研、生产、销售于一体的大型央企民营混合所有 制企业, 秉承 "品质打造信誉, 真诚捍卫健康"的经营理念, 着力于研究开发适应不同人群的健康食 品,为提高人民的生活质量和健康水平作出贡献,公司现有产品:轻藏、康安酸宝、纯亚麻籽微粉

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瘦吧科技成立于2016年底,是一家以成为"全球卓越的全生命周期数字健康管理平台"为愿景 的大健康科技企业、国家高新技术企业。自成立以来,紧跟国家"健康中国2030"战略,以"全民 健康"为企业社会责任,以体重健康管理为切入点,在坚实、系统的科学基础理论之上,以不断 更迭、升级的先进科技、专业服务、优质产品、依托自有APP平台、提供"三位一体"的综合 健康管理方案,帮助人们以科学、健康、轻松的方式减脂减重,收获健康身体和幸福生活。





瘦吧科技快速发展的同时,积极投身公益事业。2020年成立中食安泓爱心公益基金会, 在五大公益领域开展超过20项公益行动,累计向社会各界捐款超过2425万元。

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阳光绿地集团成立于2004年,总部坐落于大美新疆——乌鲁木齐,是一家跨国农副产品全产 业链公司。跟随国家"一带一路"合作倡议,集团重点发展跨国收购、标准化种植、种子优化、 技术研发、精深加工等农业产业化项目。

旗下有新疆金百胜贸易有限公司、新疆阳光绿地农业科技有限公司、杭州阳光绿地农业科技 有限公司、阿拉山口金牧生物科技有限公司等。公司注重产学研结合、科技创新,主营业务包括: 油脂油料进口、油籽压榨、食用油精炼、粮食加工、生物工程的开发研制、商品运输配送、边境 贸易进出口业务等。通过二十余年的发展,建立起完善的市场营销网络,培养了一批专业技术人 才,为实现公司的战略目标打下坚实基础。 公司致力于在农副产品产业领域上精益求精,发扬 工匠精神,以打造适应力强的综合型农业产业模式,整合农产品从有机种植到加工、从品牌产品 到流通服务的整条农业价值链为战略核心。

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# Company Profile 公司简介

福建高龙海洋生物工程有限公司隶属于高龙集团,成立于2008年04月14日,注册于 福建连江,专业从事鱼油的浓缩深加工。主要产品为食品级浓缩鱼油系列产品,首期项目 具有年处理毛鱼油能力10000吨。

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