



Department: School of Biotechnology

Professional field: Biochemical engineering

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Profile

Dr. Meijin Guo holds a position of a full professor of biochemical engineering and biotechnology at the Biotechnical Faculty, East China University of Science and Technology (ECUST). He has over 20 years of experience in microbial biotechnology, metabolic and biosynthetic engineering, and bioprocess development.

Professor Guo is one of the leading bio-processing professors in China and has been actively working in the field of genetic engineering, microbial physiology, fermentation process development and scale-up productions for more than 20 years. He was involved in major breakthrough scientific projects on national basis, involving the National High Technology Research and Development Program of China (863 Program) with project entitled “Key technology of bioprocess development and its high efficient equipment development” (2011-2015); China-Scotland Higher Education Collaboration Project (2010-2011) with Prof. Iain Hunter in Strathclyde University (UK) and National Natural Science Foundation of China (NSFC) with project entitled “Association studies on phenotypic and genotypic characterization of recombinant *Pichia pastoris* harboring different gene dosages” (2006-2008). For his research projects he has received funds with combined worth over 20M RMB (nearly 3M US dollars). He has published more than 50 SCI papers in international journals. In addition, Prof. Guo received several awards, three of which were awarded by Shanghai Municipal Government (2001, 2004, 2018). Among them, two were awarded by Ministry of Science and Technology of the People’s Republic of China (2002 and 2011).

Research Field

(1) bioprocess engineering; (2) Cell culture engineering

Research results and selected published papers

1. Zhang K, Mohsin A, Dai Y, Chen Z, Zhuang Y, Chu J and Guo M. Combinatorial effect of ARTP mutagenesis and ribosome engineering on an industrial strain of *Streptomyces albus* S12 for enhanced biosynthesis of salinomycin. *Front. Bioeng. Biotechnol.* 2019,7:212. doi: 10.3389/fbioe.2019.00212.
2. Hu J, Lei P, Mohsin A, Liu X, Huang M, Li L, Hu J, Hang H, Zhuang Y and Guo M. Mixomics analysis of *Bacillus subtilis*: effect of oxygen availability on riboflavin production. *Microbial Cell Factories.* 2017, 16:150
3. Mohsin A, Zhang K, Hu J, Rehman S, Tariq M, Zaman WQ, Khan IM, Zhuang Y and Guo M. Optimized biosynthesis of xanthan yffective valorization of orange peels using response surface methodology: A kinetic model approach. *Carbohydrate Polymers.* 2018, 181: 793-800
4. Wei Y, Mohsin A, Hong Q, Fang H and Guo M. Enhanced production of biosynthesized lycopene via heterogenous MVA pathway based on chromosomal multiple position integration strategy plus plasmid systems in *Escherichia coli*. *Bioresource Technology.* 2017, 250. DOI:10.1016/j.biortech. 2017.11.035
5. Chenze Xu, Ali Mohsin, Yanxia Luo, Lili Xie, Yan Peng, Qizheng Wang, Haifeng Hang, Yingping Zhuang, Meijin Guo*. Differentiation roadmap of embryonic Sertoli cells derived from mouse embryonic stem cells. *Stem cell research & therapy.* 2019, doi: 10.1186/s13287-019-1180-6
6. Chenze Xu, Yichen Dai, Ali Mohsin, Haifeng Hang, Yingping Zhuang, Meijin Guo*. Mapping molecular pathways for embryonic Sertoli cells derivation based on differentiation model of mouse embryonic stem cells. *Stem cell research & therapy.* 2020, doi: 10.1186/s13287-020-01600-2

Awards:

Award name	Level	Project	Issued by	Issued year
Shanghai Award for Science and Technology Progress	1st	Production of genetically engineered phytase with high thermo-stability using DNA-shuffling	Shanghai Municipal Government	2004
National Award for Science and Technology Progress	2nd	Optimization and scaling-up of bioprocess based on multi-scale parameter association analysis	State Council of P. R. of China	2002
National Award for Science and Technology Progress	2nd	Industrial fermentation technology based on the integration of microbial physiology and flow field property in bioreactor	State Council of P. R. of China	2011
Shanghai Award for Science and Technology Progress	2nd	Oxygen Global regulation on gluconate production by <i>A.niger</i> cell factory	Shanghai Municipal Government	2019