

Department: School of Biotechnology Professional field: Bioengineering E-mail: shhgao@ecust.edu.cn

Profile

Associate professor, Master Tutor. From 2012 to 2013, as a visiting scholar atVirginia Polytechnic Institute and State University. Focused onfermentationoptimization of antibiotics such as spiramycin, kitasamycin, lincomycin and erythromycin; application of pyruvate kinasein the synthesis of deoxyribonucleotide (dNTP); and research on the surface heterogeneity of cellulose and influence on cellulose hydrolysis rate by using carbonhydratebinding module (CBM).

Research Field

Microbial fermentation optimization and metabolism regulation, transcription regulation of metabolism process. Focused on pilot scale-up and antibiotic production by industrial actinomycetes (Streptomyces ambofaciens, Streptomyces kitasatoensis, Streptomyces lincolnensis, Saccharopolysporaerythraea, etc.); gene cloning and exogenous expression of industrial enzymes in E.coli, Bacillus subtilis, etc.; relationship of substrate supply and coenzyme balance, etc.

Research results and selected published papers

 Zhuang ZH, Zhang LW, Yang CC, Zhu DY, Mao QG, Wang QY and Gao SH*. Enhanced lincomycin A production by calcium gluconate feeding in fermentation of Streptomyces lincolnensis. Bioresources and Bioprocessing, 2019, 6:31. DOI: 10.1186/s40643-019-0266-4.

2. Yao KY, Gao SH*, Wu YJ, Zhao Z, Wang W, Mao QG. Influence of dextrins on the production of spiramycin and impurity components by Streptomyces ambofaciens. Folia Microbiologica. 2018, 63 (1): 105-113.

3. Zheng QL, Gao SH*. The effect of surfactant on fermentation of kitasamycin in Streptomyces kitasatoensis. Biotechnology & Applied Biochemistry. 2016, 63(6):895-900.

4. Gao SH, You C, Renneckar S, Bao J, Zhang YH*. New insights into enzymatic hydrolysis of heterogeneous cellulose by using carbohydrate- binding module 3 containing GFP and carbohydrate-binding module 17 containing CFP. Biotechnology for Biofuels 2014, 7:24.

5. Yu WB§, Gao SH§, Yin CY, Zhou Y, Ye BC*. Comparative transcriptome analysis of Bacillus subtilis responding to dissolved oxygen in adenosine fermentation. PLoS ONE, 2011, 6(5): e20092. doi:10.1371/journal.pone.0020092. (\$Coauthor)

6. Gao SH, Bao J*, Gu XM, Xin XJ, Chen CH, Ryu DY. Substrate promiscuity of pyruvate kinase on various deoxynucleoside diphosphates for synthesis of deoxynucleoside triphosphates. Enzyme and Microbial Technology, 2008, 43(6):455-459.