

浙江省科学技术奖公示信息表（单位提名）

提名奖项：自然科学奖

成果名称	基于结构的细胞生长因子调控机制、分子改良及创新 药物研究
提名等级	一等奖
提名书 相关内容	<p>提名书的代表性论文（专著）目录：</p> <ol style="list-style-type: none"> 1. Zhifeng Huang, William M. Marsiglia, Upal Basu Roy, Nader Rahimi, Dariush Ilghari, Huiyan Wang, Huaibin Chen, Weiming Gai, Steven Blais, Thomas A. Neubert, Alka Mansukhani, Nathaniel J. Traaseth, Xiaokun Li and Moosa Mohammadi. Two FGF Receptor Kinase Molecules Act in Concert to Recruit and Transphosphorylate Phospholipase Cγ. <i>Mol Cell</i>, 2016, 61(1):98-110. 2. Zhifeng Huang, Yi Tan, Junlian Gu, Yang Liu, Lintao Song, Jianlou Niu, Longwei Zhao, Lakshmi Srinivasan, Qian Lin, Jingjing Deng, Yang Li, Daniel J. Conklin, Thomas A. Neubert, Lu Cai, Xiaokun Li, and Moosa Mohammadi. Uncoupling the Mitogenic and Metabolic Functions of FGF1 by Tuning FGF1-FGF Receptor Dimer Stability. <i>Cell Rep</i>, 2017, 20(7):1717-1728. 3. Guang Liang, Lintao Song, Zilu Chen, Yuanyuan Qian, Junjun Xie, Longwei Zhao, Qian Lin, Guanghui Zhu, Yi Tan, Xiaokun Li, Moosa Mohammadi and Zhifeng Huang. Fibroblast growth factor 1 ameliorates diabetic nephropathy by an anti-inflammatory mechanism. <i>Kidney Int</i>, 2018, 93(1):95-109 (published online 24 July 2017). 4. Helin Xu, Jie Xu, Bixin Shen, Sisi Zhang, Binghui Jin, Qunyan Zhu, Deli Zhu, Ge, Xueling Wu, Jian Xiao, and Yingzheng Zhao. Dual Regulations of Thermosensitive Heparin-Poloxamer

	<p>Hydrogel Using ϵ-Polylysine: Bioadhesivity and Controlled KGF Release for Enhancing Wound Healing of Endometrial Injury. <i>ACS Appl. Mater. Interfaces</i>, 2017, 9:29580–29594.</p> <p>5. Yingzheng Zhao, Xi Jiang, Jian Xiao, Qian Lin, Wenze Yu, Furong Tian, Kaili Mao, Wei Yang, Ho Lun Wong, Cuitao Lu. Using NGF heparin-polyoxamer thermosensitive hydrogels to enhance the nerve regeneration for spinal cord injury. <i>Acta Biomater</i>, 2016, 29:71-80.</p> <p>6. Jianlou Niu, Yanlin Zhua, Yaoyao Xie, Lintao Song, Lu Shi, Junjie Lan, Bailin Liu, Xiaokun Li, Zhifeng Huang. Solid-phase polyethylene glycol conjugation using hydrophobic interaction chromatography. <i>J Chromatogr A</i>, 2014,1327:66–72.</p> <p>7. Jianlou Niu, Yanlin Zhu, Lintao Song, Yaoyao Xie, Yi Zhang, Huiyan Wang, Xiaokun Li, Bailin Liu, Lu Cai, Zhifeng Huang. One-Step Production of Bioactive Proteins through Simultaneous PEGylation and Refolding. <i>Bioconjugate Chem</i>, 2014,25(1):63-71.</p> <p>8. Jianqiu Cai, Guifang Dou, Long Zheng, Ting Yang, Xuechao Jia, Lu Tang, Yadong Huang, Wencan Wu, Xiaokun Li, Xiaojie Wang. Pharmacokinetics of topically applied recombinant human keratinocyte growth factor-2 in alkali-burned and intact rabbit eye. <i>Experimental Eye Research</i>, 2015,136:93-99.</p>
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主要完成单位	温州医科大学

提名单位	浙江省教育厅
提名意见	<p>本项目团队在国家自然科学基金、科技部重点研发计划等课题持续支持下，聚焦细胞生长因子基础理论和创新药物研究，利用结构生物学、分子药理学和蛋白工程等多学科手段，在国际上率先阐明细胞生长因子 FGF “启动-转导-运行”信号轴，破解了生长因子领域近 20 年的科学难题，并为基于结构的 FGF 创新药物设计和开发提供了关键科学依据。在 Molecular Cell, Cell Reports, Kidney Int 等杂志以第一或通讯作者发表高水平论文，多项工作获 Nature Review, F1000 等专评或推荐,获多项国内外发明专利。系列研究丰富了我国生长因子功能蛋白原创性研发体系，所建立的药物分子改良新策略、递送系统新思路为我国生物医药的源头创新和应用开发提供了重要借鉴。</p> <p>提名该项目为 2020 年度浙江省自然科学奖一等奖。</p>