

附件

重庆市科学技术奖提名公示表

申报奖项：自然科学奖

项目名称	心肌梗死后心肌细胞再生与修复研究		
提名者	张运	提名等级	一等
项目简介	<p>心肌梗死 (MI) 是影响人类健康的危重病, 存活 MI 患者 5 年内心衰发生率达 31.9%, 心梗后心肌细胞大量丢失是心衰发生的主要原因, “促进心肌再生、修复受损心肌”是解决问题的关键途径, 但“再生心肌细胞来源存在巨大争议、心肌增殖模式不明”等问题成为制约该领域发展的重要瓶颈, 因此, 我们以成年心肌细胞再生与修复为研究对象, 历时 11 年, 取得系列成果。该项目受到“国家杰青、国家优青、重点研发、国自然重点”等基金支持。主要科学发现: 1. 谱系示踪技术显示了再生心肌细胞来源于原有心肌细胞的证据, 推翻了成体干细胞心肌来源理论; 揭示了心肌再生模式, 奠定了心肌再生研究基础理论。2. 揭示了促进成体干细胞存活新靶点, 量化了干细胞旁分泌成血管作用, 优化了心肌再生土壤。</p> <p>3. 精准化提出“刺激心脏β受体+内源性抑制 PKA”的交感神经心脏保护修复新策略; 发现骨骼肌-心脏对话保护心肌的关键因子, 开辟了心肌保护修复新领域。成果在 Cell Res、Circulation、Eur Heart J 等杂志发表论文 58 篇, 最高 IF 44.1, IF>30 的 5 篇, IF>20 的 8 篇, IF>10 的 18 篇, 20 篇主要论文被 Nat Med、Circulation 等杂志他引 992 次, 10 余次在美国心脏学会年会等国际会议发言; 8 篇文章被 Circ Res 等杂志封面介绍; 3 篇文章被 Nat Rev Cardiol 等杂志述评; Nat Rev Cardiol 评价为 2017 年度心脏再生领域的里程碑式进展之一, 被《中国循环》评为 2017 年度中国心血管病十大科学研究之一。项目培养国家杰青 2 人, 长江学者 1 名、万人领军人才 1 名、中青年科技创新领军人才 1 名、国家优秀 3 名、万人青年拔尖人才 1 名、新基石研究员 1 名、重庆杰青 2</p>		

	<p>名、重庆青年拔尖人才 2 名； 4 人次获得美国心脏学院（ACC）杰出科学家奖、国际心脏研究学会（ISHR）杰出研究者奖（Outstanding Investigator Award）、美国心脏协会（AHA）青年研究者奖、腾讯公益慈善基金会科学探索奖等荣誉；军队、江苏省和重庆市优博论文 3 篇；研究团队获批国家自然科学基金委创新群体、教育部创新团队、科技部国际联合研究中心、教育部重点实验室。</p>
<p>主要知识产权和标准规范等目录（自然科学奖、技术发明奖、科技进步奖）</p>	<p style="text-align: center;">论文、专著目录</p> <p>一、代表性论文目录</p> <ol style="list-style-type: none"> 1. Wang WE, Li L, Xia X, Fu W, Liao Q, Lan C, Yang D, Chen H, Yue R, Zeng C, Zhou L, Zhou B, Duan DD, Chen X, Houser SR, Zeng C. Dedifferentiation, Proliferation, and Redifferentiation of Adult Mammalian Cardiomyocytes After Ischemic Injury. <i>Circulation</i>. 2017 Aug 29;136(9):834-848. 2. Liu Q, Yang R, Huang X, Zhang H, He L, Zhang L, Tian X, Nie Y, Hu S, Yan Y, Zhang L, Qiao Z, Wang QD, Lui KO, Zhou B. Genetic lineage tracing identifies in situ Kit-expressing cardiomyocytes. <i>Cell Res</i>. 2016 Jan;26(1):119-130. 3. Li Y, He L, Huang X, Bhaloo SI, Zhao H, Zhang S, Pu W, Tian X, Li Y, Liu Q, Yu W, Zhang L, Liu X, Liu K, Tang J, Zhang H, Cai D, Ralf AH, Xu Q, Lui KO, Zhou B. Genetic Lineage Tracing of Nonmyocyte Population by Dual Recombinases. <i>Circulation</i>. 2018 Aug 21;138(8):793-805. 4. Fan Y, Cheng Y, Li Y, Chen B, Wang Z, Wei T, Zhang H, Guo Y, Wang Q, Wei Y, Chen F, Sha J, Guo X, Wang L. Phosphoproteomic Analysis of Neonatal Regenerative Myocardium Revealed Important Roles of Checkpoint Kinase 1 via Activating Mammalian Target of Rapamycin C1/Ribosomal Protein S6 Kinase b-1 Pathway. <i>Circulation</i>. 2020 May 12;141(19):1554-1569. 5. Zhang Y, Wang WE, Zhang X, Li Y, Chen B, Liu C, Ai X, Zhang X, Tian Y, Zhang C, Tang M, Szeto C, Hua X, Xie M, Zeng C, Wu Y, Zhou L, Zhu W, Yu D, Houser SR, Chen X. Cardiomyocyte PKA Ablation Enhances Basal Contractility While Eliminates Cardiac β-Adrenergic Response Without Adverse Effects on the Heart. <i>Circ Res</i>. 2019 Jun 7;124(12):1760-1777 <p>二、主要论文目录</p> <ol style="list-style-type: none"> 1. Li Y, Lv Z, He L, Huang X, Zhang S, Zhao H, Pu W, Li Y, Yu W, Zhang L, Liu X, Liu K, Tang J, Tian X, Wang QD, Lui KO, Zhou B. Genetic Tracing Identifies Early Segregation of the Cardiomyocyte and Nonmyocyte Lineages. <i>Circ Res</i>. 2019 Jul 19;125(3):343-355. 2. Wang WE, Yang D, Li L, Wang W, Peng Y, Chen C, Chen P, Xia X, Wang H, Jiang J, Liao Q, Li Y, Xie G, Huang H, Guo Y, Ye L, Duan DD, Chen X, Houser SR, Zeng C. Prolyl hydroxylase domain protein 2 silencing enhances the survival and paracrine function of transplanted adipose-derived stem cells in infarcted myocardium. <i>Circ Res</i>. 2013 Jul 19;113(3):288-300. 3. Li L, Fu W, Gong X, Chen Z, Tang L, Yang D, Liao Q, Xia X, Wu H, Liu C, Tian M, Zeng A, Zhou L, Jose PA, Chen K, Wang WE, Zeng C. The role of G protein-coupled

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11. Lan C, Cao N, Chen C, Qu S, Fan C, Luo H, Zeng A, Yu C, Xue Y, Ren H, Li L, Wang H, Jose PA, Xu Z, Zeng C. Progesterone, via yes-associated protein, promotes cardiomyocyte proliferation and cardiac repair. *Cell Prolif*. 2020 Nov;53(11):e12910.
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<p>主要完成人及完成单位</p>	<p>曾春雨 中国人民解放军陆军军医大学 周 斌 中国科学院分子细胞科学卓越创新中心 陈雄文 中国人民解放军陆军军医大学 王 伟 中国人民解放军陆军军医大学 王连生 南京医科大学第一附属医院</p>
<p>备注</p>	<p>重庆市自然科学奖：项目名称、提名者及提名等级、项目简介、代表性论文专著目录、主要完成人及完成单位。重庆市技术发明奖：项目名称、提名者及提名等级、项目简介、主要知识产权和标准规范等目录、主要完成人及完成单位。重庆市科技进步奖：项目名称、提名者及提名等级、项目简介、主要知识产权和标准规范等目录、主要完成人及完成单位。</p>

