

上海市生物化学与分子生物学学会

2019 年青年学术论坛

优秀青年报告 推荐表

姓 名	王义平	性 别	男
E-mail	yiping_wang@fudan.edu.cn	手 机	15618727909
单位/院校	复旦大学	职 称	研究员
报告题目	蛋白精氨酸甲基化调控葡萄糖感知和线粒体生成		
报告摘要	<p>Sirtuins (SIRT6) are a class of lysine deacetylases that regulate cellular metabolism and energy homeostasis. Although sirtuins have been proposed to function in nutrient sensing and signaling, the underlying mechanism remains elusive. SIRT6, a histone H3K9 - specific deacetylase, epigenetically controls mitochondria biogenesis, ribosomal biosynthesis, and DNA repair. Here, we report that SIRT6 is methylated at arginine 388 (R388), which inhibits its H3K9 deacetylase activity. Protein arginine methyltransferase 6 (PRMT6) directly interacts with and methylates SIRT6 at R388 in vitro and in vivo. R388 methylation suppresses the H3K9 deacetylase activity of SIRT6 without modulating its subcellular localization. PRMT6-induced H3K9 hyperacetylation at SIRT6-target gene promoter epigenetically promotes mitochondria biogenesis and maintains mitochondria respiration. Moreover, high glucose enhances R388 methylation in mouse fibroblasts and liver tissue. PRMT6 signals glucose availability to SIRT6 in an AMPK-dependent manner. AMPK induces R388 hypomethylation by disrupting the association between PRMT6 and SIRT6. Together, PRMT6 - induced arginine methylation of SIRT6 coordinates glucose availability with mitochondria biogenesis to maintain energy homeostasis. Our study uncovers the regulatory role of SIRT6 arginine methylation in glucose sensing and mitochondria biogenesis.</p>		

<p>论文发表情况 (近三年)</p>	<p>Tianshi Wang*, Jinke Cheng, Qunying Lei, Yi-Ping Wang*. (2019). A Switch for Transcriptional Activation and Repression: Histone Arginine Methylation. In S. Jurga & J. Barciszewski (Eds), The DNA, RNA, and Histone Methylomes. RNA Technologies, Springer, Switzerland (in press)</p> <p>Yan Wei-Wei, Liang Yun-Liu, Zhang Qi-Xiang, Wang Di, Lei Ming-Zhu, Qu Jia, He Xiang-Huo, Lei Qun-Ying, Wang Yi-Ping*. Arginine methylation of SIRT7 couples glucose sensing with mitochondria biogenesis. <i>EMBO Reports</i>. 2018 Dec;19(12). pii: e46377</p> <p>Wang Yi-Ping*, Lei Qun-Ying*. Metabolite sensing and signaling in cell metabolism. Signal Transduction and Targeted Therapy. 2018 Nov 9;3:30</p> <p>Zhong Xing-Yu, Yuan Xiu-Ming, Xu Ying-Ying, Yin Miao, Yan Wei-Wei, Zou Shao-Wu, Wei Li-Ming, Lu Hao-Jie, Wang Yi-Ping*, Lei Qun-Ying*. CARM1 Methylates GAPDH to Regulate Glucose Metabolism and Is Suppressed in Liver Cancer. Cell Reports. 2018 Sep 18;24(12):3207-3223</p> <p>Yi-Ping Wang*, Qun-Ying Lei*. Metabolic Recoding of Epigenetics in Cancer. Cancer Communications. 2018 May 21;38(1):25</p> <p>Yi-Ping Wang*, Wei Zhou, Jian Wang, Xian Huang, Yong Zuo, Tian-Shi Wang, Xue Gao, Ying-Ying Xu, Shao-Wu Zou, Ying-Bing Liu, Jin-Ke Cheng*, Qun-Ying Lei*. Arginine Methylation of MDH1 by CARM1 Inhibits Glutamine Metabolism and Suppresses Pancreatic Cancer. Molecular Cell. 2016 Nov 17;64(4):673-687</p>
-------------------------	---

请在 **2019年8月29日** 之前提交推荐表至学会办公室 ssbmb@sibs.ac.cn。

邮件主题注明：2019年青年论坛