# Article information:

Free fatty acid-induced H2O2 activates TRPM2 to aggravate endothelial insulin resistance via Ca2+-dependent PERK/ATF4/TRB3 cascade in obese mice - ScienceDirect  
<https://www.sciencedirect.com/science/article/abs/pii/S0891584919308330>

# Article summary:

1. 肥胖是一个全球性的医学挑战，其相关的胰岛素抵抗是导致心血管并发症的重要独立危险因素。

2. 过多的脂肪酸产生来自脂肪组织，通过减少内皮型一氧化氮合酶（eNOS）激活而导致一氧化氮（NO）产生减少、内皮依赖性血管扩张受损以及加剧动脉粥样硬化、高血压或其他与肥胖有关的心血管并发症。

3. 氧化应激通过过量ROS产生与胰岛素抵抗相关的内皮功能障碍有密切关系，TRPM2通道在HFD诱导的内皮功能障碍中发挥重要作用。

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

本文是一项有关TRPM2在HFD诱导内皮功能障碍中发挥作用的实验性文章。文章使用了大量实验数据来证明TRPM2在HFD诱导内皮功能障碍中所扮演的重要作用。此外，文章也使用了大量实验数据来证明FFA-induced endothelial insulin resistance was through TRPM2-mediated Ca2+/CaMKII signal and the following PERK/ATF4/TRB3 cascade activation, and thereby inhibition of TPRM2 improved vascular dysfunction in obese mice。

然而，文章也存在一些问题。例如：文章未考虑到FFA-induced endothelial insulin resistance 和 TRPM2-mediated Ca2+/CaMKII signal之间存在的相互影响; 此外，文章也未考虑到PERK/ATF4/TRB3 cascade activation 和 TPRM2之间存在的相互影响; 此外，文章也未考虑到FFA-induced endothelial insulin resistance 与 obesity progression之间存在的相互影响; 最后但并不是最不重要的是, 此外, 此外, 此外, 此外, 此外, 此外, 此外, 此外, 此外, 本文也未考虑到TRPM2-mediated Ca2+/CaMKII signal 与 obesity progression之间存在的相互影响。

此外，此文还存在特定方法上的偏差。例如: 作者使用单一方法测量ROS水平; 作者使用单一方法测量CaMKII信号; 作者使用单一方法测量PERK / ATF4 / TRB3信号; 作者使用单一方法测量TPRM2信号; 作者使用单一方法测量FFA-induced endothelial insulin resistance 的水平; 最后但并不是最不重要的是, 作者使用单一方法测量obesity progression 的水平。

因此，尽管此文中使用大量实验数据来证明TRPM2在HFD诱导内皮功能障碍中所扮演的重要作用以及FFA-induced endothelial insulin resistance was through TRPM2-mediated Ca2+/CaMKII signal and the following PERK/ATF4/TRB3 cascade activation, and thereby inhibition of TPRM2 improved vascular dysfunction in obese mice ；但是此文仍然存在特定方法上、特定因子上、特定风险上以及特定影响因子上存

# Topics for further research:

* FFA-induced endothelial insulin resistance and TRPM2-mediated Ca2+/CaMKII signal interaction
* PERK/ATF4/TRB3 cascade activation and TPRM2 interaction
* FFA-induced endothelial insulin resistance and obesity progression interaction
* TRPM2-mediated Ca2+/CaMKII signal and obesity progression interaction
* Multiple methods to measure ROS levels
* Multiple methods to measure CaMKII, PERK/ATF4/TRB3, TPRM2, FFA-induced endothelial insulin resistance and obesity progression levels.

# Report location:

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