№： HDL mimetics enhances mitochondrial function via stimulation of PGC1-alpha

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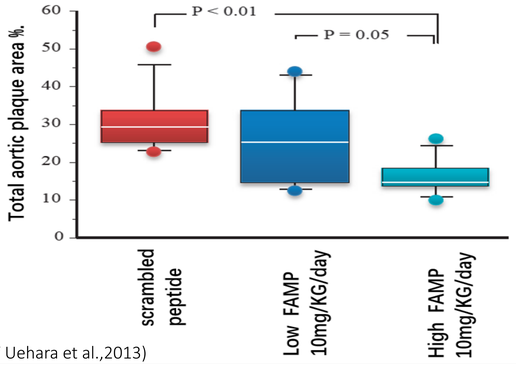
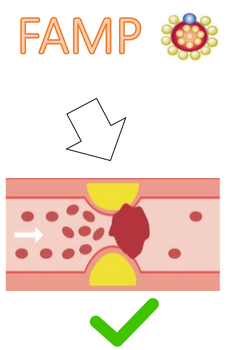
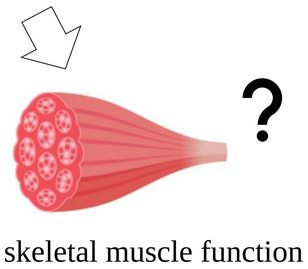
Background

- There is an important inverse association between high-density lipoprotein cholesterol (HDL-C) and the risk of coronary artery disease (CHD) (W. P. Castelli et al., 1977)
- Increased HDL with CETP inhibitors is associated with improved glucose metabolism. (François Briand et al.,2014)
- FAMP-HDL(ApoA-I mimetic peptide to enhance HDL function), developed as a phospholipid-free low amino acid residue peptide that retains human ApoA-I activity and has been reported to enhance HDL function (Y Uehara et al.,2013)



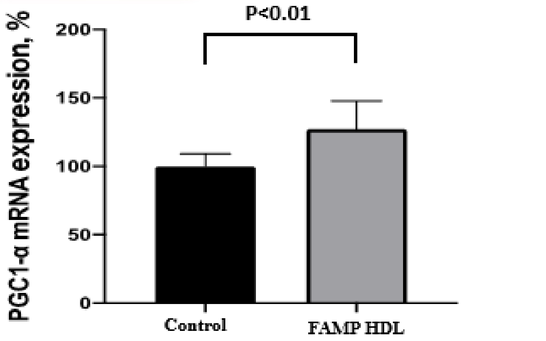
(Y Uehara et al.,2013)

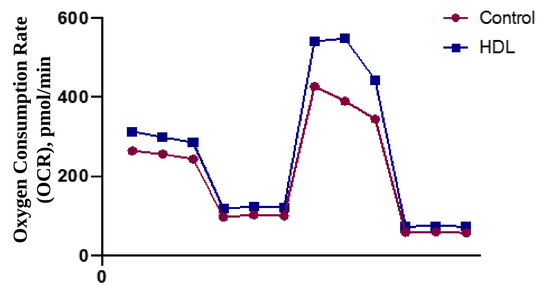


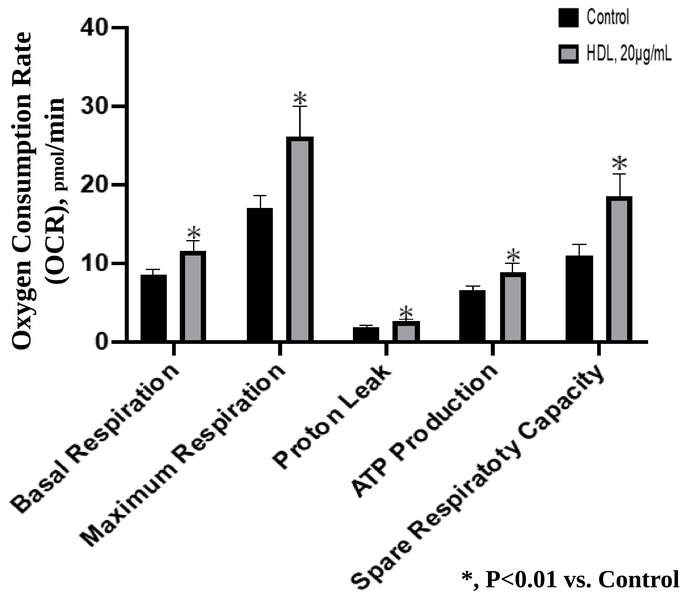


skeletal muscle function

Result



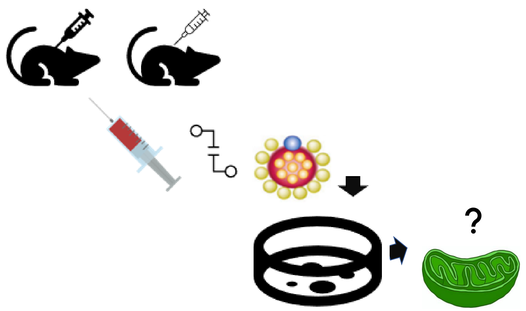




Objectives

Demonstrate whether HDL, HDL mimics FAMP, improve mitochondrial function in skeletal muscle cells in vitro.

Method



① 50 mg/kg/day of **FAMP** or **saline** for **4 weeks**

② Plasma was collected and **HDL** was extracted by the apolipoprotein depletion method.

③ Added to **C2C12**, 18 hours incubation

④ Extracellular flux analyser XF mini

⑤ Assessment of **mitochondrial function**

Discussion

Administration of HDL mimics has been shown to improve mitochondrial function in skeletal muscle cells through stimulation of PGC1- expression, suggesting that HDL may affect skeletal muscle. And there is potential for improvement to :

✔type 2 diabetes

✔cardiovascular disease.

△May be possible to increase the function of skeletal muscle, on the next arguments

Conclusion

HDL may be able to prevent cardiovascular disease by enhancing skeletal muscle function.