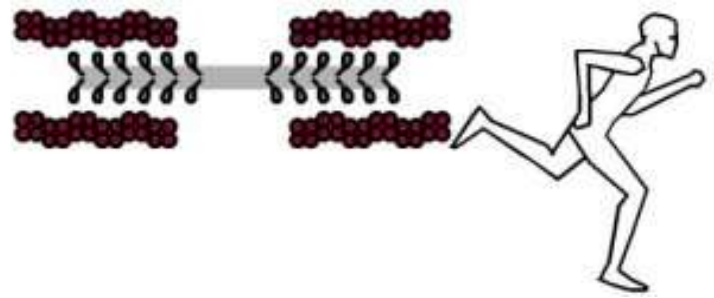


ACAGACACTG
AGAAGGTATT
TGGGGTGTCA



New topic for Master Theses:

Aminokines: Identification of exercise-regulated amino acid-carboxylic acid conjugates as regulators of metabolism and other phenotypes

Master thesis in sports science

Start: as soon as possible

Project description

The group of Jonathan Long, Stanford, has identified several amino acid-carboxylic acid conjugates that are modulated by exercise and that have an effect on metabolism. Recent examples are lactoyl-phenylalanine (Li, He et al. 2022) and N-acetyltaurine (Wei, Lyu et al. 2024). We propose to use the term “aminokines” for regulatory amino acid-carboxylic acid conjugates. Our group has also identified a candidate aminokine.

To more systematically identify aminokines, we are seeking to recruit a MSc student to perform the following analyses:

1. Screen our own and other metabolomics-datasets that report the effect of exercise and other interventions on the concentrations of aminokines.
2. GWAS analyses to try to identify enzymes and transporters that regulate the levels of amokines and to determine phenotypes associated with these genes.

3. MetaMex-analyses to identify whether the amino-kine-modulating genes are regulated by exercise.
4. IMPC analyses to identify phenotypes resulting from the mutation of such genes.

These analyses should then be written up as a thesis.

References

- Li, V. L. et al. (2022). "An exercise-inducible metabolite that suppresses feeding and obesity." *Nature* 606(7915): 785-790.
- Wei, W. et al. (2024). "PTER is a N-acetyltaurine hydrolase that regulates feeding and obesity." *Nature* 633(8028): 182-188.

Requirements

Interested in modern techniques and data analysis.

Supervision

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