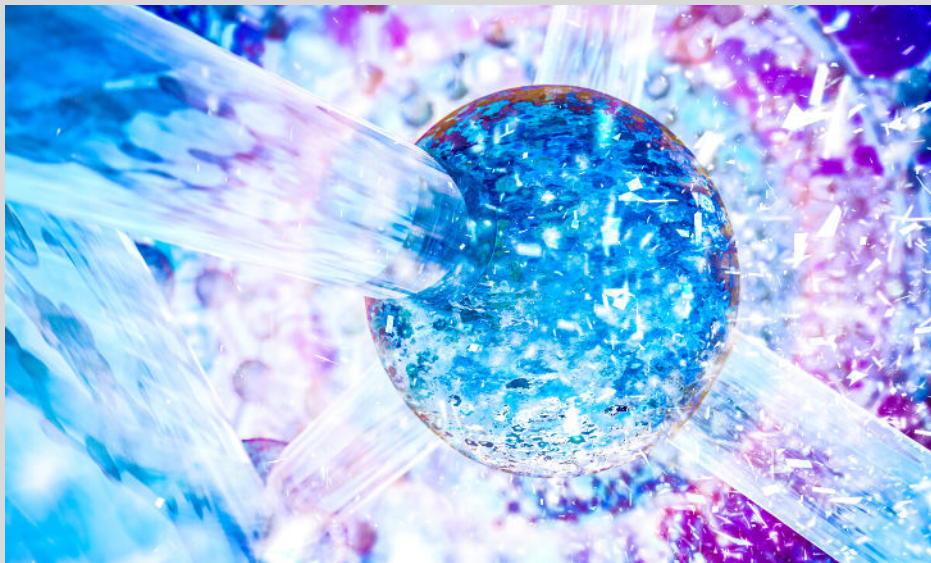




MOTS-C

(mitochondrial open reading frame of the 12S rRNA-c)

MOTS-C is a short open reading frame (sORF) 16 amino-acid peptide. MOTS-C has endocrine-like effects on muscle metabolism, insulin sensitivity, and weight regulation. It regulates insulin sensitivity and metabolic homeostasis. Its primary target organ appears to be the skeletal muscle, and its cellular actions inhibit the folate cycle. MOTS-C targets the Methionine-Folate Cycle, Increases AICAR levels, and activates AMPK. A well-described role of AICAR is to activate AMPK and stimulate fatty acid oxidation and also enhance glucose uptake in the muscle.



MOTS-C has been shown to target the skeletal muscle and enhance glucose metabolism. As such, MOTS-C has implications in the regulation of obesity, diabetes, exercise, and longevity, representing an entirely novel mitochondrial signaling mechanism to regulate metabolism within and between cells.

MOTS-C assists with gene expression and cellular metabolism. It appeared to stimulate glucose utilization by increased glucose clearance. Coordinates cellular glucose, mitochondrial, and fatty acid metabolism.

MOTS-c prevents HFD-induced obesity by increasing energy expenditure, including heat production, improving glucose utilization and insulin sensitivity. Reduced fat accumulation may be a result of robust carbohydrate usage that reduces fatty acid synthesis.

BENEFITS

- Regulates insulin sensitivity and maintain metabolism.
- Stimulate fatty acid oxidation.
- Enhance glucose uptake and clearance into muscle.
- Stimulate glucose utilization.
- Coordinates cellular glucose, mitochondrial, and fatty acid metabolism.
- Increased energy expenditure and heat production.
- Reduction of fat accumulation.

