



## Mechanism of Action

MOTS-C is a mitochondrial-derived peptide encoded by the mitochondrial genome. In research models, it has been shown to translocate to the nucleus during metabolic stress, activating AMPK-dependent pathways that regulate cellular metabolism. This peptide has demonstrated influence on glucose metabolism, fatty acid utilization, and cellular stress adaptation in experimental settings.

## Laboratory Considerations

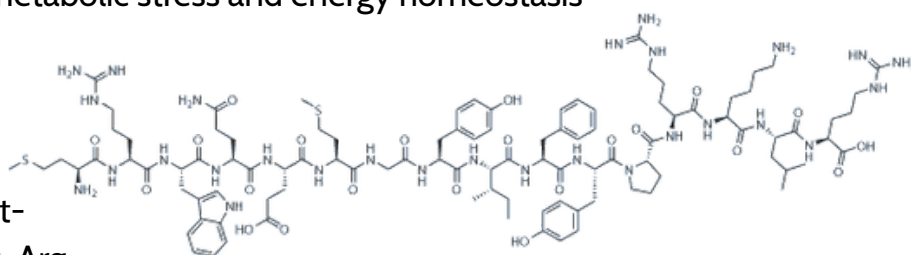
- Store lyophilized powder at -20°C
- Reconstituted solutions should be stored at 4°C
- Avoid oxidizing agents during handling and experimentation

## Research Applications

- Cellular metabolism and mitochondrial function research
- Investigation of AMPK signaling pathways and metabolic stress responses
- Models examining glucose utilization and insulin sensitivity
- Research on cellular adaptations to metabolic stress and energy homeostasis

## Molecular Profile

- Chemical Formula:  $C_{75}H_{125}N_{23}O_{23}S$
- Molecular Weight: 1,618.9 Da
- Sequence: Met-Arg-Trp-Gln-Glu-Met-Gly-Tyr-Ile-Phe-Tyr-Pro-Arg-Lys-Leu-Arg



## References

1. Lee C, et al. The mitochondrial-derived peptide MOTS-c promotes metabolic homeostasis and reduces obesity and insulin resistance. *Cell Metab.* 2015;21(3):443-454.
2. Kim SJ, et al. The mitochondrial-derived peptide MOTS-c is a regulator of plasma metabolites and enhances insulin sensitivity. *Physiol Rep.* 2019;7(13):e14171.
3. Lu H, et al. MOTS-c peptide regulates adipose homeostasis to prevent ovariectomy-induced metabolic dysfunction. *J Mol Med.* 2019;97(4):473-485.
4. Reynolds JC, et al. MOTS-c is an exercise-induced mitochondrial-encoded regulator of age-dependent physical decline and muscle homeostasis. *Nat Commun.* 2021;12(1):470.