



# 5-AMINO-1MQ

## Research Applications

US Peptide Co

### Mechanism of Action

5-Amino-1MQ is a selective inhibitor of nicotinamide N-methyltransferase (NNMT), an enzyme that catalyzes the methylation of nicotinamide. In research models, inhibition of NNMT increases cellular NAD<sup>+</sup> levels by reducing nicotinamide clearance, thereby enhancing NAD<sup>+</sup>-dependent enzymatic activities including sirtuins. This mechanism influences cellular energy metabolism, mitochondrial function, and metabolic homeostasis, making it valuable for studying NAD<sup>+</sup> biology and cellular energetics.

## Molecular Profile

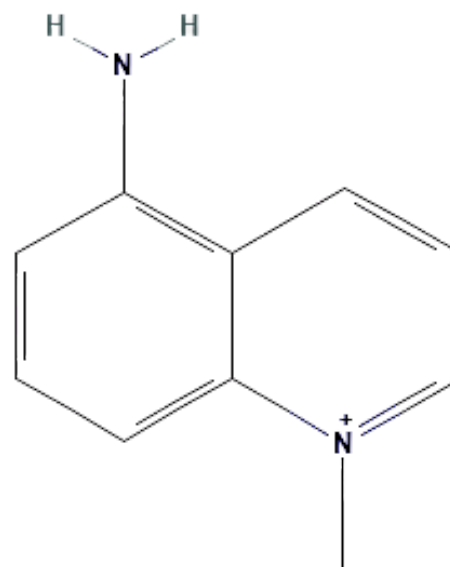
- Chemical Formula:  $C_{10}H_{11}N_2^+$
- Molecular Weight: 137.14 Da
- IUPAC Name: 5-amino-1-methylquinolin

## Laboratory Considerations

- Store powder at room temperature in a dry environment
- For extended stability, store at  $-20^{\circ}\text{C}$
- Protect from light during storage and experimentation

## Research Applications

- NNMT enzyme inhibition research
- Investigation of cellular methylation pathway regulation
- Models examining NAD<sup>+</sup> metabolism and energy homeostasis
- Research on cellular aging and metabolic dysfunction



## References

1. Ulanovskaya OA, et al. NNMT promotes epigenetic remodeling in cancer by creating a metabolic methylation sink. *Nat Chem Biol.* 2013;9(5):300-306.
2. Kraus D, et al. Nicotinamide N-methyltransferase knockdown protects against diet-induced obesity. *Nature.* 2014;508(7495):258-262.
3. Komatsu M, et al. Inhibition of NNMT by 5-amino-1MQ activates cellular energy metabolism and extends lifespan in *C. elegans*. *Aging Cell.* 2020;19(11):e13238.
4. Hong S, et al. Nicotinamide N-methyltransferase regulates hepatic nutrient metabolism through Sirt1 protein stabilization. *Nat Med.* 2015;21(8):887-894.