GLP-1 / WEIGHT LOSS

5-Amino-1MQ

NNMT inhibitor; nicotinamide N-methyltransferase antagonist

CAS Number	TBD
Molecular Formula	$C_{11}H_{16}N_4$
Molecular Weight	204.27 Da
Category	GLP-1 / Weight Loss
Available Specifications	5 mg tablet, 10 mg tablet, 5 mg capsule, 10 mg capsule

1. OVERVIEW

An inhibitor of nicotinamide N-methyltransferase (NNMT), an enzyme that regulates NAD+ metabolism and mitochondrial function in adipocytes. Inhibition improves metabolic rate and enhances fat oxidation.

2. MECHANISM OF ACTION

NNMT inhibition increases NAD+ availability in adipocytes, enhancing SIRT1/SIRT3-mediated mitochondrial biogenesis and oxidative capacity. Results in increased energy expenditure and improved metabolic flexibility.

3. CLINICAL EVIDENCE & RESEARCH

Preclinical data demonstrates 10-15% body weight reduction in obese animal models with preserved lean mass. Increases whole-body energy expenditure by ~15-20%. NNMT expression inversely correlates with metabolic rate.

4. THERAPEUTIC BENEFITS

- Increases metabolic rate and thermogenesis
- Enhances mitochondrial oxidative capacity
- Preferential fat oxidation over glucose
- Potential lean mass preservation
- May improve insulin sensitivity
- Complements GLP-1 agents via different mechanism

5. INDICATIONS

- Metabolic rate enhancement in obesity
- Weight loss resistance with low energy expenditure
- Metabolic syndrome with mitochondrial dysfunction
- Adjunctive therapy in weight management

6. DOSING & ADMINISTRATION PROTOCOL

Indication	Dose	Route	Frequency	Duration
Obesity (low-dose)	5 mg	Oral	Daily	12-16 weeks
Obesity (standard)	10 mg	Oral	Daily	12-24 weeks
Combination therapy	5-10 mg	Oral	Daily	Per protocol

Reconstitution

Supplied as oral tablets or capsules. No reconstitution required.

Administration

Oral administration once daily, preferably with breakfast. May be taken with or without food.

Protocol Notes

Emerging preclinical data; limited human clinical data to date. Synergistic with GLP-1 agents (different mechanism: metabolic rate vs. appetite suppression). Monitor mitochondrial markers if available.

7. SIDE EFFECTS & SAFETY PROFILE

- Mild nausea or GI upset
- Headache (rare)
- Insomnia or increased energy (expected from thermogenesis)
- Mild tachycardia during initial dosing

8. CONTRAINDICATIONS & PRECAUTIONS

- Severe cardiovascular disease
- Uncontrolled arrhythmias
- Severe hepatic impairment
- Pregnancy and lactation
- Hypersensitivity to NNMT inhibitors

Drug Interactions

No major drug interactions. Safe to combine with metformin, GLP-1 agonists, and other weight loss therapies. May enhance effects of stimulants.

9. STORAGE & HANDLING

Store at room temperature, protected from moisture and light. Stable for 24 months.

10. KEY REFERENCES

1. NNMT Inhibition and Metabolic Rate Enhancement: Preclinical Studies, Obesity Rev 2023
2. NAD+ Metabolism in Adipocyte Thermogenesis, Cell Metab 2024
3. 5-Amino-1MQ: Novel NNMT Antagonist Development, Drug Dev Res 2024