

# 5Amino1MQ (5-amino-1-methylquinoline)



## What is 5Amino1MQ?

5Amino1MQ is a short peptide inhibitor of cytosolic nicotinamide N-methyltransferase (NNMT). The NNMT enzyme has been linked to both obesity and type 2 diabetes and is known to play a role in energy homeostasis within the cell. Inhibiting NNMT leads to weight loss, decreased fat mass and fat cell size, and lower glucose levels.

NNMT is found in many cells throughout the body but is most abundant in liver and fat cells. High levels of NNMT are associated with decreased levels of the sugar transporter glucose transporter protein type-4 (GLUT4)<sup>1</sup>.

GLUT4, which is primarily in striated muscle and fat cells, lower levels are linked to higher blood sugar levels and the development of diabetes. Individuals with higher levels of GLUT4 tend to have a higher metabolism and burn more calories as a result. GLUT4 and NNMT are directly correlated to basal metabolism. Higher levels of NNMT are often found in the fat cells of animals with insulin resistance<sup>2</sup>.

## Why use 5Amino1MQ?

The net result of administering a NNMT inhibitor is an increase in energy burning and a decrease in energy storage. The results from administering an inhibitor are decreased need for insulin, decreased insulin resistance, decreased fat production, and increased energy metabolism.

Research suggests (non-human studies) that by boosting GLUT4 expression, 5amino1MQ may alter the way fat cells work, leading them to produce an alternative class of lipids that have anti-diabetic and anti-inflammatory effects<sup>3</sup>. This class of lipids, PAHSA (palmitic acid esters of hydroxy-stearic acids), can reduce insulin resistance on their own and reduce inflammation leading to improved risk profiles.

5amino1MQ has been shown to increase the levels of nicotinamide adenine dinucleotide (NAD<sup>+</sup>), which plays a role in cellular metabolism in adipose tissue. Increased NAD<sup>+</sup> levels will help metabolic rate and will cause fat cells to shrink in size<sup>4</sup>.

## Benefits of 5Amino1MQ:

1. Increase fat metabolism
2. Reduce fat storage
3. Improve energy expenditure
4. Helps facilitate weight loss

## Potential side effects:

1. Insomnia – If taken too late in the day, it may interfere with sleep due to increased cellular energy regulators.
2. Mild headaches – Especially when first starting use.
3. Nausea – Some users report feeling slightly queasy, particularly if taken on an empty stomach.
4. Increased heart rate – This is likely due to the boost in metabolism.

## How to use 5Amino1MQ?

The 5amino1MQ is administered daily with 2 capsules per day (each capsule is 50mg). Typically, 5amino1MQ is cycled by taking for 4-8 weeks followed by a break (minimum of 30 days).

At this time 5amino1MQ is not FDA approved and has many clinical trials on-going. Data sourced for this review was from animal models as limited data is available from human studies.

## Literature Cited

<sup>1</sup> <https://www.ncbi.nlm.nih.gov/books/NBK537322/>

<sup>2</sup> <https://pubmed.ncbi.nlm.nih.gov/16227617/>

<sup>3</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0006295217306718>

<sup>4</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5826726/>