

NAC

Dietary Supplement

For Healthcare Professionals Only

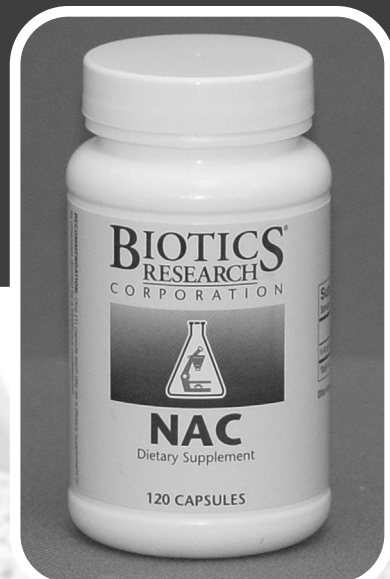
NAC *N-Acetyl-L-Cysteine*

N-Acetyl-L-Cysteine, an acetylated form of cysteine, is readily absorbed to immediately provide an efficient precursor of cysteine for continued glutathione (GSH) synthesis.

The amino acid cysteine in its pre-acetylated form is known as N-Acetyl-L-Cysteine. It is essential for glutathione synthesis as it serves as the precursor to glutathione intracellular synthesis.^{1,2} Glutathione is a critical component of the immune system, as it is an important intracellular water-soluble antioxidant. As part of this function, glutathione plays a vital role as the cofactor for the antioxidant enzymes glutathione peroxidase and glutathione transferase. Glutathione is also important to the liver, as the liver utilizes it for drug detoxification. As a metabolite of cysteine, NAC plays an important role in detoxification. As a more stable form of L-Cysteine, NAC functions in protecting cells against oxidative stress.³ Additionally, NAC contributes to important bodily reactions, making it a part of a defensive mechanism toward potential carcinogens as well as against DNA damage. The role of NAC in acetaminophen toxicity is widely documented, however, NAC contributes to other protective mechanisms, including drug conjugation and excretion, peroxides and free radical destruction, maintenance of the redox state of NADPH-NADP, acid-base balance, and the synthesis of sulfated compounds.⁴ NAC also plays a role in the development of the central nervous system.⁵

The protective method of NAC has been attributed to its:

- Nucleophilicity, antioxidant activity
- Modulation of the metabolism
- Effects in the mitochondria
- Decrease in the biologically effective dose of carcinogens
- Modulation of DNA repair
- Inhibition of genotoxicity and cell transformation
- Modulation of gene expression and signal transduction pathways
- Regulation of cell survival and apoptosis
- Anti-inflammatory activity and anti-angiogenic activity
- Immunological effects
- Inhibition of cellular dysfunction
- Influence on cell cycle progression
- Inhibition of hypercellular growth
- Inhibition of invasion and abnormal cell proliferation
- Ability to block NF-kappaB activation⁶
- Protection against the adverse effects of chemopreventive and chemotherapeutic agents¹



For additional information call: (800) 231 - 5777

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There have been numerous studies using NAC, with COPD, particularly amongst patients who smoke. Utilizing NAC in smokers with chronic bronchitis showed a significant reduction in the number of positive bacterial cultures in these patients.⁷ An additional six-month study demonstrating the effects of NAC on chronic bronchitis indicated a significant reduction in sick-leave days for the NAC group, compared to placebo. Another study utilizing NAC indicated potential benefits for chronic bronchitis, resulting in a significantly lower exacerbation rate in patients administered NAC, compared to placebo.⁸ In the group administered NAC, 40% remained free from exacerbations, compared to 19% in the placebo group. The study also indicated that the sick-leave rate due to exacerbation in the NAC group was significantly infrequent.⁹ NAC has also shown to be radioprotectant against oxidative damage.¹⁰ Researchers have sited the beneficial use of NAC for the improvement of insulin sensitivity in women with polycystic ovary syndrome (PCOS), noting a significant improvement in circulating insulin levels, as well as insulin sensitivity in these patients.¹¹

As it easily passes through cellular membranes, NAC has been shown to be readily absorbed. It is also resistant to enzymatic breakdown and is important for cellular glutathione production.¹² NAC supplies 500mg of N-Acetyl-L-Cysteine per tablet.

References

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Supplement Facts

Serving Size: 1 Capsule

	Amount Per Serving	% Daily Value
N-Acetyl-L-Cysteine	500 mg	*
*Daily Value not established		

Other ingredients: Cellulose, gelatin, water and glycerin.

RECOMMENDATION: One (1) capsule each day as a dietary supplement or as otherwise directed by a healthcare professional.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.

Sealed with an imprinted safety seal for your protection.

Contains: 120 Capsules

Product #: 5205

NDC: 55146-05205

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