

CerefolinNAC[®] Caplets

DESCRIPTION

CerefolinNAC[®] is a medical food dispensed by prescription for the clinical dietary management of certain metabolic processes identified with early memory loss. Use under medical supervision.

Each oval coated blue colored caplet contains:

Dietary Ingredients:

L-methylfolate Calcium (as Metafolin [®])*	6 mg	*CAS#151533-22-1
Methylcobalamin	2 mg	
N-Acetylcysteine	600 mg	

Dietary Ingredients:

N-acetylcysteine, Microcrystalline Cellulose, Opadry II Blue 07F90856 (Hypromellose, Talc, Titanium Dioxide, Polyethylene Glycol, FD&C Blue #2-Aluminum Lake, Saccharin Sodium), and Magnesium Stearate (Vegetable Source), L-methylfolate Calcium, Methylcobalamin.

CerefolinNAC[®] caplets do not contain sugar, lactose, yeast or gluten.

Medical foods are intended for a patient who has a limited or impaired capacity to ingest, digest, absorb, or metabolize ordinary foodstuffs or certain nutrients, or who has other special medically determined nutrient requirements, the dietary management of which cannot be achieved by the modification of the normal diet alone.¹ This product is not an Orange Book product.

CerefolinNAC[®] is a medical food dispensed by prescription.

CLINICAL PHARMACOLOGY

CerefolinNAC[®] is a medical food, which consists of a proprietary biologically active folate, B-vitamins, and antioxidant, derived from food sources.

INDICATIONS AND USAGE

CerefolinNAC[®] is indicated for the distinct nutritional requirements of individuals under treatment for early memory loss² with particular emphasis for those individuals diagnosed with or at risk for neurovascular oxidative stress^{3,4,5} and/or hyperhomocysteinemia⁶; mild to moderate cognitive impairment with or without vitamin B₁₂ deficiency^{7,8}, vascular dementia^{8,9,10} or Alzheimer's disease^{4,8,9,11}

CONTRAINDICATIONS

CerefolinNAC[®] is contraindicated in patients with known hypersensitivity to any of the components contained in this product.

PRECAUTIONS

General:

Folic acid, when administered in daily doses above 0.1mg, may obscure the detection of B₁₂ deficiency (specifically, the administration of folic acid may reverse the hematological manifestations of B₁₂ deficiency, including pernicious anemia, while not addressing the neurological manifestations). L-methylfolate Calcium may be less likely than folic acid to mask vitamin B₁₂ deficiency.^{13,14} Folate therapy alone is inadequate for the treatment of a B₁₂ deficiency.

N-acetyl-L-cysteine should be avoided by nursing mothers.¹⁵ N-acetyl-L-cysteine clearance is reduced in those with chronic liver disease as well as in pre-term newborns.¹⁵ Headaches may be intensified in those taking N-acetyl-L-cysteine and nitrates for the treatment of angina.¹⁵ While the incidence of renal stones is slow, those that do form renal stones, particularly cysteine stones should avoid CerefolinNAC[®].¹⁵ Do not administer CerefolinNAC[®] to critical ill patients.¹⁵ N-acetyl-L-cysteine and its sulfhydryl metabolites could produce a false-positive result in the nitroprusside test for ketone bodies used in diabetes.¹⁵ N-acetyl-L-cysteine should be used with caution in those with a history of peptic ulcer disease since N-acetyl-L-cysteine may disrupt the gastric mucosal barrier.¹⁵

Patient Information:

CerefolinNAC[®] is a medical food¹ for use under medical supervision and direction.

CerefolinNAC[®] is a medical food dispensed by prescription.

Interaction with Drugs:

Before using this product, tell your doctor or pharmacist of all the products you use. Keep a list of all your medications with you, and share the list with your doctor and pharmacist. No decrease in effectiveness of drugs has been reported with the use of CerefolinNAC[®].

CerefolinNAC[®] may have interactions with the following:

- Antibiotics: Chloramphenicol, evidence from case reports indicates that chloramphenicol can interfere with the red blood cell response to methylcobalamin.¹²
- Antiepileptic drugs (AED): The AED class including, but not limited to, phenytoin, carbamazepine, primidone, valproic acid, phenobarbital and lamotrigine have been shown to impair folate absorption and increase the metabolism of circulating folate. Additionally, concurrent use of folic acid has been associated with enhanced phenytoin metabolism, lowering the level of this AED in the blood and allowing breakthrough seizures to occur.^{16,17,18,19}
- Capecitabine (Xeloda[®]) toxicity may increase with the addition of leucovorin (5-formyltetrahydrofolate) (folate).²⁰
- Cholestyramine, Cholchicines, Colestipol: may decrease the enterohepatic re-absorption of methylcobalamin.¹²
- Dihydrofolate Reductase Inhibitors (DHFRIs): DHFRIs block the conversion of folic acid to its active forms, and lower plasma and red blood cell folate levels. DHFRIs include aminopterin, methotrexate, pyrimethamine, triamterene, and trimethoprim.¹⁸
- Isotretinoin: Reduced folate levels have occurred in some patients taking isotretinoin.²¹
- Nitroglycerin: N-acetylcysteine strongly potentiates the effect of nitroglycerin and related medications, and caution should be used in patients receiving both these agents in whom it may cause hypotension.²²
- Nonsteroidal Anti-inflammatory Drugs (NSAIDs): NSAIDs have been shown to inhibit some folate dependent enzymes in laboratory experiments. NSAIDs include ibuprofen, naproxen, indomethacin and sulindac.¹⁸

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- Oral Contraceptives: Serum folate and methylcobalamin levels may be depressed by oral contraceptive therapy.^{12,18}
- Methylprednisolone: Reduced serum folate levels have been noted after treatment with methylprednisolone.¹⁸
- Metformin treatment in patients with type 2 diabetes decreases serum folate and methylcobalamin.^{12,23,24}
- Nitrous Oxide: can produce a functional methylcobalamin deficiency.¹²
- Pancreatic Enzymes: Reduced folate levels have occurred in some patients taking pancreatic extracts.¹⁸
- Para-aminosalicylic acid: may decrease absorption of methylcobalamin.¹²
- Pentamidine: Reduced folate levels have been seen with prolonged intravenous pentamidine.¹⁸
- Potassium Chloride: may decrease absorption of methylcobalamin.¹²
- Warfarin can produce significant impairment in folate status after a 6-month therapy.²⁵

ADVERSE REACTIONS

Allergic reactions have been reported following the use of oral L-methylfolate Calcium.¹⁸ Mild transient diarrhea, polycythemia vera, itching, transitory exanthema and the feeling of swelling of the entire body has been associated with methylcobalamin.¹² Nausea, vomiting, diarrhea, transient skin rash, flushing, epigastric pain, and constipation have been associated with N-acetyl-L-cysteine.^{15,26}

DOSAGE AND ADMINISTRATION

The usual adult dose is one caplet daily or as directed under medical supervision.

HOW SUPPLIED

CerefolinNAC[®] is a medical food dispensed by prescription.

Available as an oval coated blue colored caplet. Debossed with "PAL" on one side and "600" on the other.

Commercial Product (90 caplets)	0525-0510-90*	Use under medical/physician supervision.
Sample Product Bottle (3 caplets)	0525-0510-03*	Professional Samples – Not for sale.

*Pamlab LLC does not represent these product codes to be a National Drug Codes (NDC). Product codes are formatted according to standard industry practice, to meet the formatting requirements of pharmacy and health insurance computer systems.

Storage:

Store at controlled room temperature 15°C to 30°C (59°F to 86°F) (See USP). Protect from heat, light and moisture.

PATENTS

Some or all of the following patents may apply:

U.S. Patent No. 5,563,126	U.S. Patent No. 6,297,224
U.S. Patent No. 5,795,873	U.S. Patent No. 6,441,168B1
U.S. Patent No. 6,008,221	U.S. Patent No. 6,451,360
U.S. Patent No. 6,011,040	U.S. Patent No. 6,528,496
U.S. Patent No. 6,207,651	U.S. Patent No. 7,709,460B2
U.S. Patent No. 6,254,904	and other pending patent applications

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