

hiv/aids treatment strategies: IMMUNE SUPPORT



3224 yoakum blvd
houston, tx 77006
houstonbuyersclub.com
(713) 520-5288

k-pax immune support



- **What is it?** K-Pax is a blend of vitamins, minerals, and naturally occurring nutraceuticals including antioxidants, acetyl-carnitine, and alpha lipoic acid.
- **Why it's used:** In a placebo-controlled clinical trial, K-Pax was shown to increase CD4 count by 24%¹.
- **Safety:** The manufacturer states that no side effects or drug interactions have been observed, and there are no contraindications of use.
- **Recommended usage:**
 - **Under 120 lbs:** 4 capsules, twice a day
 - **Over 120 lbs:** 8 capsules, twice a day*Note: for lower-cost alternatives, contact Houston Buyers Club*



cm4, omega pharmaceutical inc.

- **What is it?** A proprietary plant glycoside formulation.
- **Why it's used:** Has exhibited anti-viral activity, reduction of TNF- α , enhancement of heat shock proteins, suppression of cellular HIV receptors, and reversal of unintentional weight loss². Anecdotal reports of increased CD-4 and decreased viral loads.
- **Safety:** In animal studies, CM4 has demonstrated to be non-toxic. Studies involving over 1,000 human participants reported no toxicity or side-effects³. This product is contraindicated for patients with uncontrolled hypertension.
- **Recommended usage:** 1 ml at breakfast and lunch

green tea extract



- **What is it?** Powerful antioxidants found in green tea – epicatechin and epigallocatechin (EGCG).
- **Why it's used:** EGCG prevents HIV binding of T-cell receptors^{4,5}. Acts as antioxidant and anti-inflammatory agent.
- **Safety:** Green tea is generally well tolerated but contains caffeine⁶. Precautions regarding caffeine use apply.
- **Recommended usage:** 500 mg EGCG, twice a day

1. Kaiser JD, Campa AM, Ondercin JP, et al. Micronutrient supplementation increases CD4 count in HIV-infected individuals on highly active antiretroviral therapy: a prospective, double-blinded, placebo-controlled trial. *J Acquir Immune Defic Syndr.* 2006;42:523-8.
2. Omega Pharmaceuticals, Inc. CM4 – research effects. Internet: http://www.omegapharmaceuticals.com/cm4_effects.asp (accessed 8 Sept 2009).
3. Omega Pharmaceuticals, Inc. CM4 – toxicology. Internet: http://www.omegapharmaceuticals.com/cm4_toxicology.asp (accessed 8 Sept 2009).
4. Nance CL, Siwak EB, Shearer WT. Preclinical development of the green tea catechin, epigallocatechin gallate, as an HIV-1 therapy. *J Allergy Clin Immunol.* 2009;123:459-65.
5. Williamson MP, McCormick TG, Nance CL, Shearer WT. Epigallocatechin gallate, the main polyphenol in green tea, binds to the T-cell receptor, CD4: Potential for HIV-1 therapy. *J Allergy Clin Immunol.* 2006;118:1369-74.
6. National Institute of Health, National Center for Complementary and Alternative Medicine. Green tea. Version current Nov 2008. Internet: <http://nccam.nih.gov/health/greentea/index.htm> (accessed 8 Sept 2009).

hiv/aids treatment strategies: WEIGHT LOSS & WASTING



3224 yoakum blvd
houston, tx 77006
houstonbuyersclub.com
(713) 520-5288

L-glutamine



- **What is it?** An amino acid, which is also the most abundant amino acid in muscle protein.
- **Why it's used:** Glutamine is lost during catabolic stress. Supplementation of glutamine decreases protein breakdown, increases muscle mass^{1, 2}, and increases body weight³.
- **Safety:** A study assessing the safety of glutamine and HMB for AIDS found no adverse effects on health status⁴.
- **Recommended usage:**
 - **Severe Wasting:** 5 to 15 grams three times a day in water
 - **Weight Maintenance:** 5 to 10 grams once a day in water
 - Note: must be taken on empty stomach 30 minutes before meals, or 2 hours after*

hydroxy methylbutyrate (hmb)



- **What is it?** A metabolite of the amino acid leucine.
- **Why it's used:** Decreases protein breakdown, and increases muscle mass^{1,2,5}.
- **Safety:** A study assessing the safety of glutamine and HMB for AIDS found no adverse effects on health status⁴.
- **Recommended usage:** 1 gram, three times a day

protein supplements



- **What is it?** Powdered form of protein, usually from milk, eggs or soy.
- **Why it's used:** Hypermetabolic state due to chronic illness results in protein catabolism to meet energy needs. Those with HIV/AIDS should receive 2 to 2.5 g/kg body weight protein daily⁶.
- **Safety:** No safety concerns unless renal impairment is present.
- **Recommended usage:** 35 grams, one to two times a day

1. Clark RH, Feleke G, Din M, Yasmin T, Singh G, Khan FA, Rathmacher JA. Nutritional treatment for acquired immunodeficiency virus-associated wasting using beta-hydroxy beta-methylbutyrate, glutamine, and arginine: a randomized, double-blind, placebo-controlled study. *J Parenter Enteral Nutr.* 2000;24:133-9.
2. May PE, Barber A, D'Olimpio JT, Hourihane A, Abumrad NN. Reversal of cancer-related wasting using oral supplementation with a combination of beta-hydroxy-beta-methylbutyrate, arginine, and glutamine. *Am J Surg.* 2002;183:471-9.
3. Shabert JK, Winslow C, Lacey JM, Wilmore DW. Glutamine-antioxidant supplementation increases body cell mass in AIDS patients with weight loss: a randomized, double-blind controlled trial. *Nutrition.* 1999;15:860-4.
4. Rathmacher JA, Nissen S, Panton L, Clark RH, Eubanks May P, Barber AE, D'Olimpio J, Abumrad NN. Supplementation with a combination of beta-hydroxy-beta-methylbutyrate (HMB), arginine, and glutamine is safe and could improve hematological parameters. *J Parenter Enteral Nutr.* 2004;28:65-75.
5. Smith HJ, Wyke SM, Tisdale MJ. Mechanism of the attenuation of proteolysis-inducing factor stimulated protein degradation in muscle by beta-hydroxy-beta-methylbutyrate. *Cancer Res.* 2004;64:8731-5.
6. Escott-Stump, S. Nutrition and diagnosis-related care. 6th ed. In: *AIDS and HIV infection.* Baltimore, MD: Lippincott Williams and Wilkins, 2008;762-9.

hiv/aids treatment strategies: NEUROPATHY



3224 yoakum blvd
houston, tx 77006
houstonbuyersclub.com
(713) 520-5288

acetyl L-carnitine



- **What is it?** A compound found in the body which is important for energy metabolism.
- **Why it's used:** Improves pain associated with peripheral neuropathy, and helps regenerate nerve fibers^{1,2}.
- **Safety:** Acetyl L-carnitine has a long history of use and is considered to be safe. Muscle weakness may occur in uremic patients, and seizures in those with seizure disorders³.
- **Recommended usage:** 500 to 1,000 mg, three times a day

alpha lipoic acid



- **What is it?** Enzyme cofactor involved in aerobic metabolism.
- **Why it's used:** Improves pain related to peripheral neuropathy^{4,5}.
- **Safety:** ALA is considered safe⁵. A 2-yr study of rats found no observed adverse effects at 60 mg/kg body weight per day⁶.
- **Recommended usage:** 100 to 300 mg, twice a day

vitamin b-complex 100



- **What is it?** A combination of B vitamins in high potency dosages of 100 mg or mcg.
- **Why it's used:** B vitamins, specifically B₁, B₆ and B₁₂ have an analgesic effect on nerves; animal studies have shown benefits for neuropathic pain^{7,8}.
- **Safety:** Vitamin B₆ (pyridoxine) at doses above 500 mg/day for prolonged periods can cause neuropathy.
- **Recommended usage:** 1 B₁₀₀, twice a day with food

1. Herzmann C, Johnson MA, Youle M. Long-term effect of acetyl-L-carnitine for antiretroviral toxic neuropathy. HIVClin Trials. 2005;6:344-50.

2. Osio M, Muscia F, Zampini L, Nascimbene C, Mailland E, Cargenel A, Mariani C. Acetyl-L-carnitine in the treatment of painful antiretroviral toxic neuropathy in human immunodeficiency virus patients: an open label study. J Peripher Nerv Syst. 2006;11:72-6.

3. National Institutes of Health, Office of Dietary Supplements. Carnitine. Version current 6 June 2006. Internet: <http://ods.od.nih.gov/factsheets/carnitine.asp> (accessed 9 Sept 2009).

4. Jin HY, Joung SJ, Park JH, Baek HS, Park TS. The effect of alpha-lipoic acid on symptoms and skin blood flow in diabetic neuropathy. Diabet Med. 2007;24:1034-8.

5. Foster TS. Efficacy and safety of alpha-lipoic acid supplementation in the treatment of symptomatic diabetic neuropathy. Diabetes Educ. 2007;33:111-7.

6. Cremer DR, Rabeler R, Roberts A, Lynch B. Long-term safety of alpha-lipoic acid (ALA) consumption: A 2-year study. Regul Toxicol Pharmacol. 2006;46:193-201.

7. Wang ZB, Gan Q, Rupert RL, Zeng YM, Song XJ. Thiamine, pyridoxine, cyanocobalamin and their combination inhibit thermal, but not mechanical hyperalgesia in rats with primary sensory neuron injury. Pain. 2005;114:266-77.

8. Caram-Salas NL, Reyes-Garcia G, Medina-Santillan R, Granados-Soto, V. Thiamine and cyanocobalamin relieve neuropathic pain in rats: synergy with dexamethasone. Pharmacology. 2006;77:53-62.

hiv/aids treatment strategies: DIARRHEA



3224 yoakum blvd
houston, tx 77006
houstonbuyersclub.com
(713) 520-5288



L-glutamine

- **What is it?** An amino acid, which is also the most abundant amino acid in muscle protein.
- **Why it's used:** Glutamine reduces incidence and severity of diarrhea associated with HAART¹⁻³.
- **Safety:** A study assessing the safety of glutamine and HMB for AIDS found no adverse effects on health status⁴.
- **Recommended usage:** 5 to 10 grams, several times a day mixed in water
Note: must be taken on empty stomach 30 minutes before meals, or 2 hours after

probiotics



- **What is it?** Beneficial bacteria that live in the gut.
- **Why it's used:** Help prevent diarrhea caused by unfriendly bacteria due to medication use^{1,5}. Helps maintain integrity of mucosal wall⁶. Helps prevent candida infection.
- **Safety:** Probiotics are well-tolerated; initially may have mild side effects of gas and bloating.
- **Product suggestion:** Enteric-coated, room temperature stable probiotic blend.
- **Recommended usage:** 10 billion CFU, three times a day
Note: if taking antibiotics, must be taken 30 minutes before or 2 hours after antibiotics

digestive enzymes



- **What is it?** Enzymes which help to break down food.
- **Why it's used:** Help prevent diarrhea and steatorrhea by ensuring complete breakdown of food^{7,8}.
- **Product suggestion:** Look for a product containing lipase, amylase and protease.
- **Recommended usage:** 1 or 2 capsules with meals

1. Heiser CR, Ernst JA, Barrett JT, French N, Schutz M, Dube MP. Probiotics, soluble fiber, and L-Glutamine (GLN) reduce nelfinavir (NFV)- or lopinavir/ritonavir (LPV/r)-related diarrhea. *J Int Assoc Physicians AIDS Care.* 2004;3(4):121-129.

2. Bushen OY, Davenport JA, Lima AB, et al. Diarrhea and reduced levels of antiretroviral drugs: improvement with glutamine or alanyl-glutamine in a randomized controlled trial in northeast Brazil. *Clin Infect Dis.* 2004 Jun 15;38(12):1764-1770.

3. Huffman FG, Walgren ME. L-glutamine supplementation improves nelfinavir-associated diarrhea in HIV-infected individuals. *HIV Clin Trials.* 2003;4(5):324-329.

4. Rathmacher JA, Nissen S, Pantan L, et al. Supplementation with a combination of beta-hydroxy-beta-methylbutyrate (HMB), arginine, and glutamine is safe and could improve hematological parameters. *J Parenter Enteral Nutr.* 2004;28:65-75.

5. Anukam KC, Osazuwa EO, Osadolor HB, Bruce W, Reid G. Yogurt containing probiotic Lactobacillus rhamnosus R-1 and L. reuteri RC-14 helps resolve moderate diarrhea and increases CD4 count in HIV/AIDS patients. *J Clin Gastroenterol.* 2008;42:239-43.

6. Menningen R, Bruewer M. Effect of probiotics on intestinal barrier function. *Ann N Y Acad Sci.* 2009;1165:183-9.

7. Wignot TM, Stewart RP, Schray KJ, Das S, Sipsos T. In vitro studies of the effects of HAART drugs and excipients on activity of digestive enzymes. *Pharm Red.* 2004;21:420-7.

8. Carroccio A, Guarino A, Zuin G, Verghi F, Berni Canani R, Fontana M, Bruzzese E, Montalto G, Notarbartolo A. Efficacy of oral pancreatic enzyme therapy for the treatment of fat malabsorption in HIV-infected patients. *Aliment Pharmacol Ther.* 2001;15(10):1619-1625.

hiv/aids treatment strategies: HYPERLIPIDEMIA



3224 yoakum blvd
houston, tx 77006
houstonbuyersclub.com
(713) 520-5288

fish oil



- **What is it?** Omega-3 fatty acids, a type of essential fatty acid found in cold water fish.
- **Why it's used:** Lowers triglycerides^{1,2}, decreases platelet aggregation, blood pressure and inflammation².
- **Safety:** Fish oil is considered to be very safe³. Caution with coumadin or aspirin as bleeding may occur.
- **Product suggestion:** High potency containing at least 400 mg EPA and 200 mg DHA per capsule; Make sure product is "molecularly distilled" or filtered to be free of PCB, mercury and other heavy metals.
- **Recommended usage:** 3 to 5 grams a day in divided doses

co-enzyme Q10



- **What is it?** A co-factor in energy metabolism.
- **Why it's used:** Statin use depletes Co-Q10 production which contributes to drug side effects^{4,5}. One study reported a 50% decrease in Co-Q10 levels 30 days after beginning statin therapy⁵.
- **Safety:** Coenzyme Q10 is naturally occurring in the body and considered safe. A 1-yr study of rats found no observed adverse effects at a human equivalent dose of 720 mg/day⁶.
- **Recommended usage:** 100 to 200 mg a day

L-carnitine



- **What is it?** A compound found in the body which is important for energy metabolism.
- **Why it's used:** Reduces LDL oxidation^{7,8} and Lp(a)⁹.
- **Safety:** L-carnitine has a long history of use and is considered to be safe. Muscle weakness may occur in uremic patients, and seizures in those with seizure disorders¹⁰.
- **Recommended usage:** 2 grams per day

1. De Truchis P, Kirstetter M, Perier A, et al. Reduction in triglyceride level with N-3 polyunsaturated fatty acids in HIV-infected patients taking potent antiretroviral therapy: a randomized prospective study. J Acquired Immune Defic Syndr. 2007;44:278-85.

2. Breslow JL. N-3 fatty acids and cardiovascular disease. Am J Clin Nutr. 2006;83:1477S-1482S.

3. National Institutes of Health, Office of Dietary Supplements. Omega-3 fatty acids and health. Version current 28 Oct 2005. Internet: <http://ods.od.nih.gov/FactSheets/Omega3FattyAcidsandHealth.asp> (accessed 14 Sept 2009).

4. Hargreaves IP, Duncan AJ, Heales SJ, Land JM. The effect of HMG-CoA reductase inhibitors on coenzyme Q10: possible biochemical/clinical implications. Drug Saf. 2005;8:659-76.

5. Rundek T, Naini A, Sacco R, Coates K, DiMauro S. Atorvastatin decreases the coenzyme Q10 level in the blood of patients at risk for cardiovascular disease and stroke. Arch Neurol. 2004;61:889-92.

6. Hidaka T, Fujii K, Funahashi I, Fukutomi N, Hosoe K. Safety assessment of coenzyme Q10 (CoQ10). Biofactors. 1008;32:199-208.

7. Augustyniak A, Stankiewicz A, Skrzydlewska E. The influence of L-carnitine on oxidative modification of LDL in vitro. Toxicol Mech Methods. 2008;18:455-62.

8. Malaguarnera M, Vacante M, Avitabile T, Malaguarnera M, Cammalleri L, Motta M. L-carnitine supplementation reduces oxidized LDL cholesterol in patients with diabetes. Am J Clin Nutr. 1009;89:71-6.

9. Galvano F, Li Volti G, Malaguarnera M, Avitabile T, Antic T, Vacante M, Malaguarnera M. Effects of simvastatin and carnitine versus simvastatin on lipoprotein(a) and apoprotein(a) in type 2 diabetes mellitus. Expert Opin Pharmacother. 2009;10:1875-82.

10. National Institutes of Health, Office of Dietary Supplements. Carnitine. Version current 6 June 2006. Internet: <http://ods.od.nih.gov/factsheets/carnitine.asp> (accessed 9 Sept 2009).