

Citations

1. Marangon K, Devaraj S, Tirosh O et al. Comparison of the effect of alpha-lipoic acid and alpha-tocopherol supplementation on measures of oxidative stress. *Free Radic Biol Med* 1999;27:1114-1121.
2. Yeaman SJ, Kirby JA, Jones DE. Autoreactive responses to pyruvate dehydrogenase complex in the pathogenesis of primary biliary cirrhosis. *Immunol Rev* 2000;174:238-249.
3. Biewenga GP, Haenen GR, Bast A. The pharmacology of the antioxidant lipoic acid. *Gen Pharmacol* 1997;29:315-331.
4. Lodge JK, Youn HD, Handelman GJ et al. Natural sources of lipoic acid: determination of lipoyllysine released from protease-digested tissues by high performance liquid chromatography incorporating electrochemical detection. *J Appl Nutr* 1997;49:3-11.
5. Hermann R, Niebch G, Borbe HO et al. Enantioselective pharmacokinetics and bioavailability of different racemic α -lipoic acid formulations in healthy volunteers. *Eur J Pharm Sci* 1996;4:167-174.
6. Hagen TM. Alpha-Lipoic Acid. Accessed October 31, 2003, at www.lpi.oregonstate.edu/infocenter/othernuts/la/index.html.
7. Rybak LP, Husain K, Whitworth C, Somani SM. Dose dependent protection by lipoic acid against cisplatin-induced ototoxicity in rats: antioxidant defense system. *Toxicol Sci* 1999;47:195-202.
8. Somani SM, Husain K, Whitworth C et al. Dose-dependent protection by lipoic acid against cisplatin-induced nephrotoxicity in rats: antioxidant defense system. *Pharmacol Toxicol* 2000;86:234-241.
9. Gedlicka C, Kornek GV, Schmid K, Scheithauer W. Amelioration of docetaxel/cisplatin induced polyneuropathy by alpha-lipoic acid. *Ann Oncol* 2003;14:339-340.
10. Culy CR, Clemett D, Wiseman LR. Oxaliplatin: a review of its pharmacological properties and clinical efficacy in metastatic colorectal cancer and its potential in other malignancies. *Drugs* 2000;60:895-924.
11. Gedlicka C, Scheithauer W, Schull B, Kornek GV. Effective treatment of oxaliplatin-induced cumulative polyneuropathy with alpha-lipoic acid. *J Clin Oncol* 2002;20:3359-3361.
12. Tran Ba Huy P, Deffrennes D. Aminoglycoside ototoxicity: influence of dosage regimen on drug uptake and correlation between membrane binding and some clinical features. *Acta Otolaryngol* 1988;105:511-515.
13. Sandhya P, Varalakshmi P. Effect of lipoic acid administration on gentamicin-induced lipid peroxidation in rats. *J Appl Toxicol* 1997;17:405-408.
14. Conlon BJ, Aran JM, Erre JP, Smith DW. Attenuation of aminoglycoside-induced cochlear damage with the metabolic antioxidant alpha-lipoic acid. *Hear Res* 1999;128:40-44.
15. Shivakumar BR, Ravindranath V. Oxidative stress and thiol modification induced by chronic administration of haloperidol. *J Pharmacol Exp Ther* 1993;265:1137-1141.
16. Balijepalli S, Boyd MR, Ravindranath V. Inhibition of mitochondrial complex I by haloperidol: the role of thiol oxidation. *Neuropharmacology* 1999;38:567-577.
17. Sola S, Mir MQ, Cheema FA et al. Irbesartan and lipoic acid improve endothelial function and reduce markers of inflammation in the metabolic syndrome: results of the Irbesartan and Lipoic Acid in Endothelial Dysfunction (ISLAND) Study. *Circulation* 2005;111:343-348.
18. Melhem MF, Craven PA, Liachenko J, DeRubertis FR. Alpha-lipoic acid attenuates hyperglycemia and prevents glomerular mesangial matrix expansion in diabetes. *J Am Soc Nephrol* 2002;13:108-116.
19. El Midaoui A, de Champlain J. Prevention of hypertension, insulin resistance, and oxidative stress by alpha-lipoic acid. *Hypertension* 2002;39:303-307.
20. Gleiter CH, Schreeb KH, Freudenthaler S et al. Lack of interaction between thioctic acid, glibenclamide and acarbose. *Br J Clin Pharmacol* 1999;48:819-825.
21. Berger M, Habs M, Schmahl D. [Effect of thioctic acid (alpha-lipoic acid) on the chemotherapeutic efficacy of cyclophosphamide and vincristine sulfate]. *Arzneimittelforschung* 1983;33:1286-1288.
22. Faust A, Burkart V, Ulrich H et al. Effect of lipoic acid on cyclophosphamide-induced diabetes and insulinitis in non-obese diabetic mice. *Int J Immunopharmacol* 1994;16:61-66.
23. Brouwer CA, Gietema JA, van den Berg MP et al. Long-term cardiac follow-up in survivors of a malignant bone tumour. *Ann Oncol* 2006;17:1586-1591.
24. Al-Majed AA, Gdo AM, Al-Shabanah OA, Mansour MA. Alpha-lipoic acid ameliorates myocardial toxicity induced by doxorubicin. *Pharmacol Res* 2002;46:499-503.
25. Balachandar AV, Malarkodi KP, Varalakshmi P. Protective role of dlalpha-lipoic acid against Adriamycin-induced cardiac lipid peroxidation. *Hum Exp Toxicol* 2003;22:249-254.
26. Malarkodi KP, Balachandar AV, Sivaprasad R, Varalakshmi P. Prophylactic effect of lipoic acid against Adriamycin-induced peroxidative damages in rat kidney. *Ren Fail* 2003;25:367-377.

Citations and Reference Literature: Alpha-Lipoic Acid

27. Malarkodi KP, Balachandar AV, Varalakshmi P. Protective effect of lipoic acid on Adriamycin-induced lipid peroxidation in rat kidney. *Mol Cell Biochem* 2003;247:9-13.
28. Malarkodi KP, Balachandar AV, Varalakshmi P. The influence of lipoic acid on Adriamycin-induced nephrotoxicity in rats. *Mol Cell Biochem* 2003;247:15-22.
29. Malarkodi KP, Balachandar AV, Varalakshmi P. The influence of lipoic acid on Adriamycin-induced hyperlipidemic nephrotoxicity in rats. *Mol Cell Biochem* 2003;247:139-145.
30. Segermann J, Hotze A, Ulrich H, Rao GS. Effect of alpha-lipoic acid on the peripheral conversion of thyroxine to triiodothyronine and on serum lipid, protein and glucose levels. *Arzneimittelforschung* 1991;41:1294-1298.
31. Hagen TM, Liu J, Lykkesfeldt J et al. Feeding acetyl-L-carnitine and lipoic acid to old rats significantly improves metabolic function while decreasing oxidative stress. *Proc Natl Acad Sci U S A* 2002;99:1870-1875.
32. Liu J, Head E, Gharib AM et al. Memory loss in old rats is associated with brain mitochondrial decay and RNA/DNA oxidation: partial reversal by feeding acetyl-L-carnitine and/or R-alpha-lipoic acid. *Proc Natl Acad Sci U S A* 2002;99:2356-2361.
33. Reche PA. Lipoylating and biotinylating enzymes contain a homologous catalytic module. *Protein Sci* 2000;9:1922-1929.
34. Marquet A, Bui BT, Florentin D. Biosynthesis of biotin and lipoic acid. *Vitam Horm* 2001;61:51-101.
35. Grafe F, Wohlrab W, Neubert RH, Brandsch M. Transport of biotin in human keratinocytes. *J Invest Dermatol* 2003;120:428-433.
36. Zemleni J, Trusty TA, Mock DM. Lipoic acid reduces the activities of biotin-dependent carboxylases in rat liver. *J Nutr* 1997;127:1776-1781.
37. Kozlov AV, Gille L, Staniek K, Nohl H. Dihydrolipoic acid maintains ubiquinone in the antioxidant active form by two-electron reduction of ubiquinone and one-electron reduction of ubisemiquinone. *Arch Biochem Biophys* 1999;363:148-154.
38. Da Costa S, da Silva J. [Alpha-lipoic acid and the metabolism of copper and iron]. *Sangre (Barc)* 1962;7:367-385.
39. Gaetke LM, Chow CK. Copper toxicity, oxidative stress, and antioxidant nutrients. *Toxicology* 2003;189:147-163.
40. Sheline CT, Choi EH, Kim-Han JS et al. Cofactors of mitochondrial enzymes attenuate copper-induced death in vitro and in vivo. *Ann Neurol* 2002;52:195-204.
41. Lenin M, Latha LM, Nagaraj M, Varalakshmi P. Mitigation of free radical toxicity in hyperoxaluric condition by a novel derivative eicosapentaenoate-lipoate. *Hum Exp Toxicol* 2002;21:153-158.
42. Da Costa SF, da Silva JA. [Metabolic significance of alpha-lipoic acid. 3. Alpha-lipoic acid and iron metabolism (preliminary note)]. *J Soc Cienc Med Lisb* 1963;127:15-52.
43. Da Costa S, da Silva J, Correia JA, Maldonado FE. [Metabolic significance of alpha-lipoic acid. V. Comparative action of alpha-lipoic acid, vitamin B 12 and cocarboxylase on metabolism of copper and iron and on aminoacidurias (further observations)]. *Arq Patol* 1963;35:91-97.
44. Da Costa S, da Silva J, Maldonado FE. [Metabolic significance of alpha-lipoic acid. IV. Action of alpha-lipoic acid on ceruloplasmin and transferrin in different pathological conditions (preliminary report)]. *Arq Patol* 1963;35:3-19.
45. Scott BC, Aruoma OI, Evans PJ et al. Lipoic and dihydrolipoic acids as antioxidants: a critical evaluation. *Free Radic Res* 1994;20:119-133.
46. Packer L, Witt EH, Tritschler HJ. Alpha-lipoic acid as a biological antioxidant. *Free Radic Biol Med* 1995;19:227-250.
47. Lovell MA, Xie C, Xiong S, Markesbery WR. Protection against amyloid beta peptide and iron/hydrogen peroxide toxicity by alpha lipoic acid. *J Alzheimers Dis* 2003;5:229-239.
48. Ames BN. The metabolic tune-up: metabolic harmony and disease prevention. *J Nutr* 2003;133:1544S-1548S.
49. Persson HL, Yu Z, Tirosh O et al. Prevention of oxidant-induced cell death by lysosomotropic iron chelators. *Free Radic Biol Med* 2003;34:1295-1305.
50. Dudchenko NO, Mykhailik OM, Lubianova IP. [Effect of alpha-lipoic acid preparations on bilirubin and transferrin levels and ferritin iron and transferrin iron content]. *Ukr Biokhim Zh* 2001;73:102-105.
51. Berkson BM. A conservative triple antioxidant approach to the treatment of hepatitis C. Combination of alpha lipoic acid (thioctic acid), silymarin, and selenium: three case histories. *Med Klin (Munich)* 1999;94 Suppl 3:84-89.
52. Gal EM. Reversal of selective toxicity of (-)-alpha-lipoic acid by thiamine in thiamine-deficient rats. *Nature* 1965;207:535.
53. Bast A, Haenen GR. Regulation of lipid peroxidation by glutathione and lipoic acid: involvement of liver microsomal vitamin E free radical reductase. *Adv Exp Med Biol* 1990;264:111-116.
54. Kagan VE, Serbinova EA, Forte T et al. Recycling of vitamin E in human low density lipoproteins. *J Lipid Res* 1992;33:385-397.
55. Stoyanovsky DA, Goldman R, Claycamp HG, Kagan VE. Phenoxyl radical-induced thiol-dependent generation of reactive oxygen species: implications for benzene toxicity. *Arch Biochem Biophys* 1995;317:315-323.
56. Stoyanovsky DA, Goldman R, Darrow RM et al. Endogenous ascorbate regenerates vitamin E in the retina directly and in combination with exogenous dihydrolipoic acid. *Curr Eye Res* 1995;14:181-189.

Citations and Reference Literature: Alpha-Lipoic Acid

57. Jacob S, Ruus P, Hermann R et al. Oral administration of RAC-alpha-lipoic acid modulates insulin sensitivity in patients with type-2 diabetes mellitus: a placebo-controlled pilot trial. *Free Radic Biol Med* 1999;27:309-314.
58. Bast A, Haenen GR. Lipoic acid: a multifunctional antioxidant. *Biofactors* 2003;17:207-213.
59. Podda M, Tritschler HJ, Ulrich H, Packer L. Alpha-lipoic acid supplementation prevents symptoms of vitamin E deficiency. *Biochem Biophys Res Commun* 1994;204:98-104.
60. Thijssen HH, Janssen YP, Vervoort LT. Microsomal lipoamide reductase provides vitamin K epoxide reductase with reducing equivalents. *Biochem J* 1994;297(Pt 2):277-280.
61. Marriage B, Clandinin MT, Glerum DM. Nutritional cofactor treatment in mitochondrial disorders. *J Am Diet Assoc* 2003;103:1029-1038.

Reference Literature

- [No author listed.] [Alpha-lipoic acid in diabetic neuropathy: action mechanism and therapy: clinical picture and pathogenesis of diabetic neuropathy.] *Internist (Berl)* 1994;35(6 Alpha-liponsa):1-4. [German]
- [No author listed.] Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33): UK Prospective Diabetes Study (UKPDS) Group. *Lancet* 1998;352(9131):837-853.
- [No author listed.] Monograph: alpha-lipoic acid. *Altern Med Rev* 1998;3(4):308-310.
- [No author listed.] The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus: the Diabetes Control and Complications Trial Research Group. *N Engl J Med* 1993;329(14):977-986.
- Aguirre N, Barrionuevo M, Ramirez MJ, et al. Alpha-lipoic acid prevents 3,4-methylenedioxy-methamphetamine (MDMA)-induced neurotoxicity. *Neuroreport* 1999;10(17):3675-3680.
- Ames BN. The metabolic tune-up: metabolic harmony and disease prevention. *J Nutr* 2003;133(5 Suppl 1):1544S-1548S.
- Ametov AS, Barinov A, Dyck PJ, et al. The sensory symptoms of diabetic polyneuropathy are improved with alpha-lipoic acid: the SYDNEY trial. *Diabetes Care* 2003;26(3):770-776.
- Androne L, Gavan NA, Veresiu IA, et al. In vivo effect of lipoic acid on lipid peroxidation in patients with diabetic neuropathy. *In Vivo* 2000;14(2):327-330.
- Anuradha B, Varalakshmi P. Protective role of DL-alpha-lipoic acid against mercury-induced neural lipid peroxidation. *Pharmacol Res* 1999;39(1):67-80.
- Assadnazari H, Zimmer G, Freisleben HJ, et al. Cardioprotective efficiency of dihydrolipoic acid in working rat hearts during hypoxia and reoxygenation: P nuclear magnetic resonance investigations. *Arzneimittel-Forschung* 1993;43:425-432.
- Atamna H, Ames BN, Liu J. Delaying aging with mitochondrial micronutrients and antioxidants. *Sci World J* 2001;1(1 Suppl 3):81-82.
- Baker H, Deangelis B, Baker ER, et al. A practical assay of lipoate in biologic fluids and liver in health and disease. *Free Radic Biol Med* 1998;25(4-5):473-479.
- Barter FC, Berkson B, Gallelli J, et al. Thiotic acid in the treatment of poisoning with alpha-amanitin. In: Faulstich H, Kommerell B, Wieland T, eds. *Amanita toxins and poisoning*. Baden-Baden: Verlag Gerhard Witzstrock; 1980:197-202.
- Bassendine MF, Jones DE, Yeaman SJ. Biochemistry and autoimmune response to the 2-oxoacid dehydrogenase complexes in primary biliary cirrhosis. *Semin Liver Dis* 1997;17(1):49-60. (Review)
- Bast A, Haenen GR. Lipoic acid: a multifunctional antioxidant. *Biofactors* 2003;17(1-4):207-213. (Review)
- Baur A, Harrer T, Peukert M, et al. Alpha-lipoic acid is an effective inhibitor of human immuno-deficiency virus (HIV-1) replication. *Klin Wochenschr* 1991;69(15):722-724.
- Beckman KB, Ames BN. Mitochondrial aging: open questions. *Ann N Y Acad Sci.* 1998;854:118-127.
- Beitner H. Randomized, placebo-controlled, double blind study on the clinical efficacy of a cream containing 5% alpha-lipoic acid related to photoaging of facial skin. *Br J Dermatol* 2003;149(4):841-849.
- Berkson BM. Thioctic acid in treatment of hepatotoxic mushroom (Phalloides) poisoning. *N Engl J Med* 1979;300(7):371.
- Biewenga GP, Haenen GR, Bast A. The pharmacology of the antioxidant lipoic acid. *Gen Pharmacol* 1997;29(3):315-331.
- Biewenga G, Haenen GR, Bast A. The role of lipoic acid in the treatment of diabetic polyneuropathy. *Drug Metab Rev* 1997;29(4):1025-1054.
- Biewenga GP, Veening-Griffioen DH, Nicastia AJ, et al. Effects of dihydrolipoic acid on peptide methionine sulfoxide reductase: implications for antioxidant drugs. *Arzneimittelforschung* 1998;48(2):144-148.
- Borcea V, Nourooz-Zadeh J, Wolff SP, et al. alpha-Lipoic acid decreases oxidative stress even in diabetic patients with poor glycemic control and albuminuria. *Free Radic Biol Med* 1999;26(11-12):1495-1500.

Citations and Reference Literature: Alpha-Lipoic Acid

- Breithaupt-Grogler K, Niebch G, Schneider E, et al. Dose-proportionality of oral thioctic acid: coincidence of assessments via pooled plasma and individual data. *Eur J Pharm Sci* 1999;8(1):57-65.
- Busse E, Zimmer G, Schopohl B, et al. Influence of alpha-lipoic acid on intracellular glutathione in vitro and in vivo. *Arzneimittelforschung* 1992;42(6):829-831.
- Bustamante J, Lodge JK, Marcocci L, et al. Alpha-lipoic acid in liver metabolism and disease. *Free Radic Biol Med* 1998;24(6):1023-1039. (Review)
- Byrd DJ, Krohn HP, Winkler L, et al. Neonatal pyruvate dehydrogenase deficiency with lipoate responsive lactic acidemia and hyperammonaemia. *Eur J Pediatr* 1989;148:543-547.
- Cao X, Phillis JW. The free radical scavenger, alpha-lipoic acid, protects against cerebral ischemia-reperfusion injury in gerbils. *Free Radic Res* 1995;23(4):365-370. Erratum in *Free Radic Res* 1995;23(6):629.
- Carreau JP. Biosynthesis of lipoic acid via unsaturated fatty acids. *Meth Enzymol* 1979;62:152-158.
- Ceriello A. New insights on oxidative stress and diabetic complications may lead to a "Causal" antioxidant therapy. *Diabetes Care* 2003;26(5):1589-1596.
- Chaudiere J, Ferrari-Iliou R. Intracellular antioxidants: from chemical to biochemical mechanisms. *Food Chem Toxicol* 1999;37(9-10):949-962.
- Chidlow G, Schmidt KG, Wood JP, et al. Alpha-lipoic acid protects the retina against ischemia-reperfusion. *Neuropharmacology* 2002;43(6):1015-1025.
- Constantinescu A, Tritschler H, Packer L. alpha-Lipoic acid protects against hemolysis of human erythrocytes induced by peroxyl radicals. *Biochem Mol Biol Int* 1994;33(4):669-679.
- Devasagayam TP, Subramanian M, Pradhan DS, et al. Prevention of singlet oxygen induced DNA damage by lipoate. *Chem Biol Interact* 1993;86:79-92.
- Eremeeva ME, Silverman DJ. Effects of the antioxidant alpha-lipoic acid on human umbilical vein endothelial cells infected with *Rickettsia rickettsii*. *Infect Immun* 1998;66(5):2290-2299.
- Estrada DE, Ewart HS, Tsakiridis T, et al. Stimulation of glucose uptake by the natural coenzyme alpha-lipoic acid/thioctic acid: participation of elements of the insulin signaling pathway. *Diabetes* 1996;45(12):1798-1804.
- Evans JL, Goldfine ID. Alpha-lipoic acid: a multifunctional antioxidant that improves insulin sensitivity in patients with type 2 diabetes. *Diabetes Technol Ther* 2000;2(3):401-413.
- Evans JL, Goldfine ID, Maddux BA, et al. Oxidative stress and stress-activated signaling pathways: a unifying hypothesis of type 2 diabetes. *Endocr Rev* 2002;23(5):599-622. (Review)
- Evans JL, Heymann CJ, Goldfine ID, et al. Pharmacokinetics, tolerability, and fructosamine-lowering effect of a novel, controlled-release formulation of alpha-lipoic acid. *Endocr Pract* 2002;8(1):29-35.
- Femiano F. Burning mouth syndrome (BMS): an open trial of comparative efficacy of alpha-lipoic acid (thioctic acid) with other therapies. *Minerva Stomatol* 2002;51(9):405-409.
- Filina AA, Davydova NG, Endrikhovskii SN, et al. [Lipoic acid as a means of metabolic therapy of open-angle glaucoma.] *Vestn Oftalmol* 1995;111(4):6-8. [Russian]
- Gleiter CH, Schug BS, Hermann R, et al. Influence of food intake on the bioavailability of thioctic acid enantiomers. *Eur J Clin Pharmacol* 1996;50(6):513-514.
- Goralska M, Dackor R, Holley B, et al. Alpha lipoic acid changes iron uptake and storage in lens epithelial cells. *Exp Eye Res* 2003;76(2):241-248.
- Greene DA, Stevens MJ, Obrosova I, et al. Glucose-induced oxidative stress and programmed cell death in diabetic neuropathy. *Eur J Pharmacol* 1999;375(1-3):217-223.
- Gregus Z, Stein AF, Varga F. Effect of lipoic acid on biliary excretion of glutathione and metals. *Toxicol Appl Pharmacol* 1992;114:88-96.
- Grothey A. Oxaliplatin-safety profile: neurotoxicity. *Semin Oncol* 2003;30(4 Suppl 15):5-13.
- Grunert RR. The effect of DL-alpha-lipoic acid on heavy-metal intoxication in mice and dogs. *Arch Biochem Biophys* 1960;86:190-194.
- Gualandri W, Gualandri L, Demartini G, et al. Redox balance in patients with Down's syndrome before and after dietary supplementation with alpha-lipoic acid and L-cysteine. *Int J Clin Pharmacol Res* 2003;23(1):23-30.
- Gurer H, Ozgunes H, Oztezcan S, et al. Antioxidant role of alpha-lipoic acid in lead toxicity. *Free Radic Biol Med* 1999;27(1-2):75-81.
- Haak E, Usadel KH, Kusterer K, et al. Effects of alpha-lipoic acid on microcirculation in patients with peripheral diabetic neuropathy. *Exp Clin Endocrinol Diabetes* 2000;108(3):168-174.
- Hagen TM, Liu J, Lykkesfeldt J, et al. Feeding acetyl-L-carnitine and lipoic acid to old rats significantly improves metabolic function while decreasing oxidative stress. *Proc Natl Acad Sci U S A* 2002;99(4):1870-1875.

Citations and Reference Literature: Alpha-Lipoic Acid

- Hagen TM. Alpha-lipoic acid. Available at www.lpi.oregonstate.edu/infocenter/othernuts/la/index.html. Accessed October 31, 2003. (Review)
- Hagen TM, Ingersoll RT, Lykkesfeldt J, et al. (R)-alpha-lipoic acid-supplemented old rats have improved mitochondrial function, decreased oxidative damage, and increased metabolic rate. *FASEB J* 1999;13(2):411-418.
- Hagen TM, Vinarsky V, Wehr CM, et al. (R)-alpha-lipoic acid reverses the age-associated increase in susceptibility of hepatocytes to tert-butylhydroperoxide both in vitro and in vivo. *Antioxid Redox Signal* 2000;2(3):473-483.
- Hager K, Marahrens A, Kenklies M, et al. Alpha-lipoic acid as a new treatment option for Alzheimer type dementia. *Arch Gerontol Geriatr* 2001;32(3):275-282.
- Halat KM, Dennehy CE. Botanicals and dietary supplements in diabetic peripheral neuropathy. *J Am Board Fam Pract* 2003;16(1):47-57. (Review)
- Han D, Handelman G, Marcocci L, et al. Lipoic acid increases de novo synthesis of cellular glutathione by improving cystine utilization. *Biofactors* 1997;6(3):321-338.
- Handelman GJ, Han D, Tritschler H, et al. Alpha-lipoic acid reduction by mammalian cells to the dithiol form, and release into the culture medium. *Biochem Pharmacol* 1994;47(10):1725-1730.
- Haramaki N, Assadnazari H, Zimmer G, et al. The influence of vitamin E and dihydrolipoic acid on cardiac energy and glutathione status under hypoxia-reoxygenation. *Biochem Mol Biol Int* 1995;37:591-597.
- Henriksen EJ, Saengsirisuwan V. Exercise training and antioxidants: relief from oxidative stress and insulin resistance. *Exerc Sport Sci Rev* 2003;31(2):79-84. (Review)
- Heitzer T, Finckh B, Albers S, et al. Beneficial effects of alpha-lipoic acid and ascorbic acid on endothelium-dependent, nitric oxide-mediated vasodilation in diabetic patients: relation to parameters of oxidative stress. *Free Radic Biol Med* 2001;31(1):53-61.
- Hermann R, Niebch G, Borbe HO, et al. Enantioselective pharmacokinetics and bioavailability of different racemic α -lipoic acid formulations in healthy volunteers. *Eur J Pharm Sci* 1996;4:167-174.
- Hofmann MA, Schiekofer S, Isermann B, et al. Peripheral blood mononuclear cells isolated from patients with diabetic nephropathy show increased activation of the oxidative-stress sensitive transcription factor NF-kappaB. *Diabetologia* 1999;42(2):222-232.
- Hofmann MA, Schiekofer S, Kanitz M, et al. Insufficient glycemic control increases nuclear factor-kappa B binding activity in peripheral blood mononuclear cells isolated from patients with type 1 diabetes. *Diabetes Care* 1998;21(8):1310-1316.
- Hong YS, Kerr DS, Liu TC, et al. Deficiency of dihydrolipoamide dehydrogenase due to two mutant alleles (E340K and G101del): analysis of a family and prenatal testing. *Biochim Biophys Acta* 1997;1362:160-168.
- Hounsom L, Horrobin DF, Tritschler H, et al. A lipoic acid-gamma linolenic acid conjugate is effective against multiple indices of experimental diabetic neuropathy. *Diabetologia* 1998;41(7):839-843.
- Jacob S, Henriksen EJ, Schieman AL, et al. Enhancement of glucose disposal in patients with type 2 diabetes by alpha-lipoic acid. *Arzneimittelforschung* 1995;45(8):872-874.
- Jacob S, Henriksen EJ, Tritschler HJ, et al. Improvement of insulin-stimulated glucose-disposal in type 2 diabetes after repeated parenteral administration of thioctic acid. *Exp Clin Endocrinol Diabetes* 1996;104(3):284-288.
- Jacob S, Rett K, Henriksen EJ, et al. Thioctic acid: effects on insulin sensitivity and glucose-metabolism. *Biofactors* 1999;10(2-3):169-174.
- Jacob S, Ruus P, Hermann R, et al. Oral administration of RAC-alpha-lipoic acid modulates insulin sensitivity in patients with type-2 diabetes mellitus: a placebo-controlled pilot trial. *Free Radic Biol Med* 1999;27(3-4):309-314.
- Jones W, Li X, Qu ZC, et al. Uptake, recycling, and antioxidant actions of alpha-lipoic acid in endothelial cells. *Free Radic Biol Med* 2002;33(1):83-93.
- Kagan V, Khan S, Swanson C, et al. Antioxidant action of thioctic acid and dihydrolipoic acid. *Free Radic Biol Med* 1990;9S:15.
- Kagan V, Serbinova E, Packer L. Antioxidant effects of ubiquinones in microsomes and mitochondria are mediated by tocopherol recycling. *Biochem Biophys Res Commun* 1990;169(3):851-857.
- Kagan VE, Serbinova EA, Forte T, et al. Recycling of vitamin E in human low density lipoproteins. *J Lipid Res* 1992;33(3):385-397.
- Kagan VE, Shvedova A, Serbinova E, et al. Dihydrolipoic acid--a universal antioxidant both in the membrane and in the aqueous phase: reduction of peroxy, ascorbyl and chromanoxyl radicals. *Biochem Pharmacol* 1992;44(8):1637-1649.
- Kagan V, Witt E, Goldman R, et al. Ultraviolet light-induced generation of vitamin E radicals and their recycling: a possible photosensitizing effect of vitamin E in skin. *Free Radic Res Commun* 1992;16(1):51-64.
- Kawabata T, Packer L. Alpha-lipoate can protect against glycation of serum albumin, but not low density lipoprotein. *Biochem Biophys Res Commun* 1994;203:99-104.
- Kehler W, Kuklinski B, Ruhlmann C, et al. Diabetes mellitus-a free radical associated disease: effects of adjuvant supplementation of antioxidants. In: Gries FA, Wessel K, eds. *The role of antioxidants in diabetes mellitus: oxygen radicals and anti-oxidants in diabetes*. Frankfurt am Maine: pmi Verl-Gruppe; 1993:33-53.

Citations and Reference Literature: Alpha-Lipoic Acid

- Keith RL, Setiarahardjo I, Fernando Q, et al. Utilization of renal slices to evaluate the efficacy of chelating agents for removing mercury from the kidney. *Toxicology* 1997;116(1-3):67-75.
- Khamaisi M, Potashnik R, Tirosh A, et al. Lipoic acid reduces glycemia and increases muscle GLUT4 content in streptozotocin-diabetic rats. *Metabolism* 1997;46(7):763-768.
- Khanna S, Atalay M, Lodge JK, et al. Skeletal muscle and liver lipoyllysine content in response to exercise, training and dietary alpha-lipoic acid supplementation. *Biochem Mol Biol Int* 1998;46(2):297-306.
- Kilic F, Handelman GJ, Traber K, et al. Modelling cortical cataractogenesis XX: in vitro effect of alpha-lipoic acid on glutathione concentrations in lens in model diabetic cataractogenesis. *Biochem Mol Biol Int* 1998;46(3):585-595.
- Kishi Y, Schmelzer JD, Yao JK, et al. Alpha-lipoic acid: effect on glucose uptake, sorbitol pathway, and energy metabolism in experimental diabetic neuropathy. *Diabetes* 1999;48(10):2045-2051.
- Kobberling J, Hompesch M. alpha-Lipoic acid in NIDDM patients with cardiac autonomic neuropathy. *Diabetes Care* 1997;20(12):1918-1920. (Letter)
- Konrad D, Somwar R, Sweeney G, et al. The antihyperglycemic drug alpha-lipoic acid stimulates glucose uptake via both GLUT4 translocation and GLUT4 activation: potential role of p38 mitogen-activated protein kinase in GLUT4 activation. *Diabetes* 2001;50(6):1464-1471.
- Konrad T, Vicini P, Kusterer K, et al. alpha-Lipoic acid treatment decreases serum lactate and pyruvate concentrations and improves glucose effectiveness in lean and obese patients with type 2 diabetes. *Diabetes Care* 1999;22(2):280-287.
- Kozlov AV, Gille L, Staniek K, et al. Dihydrolipoic acid maintains ubiquinone in the antioxidant active form by two-electron reduction of ubiquinone and one-electron reduction of ubisemiquinone. *Arch Biochem Biophys* 1999;363(1):148-154.
- Kramer K, Packer L. R-alpha-lipoic acid. In: Kramer K, Hoppe P, Packer L, eds. *Nutraceuticals in health and disease prevention*. New York: Marcel Dekker, Inc; 2001:129-164.
- Liu J, Head E, Gharib AM, et al. Memory loss in old rats is associated with brain mitochondrial decay and RNA/DNA oxidation: partial reversal by feeding acetyl-L-carnitine and/or R-alpha-lipoic acid. *Proc Natl Acad Sci U S A* 2002;99(4):2356-2361.
- Lockhart B, Jones C, Cuisinier C, et al. Inhibition of L-homocysteic acid and buthionine sulfoximine-mediated neurotoxicity in rat embryonic neuronal cultures with alpha-lipoic acid enantiomers. *Brain Res* 2000;855(2):292-297.
- Loffelhardt S, Bonaventura C, Locher M, et al. Interaction of alpha-lipoic acid enantiomers and homologues with the enzyme components of the mammalian pyruvate dehydrogenase complex. *Biochem Pharmacol* 1995;50(5):637-646.
- Lovell MA, Xie C, Xiong S, et al. Protection against amyloid beta peptide and iron/hydrogen peroxide toxicity by alpha lipoic acid. *J Alzheimers Dis* 2003;5(3):229-239.
- Low PA, Nickander KK, Tritschler HJ. The roles of oxidative stress and antioxidant treatment in experimental diabetic neuropathy. *Diabetes* 1997;46(Suppl 2):S38-542.
- Lykkesfeldt J, Hagen TM, Vinarsky V, et al. Age-associated decline in ascorbic acid concentration, recycling, and biosynthesis in rat hepatocytes: reversal with (R)-alpha-lipoic acid supplementation. *FASEB J* 1998;12(12):1183-1189.
- Maitra I, Serbinova E, Tritschler HJ, et al. Stereospecific effects of R-lipoic acid on buthionine sulfoximine-induced cataract formation in newborn rats. *Biochem Biophys Res Commun* 1996;221(2):422-429.
- Mantovani G, Maccio A, Madeddu C, et al. A phase II study with antioxidants, both in the diet and supplemented, pharmacological support, progestagen, and anti-cyclooxygenase-2 showing efficacy and safety in patients with cancer-related anorexia/cachexia and oxidative stress. *Cancer Epidemiol Biomarkers Prev* 2006;15(5):1030-1034.
- Mantovani G, Maccio A, Madeddu C, et al. Reactive oxygen species, antioxidant mechanisms, and serum cytokine levels in cancer patients: impact of an antioxidant treatment. *J Environ Pathol Toxicol Oncol* 2003;22(1):17-28.
- Mantovani G, Maccio A, Madeddu C, et al. Reactive oxygen species, antioxidant mechanisms and serum cytokine levels in cancer patients: impact of an antioxidant treatment. *J Cell Mol Med* 2002;6(4):570-582.
- Mantovani G, Maccio A, Melis G, et al. Restoration of functional defects in peripheral blood mononuclear cells isolated from cancer patients by thiol antioxidants alpha-lipoic acid and N-acetyl cysteine. *Int J Cancer* 2000;86(6):842-847.
- Marangon K, Devaraj S, Tirosh O, et al. Comparison of the effect of alpha-lipoic acid and alpha-tocopherol supplementation on measures of oxidative stress. *Free Radic Biol Med* 1999;27(9-10):1114-1121.
- Marquet A, Bui BT, Florentin D. Biosynthesis of biotin and lipoic acid. *Vitam Horm* 2001;61:51-101. (Review)
- Marriage B, Clandinin MT, Glerum DM. Nutritional cofactor treatment in mitochondrial disorders. *J Am Diet Assoc* 2003;103(8):1029-1038. (Review)
- Matalon R, Stumpf DA, Michals K, et al. Lipoamide dehydrogenase deficiency with primary lactic acidosis: favorable response to treatment with oral lipoic acid. *J Pediatr* 1984;104:65-69.
- McGahon BM, Martin DS, Horrobin DF, et al. Age-related changes in LTP and antioxidant defenses are reversed by an alpha-lipoic acid-enriched diet. *Neurobiol Aging* 1999;20(6):655-664.

Citations and Reference Literature: Alpha-Lipoic Acid

- Melhem MF, Craven PA, Liachenko J, et al. Alpha-lipoic acid attenuates hyperglycemia and prevents glomerular mesangial matrix expansion in diabetes. *J Am Soc Nephrol* 2002;13(1):108-116.
- Merin JP, Matsuyama M, Kira T, et al. Alpha-lipoic acid blocks HIV-1 LTR-dependent expression of hygromycin resistance in THP-1 stable transformants. *FEBS Lett* 1996;394(1):9-13.
- Mervaala E, Finckenberg P, Lapatto R, et al. Lipoic acid supplementation prevents angiotensin II-induced renal injury. *Kidney Int* 2003;64(2):501-508.
- Midaoui AE, Elimadi A, Wu L, et al. Lipoic acid prevents hypertension, hyperglycemia, and the increase in heart mitochondrial superoxide production. *Am J Hypertens* 2003;16(3):173-179.
- Mizuno M, Packer L. Effects of alpha-lipoic acid and dihydrolipoic acid on expression of proto-oncogene c-fos. *Biochem Biophys Res Commun* 1994;200(2):1136-1142.
- Moini H, Packer L, Saris NE. Antioxidant and prooxidant activities of alpha-lipoic acid and dihydrolipoic acid. *Toxicol Appl Pharmacol* 2002;182(1):84-90. (Review)
- Morcos M, Borcea V, Isermann B, et al. Effect of alpha-lipoic acid on the progression of endothelial cell damage and albuminuria in patients with diabetes mellitus: an exploratory study. *Diabetes Res Clin Pract* 2001;52(3):175-183.
- Mythili Y, Sudharsan PT, Sudhahar V, et al. Protective effect of DL-alpha-lipoic acid on cyclophosphamide induced hyperlipidemic cardiomyopathy. *Eur J Pharmacol* 2006;543(1-3):92-96.
- Nagamatsu M, Nickander KK, Schmelzer JD, et al. Lipoic acid improves nerve blood flow, reduces oxidative stress, and improves distal nerve conduction in experimental diabetic neuropathy. *Diabetes Care* 1995;18(8):1160-1167.
- Nagy I, Pogatsa-Murray G, Zalanyi S Jr, et al. Amanita poisoning during the second trimester of pregnancy: a case report and a review of the literature. *Clin Investig* 1994;72:794-798.
- Nichols TW Jr. Alpha-lipoic acid: biological effects and clinical implications. *Altern Med Rev* 1997;2:177-183. (Review)
- Nickander KK, McPhee BR, Low PA, et al. Alpha-lipoic acid: antioxidant potency against lipid peroxidation of neural tissues in vitro and implications for diabetic neuropathy. *Free Radic Biol Med* 1996;21:631-639.
- Orzechowski A. Justification for antioxidant preconditioning (or how to protect insulin-mediated actions under oxidative stress). *J Biosci* 2003;28(1):39-49.
- Ou P, Nourooz-Zadeh J, Tritschler HJ, et al. Activation of aldose reductase in rat lens and metal-ion chelation by aldose reductase inhibitors and lipoic acid. *Free Radic Res* 1996;25:337-346.
- Ou P, Tritschler HJ, Wolff SP. Thioctic (lipoic) acid: a therapeutic metal-chelating antioxidant? *Biochem Pharmacol* 1995;50:123-126.
- Packer L. alpha-Lipoic acid: a metabolic antioxidant which regulates NF-kappa B signal transduction and protects against oxidative injury. *Drug Metab Rev* 1998;30(2):245-275.
- Packer L. Antioxidant properties of lipoic acid and its therapeutic effects in prevention of diabetes complications and cataracts. *Ann N Y Acad Sci* 1994;738:257-264.
- Packer L. Oxidants, antioxidant nutrients and the athlete. *J Sports Sci* 1997;15(3):353-363.
- Packer L, Kraemer K, Rimbach G. Molecular aspects of lipoic acid in the prevention of diabetes complications. *Nutrition* 2001;17(10):888-895.
- Packer L, Roy S, Sen CK. Alpha-lipoic acid: a metabolic antioxidant and potential redox modulator of transcription. *Adv Pharmacol* 1997;38:79-101. (Review)
- Packer L, Tritschler HJ, Wessel K. Neuroprotection by the metabolic antioxidant alpha-lipoic acids. *Free Radic Biol Med* 1997;22:359-378. (Review)
- Packer L, Witt EH, Tritschler HJ. alpha-Lipoic acid as a biological antioxidant. *Free Radic Biol Med* 1995;19(2):227-250. (Review)
- Parish RC, Doering PL. Treatment of Amanita mushroom poisoning: a review. *Vet Hum Toxicol* 1986;28(4):318-322.
- Patrick L. Mercury toxicity and antioxidants: part 1: role of glutathione and alpha-lipoic acid in the treatment of mercury toxicity. *Altern Med Rev* 2002;7(6):456-471. (Review)
- Plotzker R, Jensen DM, Payne JA. Case report: Amanita virosa acute hepatic necrosis: treatment with thioctic acid. *Am J Med Sci* 1982;283(2):79-82.
- Podda M, Tritschler HJ, Ulrich H, et al. Alpha-lipoic acid supplementation prevents symptoms of vitamin E deficiency. *Biochem Biophys Res Commun* 1994;204(1):98-104.
- Prehn JH, Karkoutly C, Nuglich J, et al. Dihydrolipoate reduces neuronal injury after cerebral ischemia. *J Cereb Blood Flow Metab* 1992;12:78-87.
- Rabinovic AD, Hastings TG. Role of endogenous glutathione in the oxidation of dopamine. *J Neurochem* 1998;71(5):2071-2078.
- Reed LJ, DeBusk BG, Gunsalus IC, et al. Crystalline alpha-lipoic acid: a catalytic agent associated with pyruvate dehydrogenase. *Science* 1951;114:93-94.

Citations and Reference Literature: Alpha-Lipoic Acid

- Reljanovic M, Reichel G, Rett K, et al. Treatment of diabetic polyneuropathy with the antioxidant thioctic acid (alpha-lipoic acid): a two year multicenter randomized double-blind placebo-controlled trial (ALADIN II): Alpha Lipoic Acid in Diabetic Neuropathy. *Free Radic Res* 1999;31(3):171-179.
- Rett K, Wicklmayr E, Maerker P, et al. Effect of acute infusion of thioctic acid on oxidative and non-oxidative metabolism in obese subjects with NIDDM. *Diabetologia* 1995;38:A41.
- Rodriguez-Budelli M, Kark P. Kinetic evidence for a structural abnormality of lipoamide dehydrogenase in two patients with Friedreich ataxia. *Neurology* 1978;28:1283-1286. (Abstract)
- Rosenburg HR, Culik R. Effects of alpha-lipoic acid on vitamin C and vitamin E deficiencies. *Arch Biochem Biophys* 1959;80:86-93.
- Roy S, Sen CK, Tritschler HJ, et al. Modulation of cellular reducing equivalent homeostasis by alpha-lipoic acid: mechanisms and implications for diabetes and ischemic injury. *Biochem Pharmacol* 1997;53(3):393-399.
- Ruhnau KJ, Meissner HP, Finn JR, et al. Effects of 3-week oral treatment with the antioxidant thioctic acid (alpha-lipoic acid) in symptomatic diabetic polyneuropathy. *Diabet Med* 1999;16(12):1040-1043.
- Sastrasinh M, Weinberg JM, Humes HD. The effect of gentamicin on calcium uptake by renal mitochondria. *Life Sci* 1982;30(26):2309-2315.
- Scholic H, Murphy ME, Sies H. Antioxidant activity of dihydrolipoate against microsomal lipid peroxidation and its dependence on alpha-tocopherol. *Biochim Biophys Acta* 1989;1001(3):256-261.
- Schonheit K, Gille L, Nohl H. Effect of alpha-lipoic acid and dihydrolipoic acid on ischemia/reperfusion injury of the heart and heart mitochondria. *Biochim Biophys Acta* 1995;1271(2-3):335-342.
- Schupke H, Hempel R, Peter G, et al. New metabolic pathways of alpha-lipoic acid. *Drug Metab Dispos* 2001;29(6):855-862.
- Scott BC, Arouma OI, Evans PJ, et al. Lipoic and dihydrolipoic acid as antioxidants: a critical evaluation. *Free Radic Res* 1994;20:119-133.
- Selvakumar E, Prahalathan C, Sudharsan PT, et al. Protective effect of lipoic acid on micronuclei induction by cyclophosphamide. *Arch Toxicol* 2006;80(2):115-119.
- Sen CK, Roy S, Han D, et al. Regulation of cellular thiols in human lymphocytes by alpha-lipoic acid: a flow cytometric analysis. *Free Radic Biol Med* 1997;22(7):1241-1257.
- Sigel H, Prijs B, McCormick DB, et al. Stability and structure of binary and ternary complexes of a-lipoate and lipoate derivatives with Mn²⁺, Cu²⁺, and Zn²⁺ in solution. *Arch Biochem Biophys* 1978;187:208-214.
- Streeter RS, Henriksen EJ, Jacob S, et al. Differential effects of lipoic acid stereoisomers on glucose metabolism in insulin-resistant skeletal muscle. *Am J Physiol* 1997;273(1 Pt 1):E185-191.
- Strodter D, Lehmann E, Lehmann U, et al. The influence of thioctic acid on metabolism and function of the diabetic heart. *Diabetes Res Clin Pract* 1995;29:19-26.
- Suh JH, Shigeno ET, Morrow JD, et al. Oxidative stress in the aging rat heart is reversed by dietary supplementation with (R)-alpha-lipoic acid. *FASEB J* 2001;15(3):700-706.
- Sumathi R, Baskaran G, Varalakshmi P. Relationship between glutathione and DL alpha-lipoic acid against cadmium-induced hepatotoxicity. *Jpn J Med Sci Biol* 1996;49:39-48.
- Sumathi R, Devi VK, Varalakshmi P. DL alpha-lipoic acid protection against cadmium-induced tissue lipid peroxidation. *Med Sci Res* 1994;22:23-25.
- Suzuki YJ, Aggarwal BB, Packer L. Alpha-lipoic acid is a potent inhibitor of NF-kappa B activation in human T cells. *Biochem Biophys Res Commun* 1992;189(3):1709-1715.
- Suzuki YJ, Tsuchiya M, Packer L. Thiotic acid and dihydrolipoic acid are novel antioxidants which interact with reactive oxygen species. *Free Rad Res Commun* 1991;15:255-263.
- Teichert J, Kern J, Tritschler HJ, et al. Investigations on the pharmacokinetics of alpha-lipoic acid in healthy volunteers. *Int J Clin Pharmacol Ther* 1998;36(12):625-628.
- Teichert J, Hermann R, Ruus P, et al. Plasma kinetics, metabolism, and urinary excretion of alpha-lipoic acid following oral administration in healthy volunteers. *J Clin Pharmacol* 2003;43(11):1257-1267.
- Tiresh O, Sen CK, Roy S, et al. Neuroprotective effects of alpha-lipoic acid and its positively charged amide analogue. *Free Radic Biol Med* 1999;26(11-12):1418-1426.
- Tiresh O, Shilo S, Aronis A, et al. Redox regulation of mitochondrial permeability transition: effects of uncoupler, lipoic acid and its positively charged analog LA-plus and selenium. *Biofactors* 2003;17(1-4):297-306.
- Varalakshmi P, Sandhya S, Malarkodi KP. Evaluation of the effect of lipoic acid administered along with gentamicin in rats rendered bacteremic. *Mol Cell Biochem* 2003;248(1-2):35-40.
- Visioli F, Smith A, Zhang W, et al. Lipoic acid and vitamin C potentiate nitric oxide synthesis in human aortic endothelial cells independently of cellular glutathione status. *Redox Rep* 2002;7(4):223-227.

Citations and Reference Literature: Alpha-Lipoic Acid

- Whiteman M, Tritschler H, Halliwell B. Protection against peroxynitrite-dependent tyrosine nitration and alpha 1-antiproteinase inactivation by oxidized and reduced lipoic acid. *FEBS Lett* 1996;379(1):74-76.
- Wollin SD, Jones PJ. Alpha-lipoic acid and cardiovascular disease. *J Nutr* 2003;133(11):3327-3330.
- Wolz P, Krieglstein J. Neuroprotective effects of alpha-lipoic acid and its enantiomers demonstrated in rodent models of focal cerebral ischemia. *Neuropharmacology* 1996;35:369-375.
- Xu DP, Wells WW. alpha-Lipoic acid dependent regeneration of ascorbic acid from dehydroascorbic acid in rat liver mitochondria. *J Bioenerg Biomembr* 1996;28:77-85.
- Yaworsky K, Somwar R, Ramlal T, et al. Engagement of the insulin-sensitive pathway in the stimulation of glucose transport by alpha-lipoic acid in 3T3-L1 adipocytes. *Diabetologia* 2000;43(3):294-303.
- Yeaman SJ, Kirby JA, Jones DE. Autoreactive responses to pyruvate dehydrogenase complex in the pathogenesis of primary biliary cirrhosis. *Immunol Rev* 2000;174:238-249.
- Zhang WJ, Frei B. Alpha-lipoic acid inhibits TNF-alpha-induced NF-kappaB activation and adhesion molecule expression in human aortic endothelial cells. *FASEB J* 2001;15(13):2423-2432.
- Ziegler D, Ametov A, Barinov A, et al. Oral treatment with alpha-lipoic acid improves symptomatic diabetic polyneuropathy: the SYDNEY 2 trial. *Diabetes Care* 2006;29(11):2365-2370.
- Ziegler D, Gries FA. Alpha-lipoic acid in the treatment of diabetic peripheral and cardiac autonomic neuropathy. *Diabetes* 1997;46(Suppl 2):S62-66.
- Ziegler D, Hanefeld M, Ruhnau KJ, et al. Treatment of symptomatic diabetic polyneuropathy with the antioxidant alpha-lipoic acid: a 7-month multicenter randomized controlled trial (ALADIN III Study): ALADIN III Study Group: alpha-lipoic acid in diabetic neuropathy. *Diabetes Care* 1999;22(8):1296-1301.
- Ziegler D, Hanefeld M, Ruhnau KJ, et al. Treatment of symptomatic diabetic peripheral neuropathy with the anti-oxidant alpha-lipoic acid: a 3-week multicentre randomized controlled trial (ALADIN Study). *Diabetologia* 1995;38(12):1425-1433.
- Ziegler D, Reljanovic M, Mehnert H, et al. Alpha-lipoic acid in the treatment of diabetic polyneuropathy in Germany: current evidence from clinical trials. *Exp Clin Endocrinol Diabetes* 1999;107(7):421-430. (Review)
- Ziegler D, Schatz H, Conrad F, et al. Effects of treatment with the antioxidant alpha-lipoic acid on cardiac autonomic neuropathy in NIDDM patients: a 4-month randomized controlled multicenter trial (DEKAN Study): Deutsche Kardiale Autonome Neuropathie. *Diabetes Care* 1997;20(3):369-373.