

## **10. LITERATURVERZEICHNIS**

Ambach, W. und Blumthaler, M. (1993): Biological effectiveness of solar UV radiation in humans. *Experientia* 49(9): 747-53.

Ames, B. (1987): Dietary carcinogens and anticarcinogens. *Science* 221: 1256-64.

Antunes, L. M. und Takahashi, C. S. (1998): Effects of high doses of vitamins C and E against doxorubicin-induced chromosomal damage in Wistar rat bone marrow cells. *Mutat Res* 419(1-3): 137-43.

Aratri, E., et al. (1999): Modulation of alpha-tropomyosin expression by alpha-tocopherol in rat vascular smooth muscle cells. *FEBS Lett* 447(1): 91-4.

Azzi, A., et al. (1998): RRR-alpha-tocopherol regulation of gene transcription in response to the cell oxidant status. *Z Ernahrungswiss* 37(Suppl 1): 21-8.

Baldi, L., et al. (1996): Critical role for lysines 21 and 22 in signal-induced, ubiquitin-mediated proteolysis of I kappa B-alpha. *J Biol Chem* 271(1): 376-9.

Baldwin, A. S., Jr. (1996): The NF-kappa B and I kappa B proteins: new discoveries and insights. *Annu Rev Immunol* 14: 649-83.

Bangha, E., et al. (1997): Suppression of UV-induced erythema by topical treatment with melatonin (N-acetyl-5-methoxytryptamine). Influence of the application time point. *Dermatology* 195(3): 248-52.

Barclay, L. R., et al. (1985): The antioxidant activity of alpha-tocopherol-bovine serum albumin complex in micellar and liposome autoxidations. *J Biol Chem* 260(29): 15809-14.

Barroso, M. P., et al. (1997): Ascorbate and alpha-tocopherol prevent apoptosis induced by serum removal independent of Bcl-2. *Arch Biochem Biophys* 343(2): 243-8.

Beg, A. A. und Baltimore, D. (1996): An essential role for NF-kappaB in preventing TNF-alpha-induced cell death. *Science* 274(5288): 782-4.

Bendich, A., et al. (1986): Dietary vitamin E requirement for optimum immune responses in the rat. *J Nutr* 116(4): 675-81.

Beyer, R. E. (1994): The role of ascorbate in antioxidant protection of biomembranes: interaction with vitamin E and coenzyme Q. *J Bioenerg Biomembr* 26(4): 349-58.

Black, H. S. (1987): Potential involvement of free radical reactions in ultraviolet light-mediated cutaneous damage. *Photochem Photobiol* 46(2): 213-21.

Blum, J. und Fridovich, I. (1985): Inactivation of glutathione peroxidase by superoxide radical. *Arch Biochem Biophys* 240(2): 500-8.

Bommannan, D., et al. (1990): Examination of stratum corneum barrier function in vivo by infrared spectroscopy. *J Invest Dermatol* 95(4): 403-8.

Bonizzi, G., et al. (1996): Interleukin-1 beta induces nuclear factor kappa B in epithelial cells independently of the production of reactive oxygen intermediates. *Eur J Biochem* 242(3): 544-9.

Boukamp, P., et al. (1988): Normal keratinization in a spontaneously immortalized aneuploid human keratinocyte cell line. *J Cell Biol* 106(3): 761-71.

Bowie, A. G. und O'Neill, L. A. (2000): Vitamin C inhibits NF-kappa B activation by TNF via the activation of p38 mitogen-activated protein kinase. *J Immunol* 165(12): 7180-8.

Brown, R. T., et al. (1995): An acute phase response factor/NF-kappa B site downstream of the junB gene that mediates responsiveness to interleukin-6 in a murine plasmacytoma. *J Biol Chem* 270(52): 31129-35.

Bunyan, J., et al. (1961): Biological potencies of  $\epsilon$ - and  $\zeta_1$ -tocopherol and 5-methyltocol. *Br J Nutr* 15: 253-257.

Burton, G. W., et al. (1982): First proof that vitamin E is major lipid-soluble, chain-breaking antioxidant in human blood plasma. *Lancet* 2(8293): 327.

Burton, G. W., et al. (1983): Is vitamin E the only lipid-soluble, chain-breaking antioxidant in human blood plasma and erythrocyte membranes? *Arch Biochem Biophys* 221(1): 281-90.

Burton, G. W. a. I., K.U. (1986): *Acc. Chem. Res.* 19: 194-201.

Cachia, O., et al. (1998): alpha-tocopherol inhibits the respiratory burst in human monocytes. Attenuation of p47(phox) membrane translocation and phosphorylation. *J Biol Chem* 273(49): 32801-5.

Cerutti, P. A. (1985): Prooxidant states and tumor promotion. *Science* 227(4685): 375-81.

Cerutti, P. A. (1994): Oxy-radicals and cancer. *Lancet* 344(8926): 862-3.

Chan, A. C. (1993): Partners in defense, vitamin E and vitamin C. *Can J Physiol Pharmacol* 71(9): 725-31.

Chance, B., et al. (1979): Hydroperoxide metabolism in mammalian organs. *Physiol Rev* 59(3): 527-605.

Chaudière, J. (1994): Some chemical and biochemical constraints of oxidative stress in living cells. In *Free Radical Damage and its Control*, ed. C. Rice-Evans R. H. Burdon, pp. 23-64. *New Comprehensive Biochemistry*, Elsevier Science, Amsterdam.

- Chaudière, J. und Ferrari-Iliou, R. (1999): Intracellular antioxidants: from chemical to biochemical mechanisms. *Food Chem Toxicol* 37(9-10): 949-62.
- Chen, C. G., et al. (1996): Inhibition of NF-kappaB activation by a dominant-negative mutant of IkappaBalphα. *Mol Immunol* 33(1): 57-61.
- Chojkier, M., et al. (1998): Long- and short-term D-alpha-tocopherol supplementation inhibits liver collagen alpha1(I) gene expression. *Am J Physiol* 275(6 Pt 1): G1480-5.
- Chow, C. K. (1991): Vitamin E and oxidative stress. *Free Radic Biol Med* 11(2): 215-32.
- Christen, S., et al. (1997): gamma-tocopherol traps mutagenic electrophiles such as NO(X) and complements alpha-tocopherol: physiological implications. *Proc Natl Acad Sci U S A* 94(7): 3217-22.
- Claycombe, K. J. und Meydani, S. N. (2001): Vitamin E and genome stability. *Mutat Res* 475(1-2): 37-44.
- Clement-Lacroix, P., et al. (1996): UVA-induced immune suppression in human skin: protective effect of vitamin E in human epidermal cells in vitro. *Br J Dermatol* 134(1): 77-84.
- Coldiron, B. M. (1998): The UV Index: a weather report for skin. *Clin Dermatol* 16(4): 441-6.
- Darr, D., et al. (1996): Effectiveness of antioxidants (vitamin C and E) with and without sunscreens as topical photoprotectants. *Acta Derm Venereol* 76(4): 264-8.
- Darr, D. und Fridovich, I. (1994): Free radicals in cutaneous biology. *J Invest Dermatol* 102(5): 671-5.

Devaraj, S. und Jialal, I. (1999): Alpha-tocopherol decreases interleukin-1 beta release from activated human monocytes by inhibition of 5-lipoxygenase. *Arterioscler Thromb Vasc Biol* 19(4): 1125-33.

Devaraj, S., et al. (1996): The effects of alpha tocopherol supplementation on monocyte function. Decreased lipid oxidation, interleukin 1 beta secretion, and monocyte adhesion to endothelium. *J Clin Invest* 98(3): 756-63.

Diplock, A. T., et al. (1989): Relationship of tocopherol structure to biological activity, tissue uptake, and prostaglandin biosynthesis. *Ann N Y Acad Sci* 570: 72-84.

Djavaheri-Mergny, M., et al. (1999): UV-A-induced decrease in nuclear factor-kappaB activity in human keratinocytes. *Biochem J* 338(Pt 3): 607-13.

Doba, T., et al. (1985): Antioxidant and co-antioxidant activity of vitamin C. The effect of vitamin C, either alone or in the presence of vitamin E or a water-soluble vitamin E analogue, upon the peroxidation of aqueous multilamellar phospholipid liposomes. *Biochim Biophys Acta* 835(2): 298-303.

Donnelly, E. T., et al. (1999): The effect of ascorbate and alpha-tocopherol supplementation in vitro on DNA integrity and hydrogen peroxide-induced DNA damage in human spermatozoa. *Mutagenesis* 14(5): 505-12.

Dreher, F., et al. (1999): Effect of topical antioxidants on UV-induced erythema formation when administered after exposure. *Dermatology* 198(1): 52-5.

Dreher, F., et al. (1998): Topical melatonin in combination with vitamins E and C protects skin from ultraviolet-induced erythema: a human study in vivo. *Br J Dermatol* 139(2): 332-9.

Eberlein-König, B., et al. (1998): Protective effect against sunburn of combined systemic ascorbic acid (vitamin C) and d-alpha-tocopherol (vitamin E). *J Am Acad Dermatol* 38(1): 45-8.

Esterbauer, H., et al. (1991): Role of vitamin E in preventing the oxidation of low-density lipoprotein. *Am J Clin Nutr* 53(1 Suppl): 314S-321S.

Factor, V. M., et al. (2000): Vitamin E reduces chromosomal damage and inhibits hepatic tumor formation in a transgenic mouse model. *Proc Natl Acad Sci U S A* 97(5): 2196-201.

Fisher, G. J., et al. (1996): Molecular basis of sun-induced premature skin ageing and retinoid antagonism. *Nature* 379(6563): 335-9.

Flohé, L. (1989): The selenoprotein glutathione peroxidase. In: Glutathione: Chemical, Biochemical and Medical Aspects, Part A. ed. *Dolphin, D.*

Foo, S. Y. und Nolan, G. P. (1999): NF-kappaB to the rescue: RELs, apoptosis and cellular transformation. *Trends Genet* 15(6): 229-35.

Fridovich, I. (1997): Superoxide anion radical (O<sub>2</sub>-), superoxide dismutases, and related matters. *J Biol Chem* 272(30): 18515-7.

Fryer, M. J. (1993): Evidence for the photoprotective effects of vitamin E. *Photochem Photobiol* 58(2): 304-12.

Fuchs, J. (1998): Potentials and limitations of the natural antioxidants RRR-alpha-tocopherol, L-ascorbic acid and beta-carotene in cutaneous photoprotection. *Free Radic Biol Med* 25(7): 848-73.

Fuchs, J., et al. (1989): Acute effects of near ultraviolet and visible light on the cutaneous antioxidant defense system. *Photochem Photobiol* 50(6): 739-44.

Fuchs, J. und Kern, H. (1998): Modulation of UV-light-induced skin inflammation by D-alpha-tocopherol and L-ascorbic acid: a clinical study using solar simulated radiation. *Free Radic Biol Med* 25(9): 1006-12.

Galleron, S., et al. (1999): Reactive oxygen species induce apoptosis of synoviocytes in vitro. Alpha-tocopherol provides no protection. *Cell Biol Int* 23(9): 637-42.

Gensler, H. L. und Magdaleno, M. (1991): Topical vitamin E inhibition of immunosuppression and tumorigenesis induced by ultraviolet irradiation. *Nutr Cancer* 15(2): 97-106.

Gerard-Monnier, D. und Chaudière, J. (1996): [Metabolism and antioxidant function of glutathione]. *Pathol Biol (Paris)* 44(1): 77-85.

Giacomoni, P. U., et al. (1998): Morphological alterations and cell blebbing in UV-irradiated human epidermis. *Arch Dermatol Res* 290(3): 163-6.

Gillies, R. J., Didier, N., Denton, M. (1986): Determination of cell number in monolayer cultures. *Anal. Biochem.* 159: 109-113.

Girotti, A. W. (1985): Mechanisms of lipid peroxidation. *J Free Radic Biol Med* 1(2): 87-95.

Grützkau, A., et al. (1998): Synthesis, storage, and release of vascular endothelial growth factor/vascular permeability factor (VEGF/VPF) by human mast cells: implications for the biological significance of VEGF206. *Mol Biol Cell* 9(4): 875-84.

Guarrera, M., et al. (1998): Catalase in the stratum corneum of patients with polymorphic light eruption. *Acta Derm Venereol* 78(5): 335-6.

Hallberg, L., et al. (1987): Is there a physiological role of vitamin C in iron absorption? *Ann NY Acad Sci* 498: 324-32.

Halliwell, B. (1989): Free radicals, reactive oxygen species and human disease: a critical evaluation with special reference to atherosclerosis. *Br J Exp Pathol* 70(6): 737-57.

Halliwell, B. und Chirico, S. (1993): Lipid peroxidation: its mechanism, measurement, and significance. *Am J Clin Nutr* 57(5 Suppl): 715S-724S; discussion 724S-725S.

Halliwell, B., et al. (1989): Free radicals in biology and medicine 2nd ed. *Oxford, UK: Clarendon Press.*

Harris, E. D. (1992): Regulation of antioxidant enzymes. *Faseb J* 6(9): 2675-83.

Hirano, F., et al. (1998): Alternative splicing variants of IkappaB beta establish differential NF- kappaB signal responsiveness in human cells. *Mol Cell Biol* 18(5): 2596-607.

Imbert, V., et al. (1996): Tyrosine phosphorylation of I kappa B-alpha activates NF-kappa B without proteolytic degradation of I kappa B-alpha. *Cell* 86(5): 787-98.

Israel, N., et al. (1992): Redox status of cells influences constitutive or induced NF-kappa B translocation and HIV long terminal repeat activity in human T and monocytic cell lines. *J Immunol* 149(10): 3386-93.

Ito, C. Y., et al. (1994): Three NF-kappa B sites in the I kappa B-alpha promoter are required for induction of gene expression by TNF alpha. *Nucleic Acids Res* 22(18): 3787-92.

Kanno, T., et al. (1995): Inhibition of stimulus-specific neutrophil superoxide generation by alpha-tocopherol. *Free Radic Res* 22(5): 431-40.

Kanno, T., et al. (1996): Inhibition of neutrophil-superoxide generation by alpha-tocopherol and coenzyme Q. *Free Radic Res* 24(4): 281-9.

Kindl, G., Raab, W.: Licht und Haut: Bräunung, Lichtschutz, Pflege; ein Leitfaden für die Beratung in der Praxis, Govi-Verlag. Frankfurt am Main [i.e. Eschborn] 1993.

Kirkman, H. N., et al. (1987): The function of catalase-bound NADPH. *J Biol Chem* 262(2): 660-6.

Kono, Y. und Fridovich, I. (1982): Superoxide radical inhibits catalase. *J Biol Chem* 257(10): 5751-4.

Le Bail, O., et al. (1993): Promoter analysis of the gene encoding the I kappa B-alpha/MAD3 inhibitor of NF-kappa B: positive regulation by members of the rel/NF- kappa B family. *Embo J* 12(13): 5043-9.

Legrand-Poels, S., et al. (1997): Involvement of different transduction pathways in NF-kappa B activation by several inducers. *Free Radic Res* 27(3): 301-9.

Lehmann, J., et al. (1998): Kinetics of DNA strand breaks and protection by antioxidants in UVA- or UVB-irradiated HaCaT keratinocytes using the single cell gel electrophoresis assay. *Mutat Res* 407(2): 97-108.

Liu, Z. G., et al. (1996): Dissection of TNF receptor 1 effector functions: JNK activation is not linked to apoptosis while NF-kappaB activation prevents cell death. *Cell* 87(3): 565-76.

McCord, J. M. und Fridovich, I. (1969): The utility of superoxide dismutase in studying free radical reactions. I. Radicals generated by the interaction of sulfite, dimethyl sulfoxide, and oxygen. *J Biol Chem* 244(22): 6056-63.

McVean, M. und Liebler, D. C. (1999): Prevention of DNA photodamage by vitamin E compounds and sunscreens: roles of ultraviolet absorbance and cellular uptake. *Mol Carcinog* 24(3): 169-76.

Messer, G. und Rupec, R. A. (2001): Nuklearfaktor-kappa-B (NF-κB) Teil 2: Pathophysiologische Bedeutung. *Hautarzt* 52(8): 746-753.

Meydani, S. N., et al. (1997): Vitamin E supplementation and in vivo immune response in healthy elderly subjects. A randomized controlled trial. *Jama* 277(17): 1380-6.

Meyer, M., et al. (1993): H<sub>2</sub>O<sub>2</sub> and antioxidants have opposite effects on activation of NF-kappa B and AP-1 in intact cells: AP-1 as secondary antioxidant-responsive factor. *Embo J* 12(5): 2005-15.

Mihara, M. und Uchiyama, M. (1978): Determination of malonaldehyde precursor in tissues by thiobarbituric acid test. *Anal Biochem* 86(1): 271-8.

Morliere, P., et al. (1991): UVA-induced lipid peroxidation in cultured human fibroblasts. *Biochim Biophys Acta* 1084(3): 261-8.

Msika, P., et al. (1990): Antioxidants and UV aggressions in the human epidermis. *J. Invest. Dermatol.* 94: 400.

Nachbar, F. und Korting, H. C. (1993): The role of vitamin E in normal and damaged skin. *J Mol Med* 73: 7-17.

Nakamura, T., et al. (1998): Inhibition of NF-kappa B transcriptional activity by alpha-tocopheryl succinate. *Biofactors* 7(1-2): 21-30.

Olnes, M. J., et al. (1994): 2,3,7,8-Tetrachlorodibenzo-p-dioxin-mediated gene expression in the immature rat thymus. *Exp Clin Immunogenet* 11(2-3): 102-9.

Ozes, O. N., et al. (1999): NF-kappaB activation by tumour necrosis factor requires the Akt serine-threonine kinase. *Nature* 401(6748): 82-5.

Packer, J. E., et al. (1979): Direct observation of a free radical interaction between vitamin E and vitamin C. *Nature* 278(5706): 737-8.

Packer, L. (1991): Protective role of vitamin E in biological systems. *Am J Clin Nutr* 53(4 Suppl): 1050S-1055S.

Packer, L. und Suzuki, Y. J. (1993): Vitamin E and alpha-lipoate: role in antioxidant recycling and activation of the NF-kappa B transcription factor. *Mol Aspects Med* 14(3): 229-39.

Peterkofsky, B. (1991): Ascorbate requirement for hydroxylation and secretion of procollagen: relationship to inhibition of collagen synthesis in scurvy. *Am J Clin Nutr* 54(6 Suppl): 1135S-1140S.

Petersen, A. B., et al. (2000): Hydrogen peroxide is responsible for UVA-induced DNA damage measured by alkaline comet assay in HaCaT keratinocytes. *J Photochem Photobiol B* 59(1-3): 123-31.

Peus, D., et al. (2001): Vitamin E analog modulates UVB-induced signaling pathway activation and enhances cell survival. *Free Radic Biol Med* 30(4): 425-32.

Peus, D., et al. (1999a): H<sub>2</sub>O<sub>2</sub> is required for UVB-induced EGF receptor and downstream signaling pathway activation. *Free Radic Biol Med* 27(11-12): 1197-202.

Peus, D., et al. (1999b): UVB activates ERK1/2 and p38 signaling pathways via reactive oxygen species in cultured keratinocytes. *J Invest Dermatol* 112(5): 751-6.

Peus, D., et al. (1998): H<sub>2</sub>O<sub>2</sub> is an important mediator of UVB-induced EGF-receptor phosphorylation in cultured keratinocytes. *J Invest Dermatol* 110(6): 966-71.

Pincheira, J., et al. (1999): Effect of vitamin E on chromosomal aberrations in lymphocytes from patients with Down's syndrome. *Clin Genet* 55(3): 192-7.

Podda, M. und Grundmann-Kollmann, M. (2001): Low molecular weight antioxidants and their role in skin ageing. *Clin Exp Dermatol* 26(7): 578-82.

Pryor, W. A. (1978): The formation of free radicals and the consequences of their reactions in vivo. *Photochem Photobiol* 28(4-5): 787-801.

Qin, J. Z., et al. (1999): Role of NF-kappaB in the apoptotic-resistant phenotype of keratinocytes. *J Biol Chem* 274(53): 37957-64.

Rauterberg, A. und Jung, E. G. (1993): [UV exposure, skin cancer and decrease in the ozone layer]. *Ther Umsch* 50(12): 804-7.

Rawlings, A. V., et al. (1994): Stratum corneum moisturization at the molecular level. *J Invest Dermatol* 103(5): 731-41.

Rijnkels, J. M., et al. (2003): Photoprotection by antioxidants against UVB-radiation-induced damage in pig skin organ culture. *Radiat Res* 159(2): 210-7.

Royack, G. A., et al. (2000): Response of human oral epithelial cells to oxidative damage and the effect of vitamin E. *Oral Oncol* 36(1): 37-41.

Satoh, K., et al. (1997): Effect of Trolox, a synthetic analog of alpha-tocopherol, on cytotoxicity induced by UV irradiation and antioxidants. *Anticancer Res* 17(4A): 2459-63.

Schmidt, K. N., et al. (1995): The roles of hydrogen peroxide and superoxide as messengers in the activation of transcription factor NF-kappa B. *Chem Biol* 2(1): 13-22.

Schreck, R. (1992): NFkB: An oxidative stress-responsive transcription factor of eukaryotic cells (a review). *s.bei Siebenlist 1994*.

Schreck, R., et al. (1992): Dithiocarbamates as potent inhibitors of nuclear factor kappa B activation in intact cells. *J Exp Med* 175(5): 1181-94.

Schreck, R., et al. (1991): Reactive oxygen intermediates as apparently widely used messengers in the activation of the NF-kappa B transcription factor and HIV-1. *Embo J* 10(8): 2247-58.

Seitz, C. S., et al. (1998): Alterations in NF-kappaB function in transgenic epithelial tissue demonstrate a growth inhibitory role for NF-kappaB. *Proc Natl Acad Sci U S A* 95(5): 2307-12.

Sen, R. a. B., D. (1986): Multiple nuclear factors interact with the immunoglobulin enhancer sequences. *Cell* 46: 705-716.

Shang, J.: Regulation of UVA-induced melanin synthesis in normal human melanocytes and melanoma cells in vitro. The role of NF-kappaB. Mensch und Buch Verlag, Berlin 2002.

Shimizu, N., et al. (1984): The reaction of superoxide radical with catalase. Mechanism of the inhibition of catalase by superoxide radical. *J Biol Chem* 259(7): 4414-8.

Shindo, Y., et al. (1994): Recovery of antioxidants and reduction in lipid hydroperoxides in murine epidermis and dermis after acute ultraviolet radiation exposure. *Photodermatol Photoimmunol Photomed* 10(5): 183-91.

Sies, H. (1986): Biochemistry of oxidative stress. *Angew Chem Int Ed Engl* 25: 1058-71.

Sies, H. (1991): Oxidative stress: from basic research to clinical application. *Am J Med* 91(3C): 31S-38S.

Sies, H. und Cadena, E. (1985): Oxidative stress: damage to intact cells and organs. *Philos Trans R Soc Lond B Biol Sci* 311(1152): 617-31.

Sies, H. e. (1985): Oxidative stress. London: Academic Press: 1-8.

Slamenova, D., et al. (1999): Detection of lignin biopolymer- and vitamin E-stimulated reduction of DNA strand breaks in H<sub>2</sub>O<sub>2</sub>- and MNNG-treated mammalian cells by the comet assay. *Nutr Cancer* 33(1): 88-94.

Soo Lee, Y., et al. (2003): Inhibition of ultraviolet-A-modulated signaling pathways by asiatic acid and ursolic acid in HaCaT human keratinocytes. *Eur J Pharmacol* 476(3): 173-8.

Sorg, O., et al. (2001): Cutaneous vitamins A and E in the context of ultraviolet- or chemically- induced oxidative stress. *Skin Pharmacol Appl Skin Physiol* 14(6): 363-72.

Steinman, H. M. (1982): Copper-zinc superoxide dismutase from *Caulobacter crescentus* CB15. A novel bacteriocuprein form of the enzyme. *J Biol Chem* 257(17): 10283-93.

Summerfield, F. W. und Tappel, A. L. (1984): Effects of dietary polyunsaturated fats and vitamin E on aging and peroxidative damage to DNA. *Arch Biochem Biophys* 233(2): 408-16.

Sun, S. C., et al. (1993): NF-kappa B controls expression of inhibitor I kappa B alpha: evidence for an inducible autoregulatory pathway. *Science* 259(5103): 1912-5.

Sun, Y. und Oberley, L. W. (1996): Redox regulation of transcriptional activators. *Free Radic Biol Med* 21(3): 335-48.

Suzuki, Y. J. und Packer, L. (1993): Inhibition of NF-kappa B DNA binding activity by alpha-tocopheryl succinate. *Biochem Mol Biol Int* 31(4): 693-700.

Suzuki, Y. J. und Packer, L. (1993 a): Inhibition of NF-kappa B activation by vitamin E derivatives. *Biochem Biophys Res Commun* 193(1): 277-83.

Tebbe, B., et al. (1997): L-ascorbic acid inhibits UVA-induced lipid peroxidation and secretion of IL-1alpha and IL-6 in cultured human keratinocytes in vitro. *J Invest Dermatol* 108(3): 302-6.

Thiele, J. J., et al. (2001): The antioxidant network of the stratum corneum. *Curr Prob Dermatol* 29: 26-42.

Tobin, D., et al. (1996): Ras-independent activation of Rel-family transcription factors by UVB and TPA in cultured keratinocytes. *Oncogene* 12(4): 785-93.

Traenckner, E. B., et al. (1995): Phosphorylation of human I kappa B-alpha on serines 32 and 36 controls I kappa B-alpha proteolysis and NF-kappa B activation in response to diverse stimuli. *Embo J* 14(12): 2876-83.

Trevithick, J. R., et al. (1992): Topical tocopherol acetate reduces post-UVB, sunburn-associated erythema, edema, and skin sensitivity in hairless mice. *Arch Biochem Biophys* 296(2): 575-82.

Tyrrell, R. M. (1995): Ultraviolet radiation and free radical damage to skin. *Biochem Soc Symp* 61: 47-53.

Tyurina, Y. Y., et al. (1997): Direct evidence for antioxidant effect of Bcl-2 in PC12 rat pheochromocytoma cells. *Arch Biochem Biophys* 344(2): 413-23.

Ursini, F., et al. (1995): Diversity of glutathione peroxidases. *Methods Enzymol* 252: 38-53.

Vierk, J. E., et al. (1998): Inhibition by tocopherol of prostaglandin-induced apoptosis in ovine corpora lutea. *Prostaglandins Other Lipid Mediat* 56(5-6): 265-76.

Vile, G. F., et al. (1995): Activation of NF-kappa B in human skin fibroblasts by the oxidative stress generated by UVA radiation. *Photochem Photobiol* 62(3): 463-8.

Wang, C. Y., et al. (1999): Control of inducible chemoresistance: enhanced anti-tumor therapy through increased apoptosis by inhibition of NF-kappaB. *Nat Med* 5(4): 412-7.

Wang, C. Y., et al. (1996): TNF- and cancer therapy-induced apoptosis: potentiation by inhibition of NF-kappaB. *Science* 274(5288): 784-7.

Wang, H. Q., et al. (2003): Epidermal growth factor receptor-dependent, NF-kappaB-independent activation of the phosphatidylinositol 3-kinase/Akt pathway inhibits ultraviolet irradiation-induced caspases-3, -8, and -9 in human keratinocytes. *J Biol Chem* 278(46): 45737-45. Epub 2003 Sep 2.

Werninghaus, K., et al. (1994): Evaluation of the photoprotective effect of oral vitamin E supplementation. *Arch Dermatol* 130(10): 1257-61.

Woods, J. A., et al. (2004): The effect of photofrin on DNA strand breaks and base oxidation in HaCaT keratinocytes: a comet assay study. *Photochem Photobiol* 79(1): 105-13.

Yamauchi, J., et al. (2001): Tocopherol-associated protein is a ligand-dependent transcriptional activator. *Biochem Biophys Res Commun* 285(2): 295-9.

Yoshida, N., et al. (1999): Vitamin E protects against polymorphonuclear leukocyte-dependent adhesion to endothelial cells. *J Leukoc Biol* 65(6): 757-63.

Yuen, K. S. und Halliday, G. M. (1997): alpha-Tocopherol, an inhibitor of epidermal lipid peroxidation, prevents ultraviolet radiation from suppressing the skin immune system. *Photochem Photobiol* 65(3): 587-92.