
7 Literatur

- ALAVA V. R., KANAZAWA A., TESHIMA S.-I. & KOSHIO S. (1993) Effects of dietary vitamins A, E, and C on the ovarian development of *Penaeus japonicus*.- Bull Jap Soc Sci Fish 59: 1235-1241
- ALLEN T. H. & BODINE J. H. (1940) Enzymes in ontogenesis (Orthoptera). XIII. Activation of protyrosinase in the oxidation of ascorbic acid.- J Gen Physiol 24: 99-102
- ARRIGONI O. & DETULLIO M. C. (2002) Ascorbic acid: much more than just an antioxidant.- Biochim Biophys Acta 1569: 1-9
- ARYA S. P., MAHAJAN M. & JAIN P. (2000) Non-spectrometric methods for the determination of Vitamin C.- Analytical Chimica Acta 417: 1-14
- AX, P. (2001) Das System der Metazoa III. Spektrum Akademischer Verlag, Heidelberg 5-283
- AYAZ K. M., JENNESS R. & BIRNEY E. C. (1976) An Improved Assay for L-Gulonolactone Oxidase.- Anal Biochem 72: 161-171
- BACOT A. W. & HARDEN A. (1922) Vitamin requirements of *Drosophila*. I. Vitamins B and C.- Biochem J 16: 148-152
- BAKAEV V.V. & BAKAEVA L.M. (2002) Effect of ascorbic acid on longevity in the nematoda *Caenorhabditis elegans*. Longevity Report 14:
- BALKE E. & STEINER G. (1958) Über die chemische Nahrungswahl von *Pelmatohydra oligactis* Pall.- Die Naturwissenschaften 22-22
- BALLARIN L., CIMA F. & SABBADIN A. (1998) Phenoloxidase and cytotoxicity in the compound ascidian *Botryllus schlosseri*.- Developmental and Comparativ Immunology 22: 479-492
- BARBEHENN R. V., BUMGARNER S. L., ROOSEN E. F. & MASUMI N. (2001) Antioxydant defenses incaterpillars: role of the ascorbate recycling system in the midgut lumen.- J Insect Physiol 47: 349-357

- BAVESTRELLO G., ARILLO A., BENATTI U., CERRANO C., CATTANEO-VIETTI R., CORTESOGNO L., GAGGERO L., GIOVINE M., TONETTI M. & SÁRA M. (1995) Quartz dissolution by the sponge *Chondrosia reniformis* (Porifera, Demospongia).- Nature 378: 374-376
- BEGG M. (1955) Some observations on water-soluble factors which accelerate the growth in aseptic culture of larvae of *Drosophila melanogaster*.- Exp Biol 33: 142-154
- BEHMER S. T., ELIAS D. O. & GREBENOK R. J. (1999) Phytosterol metabolism and absorption in the generalist grasshopper, *Schistocerca americana* (Orthoptera: Acrididae).- Archives of Biochemistry and Physiology 42: 13-25
- BEHRENS W.A. & MADERE R. (1992) Quantitative analysis of ascorbic acid and isoascorbic acid in foods by high-performance liquid chromatography with electrochemical detection. Journal of Liquid Chromatography 15: 753-765
- BIRNEY E.C., JENNESS R. & AYAZ K.M. (1976) Inability of bats to synthesise L-ascorbic acid. Nature 260: 626-628
- BIRNEY E. C., JENNESS R. & HUME I. D. (1979) Ascorbic acid biosynthesis in the mammalian kidney.- Experientia 35: 1425-1426
- BIRNEY E. C., JENNESS R. & HUME I. D. (1980) Evolution of an Enzyme System: Ascorbic Acid Biosynthesis in Monotremes and Marsupials.- Evolution 34: 230-239
- BOURNE G. & ALLEN R. (1935) Vitamin C in lower organisms.- Nature 135: 185-186
- BRADLEY D. W., EMERY G. & MAYNARD J. E. (1973) Vitamin C in Plasma: A comparative study of the Vitamin stabilized with Trichloroacetic Acid or Metaphosphoric Acid and the Effects of storage at -70°, -20°, 4° and 25° on the stabilized Vitamin.- Clin Chim Acta 44: 47-52
- BRIGGS M. H. (1960) A Function for Ascorbic Acid in the Metabolism of an Insect.- Science 132: 92-92
- BRIGGS M. H. (1962) Some Aspects of the Metabolism of Ascorbic Acid in Insects.- Comp Biochem Physiol 5: 241-252

- BROOKS G. & PAULAIS R. (1940) Recherches sur la Réparation et la Localisation des Caroténoïdes des Flavines et de l'acide-L-ascorbique chez les Mollusques Lamellibranches; cas des Huitres et des Gryphées vertes et blanches.- Ann Inst Pasteur 64: 349-354
- BURNS J. J., PEYSER P. & MOLTZ A. (1956) Missing Step in Guinea Pigs Required for the Biosynthesis of L-Ascorbic Acid.- Science 124: 1148-1149
- BURNS J. J. & EVANS C. (1956) The synthesis of L-ascorbic acid in the rat from D-glucuronolactone and L-gulonolactone.- J Biol Chem 223: 897-905
- CAMPBELL, A. C. (1987) Der Kosmos Strandführer, vol 2. Franckh'sche Verlagshandlung, W. Keller & Co., Stuttgart 1 -320
- CARR R. S., BALLY M. B., THOMAS P. & NEFF J. M. (1983) Comparison of methods for determination of ascorbic acid in animal tissues.- Anal Chem 55: 1229-1232
- CELERIN M., RAY J. M., SCHISLER N., DAY A. W., STETLER-STEVENSON W. G. & LAUDENBACH D. E. (1996) Fungal fimbriae are composed of collagen.- The EMBO Journal 15: 4445-4453
- CHANG C.L. & KURASHIMA R.S. (1999) Effects of ascorbic acid-rich bellpepper on development of *Bacteriocera latifrons* (Hendel) (Diptera, Tephritidae). J Econ Entomol 92: 1108-1112.
- CHATTERJEE I. B., GHOSH N. C., GHOSH J. J., ROY R. N. & GUHA B. C. (1957) Enzymatic Synthesis of Ascorbic Acid in Animal Tissues.- Science and Culture 23: 50-51
- CHATTERJEE I. B., KAR N. C., GHOSH N. C., ROY R. N. & GUHA B. C. (1961) Aspects of Ascorbic Acid Biosynthesis in Animals.- Ann N Y Acad Sci 92: 36-55
- CHATTERJEE I. B. (1973) Evolution and the Biosynthesis of Ascorbic Acid.- Science 182: 1271-1272
- CHATTERJEE I. B. (1973) Vitamin C Synthesis in Animals: Evolutionary Trend.- Science and Culture 39: 210-212

-
- CHATTERJEE I. B., MAJUMBER A. K., NANDI B. K. & SUBRAMANIAN N. (1975) Synthesis and some Major Functions of Vitamin C in Animals.- Ann N Y Acad Sci 258: 144-149
- CHAUDHURI C. R. & CHATTERJEE I. B. (1969) L-Ascorbic Acid Synthesis in Birds: Phylogenetic Trend.- Science 164: 435-436
- CHIPPENDALE G. M. & BECK S. D. (1964) Nutrition of the european corn borer, *Ostrinia nubilalis* (Hüb.) V. Ascorbic acid as the corn leaf factor.- Entomologia experimentalis et applicata 7: 241-248
- CHIPPENDALE G. M., BECK S. D. & STRONG F. M. (1965) Nutrition of the cabbage looper, *Trichoplusia ni* (Hüb.)-I. Some Requirements for larval growth and wing development.- J Ins Physiol 11: 211-223
- CHIPPENDALE G. M. (1975) Ascorbic acid: An essential nutrient for a plant-feeding insect, *Diatraea grandiosella*.- The journal of nutrition 105: 499-507
- CHOJKER M., HOUGLUM K., SOLIS-HERRUZO J. & BRENNER D. A. (1989) Stimulation of collagen gene expression by ascorbic acid in cultured human fibroblast. A role for lipid peroxidation.- J Biol Chem 264: 16957-16962
- COHEN R. B. (1961) Histochemical localization of L-Gulonolactone Oxidase activity in tissues of several species.- Proceedings of the Society for Experimental Biology 106: 309-311
- CONKLIN P. L., SARRACO S. A., NORRIS S. R. & LAST R. L. (2000) Identification of ascorbic acid deficient *Arabidopsis thaliana* mutants.- Genetics 154: 847-856
- CONKLIN P.L. (2001) Recent advances in the role and biosynthesis of ascorbic acid in plants. Plant, Cell and Environment 24: 383-394
- CRAMER, F. (1962) Papierchromatographie, Monographien Nr.64, vol 5, Heidelberg 118-123
- CUETE G. R., ALLEKOTTE R. & KRAVETZ F. O. (2000) Scurvy in capybaras bred in captivity in Argentina.- Journal of Wildlife Diseases 36: 97-101

- DABROWSKI K. (1990) Gulonolacton Oxidase is Missing in Teleost Fish. The Direct Spectrophometric Assay.- Biol Chem Hoppe-Seyler 371: 207-214
- DABROWSKI K. (1991) Some aspects of ascorbate metabolism in developing embryos of the brine shrimp (*Artemia salina*).- Can J Aquat Sci 48: 1905-1908
- DADD R. H. (1957) Ascorbic Acid and Carotene in the Nutrition of the Desert Locust, *Schistocera gregaria* Forsk.- Nature 179: 427-
- DADD R. H. (1960) Some effects of dietary ascorbic acid on locusts.- Proc Roy Soc 153 B: 128-143
- DADD R. H., KRIEGER D. L. & MITTLER T. E. (1967) Studies on the artificial feeding of the aphid *Myzus persicae*.- J Ins Physiol 13: 249-272
- DADD, R. H. (1984) Regulation: Digestion, Nutrition, Excretion. In: KERKUT, G. A. & GILBERT, L. I. (eds) Comprehensive insect physiology biochemistry and Pharmacology, vol 1. Pergamon Press, Oxford 313-390
- DAY P. L. (1944) The nutritional requirements of primates other than man.- Vitamins and Hormones 2: 79-86
- DEJARDINS L. M., CASTELL J. D. & KEAN J. C. (1985) Synthesis of Dehydroascorbic Acid by Subadult Lobster (*Homarus americanus*).- Can J Aquat Sci 42: 370-373
- DESHIMARU O. & KUROKI K. (1976) Studies on a purified diet for Prawn- VII Adequat dietary levels of ascorbic acid and inositol.- Bull Jap Soc Sci Fish 42: 571-576
- DONER L. W. & HICKS K. B. (1981) High-performance liquid chromatographic separation of ascorbic acid, erythorbic acid, dehydroascorbic acid, dehydroerythorbic acid, diketogulonic acid and diketogluconic acid.- Analytical Biochemistry 115: 225-230
- DYKENS J. A. & SHICK J. M. (1982) Oxygen production by endosymbiotic algae controls superoxide dismutase activity in there animal host.- Nature 297: 579-580
- DYKHUIZEN D. E., HARRISON K. M. & RICHARDSON B. J. (1980) Evolutionary implication of ascorbic acid production in the Australian lungfish.- Experientia 36: 945-946

- EHRHARDT P. (1968) Einfluß von Ernährungsfaktoren auf die Entwicklung von Säfte saugenden Insekten unter besonderer Berücksichtigung von Symbionten.- Z f Parasitenkunde 31: 38-66
- ENGEL U., PERTZ O., FAUSER C., ENGEL J., DAVID C. N. & HOLSTEIN W. T. (2001) A switch in disulfide linkage during minicollagen assembly in *Hydra* nematocysts.- The EMBO Journal 20: 3063-3073
- FELTON G. W. & DUFFEY S. S. (1992) Ascorbat Oxidation Reduction in *Helicoverpa zea* as a Scavenging System against dietary oxidants.- Archives of Biochemistry and Physiology 19: 27-37
- FLEMING J. E., ORR P. L., SHIBUYA R. B. & BENSCH K. G. (1976) Hydroxyl radical scavenging in *Drosophila melanogaster*.- Age 11: 175-175
- FRACALOSSO D. M., ALLEN M. E., YUYAMA L. K. & OFTEDAL O. T. (2001) Ascorbic acid biosynthesis in amazonian fishes.- Aquaculture 192: 321-332
- FRAENKEL G. & BLEWETT M. (1946) Linoleic acid, Vitamin E and other fat-soluble substances in the nutrition of certain insects, *Ephestia kuehniella*, *E. elutella*, *E. cautella* and *Plodia interpunctella* (Lep.).- Journal Exp Biol 22: 172-190
- FRÖBRICH G. (1954) Neue Ergebnisse experimenteller Untersuchungen zur Ernährungsphysiologie des Reismehlkäfers *Trilobium confusum* Duval (Tenebrionidae, Coleoptera).- Z Vitamin-, Hormon- u Fermentforsch 6: 1-24
- GEIGERT J., HIRANO D. S. & NEIDLEMAN S. L. (1981) High-performance liquid chromatographic method for the determination of L-ascorbic acid and D-isoascorbic acid.- Journal of Chromatography 206: 396-399
- GLASER R. W. (1930) Cultivation and classification of "bacteroides," "symbionts," or "rickettsiae" of *Blattella germanica*.- The Journal of experimental Medicine 51: 903-907
- GLASER R. W. (1930) On the isolation, cultivation and classification of the so-called intracellular "symbiont" or "rickettsia" of *Periplaneta americana*.- The Journal of experimental Medicine 51: 59-81

-
- GLAUBITZ D. & BARTOLOMAEUS T. (2002) Biosynthesis of ascorbic acid by *Alycyonium digitatum* (Alcyonaria, Cnidaria).- *Zoology* 105: 61
- GRÜN M. & LOEWUS F.A. (1984) L-ascorbic-acid biosynthesis in the euryhaline diatom *Cyclotella cryptica*.- *Planta* 160: 6-11
- GUPTA S. D., Chaudhuri C. R. & Chatterjee I. B. (1972) Incapability of L-Ascorbic Acid Synthesis by Insects.- *Archives of Biochemistry and Biophysics* 152: 889-890
- HANCOCK R. D., McRAE D., HAUPT S. & VIOLA R. (2003) Synthesis of L-ascorbic acid in the phloem.- *Brit J Exp Biol* 7:1-42
- HASAN L., VÖGELI P., STOLL P., KRAMER S. S., STRANZINGER G. & NEUENSCHWANDER S. (2004) Intragenetic deletion in the gene encoding L-gulonolactone oxidase causes vitamin C deficiency in pigs.- *Mammalian Genome* 15: 323-333
- HAWKRIDGE J.M., PIPE R.K. & BROWN B.E. (2000) Localisation of antioxidant enzymes in the cnidarians *Anemonia viridis* and *Gonipora stokesi*. *Marine Biology* 137: 1-9
- HEIK H. M. C., WILLEMOT J. & BEGIN-HEICK N. (1969) the subcellular localization of alcohol dehydrogenase activity in bakers yeast.- *Biochem Biophys Acta* 191: 493-501
- HELSPER J. P., KAGAN L., HILBY C. L., MAYNARD T. M. & LOEWUS F.A. (1982) L-Ascorbic acid biosynthesis in *Ochromonas danica*.- *Plant Physiol* 69: 465-468
- HIRSCH G. C. (1939) Form- und Stoffwechsel der Golgi-Körper. Verlag der Gebrüder Borntraeger, Berlin 233-237
- HOLST A. (1907) Experimental studies relating to "ship-beri-beri" and scurvy. *Jour of Hyg* 7: 619-671
- HOLST A. & FRÖLICH T. (1907) Experimental studies relating to "ship-beri-beri" and scurvy.- *Jour of Hyg* 7: 634-670

- HOUGLUM K. P., BRENNER D. A. & CHOIKER M. (1991) Ascorbic acid stimulation of collagen biosynthesis independent of hydroxylation.- *Am J Clin Nutr* 54: 1141S-1143S
- HUH W.-K., KIM S.-T., JEONG G. & KANG S.-O. (2001) Defency of D-Erythroascorbic acid attenuates hyphal growth and virulance of *Candida albicans*. *Infection and Immunity* 69: 3939-3946
- HUNTER B., MARGARELLI P. C. J., LIGHTNER D. V. & COLVIN L. B. (1979) Ascorbic acid-dependent collagen formation in penaeid shrimp.- *Comp Biochem Physiol* 64B: 381-385
- INAI Y., OHTA Y. & NISHIKIMI M. (2003) the whole structure of the human nonfunctional L-gulono- γ -lactone oxidase gene - the gene responsible for scurvy - and the evolution of repetitive sequences thereon.- *J Nutr Sci Vitaminol* 49: 315-319
- ISHERWOOD F. A., CHEN Y. T. & MAPSON L. W. (1953) Synthesis of L-Ascorbic Acid in Plants and Animals.- *Nature* 171: 348-349
- ISLER, O., BRUBACHER, G. & KISS, J. (1988) Wasserlösliche Vitamine. In: ISLER, O., BRUBACHER, G., GHISLA, S., & KRÄUTLER, B. (eds). Thieme, Stuttgart 396-439
- JAFFE, G. M. (1984) Handbook of vitamins; nutrional, biochemical, and clinical aspects. In: TANNENBAUM, R. S. & WALSTRA, P. (eds) Food Science and Technology, New York 199-244
- JUNG C.-H. & WELLS W.W. (2003) Spontaneous conversion of L-dehydroascorbic acid to L-ascorbic acid and erythroascorbic acid. *Arch Biochem Biophys* 355: 9-14
- JURZITZA G. (1969) Der Vitaminbedarf normaler und aposymbiontischer *Lasioderma serricornis* F.(Coleoptera, Anobiide) und die Bedeutung der symbiontischen Pilze als Vitaminquelle für ihre Wirte.- *Oecologia* 3: 70-83
- KAWAI, NISHIKIMI M., OZAWA T. & YAGI K. (1992) A missense mutation of L-gulono- γ -lactone oxidase causes the inability of scurvy-prone osteogenic disorder rats to synthesize L-ascorbic acid.- *J Biol Biochem* 267: 21973-21976

- KEAN J. C., CASTELL J. D. & TRIDER D. J. (1985) Juvenile Lobster (*Homarus americanus*) do not require Dietary Ascorbic Acid.- Can J Aquat Sci 42: 368-370
- KIDDER, G. W. (1953) The nutrition of invertebrate animals. In: BOURNE, G. & KIDDER, G. W. (eds) Biochemistry and physiology of nutrition. Academic Press Inc., New York 162
- KIM S.-T., HUH W.-K., KIM J.-Y., HWANG S.-W. & KANG S.-O. (1996) D-arabinose dehydrogenase and biosynthesis of erythroascorbic acid in *Candida albicans*.- Biochimica et Biophysica acta 1297: 1-8
- KIMOTO E., TERADA S. & YAMAGUCHI T. (1997) Analysis of ascorbic acid, dehydroascorbic acid, and transformation products by ion-pairing high-performance liquid chromatography with multiwavelength ultraviolet and electrochemical detection. In: McCORMICK, D. B., SUTTIE, J. W., & WAGNER, C. (eds) Methods in Enzymology; Vitamins and Coenzymes, vol first. Academic Press, San Diego, London, Boston, New York, Sydney, Tokyo, Toronto, pp 3-12
- KOSHIZAKA T., NISHIKIMI M., OZAWA T. & YAGI K. (1988) Isolation and sequence analysis of a complementary DNA encoding Rat liver L-gulonolactone oxidase, a key enzyme for L-ascorbic acid biosynthesis.- J Biol Biochem 263: 1619-1621
- KRAMER K. J., HENDRICKS L. H., LIANG Y. T. & SEIB P. A. (1978) Effect of ascorbic acid and related compounds on the Tobacco Hornworm, *Manduca sexta* Johannson (Lepidoptera: Spingidae).- J Agric Food Chem 26: 874-878
- KRAMER K.J., SPIERS R.D., LOOKHART G., SEIB P.A. & LIANG Y.T. (1981) Sequestration of ascorbic acid by the larval labial gland and haemolymph of the tobacco hornworm, *Manduca sexta* L. (Lepidoptera: Spingidae). Insect Biochem 11: 93-96
- KRAMER K. J. & SEIB P. A. (1982) Ascorbic acid and the growth and development of Insects. In: SEIB, P. A. & TOLBERT, B. M. (eds) Advances in chemistry series; Ascorbic acid: chemistry, metabolism, and uses, vol 1. American Chemical Society, Washington D.C., pp 275-291
- LEGAY J. M. (1958) Recent Advances in Silkworm Nutrition.- Annual Review of Entomology 3: 75-86

-
- LENHOFF H. M., KLINE E. S. & HURLEY R. (1957) A hydroxy-prolin, intracellular, collagen-like protein of *Hydra* nematocysts.- *Biochim Biophys Acta* 26: 204-205
- LEVINSON H. Z. & GOTHILF S. (1965) A semisynthetic diet for axenic growth of the carob moth *Ectomyelois ceratoniae* (Zell.).- *Rivista di Parassitologia* 26: 19-26
- LICHTENSTEIN E. P. (1948) Growth of *Culex molestus* under sterile conditions.- *Nature* 162: 227-227
- LIGHTNER D. V., HUNTER B., MARGARELLI P. C. J. & COLVIN L. B. (1979) Ascorbic acid: Nutritional requirement and role in wound repair in penaeid shrimps.- *Proc World Maricul Soc* 10: 513-528
- LIGHTNER, D. V. (1988) Black gill syndrome of penaeid shrimp. In: SINDERMANN, C. J. & LIGHTNER, D. V. (eds), vol 2. Elsevier, Amsterdam 86-88
- LIGHTNER, D. V. (1988) Disease Diagnosis and control in north american marine aquaculture In: SINDERMANN, C. J. & LIGHTNER, D. V. (eds), vol 2. Elsevier, Amsterdam 115-118
- LOEB J. (1915) The salt required for the development of insects.- *J Biol Chem* 23: 434-
- LOEB J. & NORTHROP J. H. (1916) Nutrition and evolution.- *J Biol Chem* 27: 309-312
- LÓPEZ N., CUZON G., GAXIOLA G., TABOADA G., VALENZUELA M., SÁNCHEZ A. & ROSAS C. (2003) Physiological, nutritional, and immunological role of dietary β -1-3-glucan and ascorbic acid 2-monophosphate in *Litopenaeus vannamei* juveniles.- *Aquaculture* 224: 223-243
- LUCCHETTI G., GAGGERO L., BAVESTRELLO G., CERRANO C. & CATTANEO-VIETTI R. (1999) Minerogenetic activity of the marine sponge *Chondrosia reniformis* and local impact on sediment composition.- *Per Mineral* 68: 223-230
- LUDWIG D. & GALLAGHER M. R. (1966) Vitamin Synthesis by the symbionts in the fat body of the Cockroach, *Periplaneta americana* (L.).- *Journal of the New York Entomological Society* 74: 134-139

- MARGARELLI P. C. J., HUNTER B., LIGHTNER D. V. & COLVIN L. B. (1979) Black death: An ascorbic acid deficiency disease in penaeid shrimp.- *Comp Biochem Physiol* 63A: 103-108
- MASSIE H. R., BAIRD M. B. & PIEKIELNIAK M. J. (1976) Ascorbic acid and longevity in *Drosophila*.- *Exp Gerontol* 11: 37-41
- MASSIE H. R., SHUMWAY M. E., WHITNEY S. J. P., STERNICK S. M. & AIELLO V. R. (1991) Ascorbic acid in *Drosophila melanogaster* and changes during aging.- *Experimental Gerontology* 26: 487-494
- MCBRIDE O. W. & HARRINGTON W. F. (1967) Evidence for disulfide cross-linkages in an invertebrate collagen.- *J Biol Chem* 240: 4545-4547
- MEHROTA K. H. (1963) Ascorbic acid in insects.- *Indian J Ent* 25: 270-273
- MERCHIE G., KONTARA E., LAVENS P., ROBLES R., KURMALY K. & SORGELOOS P. (1998) Effects of vitamin C and astaxanthin on stress and disease resistance of post-larval tiger shrimp, *Penaeus monodon* (Fabricius).- *Aquaculture Research* 29: 579-585
- MITTLER, T. E. (1972) Insect and mite nutrition significans and implications in ecology and pest management. In: Rodrigues, J. G. (eds). North Holland Publishing Company, Amsterdam 211-223
- MOREAU R. & DABROWSKI K. (1998) Body pool and synthesis of ascorbic acid in adult sea lamprey (*Petromyzon marinus*): An agnathan fish with gulono-lactone oxidase activity.- *Proc Natl Acad Sci USA* 95: 10279-10282
- MOREAU R. & DABROWSKI K. (1998) Fish acquired ascorbic acid synthesis prior to terrestrial vertebrate emergence.- *Free Radical Biology & Medicine* 25: 989-990
- MOREAU R. & DABROWSKI K. (2000) Biosynthesis of ascorbic acid by extant actinopterygians.- *Journal of Fish Biology* 57: 733-745
- MOREAU R. & DABROWSKI K. (2003) alpha-Tocopherol downregulates gulonolactone oxidase in sturgeon.- *Free Radical Biology & Medicine* 34: 1326-1332

- NAKAJIMA Y., SHANTHA T.R. & BOURNE G. H. (1969) Histochemical detection of L-Gulonolactone: Phenazine methosulfate oxidoreductase activity in several mammals with special reference to synthesis of vitamin C in primates.- *Histochemie* 18: 293-301
- NAM Y. K., CHO Y. S., DOUGLAS S. E., GALLANT J. W., REITH M. E. & KIM D. S. (2002) Isolation and transient expression of a cDNA encoding L-gulonolactone oxidase, a key enzyme for L-ascorbic acid biosynthesis, from the tiger shark *Scyliorhinus torazame*.- *Aquaculture* 209: 271-284
- NANDI A., MUKHOPADHYAY C. K., GHOSH M. K., CHATTOPADHYAY D. J. & CHATTERJEE I. B. (1996) Evolutionary significance of vitamin C biosynthesis in terrestrial vertebrates.- *Free Radical Biology & Medicine* 22: 1047-1054
- NAVON A. (1978) Effects of dietary ascorbic acid on larvae of the egyptian cotton leaf-worm, *Spodoptera littoralis*.- *J Insect Physiol* 24: 24-39
- NAYAR J. K. (1964) The nutrition requirement of grasshoppers I. Rearing of the grasshopper, *Melanoplus bivittatus* (Say), on a completely defined synthetic diet and some effects of different concentrations of B-Vitamin Mixture, linoleic acid, and beta-carotene.- *Can J Zool* 42: 11-22
- NICKEL M. & BRÜMMER F. (2003) In vitro sponge fragment culture of *Chondrosia reniformis* (Nardo, 1847).- *Journal of Biotechnology* 100: 147-159
- NISHIKIMI M., TOLBERT B. M. & UDENFRIED S. (1976) Purification and characterisation of L-gulono- γ -lactone oxidase from rat and goat liver.- *Arch Biochem Biophys* 175: 427-435
- NISHIKIMI M., NOGUCHI E. & YAGI K. (1978) Occurrence in Yeast of L-Galactonolactone Oxidase Which is Similar to the Key Enzyme for Ascorbic Acid Biosynthesis in Animals, L-Gulonolactone Oxidase.- *Arch Biochem Biophys* 191: 479-486
- NISHIKIMI M. & YAGI K. (1991) Molecular basis for the deficiency in humans of gulonolactone oxidase, a key enzyme for ascorbic acid biosynthesis.- *Am J Clin Nutr* 54: 1203-1208

- NISHIKIMI M., KAWAI & YAGI K. (1992) Guinea Pigs Posses a Highly Mutated Gene for L-Gulono- γ -lactone Oxidase, the Key Enzyme for L-Ascorbic Acid Biosynthesis Missing in This Species.- J Biol Biochem 267: 21967-21972
- NORTHROP J. H. (1917) The role of yeast in the nutritiopn of an insect (*Drosophila*).- J Biol Chem 30: 181-187
- OHTA Y. & NISHIKIMI M. (1999) Random nucleotide substituttion in primate nonfunctional gene for L-gulono- γ -lactone oxidase, the missing enzyme in L-ascorbic acid biosynthesis.- Biochim Biophys Acta 1472: 408-411
- OKAMURA M. (1998) Separative determination of ascorbic acid analogs contained in Mushrooms by high-performance liquid chromatography.- Journal Nutr Science Vitaminology 44: 25-35
- OKAMURA M. (2001) Purification and properties of L-gulono-1,4-lactone oxidase from *Grifola frondosa*.- J Nutr Sci Vitaminol 47: 258-262
- OSTERGAARD J., PERSIAU G., DAVEY M. W., BAUW G. & MONTAGU V. M. (1997) Isolation of a cDNA Coding for L-Galactono- γ -lactone Dehydrogenase, an Enzym involved in the Biosynthesis of Ascorbic Acid in Plants. Purification, Characterization, cDNA Cloning, and Expression in Yeast.- J Biol Biochem 272: 30009-30016
- ÔBA K., FUKUI M., IMAI Y., IRIYAMA S. & NOGAMI K. (1994) L-Galactono- γ -lactone Dehydrogenase: Partial Characterization, Induction of Activity and Role in the Synthesis of Ascorbic Acid in Wounded White Potato Tuber Tissue.- Plant Cell Physiol 35: 473-478
- ÔBA K., ISHIKAWA S., MASUMI N., MIZUNO H. & YAMAMOTO T. (1994) Purification and properties of L-Galactono- γ -lactone Dehydrogenase, a key enzyme for Acorbic Acid Biosynthesis, from Sweet Potato Roots.- J Biochem 117: 120-124
- ÔYA T. & HIROSAWA H. (1936) The content of the ascorbic acid in the marine animals and products.- Bull Jap Soc Sci Fish 5: 195-198
- PIERRE L. L. (1962) Synthesis of Ascorbic Acid by the Normal Fat-Body of the Cockroach, *Leucophaea maderae* (F.), and by its Symbionts.- Nature 193: 904-905

-
- PIEZ K. & GROSS J. (1959) The amino acid composition and morphology of some invertebrate and vertebrate collagens.- *Biochimica et Biophysica acta* 34: 24-39
- RAJAN T. V., PACIORKWSKI N., KALAJZIC I. & MCGUINNESS C. (2003) Ascorbic acid is a requirement for the morphogenesis of the human filarial parasite *Brugia malayi*.- *J Parasitol* 89: 868-870
- RAMAZZOTTO L. J. & LUDWIG D. (1966) Differences in Composition of the Fat Body of Normal and Aposymbiotic Cockroaches (*Periplaneta americana*).- *Annals of the Entomological Society of America* 60: 227-230
- RAYCHAUDHURI D. N. & BANERJEE M. (1968) Ascorbic acid synthesis in the gut of cockroach, *Periplaneta americana* (Linn.).- *Science and Culture* 34: 461-463
- REDDY G. P. V. & CHIPPENDALE G. M. (1972) Observatiopns on the nutritional requirement of the southwestern corn borer *Diatraea grandiosella*.- *Ent exp & appl* 15: 51-60
- REDDY H. R. V., GANAPATHI NAIK M. & ANNAPPASWAMY T. S. (1999) Evaluation of the dietary essentiality of vitamins for *Penaeus monodon*.- *Aquaculture Nutrition* 5: 267-275
- REIBER H., RUFF M. & UHR M. (1993) Ascorbate concentration in human cerebrospinal fluid (CSF) and serum. Intrathecal accumulation and CSF flow rate.- *Clinica Chimica Acta* 217: 163-173
- REIBER H., MARTENS U., PRALL F. & UHR M. (1994) Relevance of Endogenous Ascorbate and Tocopherol for Brain Cell Vitality Indicated by Photon Emission.- *J Neurochem* 62: 608-614
- ROBINSON W. E., KUSTIN K. & CLONEY R. A. (1986) The influence of tunichrome and other reducing compounds on tunic and fin formation in embryonic *Ascidia callosa* Stimpson.- *J Exp Zool* 237: 63-72
- ROCK G. C., GLASS E. H. & PATTON R. L. (1964) Axentic rearing of the red-banded leaf roller, *Argyrotaenia velutinana* on meridic diets.- *Annals of the Entomological Society of America* 57: 617-621

- ROCK G.C. (1967) Aseptic rearing of the codling moth on synthetic diets: ascorbic acid and fatty acids requirements.- *Journal of Economic Entomology* 60: 1002-1005
- ROCKSTEIN, M. & MIQUEL, J. (1973) The physiology of insecta. In: ROCKSTEIN, M. (eds), vol 2. Academic press, New York 422-477
- ROE J.H. & KUETHER C.A. (1943) The determination of ascorbic acid in whole blood and urine through the 2,4-Dinitro-phenylhydrazine derivation of dehydroascorbic acid. *J Biol Chem* 147: 399-407
- ROSE R. C. & BODE A. M. (1995) Analysis of water-soluble antioxidants by high-pressure liquid chromatography.- *Biochem J* 306: 101-105
- ROSS M. A. (1994) Determination of ascorbic acid and uric acid in plasma by high-performance liquid chromatography. Short Communication.- *J Chrom B* 657: 197-200
- ROSS R. H. JR., MONROE R. E. & BUTCHER J. W. (1971) Studies on techniques for the xenic and aseptic rearing of the european pine shoot moth, *Rhyacionia buoliana*.- *The Canadian Entomologist* 103: 1449-1454
- ROUSEL G. (1957) I. Effects of various factors on the synthesis of ascorbic acid by the american cockroach *Periplaneta americana* L.- *Transactions of the New York Academy of Sciences* 19: 17-18
- ROUSEL P. G. (1958) Effects of various factors on the synthesis of ascorbic acid by the american cockroach *Periplaneta americana* L.- *Journal of the New York Entomological Society* 65: 49-58
- ROY R. N. & GUHA B. C. (1958) Production of Experimental Scurvy in a Bird Species.- *Nature* 182: 1689-1690
- RUNNING J. A., BURLINGAME R. P. & BERRY A. (2003) The pathway of L-ascorbic acid biosynthesis in the microalga *Prothrotheca moriformis*.- *Journal of Experimental Botany* 54: 1841-1849

- SAARI J. C., BAKER E. M. & SAUBERLICH H. E. (1967) Thin-layer chromatographic separation of the oxidativ degradation products of ascorbic acid.- *Analytical Biochemistry* 18: 173-177
- SANG J. (1955) The quantitative nutritional requirements of *Drosophila melanogaster*.- ?
- SANG J. H. (1959) Circumstances affecting the nutritional requirement of *Drosophila melanogaster*.- *Ann N Y Acad Sci* 77: 352-365
- SANTA N. & BĂCESCO M. (1942) Recherches sur la Vitamine C chez quelques Crustacés marins.- *Bull Sect scient Acad roum* 24: 438-443
- SATO P., NISHIKIMI M. & UDENFRIED S. (1976) Is L-Gulonolactone Oxidase the only Enzyme missing in Animal subject to scurvy?- *Biochem Biophys Res Commun* 71: 293-299
- SATO P. & UDENFRIED S. (1978) Scurvy-Prone Animals, Including Man, Monkey, and Guinea Pig, Do Not Express the Gene for Gulonolactone Oxidase.- *Arch Biochem Biophys* 187: 159-162
- SAUBERLICH H. E., GREEN M. D. & OMAYE S. T. (1982) Determination of ascorbic acid and dehydroascorbic acid. In: SEIB, P. A. & TOLBERT, B. M. (eds) *Advances in chemistry series, vol 1*. American Chemical Society, Washington D.C. 199-221
- SÁNCHEZ-MATA M. C., CÁMARA-HURTADO M., DíEZ-MARQUÉS C. & TORIJA-ISASA M. E. (2000) Comparison of high-performance liquid chromatography and spectrofluorometry of vitamin C analysis of green beans (*Phaseolus vulgaris*, L.).- *Europ Food Res Technol* 210: 220-225
- SCHULTZ J., ST.LAWRENCE P. & NEWMAYER D. (1946) A chemical defined medium for the growth of *Drosophila melanogaster*.- *Anat Records* 96: 540-540
- SHAO Y.-Y., SEIB P.A., KRAMER K.J. & VAN GALEN D.A. (1993) Synthesis and properties of D-erythorbic acid and its vitamin C activity in the Tobacco Hornworm (*Manduca sexta*). *J Agric Food Chem* 41: 1391-1396
- SLAVÍK, K. (1964) Vitamin C. In: FRAGNER, J. (eds), vol 1, VEB Gustav Fischer Verlag Jena 447-477

- SMIRNOFF N. (2003) Vitamin C booster; Identification and manipulation of a new enzyme from strawberry demonstrates the feasibility of engineering vitamin C synthesis in plants.- *Nature biotechnology* 21: 134-136
- SMYTH J. D., BINGLEY W. J. & HILL G. R. (1944) The distribution of vitamin C in *Nyctotherus cordiformis* Ehrenberg, *Opisthoglyphe ranae* Fröhlich, and *Toxocara canis* Werner.- *Brit J Exp Biol* 21: 13-16
- STAHL, E. (1967) *Dünnschichtchromatographie, Ein Laborhandbuch, vol 2.* Springer Verlag, Berlin 295-297
- STONE I. (1972) The natural history of ascorbic acid in the evolution of the mammals and primates and its significance for present day man.- *Orthomolecular Psychiatry* 1: 82-89
- STRAUCH O., NIEMANN I., NEUMANN A., SCHMIDT A.J., PETERS A. & EHLERS R.-U. (2000) Storage and formulation of the entomophagous nematodes *Heterorhabditis indica* and *H. bacteriophora*. *BioControl* 45: 483-500
- STREB P., AUBERT S., GOUT E. & BLIGNY R. (2003) Cold- and light-induced changes of metabolite and antioxidant levels in two high mountain plant species *Soldanella alpina* and *Ranunculus glacialis* and a lowland species *Pisum sativum*.- *Physiologia Plantarum* 118: 96-104
- STRYER, L. (1994) *Biochemie* In: WIGGER, F. & BEHNKE, M. (eds), vol 2. Spektrum Akademischer Verlag GmbH, Heidelberg 273-294
- SUBBAROW Y. & TRAGER W. (1940) The chemical nature of growth factors required by mosquito larvae.- *Journal of General Physiology* 23: 561
- SUGISAWA T., OJIMA S., MATZINGER P. K. & HOSHINO T. (1995) Isolation and Characterisation of a new vitamin C producing enzyme (L-Gulonolactone dehydrogenase) of bacterial origin.- *Biosci Biotech Biochem* 59: 190-196
- SWEETMAN M. D. & PALMER L. S. (1928) Insect as test animals in vitamin research.- *J Biol Chem* 77: 33-52
- TABATA K., TAKAOKA T. & ESAKA M. (2002) Gene expression of ascorbic acid-related enzymes in tobacco.- *Phytochemistry* 61: 631-635

- TILLMANS J. (1927) Über die Bestimmung der elektrischen Reduktions-Oxidations-Potentiale und ihre Anwendung in der Lebensmittelchemie.- Zeitschrift für Untersuchung der Lebensmittel 54: 33-43
- UHRICH, K. (1990) Vergleichende Biochemie der Tiere. Gustav Fischer Verlag, Stuttgart 426-458
- VAN EEKELEN M. (1933) Vitamin C in invertebrates.- Acta brevia Neerlandicaphsiologica, pharmacologia, microbiologia 3: 119-120
- VANDERZANT E. S. & REISER R. (1956) Aseptic rearing of the pink bollworm on synthetic media.- Journal of Economic Entomology 49: 7-10
- VANDERZANT E.S. (1957) Growth and reproduction of the pink bollworm on an amino acid medium. Journal of Economic Entomology 50: 219-221
- VANDERZANT E. S., POOL M. C. & RICHARDSON C. D. (1962) The Role of Ascorbic Acid in the Nutrition of three Cotton Insects.- J. Ins. Physiol. 8: 287-297
- VANDERZANT E. S. & RICHARDSON C. D. (1963) Ascorbic Acid in the Nutrition of Plant feeding Insects.- Science 140: 989-991
- VANDUIJN M. M., TIJSSEN K., VANSTEVENINCK J., VAN DEN BROEK P. J. A. & VAN DER ZEE J. (2000) Erythrocytes reduce extracellular ascorbate free radicals using intracellular ascorate as an electron donor.- J Biol Chem 275: 27720-27725
- VON EULER B. & VON EULER H. (1933) C-Vitamin in Meeresfischen und Evertebraten.- Svensk kemisk Tidskrift 7: 173-180
- WALLACE C. A., JENNESS R., MULLIN R. J. & HERMAN W. S. (1985) L-Gulonolactone oxidase is present in the invertebrate, *Limulus polyphemus*.- Experientia 41: 485-486
- WHEELER G. L., JONES M. A. & SMIRNOFF N. (1998) The biosynthetic pathway of vitamin C in higher plants.- Nature 393: 365-369
- WINKLER B. S. (1987) In vitro oxidation of ascorbic acid and its prevention by GSH.- Biochimica et Biophysica acta 925: 258-264

-
- WOLLMAN E. (1926) Observation sur une lignée aseptique de blattes (*Blattella germanica*) datant de cinq ans.- Compt rend soc biol 95: 164-165
- WOLLMAN E., GIROUD A. & RATSIMAMANGA R. (1937) Synthèse de la Vitamine C chez un Insecte Orthoptère (*Blattella germanica*) en élevage aseptique.- Compt rend soc biol 124: 434-435
- WUNDERLING M., PAUL H. H. & LOHMANN W. (1986) Evaluation of a Direct Spectrometric Method for the Rapid Determination of Ascorbate and Dehydroascorbate in Blood Using Ascorbate Oxidase.- Biol Chem Hoppe-Seyler 367: 1047-1054
- ZÖLLMER A. (2003) Mikroorganismen in den anthrachinonhaltigen Eiern des Blattkäfers *Galeruca tanacetii* (Crysomelidae).- Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin 42: 49-56