



Weiterführende Literatur zum AF-Artikel

Huminstoffe – totes Material höchst aktiv **Studien über lebenswichtige braune Geopolymere** von Prof. Dr. Christian Steinberg & Dr. Ralph Menzel

Teil 1 des Artikels ist erschienen
im AF-205 (Feb./März 2009).

<http://www.shop-016.de/TetraVerlagGmbH-p296h10s16-Aquaristik-Fachmagaz.html>



Teil 2 des Artikels ist erschienen
im AF-206 (April/Mai 2009).

<http://www.shop-016.de/TetraVerlagGmbH-p295h10s15-Aquaristik-Fachmagaz.html>

Benutzte und weiterführende Literatur

- BERTOLO, A., MAGNAN, P. (2007): Logging-induced variations in dissolved organic carbon affect yellow perch (*Perca flavescens*) recruitment in Canadian Shield lakes. *Canadian Journal of Fisheries & Aquatic Sciences* **64**: 181–186.
- BIJLSMA, R., LOESCHKE, V. (eds., 1997): *Environmental Stress, Adaptation and Evolution*. Birkhäuser-Verlag, Basel.
- BITTNER, M., JANOŠEK, J., HILSCHEKOVÁ, K., GIESY, J., HOLOUBEK, I., BLÁHA, L. (2006): Activation of Ah receptor by pure humic acids. *Environmental Toxicology* **21**, 338–342
- CALABRESE, E.J., BALDWIN, K.A. (2003): Toxicology rethinks its central belief – Hormesis demands a reappraisal of the way risks are assessed. *Nature* **421**, 691–692.
- CAZENAIVE, J., ÁNGELES BISTONI, M. DE, ZWIRNMANN, E., WUNDERLIN, D.A., WIEGAND, C. (2006): Attenuating effects of natural organic matter on microcystin toxicity in zebra fish (*Danio rerio*) embryos – Benefits and costs of microcystin detoxication. *Environmental Toxicology* **21**, 22–32.
- GEMS, D., MCELWEE, J.J. (2003): Microarraying mortality. *Nature* **424**, 259–261.
- HEIDRICH, S. (2005): Prophylaktischer und therapeutischer Einsatz von Braunkohle-Huminstoffen in der Nutz- und Zierfischzucht. *Inaugural-Dissertation an der Veterinärmedizinische Fakultät, Universität Leipzig*.
- HÖSS, S., BERGTOLD, M., HAITZER, M., TRAUNSPURGER, W., STEINBERG, C.E.W. (2001): Refractory dissolved organic matter can influence the reproduction of *Caenorhabditis elegans* (Nematoda). *Freshwater Biology* **46**, 1–10.
- JANOŠEK, J., BITTNER, M., HILSCHEKOVÁ, K., BLÁHA, L., GIESY, J.P., HOLOUBEK, I. (2007): AhR-mediated and antiestrogenic activity of humic substances. *Chemosphere* **67**, 1096–1101.
- KLEINHEMPEL, D. (1970): Ein Beitrag zur Theorie des Huminstoffzustandes. *Albrecht-Thaer-Archiv* **14**, 3–14.
- KOZLOWSKY-SUZUKI, B., BOZELLI, R.L. (2004): Resilience of a zooplankton community subjected to marine intrusion in a tropical coastal lagoon. *Hydrobiologia* **522**, 165–177.
- LUTZ, I., ZHANG, J., OPITZ, R., KLOAS, W., XU, Y., MENZEL, R., STEINBERG, C.E.W. (2005): Environmental signals: Synthetic humic substances act as xeno-estrogen and affect the thyroid system of *Xenopus laevis*. *Chemosphere* **61**, 1183–1188.
- MCMASTER, D., BOND, N. (2008): A field and experimental study on the tolerances of fish to *Eucalyptus camaldulensis* leachate and low dissolved oxygen concentrations. *Marine & Freshwater Research* **59**:177–185.
- MATSUO, A.Y.O., WOODIN, B.R., REDDY, C.M., VAL, A.L., STEGEMAN, J.J. (2006): Humic substances and crude oil induce cytochrome P450 1A expression in the Amazonian fish species *Colossoma macropomum* (tambaqui). *Environmental Science & Technology* **40**, 2851–2858.
- MATSUO, A.Y.O., VAL, A.L. (2007): Acclimation to humic substances prevents whole body sodium loss and stimulates branchial calcium uptake capacity in cardinal tetras *Paracheirodon axelrodi* (Schultz) subjected to extremely low pH. *Journal of Fish Biology* **70**, 989–1000.
- MEEMS, N., STEINBERG, C.E.W., WIEGAND C. (2004): Direct and interacting toxicological effects on the waterflea (*Daphnia magna*) by natural organic matter, synthetic humic substances and cypermethrin. *Science of Total Environment* **319**, 123–136.
- MEINELT, T., PAUL, A., PHAN, T.M., ZWIRNMANN, E., KRÜGER, A., WIENKE, A., STEINBERG, C.E.W. (2007): Reduction in vegetative growth of the water mold *Saprolegnia parasitica* (Coker) by humic substances of different origin. *Aquatic Toxicology* **83**, 93–103.
- MEINELT, T., SCHRECKENBACH, K., PIETROCK, M., HEIDRICH, S., STEINBERG, C.E.W. (2008): Humic Substances. Part 1: Dissolved

- humic substances (HS) in aquaculture and ornamental fish breeding. *Environmental Science & Pollution Research* **15**, 17–22.
- MENZEL, R., STÜRZENBAUM, S., KULAS, J., BÄRENWALDT, A., STEINBERG, C.E.W. (2005): Humic material induces behavioral and global transcriptional responses in the nematode *Caenorhabditis elegans*. *Environmental Science & Technology* **39**, 8324–8332.
- MINOIS, N. (2002): Longevity and aging: Beneficial effects of exposure to mild stress. *Biogerontology* **1**, 15–29.
- MORROW, G., BATTISTINI, S., ZHANG, P., TANGUAY, R.M. (2004): Decreased lifespan in the absence of expression of the mitochondrial small heat shock protein Hsp22 in *Drosophila*. *Journal of Biological Chemistry* **279**, 43382–43385.
- MURPHY, C.T., MCCARROL, S.A., BARGMANN, C.I., FRASER, A., KAMATH, R.S., AHRINGER, J., LI, H., KENYON, C. (2003): Genes that act downstream of DAF-16 to influence the lifespan of *Caenorhabditis elegans*. *Nature* **424**, 277–284.
- OLMSTEAD AW, LEBLANC GA. (2007): The environmental-endocrine basis of gynandromorphism (intersex) in a crustacean. *International Journal of Biological Science* **3**, 77–84.
- PAUL, A. HACKBARTH, S., VOGT, R.D., RÖDER, B., BURNISON, B.K, STEINBERG, C.E.W. (2004): Photogeneration of singlet oxygen by humic substances: comparison of humic substances of aquatic and terrestrial origin. *Photochemical & Photobiological Science* **3**, 273–280.
- REEMTSMA, T., THESE A. (2003) On-line coupling of size exclusion chromatography with electrospray ionisation-tandem mass spectrometry for the analysis of aquatic fulvic and humic acids. *Analytical Chemistry* **75**, 1500–1507.
- REEMTSMA, T., THESE, A. (2005): Comparative investigation of low-molecular-weight fulvic acids of different origin by SEC-Q-TOF-MS: New insights into structure and formation. *Environmental Science & Technology* **39**, 3507–3512.
- SAUL, N., PIETSCH, K., MENZEL, R., STEINBERG, C.E.W. (2008): Quercetin-mediated longevity in *Caenorhabditis elegans*: Is DAF-16 involved? *Mechanisms of Ageing and Development* **129**, 611–613.
- STEINBERG, C.E.W. (2003): *Ecology of humic substances in freshwaters. Determinants from geochemistry to ecological niches.* Springer-Verlag, Berlin, 440 Seiten
- STEINBERG, C., LENHART, B. (1985): *Wenn Gewässer sauer werden: Ursachen, Verlauf, Ausmaß.* BLV Verlagsgesellschaft, München, 127 Seiten.
- STEINBERG, C.E.W., HÖSS, S., KLOAS, W., LUTZ, I. MEINELT, T. PFLUGMACHER, S., WIEGAND, C. (2004): Hormone-like effects of humic substances on fish, amphibians, and invertebrates. *Environmental Toxicology* **19**, 409–411.
- STEINBERG, C.E.W., KAMARA, S., PROKHOTSKAYA, V.YU., MANUSADŽIANAS, L., KARASYOVA, T., TIMOFEYEV, M.A., ZHANG, J., PAUL, A., MEINELT, T., FARJALLA, V.F., MATSUO, A.Y.O., BURNISON, B.K., MENZEL, R. (2006): Dissolved humic substances – ecological driving forces from the individual to the ecosystem level? *Freshwater Biology* **51**, 1189–1210.
- STEINBERG, C.E.W., MEINELT, T., TIMOFEYEV, M.A., BITTNER, M, MENZEL, R. (2008): Humic substances, Part 2: Interactions with organisms. *Environmental Science & Pollution Research* **15**, 128–135.
- STEINBERG, C.E.W., PAUL, A., PFLUGMACHER, S., MEINELT, T., KLÖCKING, R., WIEGAND, C. (2003): Pure humic substances have the potential to act as xenobiotic chemicals – a review. *Fresenius Environmental Bulletin* **15**, 391–401.
- STEINBERG, C.E.W., SAUL, N., PIETSCH, K., MEINELT, T., RIENAU, S., MENZEL, R. (2007): Dissolved humic substances facilitate fish life in extreme aquatic environments and have the potential to extend lifespan of *Caenorhabditis elegans*. *Annals of Environmental Sciences* **1**, 81–90.
- TIMOFEYEV, M.A., WIEGAND, C., BURNISON, B.K., SHATILINA, Z.M., PFLUGMACHER, S., STEINBERG, C.E.W. (2004). Direct impact of natural organic matter (NOM) on freshwater amphipods. *Science of the Total Environment* **319**, 115–121.
- TIMOFEYEV, M.A., SHATILINA, Z.M., BEDULINA, D.S., MENZEL, R., STEINBERG, C.E.W. (2007): Natural organic matter (NOM) has the potential to modify the multixenobiotic resistance (MXR) activity in freshwater amphipods *Eulimnogammarus cyaneus* (Dyb) and *Eulimnogammarus verrucosus* (Gerst.). *Comparative Biochemistry & Physiology B* **146**, 496–503.
- TIMOFEYEV, M.A., SHATILINA, Z.M., KOLESNICHENKO, A.V., KOLESNICHENKO, V.V., STEINBERG, C.E.W. (2006) Specific antioxidant reactions to oxidative stress promoted by natural organic matter (NOM) in two amphipod species from Lake Baikal. *Environmental Toxicology* **21**, 104–110.
- VALENZANO, D.R., CELLERINO, A. (2006): Resveratrol and the pharmacology of aging: a new vertebrate model to validate an old molecule. *Cell Cycle* **5**, 1027–1032.
- WEISHEIT, C. (2006): Konditionierung von Karpfen (*Cyprinus carpio*) durch Huminstoffe verschiedener Herkunft. *Master-Arbeit im Studiengang Fishery Science and Aquaculture, Humboldt-Universität zu Berlin, Landwirtschaftlich-Gärtnerische Fakultät.*