











































- [145] W. A. Shoults-Wilson, O. I. Zhurbich, D. H. McNear, O. V. Tsyusko, P. M. Bertsch, J. M. Unrine, Evidence for avoidance of Ag nanoparticles by earthworms (*Eisenia fetida*). *Ecotoxicology* **2011**, *20*, 385. doi:10.1007/S10646-010-0590-0
- [146] P. V. AshaRani, G. L. K. Mun, M. P. Hande, S. Valiyaveetil, Cytotoxicity and genotoxicity of silver nanoparticles in human cells. *ACS Nano* **2009**, *3*, 279. doi:10.1021/NN800596W
- [147] C. M. Ho, S. K. Yau, C. N. Lok, M. H. So, C. M. Che, Oxidative dissolution of silver nanoparticles by biologically relevant oxidants: a kinetic and mechanistic study. *Chem. Asian J.* **2010**, *5*, 285. doi:10.1002/ASIA.200900387
- [148] X. Zhu, L. Zhu, Y. Li, Z. Duan, W. Chen, P. J. J. Alvarez, Developmental toxicity in zebrafish (*Danio rerio*) embryos after exposure to manufactured nanomaterials: buckminsterfullerene aggregates (nC<sub>60</sub>) and fullerol. *Environ. Toxicol. Chem.* **2007**, *26*, 976. doi:10.1897/06-583.1
- [149] X. Zhu, L. Zhu, Z. Duan, R. Qi, Y. Li, Y. Lang, Comparative toxicity of several metal oxide nanoparticle aqueous suspensions to zebrafish (*Danio rerio*) early developmental stage. *J. Environ. Sci. Health Part A Tox. Hazard. Subst. Environ. Eng.* **2008**, *43*, 278. doi:10.1080/10934520701792779
- [150] J. Cheng, E. Flahaut, S. H. Cheng, Effect of carbon nanotubes on developing zebrafish (*Danio rerio*) embryos. *Environ. Toxicol. Chem.* **2007**, *26*, 708. doi:10.1897/06-272R.1
- [151] K. J. Lee, P. D. Nallathamby, L. M. Browning, C. J. Osgood, X.-H. N. Xu, In vivo imaging of transport and biocompatibility of single silver nanoparticles in early development of zebrafish embryos. *ACS Nano* **2007**, *1*, 133. doi:10.1021/NN700048Y
- [152] A. Pluskota, E. Horzowski, O. Bossinger, A. von Mikecz, In *Caenorhabditis elegans* nanoparticle-bio-interactions become transparent: silica-nanoparticles induce reproductive senescence. *PLoS ONE* **2009**, *4*, e6622. doi:10.1371/JOURNAL.PONE.0006622
- [153] H.-J. Eom, J. Choi, p38 MAPK activation, DNA damage, cell cycle arrest and apoptosis as mechanisms of toxicity of silver nanoparticles in jurkat T cells. *Environ. Sci. Technol.* **2010**, *44*, 8337. doi:10.1021/ES1020668
- [154] R. Zhang, M. J. Piao, K. C. Kim, A. D. Kim, J.-Y. Choi, J. Choi, J. W. Hyun, Endoplasmic reticulum stress signaling is involved in silver nanoparticles-induced apoptosis. *Int. J. Biochem. Cell B.* **2012**, *44*, 224. doi:10.1016/J.BIOCEL.2011.10.019
- [155] J. Kim, M. Takahashi, T. Shimizu, T. Shirasawa, M. Kajita, A. Kanayama, Y. Miyamoto, Effects of a potent antioxidant, platinum nanoparticle, on the lifespan of *Caenorhabditis elegans*. *Mech. Ageing Dev.* **2008**, *129*, 322. doi:10.1016/J.MAD.2008.02.011
- [156] Y. Sakaue, J. Kim, Y. Miyamoto, Effects of TAT-conjugated platinum nanoparticles on lifespan of mitochondrial electron transport complex I-deficient *Caenorhabditis elegans*, nuo-1. *Int. J. Nanomed.* **2010**, *5*, 687.
- [157] H. X. Yan, T. Kinjo, H. Z. Tian, T. Hamasaki, K. Teruya, S. Kabayama, S. Shirahata, Mechanism of the lifespan extension of *Caenorhabditis elegans* by electrolyzed reduced water-participation of Pt nanoparticles. *Biosci. Biotechnol. Biochem.* **2011**, *75*, 1295. doi:10.1271/BBB.110072
- [158] Q. Rui, Y. Zhao, Q. Wu, M. Tang, D. Wang, Biosafety assessment of titanium dioxide nanoparticles in acutely exposed nematode *Caenorhabditis elegans* with mutations of genes required for oxidative stress or stress response. *Chemosphere* **2013**, *93*, 2289. doi:10.1016/J.CHEMOSPHERE.2013.08.007
- [159] M. C. Arnold, A. R. Badireddy, M. R. Wiesner, R. T. Di Giulio, J. N. Meyer, Cerium oxide nanoparticles are more toxic than equimolar bulk cerium oxide in *Caenorhabditis elegans*. *Arch. Environ. Contam. Toxicol.* **2013**, *65*, 224. doi:10.1007/S00244-013-9905-5
- [160] S. Wu, J. H. Lu, Q. Rui, S. H. Yu, T. Cai, D. Y. Wang, Aluminum nanoparticle exposure in L1 larvae results in more severe lethality toxicity than in L4 larvae or young adults by strengthening the formation of stress response and intestinal lipofuscin accumulation in nematodes. *Environ. Toxicol. Pharmacol.* **2011**, *31*, 179. doi:10.1016/J.ETAP.2010.10.005
- [161] Q. Wu, Y. Li, M. Tang, D. Wang, Evaluation of environmental safety concentrations of DMSA coated Fe<sub>2</sub>O<sub>3</sub>-NPs using different assay systems in nematode *Caenorhabditis elegans*. *PLoS ONE* **2012**, *7*, e43729. doi:10.1371/JOURNAL.PONE.0043729
- [162] P. R. Hunt, B. J. Marquis, K. M. Tyner, S. Conklin, N. Olejnik, B. C. Nelson, R. L. Sprando, Nanosilver suppresses growth and induces oxidative damage to DNA in *Caenorhabditis elegans*. *Journal of applied toxicology. J. Appl. Toxicol.* **2013**, *33*, 1131. doi:10.1002/JAT.2872
- [163] B. R. Daniels, B. C. Masi, D. Wirtz, Probing single-cell micro-mechanics in vivo: the microrheology of *C. elegans* developing embryos. *Biophys. J.* **2006**, *90*, 4712. doi:10.1529/BIOPHYSJ.105.080606
- [164] E. Zanni, G. De Bellis, M. P. Bracciale, A. Broggi, M. L. Santarelli, M. S. Sarto, C. Palleschi, D. Uccelletti, Graphite nanoplatelets and *Caenorhabditis elegans*: insights from an in vivo model. *Nano Lett.* **2012**, *12*, 2740. doi:10.1021/NL204388P
- [165] P.-C. L. Hsu, M. O'Callaghan, N. Al-Salim, M. R. H. Hurst, Quantum dot nanoparticles affect the reproductive system of *Caenorhabditis elegans*. *Environ. Toxicol. Chem.* **2012**, *31*, 2366. doi:10.1002/ETC.1967
- [166] E. Q. Contreras, M. Cho, H. Zhu, H. L. Puppala, G. Escalera, W. Zhong, V. L. Colvin, Toxicity of quantum dots and cadmium salt to *Caenorhabditis elegans* after multigenerational exposure. *Environ. Sci. Technol.* **2013**, *47*, 1148. doi:10.1021/ES3036785
- [167] Q. L. Wu, W. Wang, Y. X. Li, Y. P. Li, B. P. Ye, M. Tang, D. Y. Wang, Small sizes of TiO<sub>2</sub>-NPs exhibit adverse effects at predicted environmental relevant concentrations on nematodes in a modified chronic toxicity assay system. *J. Hazard. Mater.* **2012**, *243*, 161. doi:10.1016/J.JHAZMAT.2012.10.013
- [168] Q. L. Wu, A. Nouara, Y. P. Li, M. Zhang, W. Wang, M. Tang, B. P. Ye, J. D. Ding, D. Y. Wang, Comparison of toxicities from three metal oxide nanoparticles at environmental relevant concentrations in nematode *Caenorhabditis elegans*. *Chemosphere* **2013**, *90*, 1123. doi:10.1016/J.CHEMOSPHERE.2012.09.019
- [169] Y. Zhao, Q. Wu, M. Tang, D. Wang, The in vivo underlying mechanism for recovery response formation in nano-titanium dioxide exposed *Caenorhabditis elegans* after transfer to the normal condition. *Nanomedicine* **2014**, *10*, 89. doi:10.1016/J.NANO.2013.07.004
- [170] Y. X. Li, W. Wang, Q. L. Wu, Y. P. Li, M. Tang, B. P. Ye, D. Y. Wang, Molecular control of TiO<sub>2</sub>-NPs toxicity formation at predicted environmental relevant concentrations by Mn-SODs proteins. *PLoS ONE* **2012**, *7*, e44688. doi:10.1371/JOURNAL.PONE.0044688
- [171] P. H. Chen, K. M. Hsiao, C. C. Chou, Molecular characterization of toxicity mechanism of single-walled carbon nanotubes. *Biomaterials* **2013**, *34*, 5661. doi:10.1016/J.BIOMATERIALS.2013.03.093
- [172] Q. Wu, Y. Li, Y. Li, Y. Zhao, L. Ge, H. Wang, D. Wang, Crucial role of the biological barrier at the primary targeted organs in controlling the translocation and toxicity of multi-walled carbon nanotubes in the nematode *Caenorhabditis elegans*. *Nanoscale* **2013**, *5*, 11166. doi:10.1039/C3NR03917J
- [173] R. T. Minullina, Y. N. Osin, D. G. Ishmuchametova, R. F. Fakhrullin, Interfacing multicellular organisms with polyelectrolyte shells and nanoparticles: a *Caenorhabditis elegans* study. *Langmuir* **2011**, *27*, 7708. doi:10.1021/LA2006869
- [174] S. W. Kim, J. I. Kwak, Y.-J. An, Multigenerational study of gold nanoparticles in *Caenorhabditis elegans*: transgenerational effect of maternal exposure. *Environ. Sci. Technol.* **2013**, *47*, 5393. doi:10.1021/ES304511Z