

## Curriculum Vitae

Personal information **ZhiChao Dang**

### Work experience

1. Employer: RIVM
  - Start date: 092005
  - End date:
  - Position: Senior risk assessor
  - Activities: risk assessment of chemicals endocrine disruptor assessment for industrial chemicals (human health and the environment), biocides/pesticides (human health and non\_target organisms), and pharmaceuticals (environment)
  - Country: Netherlands
2. Employer: VUMC
  - Start date: 092004
  - End date: 092005
  - Position: Senior clinical scientist
  - Activities: research work on diabetes
  - Country: Netherlands
3. Employer: LUMC
  - Start date: 121999
  - End date: 092004
  - Position: Senior clinical scientist
  - Activities: research on phytoestrogens on osteoporosis and diabetes
  - Country: Netherlands
4. Employer: Radboud University Nijmegen
  - Start date: 111994
  - End date: 121999
  - Position: PhD research
  - Activities: research on stress response in fish gills
  - Country: Netherlands
5. Employer: Ocean University of China
  - Start date: 071989
  - End date: 111994
  - Position: Lecturer
  - Activities: teaching and research
  - Country: China

### Education and training

1. Subject: Radboud University Nijmegen
  - Start date: 111994
  - End date: 052000
  - Qualification: PhD
  - Organisation: lab research, histology, immunocytochemistry, physiology
  - Country: Netherlands

### Additional information

#### Publications

Peer\_reviewed papers 1. Dang Z. Amphibian toxicity testing for identification of thyroid disrupting chemicals. Environ Pollut. 2022 Aug 20:120006. Doi: <https://doi.org/10.1016/j.envpol.2022.120006>. 2. Dang Z, Arena M, Kienzler A. Fish toxicity testing for identification of thyroid disrupting chemicals. Environ Pollut. 2021 May 18;284:117374. doi: 10.1016/j.envpol.2021.117374. 3. Ford AT, Ågerstrand M, Brooks BW, Allen J, Bertram MG, Brodin T, Dang Z, Duquesne S, Sahm R, Hoffmann F, Hollert H, Jacob S, Klüver N, Lazorchak JM, Ledesma M, Melvin SD, Mohr S, Padilla S, Pyle GG, Scholz S, Saaristo M, Smit E, Steevens JA, van den Berg S, Kloas W, Wong BBM, Ziegler M, Maack G. The Role of Behavioral Ecotoxicology in Environmental Protection. Environ Sci Technol. 2021 Apr 14. doi: 10.1021/acs.est.0c06493. 4. Knecht JA de, Rorije E., Maslankiewicz L. and Dang Z.C. Feasibility of using interspecies relationships for integration of human and environmental hazard assessment, Human and Ecological Risk Assessment: An International Journal 2021, 1\_17. 5. Dang Z. and Kienzler A. Changes in fish sex ratio as a basis for regulating endocrine disruptors. Environment International, 2019, 130, 104928, 22p. 6. Dang. Z. Endpoint sensitivity in Amphibian Metamorphosis Assay. Ecotoxicol. Environ. Saf. 2019, 167:513\_519. 7. Sobanska M, Scholz S, Nyman AM, Cesnaitis R, Gutierrez Alonso S, Klüver N, Kühne R, Tyle H, de Knecht J, Dang Z, Lundbergh I, Carlson C, De Coen W. Applicability of the fish embryo acute toxicity (FET) test (OECD 236) in the regulatory context of Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH). Environ Toxicol Chem. 2018, 37:657\_670. 8. Dang, Z.C., Leo TM. van der Ven, Anne S. Kienhuis, Fish embryo toxicity test, threshold approach, and moribund as approaches to implement 3R principles to the acute fish toxicity test, Chemosphere 2017, 186, 677\_685. 9. Matthiessen P, Ankley GT, Biever RC, Bjerregaard P, Borgert C, Brugger K, Blankinship A, Chambers J, Coady KK, Constantine L, Dang Z, Denslow ND, Dreier DA, Dungey S, Gray LE, Gross M, Guiney PD, Hecker M, Holbech H, Iguchi T, Kadlec S, Karouna\_Renier NK, Katsiadaki I, Kawashima Y, Kloas W, Krueger H, Kumar A, Lagadic L, Leopold A, Levine SL, Maack G, Marty S, Meador J, Mihaich E, Odum J, Ortego L, Parrott J, Pickford D, Roberts M, Schaefer C, Schwarz T, Solomon K, Verslycke T, Weltje L, Wheeler JR, Williams M, Wolf JC, Yamazaki K. Recommended approaches to the scientific evaluation of ecotoxicological hazards and risks of endocrine\_active substances. Integr Environ Assess Manag. 2017, 13(2):267\_279. 10. Mihaich EM, Schäfers C, Dreier DA, Hecker M, Ortego L, Kawashima Y, Dang Z.C., Solomon K. Challenges in assigning endocrine\_specific modes of action: Recommendations for researchers and regulators. Integr Environ Assess Manag. 2017. 13(2):280\_292. 11. Dang Z.C. Interpretation of fish biomarker data for identification, classification, risk assessment and testing of endocrine

disrupting chemicals. *Environment International*, 2016, 92\_93, 422\_441. 12. Dang Z.C. Fish biomarkers for regulatory identification of endocrine disrupting chemicals. *Environmental Pollution*, 2014, 185, 222\_270. 13. Dang Z.C. Cheng Y., Chen H.M., Cui Y., Yin H.H., Traas T., Montforts M., and Vermeire T. Evaluation of the *Daphnia magna* reproduction test for detecting endocrine disrupters. *Chemosphere*, 2012, 88, 514\_523. 14. Rorije E., van Hienen F.J.W., Dang Z.C., Hakkert B.C., Vermeire T., and Piersma A. H. Relative parameter sensitivity in prenatal toxicity studies with substances classified as developmental toxicants. *Reproductive Toxicology* 2012, 34, 284\_290. 15. Cheng Y., Cui Y., He P., Dang Z.C. Xie W. Yin H.H. Zhou X. Yu W. Li H. Chen H.M., Effect of perfluorooctane sulfonate (PFOS) on vitellogenin levels in blood plasma and tissue homogenate of zebrafish (*Brachydanio rerio*). *Asian Journal of Ecotoxicology*, 2012, 7, 65\_70. 16. Cheng Y., Cui Y., Dang Z.C., Xie W., Li H.S., Yin H.H., Chen H.M., Effect of perfluorooctane sulfonate (PFOS) on vitellogenin mRNA level in zebrafish (*Brachydanio rerio*). *Environmental Sciences*, 2012, 33, 1865\_1870. 17. Dang Z.C. Traas T., Vermeire T. Evaluation of the fish short term reproduction assay for detecting endocrine disrupters. *Chemosphere*, 2011, 85, 1592\_1603. 18. Dang Z.C. Li K., Yin H.W. Hakkert B., and Vermeire T. Endpoint sensitivity in fish endocrine disrupter assays: regulatory implication. *Toxicology letters*, 2011, 202, 36\_46. 19. Dang Z.C. Ru. S.G., Wang W., Roije E., Hakkert B., and Vermeire T. Comparison of chemical induced transcriptional activation of fish and human estrogen receptors: regulatory implications. *Toxicology letters*. 2011, 201, 152\_175. 20. Hulzebos E., Gunnarsdottir S., Rila J.P., Dang Z.C., and Rorije E. An Integrated Assessment Scheme for assessing the adequacy of (eco)toxicological data under REACH. *Toxicology letters*. 2010, 198, 255\_262. 21. Dang Z.C. Comparison of relative binding affinities to fish and mammalian estrogen receptors: the regulatory implications. *Toxicology letters*. 2010, 192, 298\_315. 22. Dang Z.C. Dose dependent effects of soy phyto\_oestrogen genistein on adipocytes: mechanisms of action. *Obesity Review*. 2009, 10, 342\_349. 23. Dang Z.C., Rorije E., Hogen Esch T., Muller A., Hakkert B.C., and Piersma A. H. Retrospective analysis of relative parameter sensitivity in multi\_generation reproductive toxicity studies. *Reproductive Toxicology* 2009, 28, 196\_202. 24. Ouwens D., Diamant M., Fodor M., Hebets D., Pelsers M., ElHasaoui M., Dang. Z.C. van den Brom C., Vlasblom R., Boer C., Coort S.L., Glatz J.F. and Luiken J.J. Cardiac contractile dysfunction in insulin\_resistant rats fed a high\_fat diet is associated with elevated CD36\_mediated fatty acid uptake and esterification, *Diabetologia*. 2007, 50, 1938\_1948. 25. Dang Z.C. and Löwik C. Dose dependent effects of phytoestrogens on bone: molecular mechanisms, review paper, *Trends in Endocrinology and Metabolism*. 2005, 16, 207\_213. 26. Heijboer A.C., Donga E, Voshol P. J, Dang Z.C., Havekes, L.M., Romijn J.A., and Corssmit E.P.M. Sixteen hours fasting differentially affects hepatic and muscle insulin sensitivity in mice, *Journal of Lipid Research*. 2005, 46, 582\_588. 27. Dang Z.C. and Löwik C. Differential effects of charcoal\_stripped serum on adipogenesis. *Molecular and Cellular Biochemistry*. 2005, 268, 159\_167. 28. Dang Z.C. and Löwik C. The balance between concurrent activation of ERs and PPARs determines daidzein\_induced osteogenesis and adipogenesis. *Journal of Bone and Mineral Research*. 2004, 19, 853\_861. 29. Dang Z.C. and Löwik C. Differential effects of MAPK inhibitors PD98059 and U0126 on osteogenesis and adipogenesis. *Journal of Cellular Biochemistry*. 2004, 92, 525\_533. 30. Dang Z.C. Audinot V., Papapoulos S. Boutin J.A., and Löwik C. Peroxisome proliferator\_activated receptor  $\alpha$  (PPAR $\alpha$ ) as a molecular target for the soy phytoestrogen genistein. *Journal of Biological Chemistry*. 2003, 278, 962\_967. 31. Dang Z.C. R.L. van Bezooijen, M. Karperien, S. Papapoulos and C. Löwik. Exposure of mesenchymal progenitor cells to estrogen stimulates osteogenesis and inhibits adipogenesis. *Journal of Bone and Mineral Research*. 2002, 17, 394\_405. 32. Dang Z.C., Papapoulos S., Löwik C. Phytoestrogens enhance osteogenesis and concurrently inhibit adipogenesis. *J Nutr* 2002;132:617S 33. Dang Z.C. Papapoulos S., Lowik C, Genistein enhances osteogenesis and concurrently inhibits adipogenesis of mesenchymal progenitor cells. *Annals of Nutrition & Metabolism*, 2001, 45, 228\_229. 34. Dang Z.C., Berntsen, M.H.G., Lundebye, A.K., Lock R.A.C., Flik G., Wendelaar Bonga S.E. Dietary cadmium, metallothionein and cortisol receptor expression in gills of Atlantic salmon, *Salmo salar*. *Aquatic Toxicology*. 2001, 53, 91\_101. 35. Dang Z.C., Lock R.A.C., Flik G., Wendelaar Bonga S.E. Na<sup>+</sup>/K<sup>+</sup>\_ATPase immunoreactivity in branchial chloride cells of *Oreochromis mossambicus* exposed to copper. *Journal of Experimental Biology*. 2000, 203, 379\_387. 36. Dang Z.C., Balm, P.H.M., Flik G., Wendelaar Bonga S.E., Lock R.A.C. Cortisol increases Na<sup>+</sup>/K<sup>+</sup>\_ATPase density in plasma membranes of gill chloride cells in the freshwater tilapia *Oreochromis mossambicus*. *Journal of Experimental Biology*. 2000, 203, 2349\_2355. 37. Dang Z.C., Flik G., Ducouret B, Hogstrand C, Wendelaar Bonga S.E., Lock R.A.C. Effects of Cu on cortisol receptor and metallothionein expression in gills of *Oncorhynchus mykiss*. *Aquatic Toxicology*. 2000, 51, 45\_54. 38. Dang Z.C. Lock R.A.C., Flik G., Wendelaar Bonga S.E. Responses of Na<sup>+</sup>/K<sup>+</sup>\_ATPase, metallothioneins and cortisol receptor in the gill epithelial cells of copper exposed fish. *Comp. Biochem. Physiol.* 1999, 124A: S11. 39. Dang Z.C., Lock R.A.C., Flik G., Wendelaar Bonga S.E. The metallothionein response in gills of *Oreochromis mossambicus* exposed to copper in fresh water. *American Journal of Physiology*. 1999, 277: R320\_331. 40. Guan S. and Dang Z.C. The building of English listening comprehension textbook for university biological majors. *Journal of Ocean University of Qingdao*, Social Science Edition. 1995, 111\_113. 41. Dang Z.C. 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The Effect of Soda Plant Effluent on *Dunaliella*, *Marine Environmental Science*. 1992, 11, 88\_90. 49. Dang Z.C., Jiang L.Y. and Li Y.Q. The Combined Effects of Ca PH And Salinity on the Hatching Percentage of the *Artemia* Cysts, *Marine Environmental Science*, 1992, 11(2): 18\_23. 50. Dang Z.C. Highlight Threat to the Ocean, *Marine Information*. 1991, 7, 28\_29. 51. Dang Z.C., Qin Q.Q., Jiang L.Y. and Li Y.Q. The Study of Influence of Soda Plant Effluent on Several Marine Organisms, *Soda Industry*. 1989, 3, 15\_21. 52. Dong B.X. Lin T.X. Jiang L.Y. Dang Z.C., Li Y.Q. Tolerance Experiment of Marine Organisms to Temperature Rise, *Marine Environmental Science*. 1989, 8, 1\_7. 53. Dong B.X. Lin T.X., Jiang L.Y., Dang Z.C., Li Y.Q. Research on Monitoring Estuary and Nearshore Pollution with Several Organisms, *Marine Environmental Science*. 1988, 7, 39\_42. Publicly available reports • De Knecht J.A., Marinković M., and Dang Z., 2021. Innovating the integration of ecological and human health Risk Assessment: Connecting concepts and cases (IRAC) \_ Identification phase, parallels and integration., RIVM letter report 2020\_0010, 1\_124. • Waaijers van der Loop, S.L., Dang Z.C., Rorije E., Janssen N., 2019. Toxicity screening of potential bio\_based Polar Aprotic Solvents (PAS), 1\_40. • Dang Z.C., Smit E., van Vlaardingen P. Moermond C, and Bodar C., 2016. Endocrine disrupting chemicals within EU legal frameworks: environmental perspectives. 2016\_0145, 1\_40. • Graven C., Dang Z.C., Piersma A.H, and Hakkert B, 2016. Endocrine disrupting chemicals within EU legal frameworks: human health perspectives. 2016\_0137, 1\_50. • Kienhuis A., Dang Z.C., Ezendam J. and Hakkert B. internationale activiteiten gericht op het verminderen van LC50 testen voor het vaststellen van acute toxiciteit in vis RIVM Briefrapport 2015\_0127, 2015, 1\_24. • Dang Z.C. and Vermeire T. Sino\_Dutch cooperation in the field of risk assessment of chemicals Project G2G11/CH/6/8 completion report, RIVM report 601048001/2013, 2013, 1\_25. • van Herwijnen R, de Poorter LRM, Dang Z Impact of (inter)national substance frameworks on the policy on Dutch priority substances, RIVM\_report 601783001, 2010, 1\_67. • Dang Z.C. and Smit C. E. Environmental risk limits for carbendazim, RIVM Letter report 601716014/2008, 2008, 1\_35. • Vermeire TG, Aldenberg T, Dang Z.C., Janer G, Knecht JA de, Loveren H van, Peijnenburg WJGM, Piersma AH, Traas TP, Verschoor AJ, Zijverden M van, Hakkert B. Selected Integrated Testing Strategies (ITS) for the risk assessment of chemicals, RIVM\_report 601050001/2007, 2007, 1\_160 Books/Chapters • Liu J.N.; Wang L., and Dang Z.C. Concept and Progress of Adverse Outcome Pathways, China Environmental Science Press., 2016, pp 119. • Chinese version of the book "Detailed Review Paper on Biodegradability Testing" China Environmental Science Press., 2016, pp 225. Coordinator for collaboration among NIES, RIVM and OECD. • Chinese version of the book "Guidance Document on Standardised Test Guidelines for Evaluating Chemicals for Endocrine Disruption", GD150, 2014, pp 291. Coordinator for collaboration among CAIQ, RIVM and OECD. • Chinese version of the book "risk assessment of chemicals: an introduction" Chinese Chemical Publisher, 2010, pp 507. Coordinator for the book translation and quality control. • Dang Z.H. and Dang Z.C. Phytoestrogens and bone health: mechanisms of action, chapter 11, in Current topics in bone biology, Chinese High Education Publisher, 2006, 160\_175. • Dang Z.C. Phytoestrogens and bone health: mechanisms of action, chapter 11, in Current topics in bone biology, World Scientific Publication Company, 2005, 251\_280. • Dang Z.C. Adaptive Stress Responses in Fish Gills, PrintPartners Ipskamp, Enschede, the Netherlands, 2000, pp 185.

**Projects** risk assessment of chemicals OECD test guidelines ECHA framework contract

**Memberships** Member, EFSA Working Group \_ WG \_ PREV \_ Endocrine disrupting properties of pesticide active substances on humans and non\_target organisms. 2021 Member, OECD VMG ECO, 2010 present Member, OECD VMG NA, 2011—present Member, OECD EDTA AG, 2010—present Member, EU Expert Advisory Group on Endocrine Disruptors, 2011\_2013 The Society for Experimental Biology (1998\_1999) The European Society for Comparative Endocrinology (1998\_2000) The Dutch Society for Calcium and Bone Metabolism (2000\_2003) American Society for Bone and Mineral Research (2000\_2004) American Society of Diabetes (2003) The Society of Environmental Toxicology and Chemistry (1997\_1998, 1999\_2000, 2010\_2011, 2012\_2013) The Society of Toxicology (2011\_present) The Dutch Society of Toxicology (2009, 2014\_present) The Chinese Society of Toxicology (2008\_present)

**Other Relevant Information** Patents • Schoenmakers I, Dang Z.C., Lowik, C., Lambertus A., van Helvoort, A., Hageman R., and van Gros M. Method of treating mammals with genistein and/or genistein US 2005/0090457 A1(patent), 28 Apr. 2005 • Schoenmakers I, Dang Z.C., Lowik, C., Waltherus, G.M., van Helvoort, A., and Bertholdus, L. Use of genistein in the manufacture of a medicament for the treatment of osteoporosis and obesity, and compositions containing genistein in combination with vitamin D and K, World Intellectual Property Organization, international publication number: WO 03/068218 A1 (patent), 10 Nov. 2004.