Purdue University

<u>School of Health Sciences</u>



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Glimpse of Zheng Lab Personnel

Education

- B.S. Pharmacy, Zhejiang University College of Pharmacy, Hangzhou, PRC
- M.S. Pharmacology, Zhejiang University College of Pharmacy, Hangzhou, PRC
- Ph.D. Pharmacology & Toxicology, University of Arizona, Tucson, AZ

Teaching

• HSCI 101 Introduction to the Health Sciences Professions

Research Interests

- Toxicology of blood-brain barrier and blood-CSF barrier.
- Neurotoxicology of heavy metals (lead, manganese, iron, aluminum, and mercury): transport, homeostasis in the CNS, and molecular mechanisms.
- Roles of brain barriers in etiology of neurodegenerative diseases such as Parkinson's syndrome and Alzheimer's disease.
- Chelation therapy of metal toxicities.
- Transport of substances by the blood-CSF barrier in the choroid plexus.
- In vitro model of blood-brain/CSF barrier.
- News on Zheng group research: <u>Science magazine daily news 06/09/06</u>; <u>Purdue News Release 03/24/06</u>; <u>Purdue News Release 06/06/06</u>

Professional Experiences and Affiliations

- Assistant Professor (1993-1999), Associate Professor (2000-2002), School of Public Health and College of Physicians and Surgeons, **Columbia University**, New York, NY
- Member of NIH/NIEHS Environmental Health Sciences Review Committee
- Society of Toxicology
- Society for Neuroscience

• New York Academy of Sciences

Book Published

• Zheng, W, and Chodobski, A. *The Blood-Cerebrospinal Fluid Barrier*. CRC Press, New York. 2005

Selected Publications (from more than 80)

- Jiang, YM, Mo, XA...**Zheng, W** (2006). <u>Effective treatment of manganese-induced occupational</u>

 <u>Parkinsonism with p-aminosalicylic acid: A case of 17-year follow-up study.</u> *J Occup. Env. Med.* **48 (6)**, 644649. <u>Video 1 Patient with original Treatment</u> <u>Video 2 17 year follow-up</u>

 <u>Download Macromedia Flash Player to view videos.</u>
- Jiang, Y, and **Zheng, W** (2005). <u>Cardiovascular toxicities upon manganese exposure.</u> *Cardiovasc. Toxicol.* **5**:345-354.
- Crossgrove, JS, Li, GJ, and **Zheng, W** (2005). <u>The choroid plexus removes beta-amyloid from the cerebrospinal fluid.</u> *Exp Biol Med* **230(10)**, 771-776.
- Shi, LZ and **Zheng, W** (2005). <u>Establishment of an In Vitro Brain Barrier Epithelial Transport System for Pharmacological and Toxicological Study.</u> *Brain Res.* **1057**, 37-48.
- Lu, L, Zhang, L-L, Li, GJ, Guo, W, Liang, W, and **Zheng, W** (2005). <u>Serum concentrations of manganese and</u> iron as the potential biomarkers for manganese exposure in welders. *NeuroToxicology* **26**, 257-265.
- Li, GJ, Zhao, Q, and **Zheng, W** (2005). <u>Alteration at translational but not transcriptional level of transferrin receptor expression following manganese exposure at the blood-CSF barrier in vitro.</u> *Toxicol. Appl. Pharmacol.* **205**, 188-200.
- Crossgrove, JS, and **Zheng, W** (2004). <u>Manganese toxicity upon overexposure.</u> *NMR in Biomedicine* **17**, 544-553.
- **Zheng, W** (2004). <u>Introduction to the blood-CSF barrier.</u> In: *The Blood-Cerebrospinal Barrier*, Zheng W and Chodobski A, Ed., CRC Press, New York.
- Li, GJ, and **Zheng, W** (2004). <u>Regulation of neuroactive metals by the choroid plexus.</u> In: The Blood-Cerebrospinal Barrier, Zheng W and Chodobski A, Ed., CRC Press, New York. pp211-239.
- **Zheng, W,** and Segal, MB (2004). <u>In situ techniques used in the blood-CSF barrier research.</u> In: The Blood-Cerebrospinal Barrier, Zheng W and Chodobski A, Ed., CRC Press, New York. pp541-551.
- Deane, R, **Zheng, W**, and Zlokovic, BV (2004). <u>Brain capillary endothelium and choroid plexus epithelium regulate transport of transferrin-bound and free iron into the rat brain. *J. Neurochem.* **88**, 813-820.</u>
- Li, GJ, Zhang, L, Lu, L, Wu, P, and **Zheng, W** (2004). Occupational exposure to welding fume among welders: alterations of manganese, iron, zinc, copper, and lead in body fluids and the oxidative stress status. *J. Occup. Environ. Med.* **46**, 241-248.
- **Zheng, W**, Aschner, M, and Ghersi-Egea J (2003). <u>Brain barrier systems: a new frontier in metal neurotoxicological research.</u> *Toxicol. Appl. Pharmacol.* **192**, 1-11.
- **Zheng, W**, Deane, R, Redzic, Z, Preston, JE, and Segal, MB (2003). <u>Transport of L-[1251]Thyroxine by insitu perfused ovine choroid plexus: Inhibition by Lead Exposure.</u> *J. Toxicol. Env. Health.* **66**, 435-451.
- **Zheng, W**, and Zhao, Q (2002). <u>Establishment and characterization of an immortalized Z310 choroidal epithelial cell line from murine choroid plexus</u>. *Brain Res.* **958**, 371-380.
- Louis, ED, **Zheng, W**, Jurewicz, EC, Watner, D, Chen, J, Factor-Litvak, P, and Parides, M (2002). <u>Elevation of blood beta-carboline alkaloids in essential tremor.</u> *Neurology* **59**, 1940-1944.
- **Zheng, W**, and Zhao, Q (2002). Blood-CSF barrier in culture: Development of primary culture and transport model from choroidal epithelial cells. *Methods Mol. Biol.* 188, 99-114.
- Zheng, W (2001). <u>Neurotoxicology of the brain barrier system:</u> New implications. *J. Toxicol. Clin. Toxicol.* **39**, 711-719.
- Chen, JY, Tsao, G, and Zhao, Q, and **Zheng, W** (2001). <u>Differential cytotoxicity of Mn(II) and Mn(III):</u> special reference to mitochondrial [Fe-S] containing enzymes. *Toxicol. Appl. Pharmacol.* **175**, 160-168.

- Guan, Y, Louis, ED, and **Zheng, W** (2001). <u>Toxicokinetics of tremorogenic natural products, harmane and harmine in male Sprague-Dawley rats.</u> *J. Toxicol. Env. Health* **64**, 645-660.
- **Zheng, W**, and Zhao, Q (2001). <u>Iron overload following manganese exposure in cultured neuronal, but not neuroglial cells. *Brain Res.* **897**, 175-179.</u>
- **Zheng, W**, Lu, YM, Lu, GY, Zhao, Q, Cheung, O, and Blaner, WS (2001). <u>Transthyretin, thyroxin, and retinol-binding protein in human cerebrospinal fluid: Effect of lead exposure. *Toxicol. Sci.* **61**, 107-114.</u>
- **Zheng, W**, Kim, H, and Zhao, Q (2000). <u>Comparative toxicokinetics of manganese chloride and methylcyclopentadienyl Mn tricarbonyl in male Sprague-Dawley rats. *Toxicol. Sci.* **54**, 295-301.</u>
- **Zheng, W**, Blaner, WS, and Zhao, Q (1999). <u>Inhibition by Pb of production and secretion of transthyretin in the choroid plexus: Its relationship to thyroxine transport at the blood-CSF barrier. *Toxicol. Appl. Pharmacol.* **155**, 24-31.</u>
- **Zheng, W**, Zhao, Q, Slavkovich, V, Aschner, M, and, Graziano, H (1999). <u>Alteration of iron homeostasis following chronic exposure to manganese in rats.</u> *Brain Res.* **833**, 125-132.
- Zhao, Q, Slavkovich, V, and, **Zheng, W** (1998). <u>Lead exposure promotes translocation of protein kinase C activity in rat choroid plexus in vitro, but not in vivo.</u> *Toxicol. Appl. Pharmacol.* **149**, 99-106.
- **Zheng, W**, Ren, S, and Graziano, JH (1998). <u>Manganese inhibits mitochondrial aconitase: A mechanism of manganese neurotoxicity. *Brain Res.* **799**, 334-342.</u>
- **Zheng, W**, Shen, H, Blaner, WS, Zhao, Q, Ren, X, and Graziano, JH (1996). <u>Chronic lead exposure alters transthyretin concentration in rat cerebrospinal fluid: The role of the choroid plexus. *Toxicol. Appl. Pharmacol.* **139**, 445-450.</u>
- **Zheng, W**, Perry, DF, Nelson, DL, and Aposhian, HV (1991). Protection of cerebrospinal fluid against toxic metals by the choroid plexus. *FASEB J.* **5**, 2188-2193.
- **Zheng, W**, Maiorino, RM, Brendel, K, and Aposhian, HV (1990). Determination and metabolism of dithiol chelating agents: VII. Biliary excretion of dithiols and their interactions with cadmium and metallothionein. *Fundam. Appl. Toxicol.* **14**, 598-607.

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