

JoAnn C.L. Schuh, DVM, PhD, DACVP, DABT Principal

Summary. Preclinical and Nonclinical Research and Development Expert with extensive experience in biologics, small molecules, drugs, combination products and medical devices. Areas of experience and expertise include:

- Drug Safety and Safety Pharmacology
- Drug Efficacy and in vivo Pharmacology
- Regulatory Strategies and Representation
- Project Planning and Implementation
- Study Monitoring and Oversight
- Immunopathology, Immunotoxicology
- Immunotherapeutics, Immunomodulators
- Animal Models of Inflammation, Oncology
- Pathology/Toxicology of Eye and Ear
- Pathology of Hard Tissues (bone, teeth)

Professional Experience

Applied Veterinary Pathobiology, PLLC
Principal and Manager: 2000-Present

Immunex Corp.
Research Pathologist: 1995-2000

Warner-Lambert Parke-Davis Research Institute
Senior Research Pathologist: 1990-1995

University of Saskatchewan
Assistant Professor (Term), Veterinary Pathology: 1985-1987

Education/Certification

1977; BSc, University of Alberta

1980; DVM, University of Saskatchewan

1983; MS, University of Wisconsin-Madison

1987; Diplomate, American College Veterinary Pathologists

1994; PhD, University of Saskatchewan

1995; Diploma in Business Administration, Wilfred Laurier University

1995; Diplomate, American College of Toxicology

Drug Development Experience

- Toxicology Program Development and Monitoring
- Toxicologic Pathology Evaluation, Peer Review, Tumor Review and Expert Review
- Discovery Research and Experimental Pathobiology of Biologics and Signaling Molecules
- Scientific Advisory Boards in USA and Canada
- Published and lectured on efficacy models of inflammation, oncology and genetically engineered mice
- Experience working with most divisions at FDA

Selected Publications

- Schuh JCL. 2008. Medical device regulations and testing for toxicologic pathologists *Toxicol Pathol.* 36:63-9. compounds in the rat. *Toxicol Pathol*, 17, No.1 (Part 2): 203-213, 1989.
- Schuh JCL. 2004. Trials, tribulations and trends in tumor modeling in mice. *Toxicol Pathol.* 32 (Suppl 1): 53-66.
- Sedger LM, MB Glacuum, JCL Schuh, ST Kanaly, E Williamson, N Kayagaki, T Yun, P Smolak, T Le, R Goodwin, B Gliniak. 2002. Characterization of the in vivo function of TNF α -related apoptosis-inducing ligand, TRAIL/Apo2L, using TRAIL/Apo2L gene-deficient mice. *Eur. J. Immunol.* 32; 2246-2254.
- Schuh JCL, R Hall, D Lambert, KA Harrington, K Mohler, D Barone. 2002. Periosteal hyperostosis (exostoses) in DBA/1 male mice. *Toxicol Pathol.* 30: 390-393.
- Averbook BJ, Schuh JCL, Papay R, Maliszewski C. 2002. Antitumor effects of Flt3 ligand in transplanted murine tumor models. *J Immunother.* 25:27-35.
- Kennedy MK, M Glacuum, SN Brown, EA Butz, M Embers, N Matsuki, K Charrier, L Sedger, K Brasel, PJ Morrissey, K Stocking, JCL Schuh, S Joyce, JJ Peschon. 2000. Reversible defects in natural killer and memory CD8 T cell lineages in IL-15 deficient mice. *J Exp Med.* 191:771-780.
- Guo L, RS Johnson, JCL Schuh. 2000. Biochemical Characterization of endogenously formed eosinophilic crystals in the lungs of mice. *J Biol Chem.* 275:8032-37.
- Dougall WC, M Glacuum, K Charrier, K Rohrbach, K Brasel, T De Smedt, E Daro, J Smith, ME Tomesko CR Maliszewski, A Armstrong, V Shen, S Bain, D Cosman, D Anderson, PJ Morrissey, JJ Peschon, and JCL Schuh. 1999. RANK is essential for osteoclast and lymph node development. *Genes Dev.* 13:2412-24.
- Schuh JCL and PJ Morrissey. 1999. Development of a recombinant growth factor and fusion protein: lessons from GM-CSF. *Toxicol Pathol.* 27: 72-77.
- Schuh JCL and KA Harrington. 1999. Mechanisms of disease and injury: utilization of mutants, monoclonals and molecular methods. *Toxicol Pathol.* 27: 115-120.
- Walczak H, RE Miller, K Ariail, B Gliniak, TS Griffith, M Kubin, W Chin, J Jones, A Woodward, T Le, C Smith, P Smolak, RG Goodwin, CT Rauch, JCL Schuh, and DH Lynch. 1999. Tumoricidal activity of tumor necrosis factor-related apoptosis-inducing ligand in vivo. *Nature Med.* 5:157-163.
- Pettit DK, JR Lawter, WJ Huang, SC Pankey, NS Nightlinger, DH Lynch, JCL Schuh, PJ Morrissey, and WR Gombotz. 1997. Characterization of Poly(glycolide-co-D,L-lactide)/poly(D,L-lactide) microspheres for controlled release of GM-CSF. *Pharm. Res.* 14:1422-1430.
- Lynch DH, A Andreasen, RE Miller, Maraskovsky E, Whitmore J, Miller RE and JCL Schuh. 1997. Flt3 ligand induces tumor regression and anti-tumor immune responses in vivo. *Nature Med.* 3:625-631.

Professional Activities

- Co-Chair, Acquired Immunity, Immune System Meeting, Society of Toxicologic Pathology
- President-Elect, Ocular Toxicology Specialty Section, Society of Toxicology
- Co-Chair, Internet Committee, Society of Toxicologic Pathology
- Lecturer to Pharmaceutical R&D and Academic groups, and FDA
- Speakers Bureau, Northwest Association for Biomedical Research