

Teaching courses and research publications

Tang Hu

Courses Taught

Cell Biology
Cell Biology Lab
Genetics
Genetics Lab
Seminar
Biology Foundations
Biological Foundations Lab
Biomedical Orientation

Research Interest

My research interest is “Cell Signaling and Cancer”:

- (1) I am studying the molecular mechanisms responsible for abnormal growth of human cancer cells with a focus on cell cycle control;
- (2) I am studying the differentiation induction of cancer stem cells.

Publications

Book

Tang Hu and Laura Mudd. The world of biological molecules through the eyes and



hands of undergraduate students. September 2015, ISBN Number: 1943955166, Green Ivy Publishing, Chicago, Illinois.

Book Chapters (corresponding author for the first three book chapters)

- 1 Hu X and Shaw G (2013) Differentiation signaling induced by retinoic acid and vitamin D3. In Spencer A Douglas (Ed.), *Myeloid Cells: Biology & Regulation, Role in Cancer Progression and Potential Implications for Therapy* 2013, pp 1-34. Nova Publisher, Hauppauge, NY.
- 2 Hu X (2011). Distinct inhibitory effect of TGF β on human myeloid leukemia cells. In Steffen Koschmieder (Ed.), *Myeloid Leukemia* 2011, pp 197-214 (Book ISBN: 978-953-7-795-5), InTech Publisher, Rijeka, Croatia.
- 3 Hu X and Zuckerman KS (2008). Chapter IV- TGF β : a unique and powerful negative regulator of the cell cycle in human myeloid leukemia cells. In NH Leroy and NT Fournier (Ed.), *Cell Cycle Control: New Research*, 2008, pp99-124, Nova Publisher, Hauppauge, NY.
- 4 Zuckerman KS, Emanuel PD, **Hu X** (1992): Molecular Pathophysiology of Juvenile Chronic Myeloid Leukemia. In: Abraham NG, Marks PA, Konwalinka G, Sachs L, Tavassoli M(eds), *Molecular Biology of Hematopoiesis* 1992, Intercept Scientific, Medical, & Technical Publications, Ltd, Andover, Hampshire, England.

Peer-reviewed Research Papers (corresponding author for the papers 1-18; the underlines are students)

- 1 **Hu X** (2019). Application of a simple and reliable cell proliferation and viability assay in green tea extract-and catechin-induced growth inhibition of cancer cells. *Clinical Oncology and Research* 2(5): 2-6.
- 2 Henry D, Brumaire S, **Hu X** (2019). Involvement of pRb-E2F pathway in green tea extract-induced growth inhibition of human myeloid leukemia cells *Leukemia Research* 77:34-41.
- 3 **Hu X** (2016) CRISPR-Cas9 system and its applications in human hematopoietic cells. *Blood Cells, Molecules, and Diseases*. 62: 6-12.
- 4 **Hu X**, Laguette V, Packert D, Nakasone A, Moscinski L (2015). A simple and efficient method for preparing cell slides and staining without using cytocentrifuge and cytoclips. *International Journal of Cell Biology* 2015: 1-4.

- 5 **Hu X** and Zuckerman KS (2014). Role of cell cycle regulatory molecules in retinoic acid- and vitamin D3-induced differentiation of Acute Myeloid Leukemia. (submitted-revised version).
- 6 **Hu X** (2011) Cdc2: a monopotent or pluripotent CDK? *Cell Proliferation* 44: 205-211.
- 7 **Montenigor DE, Franklin T, Moscinski LC, Zuckerman KS, Hu XT** (2009) TGF β inhibits GM-CSF-induced phosphorylation of ERK and MEK in human myeloid leukemia cell lines via inhibition of phosphatidylinositol 3-kinase (PI3-k) *Cell Proliferation* 42: 1-9.
- 8 **Hu X** (2008) TGF β -mediated formation of pRb-E2F complexes in human myeloid leukemia cells. *Biochem Biophys Res Commun* 369:277-280 (invited review paper).
- 9 **Hu X, Cui DM, Moscinski L, Zhang X, Maccachero V, and Zuckerman KS** (2007). TGF β regulates the expression and activities of G2 checkpoint kinases in human myeloid leukemia cells. *Cytokine* 37:155-162.
- 10 **Hu X** (2003) Proteolytic signaling by TNF α : Caspase activation and I κ B degradation. *Cytokine* 21:286-294 (invited review paper).
- 11 **Hu X, Liang X, Datta I et al.** (2002) Ubiquitin/proteolysis-dependent degradation of D-type cyclins is linked to tumor necrosis factor-induced cell cycle arrest. *J Biol Chem* 277: 16528-16537.
- 12 **Hu X, Zhang X, Qing Zhong et al.** (2001) Differential effects of transforming growth factor on the cell cycle regulatory molecules in human myeloid leukemia cells. *Oncogene* 20: 6840-6850.
- 13 **Hu X, William E. Janssen, Lynn C. Moscinski, Matthew Bryington, Alisa Dangsup, Natalie Rezai-Zadeh, Brian A. Babbin, and KS Zuckerman.** (2001). An I κ B α inhibitor causes apoptotic cell death via a p38 MAP kinase-dependent, NF- κ B-independent mechanism. *Cancer Research* 61: 6290-6296.
- 14 **Hu X** (2001) Transforming growth factor: signal transduction pathway, cell cycle mediation, and effect on hematopoiesis. *J Hematotherapy & Stem Cell Research* 10: 61-68 (invited review paper)
- 15 **Hu X, DW Cress, Q Zhong, and KS Zuckerman.** (2000) Transforming growth factor-beta inhibits the phosphorylation of pRb at multiple serine/threonine sites and differentially regulates the formation of pRb family-E2F complexes in human myeloid leukemia cells. *Biochem Biophys Res Commun* 276: 930-939.
- 16 **Hu X** (2000) Cell cycle and transcriptional control of human myeloid leukemic cells by Transforming Growth Factor. *Leukemia and lymphoma* 38: 235-246 (invited review paper).
- 17 **Hu X, Lynn C. Moscinski, Nikola I. Valkov, Ariana B. Fisher, Bobbye J. Hill, and Kenneth S. Zuckerman.** (2000). Prolonged activation of the Mitogen-activated Protein Kinase pathway is required for macrophage-like differentiation of a Human Myeloid leukemic cell line. *Cell Growth & Differ* 11(4): 191-200.
- 18 **Hu X, Menque Tang, Ariana B. Fisher, Nancy Olashaw, and Kenneth S. Zuckerman.** (1999) Tumor necrosis factor (TNF) α -induced growth suppression/of CD34+ myeloid leukemic cell lines signals through TNF receptor type I and is associated with NF- κ B activation. *J Immunol* 163: 3106-3115.
- 19 **Hu X, Lynn C. Moscinski and Zuckerman KS** (1999). Transforming growth factor- β (TGF β) inhibits growth of more differentiated myeloid leukemia cells and retinoblastoma protein phosphorylation at Ser 795. *Exp Hematol* 27: 605-614.

- 20 **Hu X**, Lynn C. Moscinski, Bobbye J. Hill, Quanlu Chen, Jie Wu and Kenneth S. Zuckerman (1998) Characterization of a unique factor-independent subline derived from human factor -dependent TF-1 cells : A transformed event. *Leukemia Research* 22: 817-826.
- 21 **Hu X** and Zuckerman (1998) Cloning and sequencing of the cDNA encoding a soluble GM-CSF receptor α -subunit, with a 397 bp deletion. *American Journal of Hematology* 58: 145-147.
- 22 **Hu X** and Zuckerman KS (1996) Removing monolayer cells from culture dishes by incubation with EDTA in studies of cell surface receptors. *BioTechniques* 21: 784-786.
- 23 **Hu X**, Zuckerman KS. (1995): Isolation by RT-PCR and analysis of full-length cDNA clones from human blood mononuclear cells encoding the common beta-subunit of GM-CSF, IL-3 and IL-5 receptors. *Focus* 17 (1), 21-24.
- 24 Unlap T, **Hu X** (1995): Direct identification of recombinant clones in *Escherichia coli* utilizing supercoiled DNA. *BioTechniques* 18 (4) 590-594.
- 25 **Hu X**, Emanuel PD, Zuckerman KS. (1994): Cloning and sequencing of the cDNAs encoding two alternative splicing-derived variants of the alpha-subunit of the granulocyte-macrophage colony-stimulating factor receptor. *Biochem. Biophys. Acta* 1223 306-308.
- 26 **Hu X**, Xu Y, Zhou Y (1990) The Effect of Carbamylcholine on CFU-S differentiation. *Inter J Cell Cloning* 8:377-384.
- 27 **Hu X**, Xu Y, Zhou Y (1989) The Effect of Impromidine and Carbamylcholine on Cell Cycle Status of CFU-S. *Acta Physiologica Sinica* 41:516-521
- 28 **Hu X**, Xu Y, Zhou Y (1988) Differential effect of ACTH on CFU-S and CFU-GM. *Journal of Physiology (Chinese)* 69: 343-379
- 29 **Hu X**, Zhou Y (1987) Comparative Study of Cell Suspension Prepared by Pounding And Flushing of the Femurs. *Bulletin of Hunan Medical University (Chinese)* 12:293-296
- 30 **Hu X**, Zhou Y (1986): The Inhibitory Effect of ACTH On CFU-D And CFU-GM In Vivo And In Vitro In Bone Marrow of LACA Mice. *Bulletin of Physiology (Chinese)* 3:10-14
- 31 **Hu X**, Li S, Zhou Y (1986): The Heterogeneity of Pluripotent Hematopoietic Stem Cells I: Comparative studies on the properties of day 9 CFU-S and day 13 CFU-S. *Bulletin of Hunan Medical University (Chinese)* 11: 225-229
- 32 Li S, **Hu X**, Zhou Y (1986): The Heterogeneity of Pluripotent Hematopoietic Stem Cells II: Morphological studies of spleen colonies harvested on 7-15 days after bone marrow cells transplantation. *Bulletin of Hunan Medical University (Chinese)* 11:317-320
- 33 **Hu X**, Zhou Y (1986): The Heterogeneity of Pluripotent Hematopoietic Stem Cells III: Brain-associated surface antigens of day 9 and day 13 CFU-S. *Bulletin of Hunan Medical University (Chinese)* 11:332-338
- 34 **Hu X**, Xu Y (1985): Current Studies of Receptors and Surface Antigens in/on Hematopoietic Stem Cells. *Progress in Chinese Physiological Sciences* 16: 385-389
- 35 **Hu X** (1985) An improving method for the measurement of pH with microfine test paper. *Bulletin of Hunan Medical University (Chinese)* 10: 184-188

Cell Line

TF-1a cell line I established was accepted for deposition in ATCC (ATCC # CRL-2451)

in 2003. The cell line has been used in a number of laboratories/companies around the world.

GenBank Data

Hu X et al. (1997): GM-CSF-R α_{S3} (The accession number: U93096).

Hu X et al. (1994): (1) GM-CSF-R α_{S2} (The accession number: L29348);
(2) GM-CSF-R α_3 (The accession number: L29349).

GM-CSF: granulocyte macrophage-colony stimulating factor.

These variants have been cited by Wikipedia, a free encyclopedia, in the article entitled “Granulocyte macrophage colony-stimulating factor receptor” [http://en.wikipedia.org/wiki/Granulocyte_macrophage_colony-stimulating_factor_receptor].