

Curriculum Vitae

Dongtao (Ann) Fu

CURRENT POSITION: Assistant Scientist/Lab Manager

BIOGRAPHICAL SKETCH:

I received M.D at Shanghai Second Medical University (SSMU) in 1992. After that, I worked in Cardiovascular Dept in Xin-hua hospital as a physician. In 1998, I went to Japan Kanazawa University Hospital as a visiting fellow. In 2000, I joined a DNA repair research lab in Kanazawa University as a Ph.D student under the supervision of Professor Osamu Nikaido and Professor Tsukasa Matsunaga. My doctoral level studies involved cloning of the chicken *DDB1*(Damaged DNA-binding) gene; DNA repair analysis in DT40 cells and knockout *DDB1* gene in mouse ES cells, etc. I went to NIA, NIH as a postdoctoral fellow in 2003 after I got my Ph.D degree. In NIH, my research focused on studying the mechanism of DNA repair, using LM-PCR method to detect Uracils in immunoglobulin heavy chain. Since my family moved to Gainesville in fall of 2004, I started to work on the normal human stem cells and tumor stem cells as a postdoctoral associate under Dr. Edward Scott and Dr. Christopher R. Cogle's supervision. At that time, I main work was focus on IHC staining and image taking. In 2007, I started working in my current Core lab as Sr. Biological Scientist/Lab Manager. My main job is general IHC staining, new antibody development and consultation on project design and histology and IHC methodology. From December 2010, I worked as Assistant Scientist/Lab Manager and have an additional role for managing the MPC work.

EDUCATION:

- Ph.D Faculty of Pharmaceutical Sciences, Kanazawa University, Japan.
03/2000-03/2003
- M.D Clinical Medicine, Shanghai Second Medical University, China.
09/1986-07/1992

Certificates:

May 2010, QIHC (Qualification in Immunohistochemistry)

August 2010, HT (ASCP)

Memberships:

2006-2007 ASH (American Society of Hematology) membership;

2008-2010 FSH (Florida Society for Histotechnology) membership;

2008- NSH (National Society for Histotechnology) membership

MAIN RESEARCH AREA:

2004-2007:

1. Defining the hemangioblast activity of the human hematopoietic stem cells
2. Defining the pathologic hemangioblast activity of the hematopoietic stem cell in cancer blood vessel development
3. Define the hemangioblast activity of leukemia stem cell
4. marrow as a source of tumor

2003-2004:

Detection of Uracils in DNA using LM-PCR method

2000-2003:

1. Molecular function of DDB (Damaged DNA-binding protein) in nucleotide excision repair and other cellular mechanisms
2. DNA repair analysis in chicken DT40 cells
3. Construction of targeted knockout model of DNA repair-related gene

1994-2000:

Investigation of side effects of the anti-arrhythmic drugs in cardiovascular patients

SCHOLARSHIPS AND AWARDS:

- Foreign Student Scholarship awarded by Ishikawa prefecture, Japan (2000-2003)
- Scholarship awarded by Rotary Yoneyama Memorial Foundation, Japan (2001-2003).

- Teaching assistantship, Japan(2000-2003)
- Research assistantship, Japan (2002)

WORKING EXPERIENCES:

- Assistant Scientist/Lab Manager(2010,12-now)
Molecular Pathology Core
Department of Pathology
University of Florida
1600SW archer Road
Gainesville, FL 32610
USA
- Sr. Biological Scientist/Lab Manager(2007.7-2010, 12)
Molecular Pathology Core
Department of Pathology
University of Florida
1600SW archer Road
Gainesville, FL 32610
USA
- Postdoctoral associate (2004.10 -2007.6)
Dept of Medicine
Shands Cancer Center
University of Florida
1600SW Archer Road
Gainesville, FL 32610-0277
USA
- Postdoctoral research fellow (2003.10-2004.9)
Laboratory of Molecular Gerontology
National Institute on Aging, NIH
5600 Nathan Shock Dr.

Baltimore, MD 21224-6825

USA

- Clinical visiting fellow (1998-2000)
Section of cardiovascular science
First Dept of Internal Medicine
Kanazawa University Hospital
Kanazawa University School of Medicine
Kanazawa
Japan
- Clinical Physician (1992-1998)
Dept of Cardiovascular Internal Medicine
Xinghua hospital of Shanghai Second Medical University
Shanghai, China

TECHNICAL EXPERTISE:

Histology and IHC related experiences:

- Immunohistochemistry(chromagen and fluorescent methods) staining using mouse, rat and human tissues, and also cell pellets
- Fluorescent in situ(FISH) hybridization using fresh cytopun cells and fixed tissues
- H&E staining and Special staining(PAS, Toludine Blue, AF, etc)
- Paraffin embedding and OCT embedding, processing and sectioning
- Fluorescence analysis, ELISA, immunostaining.

Manager Related work:

- Training new employees for lab safety
- Write, revise SOPs and organize documents
- Working with companies to get quotes, invoices and ask for technical support
- Training customers for using fluorescent microscope
- Training lab staffs for using spinning disc confocal microscope
- Consultation on project design and histology and IHC methodologies
- Approval staffs work time

- Assistant staffs work on challenging projects

Computer Skills:

- Word, excel, access
- Powerpoint, photoshop
- Manefire, Avio
- Aperio, Metaphor(data analysis)

Stem cell related experiences:

- Cell culture: primary cells from patients culture in conditioned medium to differentiate into endothelial cells
- Isolate MNCs from Human umbilical cord blood/leukemia patients.
- Isolate stem cells from mouse bone marrow/umbilical cord blood/leukemia patient sample.
- Labeling CD34 (+) stem cells from cord blood/normal patient using nanoparticles, ie feridex and MION
- Labeling endothelial cells using PKH26 dye
- Prepare and run Flow Cytometry using different antibodies
- Mice model. Set up dorsal skin chamber model, high limb ischemic model and tumor matrigel plug model

Molecular biology related experiences

- General Cell culture *in vitro*.
- Gene cloning techniques, including: Preparation of plasmid DNA, acquirement of objective gene by RT-PCR (including: 5'-RACE and 3'-RACE), acquirement of objective genomic DNA fragment by PCR, transformation of E. coli with recombinant plasmid DNA, identification of bacterial colonies *et al.*
- Site-directed mutagenesis *in vitro*.
- Fusion proteins culture in E. coli and isolation.
- Eukaryotic cell transfection, including: transient and stable transfection, selection of transfected clones using limiting dilution.
- DNA repair related: NER activity assay, BER activity assay.
- Electrophoretic Mobility Shift Assay (EMSA).

- Southern blots, Northern blots, Western blots, Immunoprecipitation.
- Design of primer and oligonucleotide probe, statistical analysis.
- DNA sequencing.

Mouse related experiences

- Isolation of B cells from mouse spleen.
- Knockout mouse related: mouse ES cell culture, mouse EF cell culture, targeting vector construction, expression vector construction, electroporation, colony pickup, screening (by PCR or Southern blots method), DNA isolation, RNA isolation, recombinant protein preparation.
- Mice handling: maintain breeder(B6 mice, NOD/scid mice, APCmin mice and Rag2 mice), bleeding, check genotype by tail DNA

PRESENTATION:

1. cDNA cloning of the chicken *DDB1* gene encoding the p127 subunit of damaged DNA-binding protein. Poster on 3th international 3R symposium (Replication, Recombination and Repair) Fall 2001, Japan
2. Tumor vasculogenesis can be derived from the hematopoietic stem cell. Poster ASH meeting 2006, Florida
3. Human myeloid leukemia xenotransplant model demonstrates leukemia blood vessels from both human and mouse origin. ASH meeting 2006, Florida
4. Histopathology Services for Preclinical and Clinical Trials. COM, 2010, Florida
5. Mechanism for aberrant Ras activation in human B-cell lymphoma. ASH meeting 2010, Florida
6. Immunobased blood test for inclusion body disease. ARAV, 2011, Washington
7. Expression of the Normal Alpha-1-Antitrypsin Gene in Transgenic PI*Z Mice is Associated

with Decrease Polymerization of the Z Mutant and Increase Secretion of Z and Normal Alpha-1-Antitrypsin. The 6th International Symposium on the Chemistry and Biology of Serpins, Oct. 2011

8. Overexpression of human alpha-1 antitrypsin (AAT) in PiZZ liver reduced the polymerization, facilitate secretion in vitro cell model and in vivo PiZ mice model. 2011 American society for cell biology annual meeting, Dec. 2011

9. Histopathology Services of Molecular Pathology Core. COM UF March 2012

10. Presumptive Transmissive Routes and Presumptive Prevalence of Inclusion Body Disease (IBD) in Boid Snakes—A Clinical Survey Using a Validated Antibody Against IBD Protein (IBDP). ARAV 2012

PUBLICATION:

- **Dongtao Fu**, Mitsuo Wakasugi, Yasuhito Ishigaki, Osamu Nikaido and Tsukasa Matsunaga (2003). cDNA cloning of the chicken *DDB1* gene encoding the p127 subunit of damaged DNA-binding protein. *Genes and Genetic Systems*, Vol 78, 301-313 2003.
- Stella A. Martomo, **Dongtao Fu**, William W. Yang, Nikhil S. Joshi, and Patricia Gerhart. Deoxyuridine is generated preferentially in the nontranscribe strand of DNA from cells expressing AID JI Ms. No. 05-1504, 2005
- Christopher R. Cogle, Neil D. Theise, **Dongtao Fu**, et al. Bone marrow contributes to epithelial cancers in mice and human as developmental mimicry *Stem Cell*. 2007 Aug; 25(8):1881-7. Epub 2007 May 3.
- Christopher R. Cogle, **Dongtao Fu**, et al. Bone marrow stem and progenitor cell contribution to neovasclogenesis is dependent on model system with SDF-1 as a permissive trigger. *Blood*. 2009 Nov 5;114(19):4310-9 2009

- Keeler AM, Conlon T, **Dongtao Fu**, et al. Long-term Correction of Very Long-chain Acyl-CoA Dehydrogenase Deficiency in Mice Using AAV9 Gene Therapy. *Mol Ther*. 2012 Jun;20(6):1131-8.
- Mueller C, Chulay JD, Trapnell BC, Humphries M, Carey B, Sandhaus RA, McElvaney NG, Messina L, Tang Q, Rouhani FN, Campbell-Thompson M, **Fu AD**, et al. Human Treg responses allow sustained recombinant adeno-associated virus-mediated transgene expression. *J Clin Invest*. 2013 Dec 2;123(12):5310-8. doi: 10.1172/JCI70314. Epub 2013 Nov 15.
- Li-Wen Chang, **Ann Fu**, et al. Immunohistochemical Detection of a Unique Protein within Cells of Snakes Having Inclusion Body Disease, a World-Wide Disease Seen in Members of the Families Boidae and Pythonidae. *Plos One*. 2013 Dec. 10: DOI: 10.1371/journal.pone.0082916

REFERENCES:

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2. Christopher R. Cogle Assistant Professor
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3. Martha Campbell-Thompson Research Professor

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