

CURRICULUM VITAE

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RESEARCH EXPERIENCE

The Scripps Research Institute, La Jolla, CA

6/2004-present Postdoctoral fellow (laboratory of Dr. Erguang Li)

My project is on the modification of adenovirus vector for selectively targeting tumor cell.

- Identification of a novel trimerization element in the Ad fiber shaft. We generated a series of fiber construct containing N-terminal tail and varying numbers of shaft repeats. Our data indicate that Ad fiber shaft forms stable trimer, independent of the C-terminal knob, 7 shaft repeats containing element is the minimal trimerization element.
- Demonstrated that truncated fiber shaft assembles onto Ad virions, independent of the presence of the knob region. The fiber gene of Ad5 in pAdEasy-1(34 Kb) vector was replaced with the 9 repeats shaft fiber fragment (9R) by homologous recombination. This modified plasmid was transfected to 293 cells for the generation of the recombinant Ad9R. We demonstrated 9R fiber was present on the modified virions as a trimeric protein. This knobless Ad9R loses infectivity in Ad5 permissible A549 cells.
- Using this 9R fiber fragment, we further showed that this element supported peptide fusion of cell surface specific ligands such as IGF-1. Our data showed Ad particles equipped with a chimeric 9R-IGF-1 regains specific infectivity.
- Generating modified viruses by fusing anti-CEA scFv to Ad5 for selectively targeting tumor cells. We are testing the gene delivery efficiency and selectivity of scFv-modified virus in cell cultures.

Institute of Virology, Chinese Center for Disease Control and Prevention, Beijing, P.R.China

8/2002-6/2004 Postdoctoral fellow (laboratory of Dr. Li Ruan)

The lab dedicates to develop preventive and therapeutic vaccine for virus, such as HBV, HPV, EBV and HIV, using recombinant vaccinia virus expression system. However, a priority in current vaccine research is the development of adjuvant that supports the efficient priming of long lasting CD8⁺ T cell immunity. CpG oligodeoxynucleotides (ODN) are strong Th1 like adjuvant for inducing B and T cell responses in mice, but optimal human CpG ODN remain unclear. My project is to identify optimal human CpG ODN and delimitate its immune stimulatory mechanisms as vaccine adjuvants.

- Design a panel of CpG ODN and Screen their immune stimulatory ability.
We designed over 100 different CpG ODNs and screened for their ability to stimulate proliferation, CD86 expression of human B cell and secret IgM. We got a CpG ODN 45 with the higher immunostimulatory than CpG 2006 which was reported by Krieg et al. In addition, it could stimulate human peripheral blood mononuclear cells (PBMC) to secret IFN α and IL-6. CpG ODN 45 has a mouse motif and human motifs, we have demonstrated it had an

NK cells lytic activity in vitro.

- Evaluate the in vivo adjuvant activities of CpG ODN 45
By using recombinant HbsAg as an antigen, we evaluated the in vivo immunostimulatory effects of optimally human CpG ODN45 in mice. CpG ODN 45 elicited a stronger Th1 humoral immunity, the ratio of IgG2a and IgG1>1. To assess the cellular immune response in mice after immunization, we measured the IFN γ production in specific CD8⁺ T cell by Flow cytometric analysis. The results showed that CpG ODN45 induced the highest IFN γ response and is the most effective in terms of CTL induction.

1999-2002 Ph.D student

My thesis is to study engineering antibody to human IL-2R

- Obtain anti-human-IL-2R α antibody Fab
We separated mRNA from the hybridoma cell which secretes anti-IL-2R α monoclonal antibody and synthesized cDNA by RT-PCR. By designing VH and VL consensus primers and using the vector which carries gene fragments of human antibody CH1 and CL, we amplified complete antibody Fab gene.
- Expression, Purification and Identification of Recombinant Antibody Fab to Human IL-2R α in Bacteria and CHO-dhfr⁻ system.
- Blocking effect of recombinant antibody Fab to human-IL-2R α in vitro.
In vitro, antibody competitive inhibition assay and mixed lymphocyte reaction assay showed recombinant antibody Fab could compete with IL-2 to bind IL-2R α in active T cell surface and have a good blocking effect.

1996-1999 M.S. Student

We screened cytomegalovirus infection in pregnant women. Results indicated the outcome of congenital cytomegalovirus infection is in relation to maternal antibody status.

Education

9/1999-7/2002 **Ph.D.** in Immunology, Dept of Immunology, Basic Medical School, Jilin University, Changchun, P. R. China

9/1996-7/1999 **M.S.** in Clinical Immunology, Dept of Clinical Immunology, Jilin Medical College, Jilin, P.R. China

9/1988-7/1993 **MD**, Jilin Medical College, Jilin, P. R. China

WORK EXPERIENCE

9/1993-8/1996 Doctor, Dept of Anaesthesia, Jilin Central Hospital, Jilin, P. R. China

EXPERTISE

- 1 Recombinant DNA techniques: primer design, PCR and RT-PCR, plasmid construction, recombinant protein expression in eukaryotic and prokaryotic cell, Southern blot and Western blot.
- 2 Immunology techniques: in vitro and in vivo assays for lymphocyte function, Flow cytometry, immunofluorescence staining.
- 3 Virology techniques: cell culture of virus, identification and purification of virus, extractions of viral nucleic acids

4 Other basic techniques: Cell culture and manipulation, Animal experiment techniques.

HONORS:

2002 Excellent Graduate Student at JILIN UNIVERSITY

Professional affiliation

American Society of Virology, Member

Publications:

1. **Li Jiali**, Sonya Lad, and Erguang Li Adenovirus Fiber Shaft Contains A Trimerization Element that Supports Peptide Display For Targeted Gene Delivery (Submitted to Journal of Virology)
2. **Li Jiali**, Ruan li Optimal CpG ODN for activating human immune cells.(patent application)
3. **Li Jiali**, Zhuxun. Construction and expression of recombinant anti-IL-2R α antibody Fab and its biological activity assay. Chinese Journal of Immunology, 2002,5; 14-16
4. **Li Jiali**, Xuwei Liu Fas/FasL expression in gastric cancer and its clinical significance. Journal of Practical Oncology, 2001,15:4
5. **Li Jiali**, Zhuxun Fas/FasL and tumor immune escape. Abroad Medicine-Immunology, 2001,15:2,65-67
6. Lichun zhao, CaixiaLiu, **Li Jiali** Studying the expression and clinical significance of P16. Journal of Practical Oncology, 2001,15:1
7. Sonya P. Lad, Elaine Y. Fukuda, **Jiali Li** and Erguang Li Up-regulation of the JAK/STAT1 signal pathway during Chlamydia trachomatis infection. J Immunol. 2005 Jun 1; 174(11): 7186-93.

References are available on request