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Primary Research Field

Immunology, Dendritic cells, ITIMs, Immune dysfunction in critical illness

Education

2000 Ph. D., Dept. Immunology, 2nd Military Medical University, P.R.China

1994 M.D. equivalent, 2nd Military Medical University, P.R.China

Professional Experience

2004-present Res. Fellow / Res. Assoc. – Div. Surg. Res./Dept. Surgery, RI Hospital-Brown Univ. Sch. Med., Providence, RI, U.S.A.

2003 - 2004 Assoc. Prof. – Dept. Immunology, 2nd Military Medical Univ., P.R.China.

2000 - 2003 Lecturer – Dept. Immunology, 2nd Military Medical University, P.R.China.

Awards, Fellowships, Grants

Awards:

- National Excellence Award for doctoral dissertations in 2002, P.R.China.
- Award for advancing science and technology. PLA. Third degree. 2001. (First Author)
- Award for advancing science and technology. Shanghai. First degree. 2001. (Sixth Author)

Grants:

- National Science Foundation of China for young scientist (30200252).
- A Foundation for the Author of National Excellent Doctoral Dissertation of PR China (FANEDD 200258).

Publications

1. **Xin Huang**, Fabienne Venet, Alan Lepape, Zhenglong Yuan, Yvonne L Wang, Yaping Chen, Ryan Swan, Hakim Kherouf, Guillaume Monneret, Chun-Shiang Chung, Alfred Ayala. PD-1 on macrophages/monocytes: a critical role in suppressed innate immunity during sepsis. *Proc Natl Acad Sci U.S.A.* 2009; 106:6303-6308.
2. Caroline Hu, Fabienne Venet, Daithi S Heffernan, Yvonne Wang, Brian Horner, Megan E Garber, **Xin Huang**, Chun-Shiang Chung, Stephen H Gregory, Alfred Ayala. Hepatic immune response during polymicrobial septic shock: Do iNKT-cells play a role? *J. Immunol.* 2009; 182:2467-2475.
3. Fabienne Venet, Chun-Shiang Chung, Guillaume Monneret, **Xin Huang**, Brian Horner, Megan E. Garber, Alfred Ayala. T-regulatory cell populations in trauma and sepsis. *J. Leuko. Biol.* 2008; 83: 523–535. (Review)
4. **Xin Huang**, Fabienne Venet, Joanne L. Lomas-Neira Chun-Shiang Chung, Alfred Ayala. Changes in dendritic cell function in the immune response to sepsis. *Expert Opin. Biol. Ther.* 2007; 7:929-938. (Review)
5. Nicholas C. Winoski, Chun-Shiang Chung, Yaping Chen, **Xin Huang**, Alfred Ayala. The contribution of CD4⁺CD25⁺ T-regulatory cells to immune suppression in sepsis. *Shock.* 2007; 27:251-257.
6. Mario Perl, Chun-Shiang Chung, **Xin Huang**, Megan E. Garber, Alfred Ayala. Contribution of anti-inflammatory/immune suppressive processes to the pathology of sepsis. *Front. Biosci. Rev.* 2006; 11:272-299. (Review)
7. **Xin Huang**, Minghui Zhang, Hua Tang, Ruo C, & Xuetao Cao. Identification and characterization of DEDDL, a human-specific isoform of DEDD. *Gene Expr*, 2006; 13(3): 141-53
8. Minghui Zhang, Hua Tang, Zhenhong Guo, Huazhang An, Xuejun Zhu, Wengang Song, Jun Guo, **Xin Huang**, Taoyong Chen, Jianli Wang, Xuetao Cao. Splenic stroma drives mature dendritic cells to differentiate into regulatory dendritic cells. *Nat Immunol*, 2004; 5(11): 1124-33
9. **Xin Huang**, Weiping Zhang, Wakimoto H, Hirofumi Hamada and Xuetao Cao. Adenovirus-mediated tissue-specific cytosine deaminase gene therapy for human hepatocellular carcinoma with different AFP expression levels. *J Exp Ther Oncol*, 2002; 2(2): 100-106.
10. **Xin Huang**, Zhenglong Yuan, Guoyou Chen, Minghui Zhang, Weiping Zhang, Yizhi Yu & Xuetao Cao. Cloning and Characterization of a Novel ITIM Containing Lectin-like Immunoreceptor LLIR and Its Two Transmembrane Region Deletion Variants. *Biochem Biophys Res Commun*, 2001; 281 (1): 131-140.

11. Zhenglong Yuan, **Xin Huang**, Weiping Zhang, Minghui Zhang, Tao Wan & Xuetao Cao. Identification of a novel zinc/POZ protein MDZF, which involved in acute promyelocytic leukemia cell differentiation. *J Cancer Res & Clin Oncol*, 2001; 127: 659-667.
12. **Xin Huang**, Zhongliang Zhao, Zhenglong Yuan, Minghui Zhang, Xuejun Zhu, Guoyou Chen & Xuetao Cao. Cloning and characterization of a novel deletion mutant of heterogeneous nuclear ribonucleoprotein M4 from human dendritic cells. *Science in China (Series C)*, 2000; 43 (6): 648-654.
13. Zhongliang Zhao, **Xin Huang**, Sumin Chen & Xuetao Cao. Construction of an integrative plasmid pLCM182 for heterogeneous gene cloning, sequencing, expression and its application in cytokine expression. *Chin J Microbiol Immunol*, 2000; 20 (4): 138-141.
14. Nan Li, **Xin Huang**, Zhongliang Zhao, Guoyou Chen, Weiping Zhang & Xuetao Cao. Identification and Characterization of a Novel Gene KE04 Differentially Expressed by Activated Human Dendritic Cells. *Biochem Biophys Res Commun* 2000; 20; 279 (2): 487-493.
15. Xuetao Cao, **Xin Huang**, Dianwen Ju, Weiping Zhang, Hirofumi Hamada, and Jianli Wang. Enhanced antitumoral effect of adenovirus-mediated cytosine deaminase gene therapy by induction of antigen-presenting cells through stem cell factor/granulocyte-macrophage colony-stimulating factor gene transfer. *Cancer Gene Therapy*, 2000; 7 (2): 177-186.
16. Xuejun Zhu, **Xin Huang**, Weiping Zhang, Long He, Zhenglong Yuan, Nan Li & Xuetao Cao. The promoting effects of mGM-CSF gene modified tumor vaccine immunization on peritoneal antigen presenting cells in mice. *Chin J Hematol*, 2000; 21 (11): 591-594
17. Zhongliang Zhao, **Xin Huang**, Nan Li, Sumin Chen & Xuetao Cao. Direct cloning of cell differential expression genes with full-length by a new strategy based on the multiple rounds of "long distance" PCR and magnetic beads mediated subtraction. *J Biotech*, 1999; 73: 35-41
18. **Xin Huang**, Zhongliang Zhao & Xuetao Cao. The optimizing expression of human interleukin 4 in *E. coli*. *Chin J Immunol*, 1999; 15: 405-407
19. **Xin Huang**, Xuetao Cao, Weiping Zhang, Xuejun Zhu, Minghui Zhang & Zhengfang Zhou. Enhanced antitumor effect of suicide gene therapy by SCF, GM-CSF gene transfer *in vivo* and its immunological mechanism. *Chin J Oncol*, 1998; 20 (4): 270-273
20. **Xin Huang**, Xuetao Cao, Dianwen Ju, Weiping Zhang, Jianli Wang & Qun Tao. Antitumor effects of adenovirus-mediated CD/5FC gene therapy in established colon adenocarcinoma-bearing mice and its immunological mechanisms. *Chin J Cancer Biother*, 1998; 5 (3): 185-189

Book Chapters

1. **Xin Huang**, Zhenglong Yuan & Xuetao Cao. Chapter 11: Direct cloning of full-length cell differentially expressed genes by multiple rounds of subtractive hybridization based on long-distance PCR and magnetic beads. in *PCR cloning protocols, 2nd edition* (B.Y Chen and H.W Janes ed.), Humana, Totowa, NJ, pp.99.

Publications (submitted)

1. Fabienne Venet, Chun-Shiang Chung, **Xin Huang**, Joanne Lomas-Neira, Yaping Chen, Alfred Ayala. Indirect lung injury: a role for regulatory T lymphocytes in the development of pulmonary inflammation. *J. Immunol.* 2009; (in revision).
2. Fabienne Venet, **Xin Huang**, Chun-Shiang Chung, Guillaume Monneret, Yaping Chen, Alfred Ayala. Plasmacytoid dendritic cells control lung inflammation and monocyte recruitment in indirect acute lung injury in mice. *J. Immunol.* 2009;(submitted).

Selected Abstracts (published)

1. **Xin Huang**, Fabienne Venet, Alan Lepape, Zhenglong Yuan, Yaping Chen, Guillaume Monneret, Chun-Shiang Chung, Alfred Ayala. 2009. A pathological role for PD-1 in sepsis induced lethality: dysregulating the balance between efficient monocyte/ macrophage mediated pathogen clearance, cell death and the innate inflammatory response. *Shock* 31:58 suppl. 1.
2. Yvonne L. Wang, **Xin Huang**, Chun-Shiang Chung, Alfred Ayala. 2009. Sepsis induces changes in splenic/hepatic macrophage PD-1:PD-L1/PD-L2 expression that are associated with altered innate immune responsiveness. *Surg. Infect.* 10:198.
3. Fabienne Venet, Joanne Lomas-Neira, **Xin Huang**, Yaping Chen, Chun-Shiang Chung, Alfred Ayala. Mechanisms of extra-pulmonary acute lung injury: the dendritic cell as a regulator of macrophage's recruitment and inflammatory response. *J Leukocyte Biol* 2008; 84:59 suppl
4. **Xin Huang**, Yvonne L. Wang, Fabienne Venet, Ryan Swan, Yaping Chen, Chun-Shiang Chung, Alan Lepape, Guillaume Monneret, Alfred Ayala. PD-1 deficiency protects mice from the lethality of sepsis by balancing efficient pathogen clearance and suppression of pro-inflammatory cytokine production. *FASEB J.* 2008; 22:675.23.
5. **Xin Huang**, Chun-Shiang Chung, Yaping Chen, Alfred Ayala. Antigen presenting cells contribute to impaired Th1 response through upregulating PD-1/B7-H1 expression. *Shock* 2007; 27:62 suppl 1.
6. Caroline Hu, Yvonne L. Wang, Rebecca J. Rhee, Brian Horner, Chun-Shiang Chung, **Xin Huang**, Alfred Ayala. Hepatic immune response during polymicrobial sepsis: do NK-T cells play a role? *Surg. Infect.* 2007; 8:295.

7. **Xin Huang**, Chun-Shiang Chung, Yaping Chen, Alfred Ayala. Sepsis induces elevated expression of inhibitory receptor PD-1 and its ligand PD-L1 on immune cells. *Shock*. 2006; 25:46 suppl.
8. Caroline Hu, Chun-Shiang Chung, **Xin Huang**, Alfred Ayala. Liver NK-T cell participation in immune dysfunction following septic shock. *J. Immunology* 2006; 176:S43 (supplement).
9. **Xin Huang**, Chun-Shiang Chung, Yaping Chen, Alfred Ayala. Sepsis induces differential expression of ITIM receptors on CD4+ T cells. *Shock*. 2005; 23 (Suppl. 3):61.

Presentations:

1. **Xin Huang** (*Poster Presenter*), Chun-Shiang Chung, Yaping Chen, Alfred Ayala. Sepsis induces elevated expression of inhibitory receptor PD-1 and its ligands on immune cells. 14th Annual Research Celebration at Rhode Island Hospital, Poster presented November 9th, 2006.
2. **Xin Huang** (*Poster Presenter*), Chun-Shiang Chung, Yaping Chen, Alfred Ayala. Antigen presenting cells contribute to impaired Th1 response through upregulating PD-1/B7-H1 expression. 15th Annual Research Celebration at Rhode Island Hospital, Poster presented November 13th, 2007.
3. **Xin Huang**, Fabienne Venet (*Oral Presenter*), Yvonne L Wang, Alan Lepape, Ryan Swan, Yaping Chen, Chun-Shiang Chung, Guillaume Monneret, Alfred Ayala. PD-1 deficiency protects mice from the lethality of sepsis by balancing efficient pathogen clearance and suppression of pro-inflammatory cytokine production. Oral presentation as a part of Session: "Development of Host Defense to Bacterial Infection" at the Experimental Biology conference in San Diego, CA, April 9, 2008.
4. Arnaldo Carreira (*Poster Presenter*), Gwendolyn F Elphick, **Xin Huang**, Alfred Ayala. PD-1 gene deficiency suppresses sepsis induced increase in migratory capacity. The Leadership Alliance-Summer Research Early Identification Program Poster Session, Brown University, July, 30, 2008
5. **Xin Huang** (*Oral Presenter*), Yvonne L Wang, Fabienne Venet, Ryan Swan, Yaping Chen, Chun-Shiang Chung, Alan Lepape, Guillaume Monneret, Alfred Ayala, A A pathological role for PD-1 in sepsis induced lethality: dysregulating the balance between efficient monocyte / macrophage mediated pathogen clearance and the innate inflammatory response. 6th Annual "Advances in Inflammation Research" Symposium, Junior Faculty presentations, Providence, RI, September 11th, 2008.
6. Yvonne L Wang (*Oral Presenter*), **Xin Huang**, Chun-Shiang Chung, Alfred Ayala, A. Sepsis induces changes in splenic/hepatic macrophage PD-1:PD-L1/PD-L2 expression that are associated with altered innate immune responsiveness. 3rd Combined meeting of the Surgical Infection Societies of North America and Europe, Chicago, IL, May 8th, 2009.



Other Appointments

Ad Hoc Reviewer:

- Shock
- Critical Care Medicine

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