BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
RUEY-CHYI SU	Research Scientist, National Laboratory for HIV-Immunology, PHAC Adjunct Professor, Dept of Medical Microbiology & Infectious Diseases, U of Manitoba
eRA COMMONS USER NAME (credential, e.g., agency login)	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Toronto, Canada	B.Sc. Hon	1991-1995	Immunology, Microbiology & Physiology
University of Toronto, Department of Medical Biophysics, Canada	Ph.D.	1995-2000	Immunology

A. Personal Statement

I was trained in cellular immunology and molecular biology and have >12 years of research experience in studying the regulation of gene expression in both animal and human primary, untransformed cells, at both transcription (RNA) and epigenetic (Chromatin & DNA, protein) levels. *The goal of my research program is to identify the epigenetic/molecular mechanisms that were altered during host-pathogen interaction and might have implication in disease susceptibility or progression, and with that knowledge to develop novel or better vaccines, diagnostic tools, and/or therapeutic options. I have* conducted studies in the fields of developmental biology, immunobiology (asthma/allergy, natural killer cells, thymocytes and T cells) and infectious diseases (HIV), with peer-reviewed publications in major journals of each field.

Our on-going projects include (i) characterization of the regulators of epigenetic markings at immunological genes in peripheral blood mononuclear cells and in innate cells at mucosal compartments, (2) defining minimal requirements for re-activating epigenetically silenced HIV provirus and for boosting innate anti-viral function in HIV-infected patients, (3) studying the molecular regulation of HIV gene expression during acute infection and its relation with disease progression, and (4) reducing endogenous IRF-1 expression in vivo using siRNA to hinder HIV-replication. We believe that adequate regulation of factors that affect immune activation and inflammation are the main determinants of an individual's susceptibilty to disease acquisition.

B. Positions and Honors

Dates	***Institution***	***Position***
August 2000 - June 2004	Howard Hughes Medical Institute University of California, Los Angeles, USA Advisor: Dr. Stephen T. Smale	Postdoctoral Fellow [HHMI Research Fellowship]
August 2004 - February 2008	University of Manitoba, Canada Advisor: Dr. Kent T. HayGlass	Postdoctoral Fellow [CIHR Postdoctoral Fellowship]
April 2008 - Nov. 2014	University of Manitoba, Canada Advisor: Dr. T. Blake Ball / Dr. Frank Plummer	Research Associate
April 2010 - Nov. 2014	National Laboratory for HIV Immunology Public Health Agency of Canada	Visiting Scientist

Dates	*Institution*	*Position*
Nov. 2014 - present	Immunogenetics/Epigenetics Unit National Laboratory for HIV Immunology Public Health Agency of Canada	Research Scientist
January 2015 -	Department of Medical Microbiology & Infectious Diseases, University of Manitoba	Adjunct Professor

C. Selected Peer-reviewed Publications

Su, R.-C., Brown, K.E., Saaber, S., Fisher, A.G., Merkenschlager, M. and Smale, S. T. (2004) Dynamic assembly of silent chromatin during thymocyte maturation. ***Nature Genetics*** 36(5): 502-6

Su, R.-C., Sridharan R., and Smale S.T. (2005) Assembly of silent chromatin during thymocyte development. ***Semin Immunol***. 17(2): 129-40 (*Review*)

Su, R.-C., Becker, A.B., Kozyrskyj, A.L., and HayGlass, K.T. (2008) Epigenetic regulation of established human Type 1 versus Type 2 cytokine responses. ***J Aller Clin Immunol.*** 121(1): 57-63

Douville, R.N. **Su, R-C.**, Coombs, K.M. Simons, FER and HayGlass, KT. (2008) Reovirus serotypes elicit distinctive patterns of recall immunity in humans. ***J Virology*** 82(15):7515-23

Su, R-C., Becker, A.B., Kozyrskyj, A.L., Hayglass, K.T. (2009) Altered epigenetic regulation and increasing severity of bronchial hyper-responsiveness in atopic asthmatic children. ***J Aller Clin Immunol.*** 124(5): 1116-8

Su, R.-C., Sivro, A., Kimani, J., Jaoko, W., Plummer, F.A., Ball, T.B. (2011) Epigenetic control of IRF-1 responses in HIV-exposed seronegative versus HIV-susceptible individuals. ***Blood*** 117(9): 2649-57

Xie, J., Lotoski, L.C., Chooniedass, R., **Su, R.-C.**, Simons, .FE., Liem, J., Becker, A.B., Uzonna, J., HayGlass, K.T. (2012) Elevated antigen-driven IL-9 responses are prominent in peanut allergic humans. ***PLoS One*** 7(10): e45377. doi: 10.1371/journal.pone.0045377.

Sivro, A., McKinnon, L.R., Ji, H., Kimani, J., Jaoko, W., Plummer, F.A., **Su, R.-C.,** Ball, T.B. (2013) Interferon regulatory factor 1 polymorphisms previously associated with reduced HIV susceptibility have no effect on HIV disease progression. ***PLoS One*** 8(6):e66253. doi: 10.1371/journal.pone.0066253.

Sivro, A., **Su, R.-C.**, Plummer, F.A., Ball, T.B. (2013) HIV and Interferon Regulatory Factor 1: A Story of Manipulation and Control. ***AIDS Research and Human Retroviruses*** 2013 Nov;29(11):1428-33

Sivro, A., **Su, R.-C.**, Plummer, F.A., Ball, T.B. (2014) Interferon Responses in HIV Infection: From Protection to Disease. ***AIDS REVIEWS*** March;16(1)

D. Research Support

Dates	*Agency*	*Role*	*Title*	*Funded*
2013 March	CIHR Operating Grant	Co-Applicant with Dr. T. Blake Ball	Defining the mechanisms of IRF-1 in mediating innate resistance to mucosal HIV acquisition in HIV exposed seronegative (HESN) women.	2013-2018
2012 Sept.	CIHR Operating Grant	Co-Applicant with Dr. T. Blake Ball	Defining the mechanisms of IRF-1 in mediating innate resistance to mucosal HIV acquisition in HIV exposed seronegative (HESN) women.	2012-2013
2012 March	Manitoba Institute of Child Health	Collaborator with Dr. Julia Rempel	In utero and neonatal liver derived IL-1β/ inflammasome activity in the development of 2nd generation metabolic syndrome	2012-2013
2010 Dec.	GRDI- Full Grant	Collaborator with Dr. T. Blake Ball	Uncovering signatures of Mycobacterium tuberculosis (MTB) specific immune responses to distinguish active versus latent TB infection.	2012-2015
2010 Sept.	CIHR Operating Grant	Writer & Collaborator with Dr. Keith Fowke	Determine the kinetics and genetics of --1 expression as a potential driver of the IQ phenotype	2011-2016
2009 Sept.	CIHR Operating Grant	Writer with Dr. T. Blake Ball	Regulation of IRF-1 in Immune Activation and HIV Infection	2010-2013