Muneer G. Hasham

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Employment Profile **The Jackson Laboratory, Bar Harbor, ME**

- Associate Research Scientist, (2011 - present)
- Post-Doctoral Associate, (2006 - 2011)
- Manager, Molecular Biology and Protein Chemistry Services (2004-2006)
- Post-Doctoral Fellow (2003 - 2004)

Education

Courses on Management at the Jackson Laboratory

- The Art of Leadership: The Human Side of Work: Building Community in the Workplace. (2006)
- Workshop on Strategies on Resolving Conflict. (2005)
- Training on Effective Communication. (2005)
- Dealing with Change. (2005)

Temple University School of Medicine (1997-2003) Philadelphia, PA
Ph.D. in 2003. Degree in Microbiology and Immunology

Bowdoin College (1993-1997) Brunswick, ME
A.B. (Summa Cum Laude) in 1997. Double major in Biology and Environmental Sciences, and minor in Chemistry. James Bowdoin Scholar.

Research Experience and Publications

Cancer Therapy

Designed and executed assays to determine the role of a novel chemotherapeutic drug.

K.R. Lamont, M.G. Hasham* et. al. (2013) "Attenuating homologous recombination stimulates an AIDinduced antileukemic effect." *J Exp Med.* 210:1021 - 1033.
* co-first author

U.S. and Foreign Patents Pending: **No. 13/799,963**: Methods and composition for treatment of Cancer and Autoimmune Disease. Inventors: K.D. Mills, M.G. Hasham, and C.G. McPhee; and **No. 62/901,026**: Composition and methods relating to the treatment of cancer, autoimmune disease and neurodegenerative disease. Inventors K.D. Mills and M.G. Hasham.

B-cell Development and Immunodeficiency

Determined the role of homologous recombination protein, XRCC2 in developing B cells.

M.G. Hasham, et. al. "Activation-induced cytidine deaminase-initiated off-target DNA breaks

aredetected and resolved during S phase". (2012) *J. Immunol*. 189:2374-2382.

M.G. Hasham, et. al. "Widespread genomic breaks generated by activation-induced cytidine deaminase are prevented by homologous recombination" (2010). *Nat. Immunol.* 11: 820-826

L. B. Caddle*, M.G. Hasham* et. al. "Homologous recombination is necessary for normal lymphocyte development" (2008). *Mol.Cell. Biol.* 28: 2295-2303
* co-first author

Immune Disorders
Determined and purified BACs to rescue the *Sharpin* mutation.

Seymour R.E., M.G. Hasham, et.al. (2007) " Spontaeous mutations in the mouse *Sharpin* gene resultin multi-organ inflammation, immune system dysregulation, and dermatitis" *Genes & Immun.* 8:416-21.

Molecular Developmental Biology
Designed experiments to decipher the role of SHP-1 in retinal degeneration using normal and viablemoth-eaten mice.

Lyons B.L., R.S. Smith, R.E. Hurd, N.L.Hawes, L.M. Burzenski, S. Nusinowitz, M.G.Hasham , B. Chang, L.D. Shultz (2006) "Deficiency of SHP-1 protein-tyrosine phosphatase in "viable motheaten" mice results in retinal degeneration." *Invest. Ophthalmol. Vis. Sci.* Mar; 47(3):1201-9.

Metabolic Syndrome
Generated Transgenic and Knock in constructs to determine the molecular basis of a mutation caused by a knock-in cassette into *Pparg* allele.

Kim, S., L.W. Huang, K.J. Snow, V. Ablamunits, M.G. Hasham, T.H. Young, A.C. Paulk, J.E. Richardson, J.P. Affourtit, T. Shalom-Barak, C.J. Bult, and Y. Barak. (2007) "A mouse model of conditional lipodystrophy." *Proc. Natl. Acad. Sci. U S A*. 104:16627-32.

Cancer Virology
Dissertation research experiments conducted to determine if *Herpesvirus saimiri Tip* and *StpC* are sufficient to transform primary T cells and to study the effects of Tip and StpC in primary and lymphoblastic T cells.

Hasham, M.G. and A.Y. Tsygankov (2004) "Tip, an Lck-interacting protein of Herpesvirus saimiri, causes Fas- and Lck-dependent apoptosis of T lymphocytes." *Virology*. Mar 15;320 (2):313-29.

Physiology
Kinase assays conducted to determine the activation of Cdc2 in the presence of High Molecular Weight Kininogen in HUVEC cells.

Wang S, M.G. Hasham MG, I. Isordia-Salas, A.Y. Tsygankov, R.W. Colman, and Y. L. Guo

(2003) “Upregulation of Cdc2 and cyclin A during apoptosis of endothelial cells induced by cleaved highmolecular-weight kininogen.” *Am. J. Physiol. Heart Circ. Physiol*. 284:H1917-23.

HIV pathogenesis
Manufactured and provided HIV/MSCV based-pseudotyped virus carrying Tip and StpC in order to stably transduce eukaryotic cells and performed kinase assay to determine the expression of Tip.

Raymond, A.D., M. Hasham, A.Y. Tsygankov, and E.E. Henderson (2007) “Herpesvirus saimiri terminal membrane proteins modulate HIV-1 replication by altering Nef and Tat functions.” *Curr. HIV Res*. (2007) Jan;5(1):79-86.

Raymond, A.D., M. Hasham, A.Y. Tsygankov, and E.E. Henderson (2006) “H. saimiri tyrosine-kinase interacting protein inhibits Tat function: a prototypic strategy for restricting HIV-1-induced cytopathic effects in immune cells” *Virology*. Sep 1;352(2):253-67.

Raymond, A.D., M.G. Hasham, A.Y. Tsygankov, and E.E. Henderson (2004) “Herpesvirus saimiri encoded proteins Tip and StpC modulate human immunodeficiency virus type 1 replication in T-cell lines and lymphocytes independently of viral tropism.”*Virology.* Jun 20;324(1):60-6.

Salerno, D., M.G. Hasham, R. Marshall, J. Garriga, A.Y. Tsygankov, and X. Grana. (2007). Direct inhibition of CDK9 blocks HIV-1 replication without preventing T-cell activation in primary human peripheral blood lymphocytes. *Gene*. 405:65-78.

Committees
Voting member of the Jackson Laboratory Institutional Biosafety Committee
(2005 -2006, 2011 -)

Reference 1:
Dr. Kevin D. Mills
Associate Professor
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Reference 2:
Dr. Jennifer J. Trowbridge
Assistant Proffessor
The Jackson Laboratory
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Reference 3
Dr. James R. Fahey
Associate Director, LAHS
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Personal Data: US Citizen, Married, 2 Children, Bilingual (English and Swahili)