James R. Hagman, PhD, is a researcher at National Jewish Health. Dr. Hagman is in the Department of Immunology and Genomic Medicine.

Professor

Department of Immunology and Genomic Medicine

Research Areas

- Antibodies
- B Cells
- Epigenetics
- Gene Expression
- Leukemia Lymphoma

Special Interests

Research Interests

Regulation of B cell transcription and development Lymphocyte differentiation proceeds through multiple stages characterized by the expression of distinct sets of genes. My laboratory's goals include understanding how the nuclear proteins Early B cell Factor (EBF) and Pax5 (B cell-specific activator protein) regulate B lineage specification, commitment and the immune response to antigens. EBF has been identified as a crucial factor for lineage determination. EBF regulates many genes (such as mb-1) involved in assembly of the pre-B and mature B cell receptors for antigen (pre-BCR and BCR). We recently identified EBF as an early mediator of changes in mb-1 gene chromatin structure, including DNA demethylation and enhanced accessibility. Pax5 acts downstream of EBF as an important regulator of the early B cell-specific transcriptome, but is also important at later stages of B cell maturation. Notably, Pax5 is a key factor for establishing B cell lineage commitment. To better understand how these proteins function in B cells, my lab employs a combination of biochemical and genetic methods, including transgenic and gene targeted mice. Ultimately, we wish to understand how regulatory signals are integrated for activation and/or repression of genes that contribute to normal immunity, immune diseases, and cancer.

Education

Education

1979 University of California, Berkeley

1986 University of Washington, Seattle

1989 University of Washington, Seattle

Residency

Howard Hughes Medical Institute

University of California, San Francisco

Academic Affiliations

University Page for Dr. Hagman

Professional Memberships

The Epigenetics Society
American Society for Biochemistry and Molecular Biology
Member, American Society of Microbiology
Member, American Association of Immunologists
Member, American Association for Cancer Research

Awards & Recognition

2009-2013: Member, NIH CMI-B Study Section
2006-2011: Editorial Board, Journal of Biological Chemistry
2008-Present: Advisory Board, Faculty of 1000 Biology
2008: Ad hoc Member, NIH Special Emphasis Panel/Scientific Review Group ZRG1 IMM-J (02)
2007: Research Award, Rocky Mountain Chapter of the Arthritis Foundation
2007: Co-editor, Current Opinion in Immunology, Lymphocyte Development 2000-2001,
2006-2007: Scientific Advisory Board Member, Cancer League of Colorado
2005: Outstanding Scientific Achievement Award, National Jewish Health
1997-2005: Ad hoc Member, NIH Special Emphasis Panel ZRG IMB 01
1997-2001: Peer Review Committee on Development, Differentiation and Cancer, Regular Member, American Cancer Society
1997: Harmon Foundation Award for Arthritis Research
7/1990-6/1993: Fellow of the Leukemia Society of America

Publications

Lukin, K, S Fields, L Guerrettaz, D Straign, V Rodriguez, S Zandi, R Månsson, JC Cambier, M Sigvardsson and J Hagman. 2011. A dose-dependent role for EBF1 in repressing non-B cell specific genes. Eur J Immunol, 41:1787-1793 (PMCID: PMC3127254).

Musselman, CA, J Ramirez, JK Sims, RE Mansfield, SS Oliver, JM Denu, JP Mackay, PA Wade, J Hagman and TG Kutateladze. 2012. Bivalent recognition of nucleosomes by the tandem PHD fingers of CHD4 is required for CHD4-mediated repression.

Proc Natl Acad Sci USA, 109:787-792 (PMCID: PMC3271909).

Hagman, J, J Ramírez and K Lukin. 2012. B lymphocyte lineage specification, commitment and epigenetic control of transcription by Early B cell Factor 1. Curr Topics Micro Immunol, 356:17-38 (PMID: 21735360).

Dege, C, and J Hagman. 2012. Activation of Aicda gene transcription by Pax5 in plasmacytoma cells. Immunol Res, [Epub ahead of print] (PMID: 22956488).

Ramirez, J, C Dege, KG Kutateladze and J Hagman. 2012. MBD2 and multiple domains of CHD4 are required for transcriptional repression by Mi-2/NuRD complexes. Mol Cell Biol, [Epub ahead of print] (PMID: 23071088).

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