Kuo-I Lin, J Vaccines Vaccin 2012, 3:4
http://dx.doi.org/10.4172/2157-7560.S1.003

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Vaccines and Vaccination

August 20-22, 2012 Hilton Chicago/Northbrook, USA

The role of B lymphocyte—induced maturation protein-1 (Blimp-1) in the plasma cells

Kuo-I Lin
Genomics Research Center, Academia Sinica, Taiwan

Terminally differentiated, antibody-secreting plasma cells are the end-stage effectors of humoral immune responses. Understanding the regulatory mechanisms that initiate plasma cell differentiation and maintain the longevity of plasma cells provides a rational basis for designing strategies to modulate vaccine-induced humoral immune responses. Transcriptional repressor B lymphocyte–induced maturation protein-1 (Blimp-1) orchestrates plasma cell differentiation by silencing the gene expression program of mature B cells. We showed the molecular mechanism underlying Blimp-1 suppression of mature B-cell gene expression and how the post-translational modification of Blimp-1 may participate in this regulatory effect. In terms of biological function, Blimp-1 is necessary and sufficient for driving plasma cell fate commitment. Long-lived plasma cells in the bone marrow require the continuous presence of Blimp-1. Further investigation of the importance of the continuous expression of Blimp-1 in plasma cells revealed that inhibition of Blimp-1 caused apoptosis, suggesting that steady-state Blimp-1 expression is important for plasma cell survival. Our recent results have uncovered the molecular mechanisms by which Blimp-1 suppresses downstream effector targets in maintaining plasma cell survival.

Biography

Kuo-I Lin has completed her Ph.D in 1998 from The Johns Hopkins University and finished her postdoctoral studies from Columbia University in 2004. Currently, she is the Associate Research Fellow of Genomics Research Center, Academia Sinica, the most preeminent academic institution in Taiwan. She has published more than 33 papers in reputed journals.

kuoilin@gate.sinica.edu.tw