



CDB SEMINAR

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Max Planck Institute of Biochemistry, Martinsried, Germany

Wednesday, September 14, 2011

16:00~17:00 A7F Seminar Room

Immunoglobulin gene conversion and somatic hypermutation: regulation, evolution and biotechnology

Summary

Immunoglobulin (Ig) genes of chicken are diversified by segmental gene conversion using pseudo V genes as donors. Our lab has studied molecular mechanisms of post V (D) J diversification using chicken B cell line DT40, which has gene conversion activity and high ratios of targeted integration. We have shown that activation-induced cytidine deaminase (AID), the key regulator of class switch recombination and somatic hypermutation, is required for gene conversion, and it meant that all the three post V (D) J re-modelling systems depend on AID. Interestingly, knockout of the pseudo gene donors changes Ig gene diversification system of DT40 from gene conversion to somatic hypermutation, indicating that these two different diversification systems are related and competing pathways with each other. In this seminar I will review recent topics of our research on gene conversion and hypermutation: especially about their mechanism and regulation, evolution of Ig gene diversification system, and application of Ig gene diversification system for bio technology.

Host:

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