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FOCUS

PROJECT

Evolution of the Immune Systems of Metazoa

I plan to trace the origin of the various types of immune receptors in metazoa with bioinformatics tools. I will try to verify the hypothesis according to which adaptive immune systems can be generated in different phyla by means of different effectors mechanisms. I will test the hypothesis of the existence of a hierarchy of adaptivity in the immune systems of metazoa against the function of the life histories of the different organisms. Analogies and homologies in various immune systems of invertebrates will be tested. I will delineate and classify the selection pressures that were the most important in shaping the various immune systems. I will investigate the putative conservation of linkage groups containing potential immune receptor genes from Sponges to Vertebrates. I will try to establish scenarios of recruitment of the immunoglobulin superfamily genes into the immune systems of metazoa.

Recommended Reading

Flajnik, M. F., K. Miller, and L. Du Pasquier. "Evolution of the immune system." In *Fundamental Immunology*, edited by William E. Paul, 519-570. Philadelphia: Lippincott Williams and Wilkins, 2003.

Du Pasquier, L., I. Zucchetti and R. De Santis. "Immunoglobulin superfamily receptors in protochordates: before RAG time." *Imm. Rev.* 198 (2004): 233-248.

Du Pasquier, L. "Immunology: Insects diversify one molecule to serve two systems." *Science* 309 (2005): 1826-1827.

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Du Pasquier, Louis (2015)

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