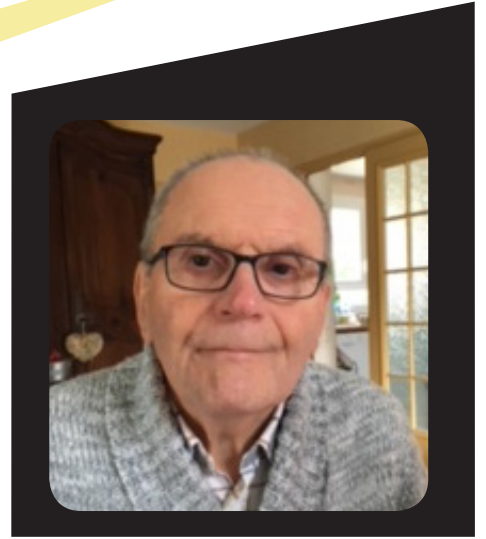


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**THE SEA STARS OPHUIRID'S I $\kappa$  KAPPA GENE**

**T**he main point of the sea star immunology and the ophiurid immunology remain the discovery of the invertebrate primitive antibody (IPA), the Ig kappa genes, with Ig sites which imply the complement system to be initiated. Nine component genes from C1 to C9 have been updated these last years, in sea star genome, in ophiurid one. We have discovered, an Fc receptor gene, a Fab gene in these same invertebrate for the first time which corroborate the presence of IPA. The transcriptomes are given. It is the first time; we can speak of adaptative immunity, in Echinoderms, in invertebrates. Since many years, even since a century long, the notion of antibody was out of the speech of immunologists. To speak of that made you as an outlaw. It is time to look with genomic studies which confirm which assert now evidence that three classes of Echinoderms out of 5 possess an Ig kappa gene, a Fc receptor gene. These classes are: the Asterids with *Asterias rubens*, the Ophiurids with *Ophiocomina nigra* and the Crinoids with *Antedon bifida*. Furthermore, these same classes present other similarities with human genome: they share IRF2, IRF4, IRF8, IFNG genes in their genomes. As you can see these data corroborate the high degree of evolution of Echinoderms. But is it evolution? or evaluative creation?.

**Biography**

Michel Leclerc has obtained his Masters in Biological Sciences from the University of Orleans. He possessed a D E S in Biology and then a *Doctorat es Sciences* in 1977 in this last University. Later he collaborated with the Institut Pasteur of Paris as a Co-Researcher for five years and then directed the laboratory of Immunology of Invertebrates, in the University of Orléans. He has been the first to culture invertebrate cells in vitro and more particularly sea star lymphocytes. In 1975, he spoke already in a paper at the Science Academy of France of Invertebrate antibody in a world where this last notion was forbidden! Again he is the first to immunize sea stars with various antigens. In the years 1980 he published a paper at *Eur J Immunol* with Francis Delmotte et al, about the isolation and purification of antibody-like substances in the sea star *Asterias rubens*. Then he started working on Genomics: he discovered the sea star Ig kappa gene (2014) with 2 Ig sites. It is the first time we can speak of IAP (Invertebrate Primitive Antibody), so the Fab gene, the Fc receptor gene, the Cr gene. Besides the sea star innate response, he spoke of adaptive immunity in an invertebrate for the first time. He has 170 international publications.

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