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CDR (CDR1, CDR2, CDR3) « Complementary-Determining region invertebrate primitive antibody from;SEA STAR »Modelization 3d with human igk

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Introduction: 10 years ago, we tried to clone, for the first time, the Asterias rubens sea star IGKappa gene by the use and the help of E.coli as amplificator (1). It allowed, in a second time, to verify that the Young Protein, or anti-HRP Protein recognizes the HRP antigen (1) (2) In the present work we research Complementary Determining Regions called more briefly CDR1, CDR2, CDR3 . Or Complementary-Determining Regions(3,4)

First, anti-HRP sequence in nucleotids is given :

5'GGA TCC GGA GGA ATG CGTGGCAACATGGCGTCTCTATGGATGTTCTTCTT

The conserved amino acids (positions 23, 41, 89, 104) are found in the starfish sequence.

This molecule appears to have an IG AA sequence as seen from the above analysis.

1. If it aligns with the Pongo IGKV1-5, the percentage of alignment is 33%, so it is a sequence that seems to have similarities to an IGKV gene when it comes to conserved amino acids.It appears clearly that CDR1 and CDR2 exist in the sea star primitive antibody and less clearly for CDR3 (1 amino acid which is conserved).Undoubtly :These new parameters corroborate the existence of an Invertebrate Primitive Antbody and NOT IG-LIKE as it is often said. We recall also the discovery by us of T and B sea star lymphocytes (5) Humoral specific response (6) Genomic data (7) with specially Invertebrate MHC genesALL these elements assess the existence of an IPA : Invertebrate Primitive Antibody which shares strong sequence alignments(at least for CDR1 and CDR2) with the Primate : Pongo pygmaeuserences . More recently, in a work concerning Modelizations in 3D of the sea star anti-HRP protein, we found a CDR3 region (see below this modelization when compared to AlphaFold prediction of IGKV1-5 03 from Homo

Biography

Michel Leclerc is a pioneering French immunologist known for his groundbreaking work in invertebrate immunity, particularly in echinoderms like sea stars. He was one of the first researchers to suggest that invertebrates can possess primitive adaptive immune responses, a view that challenged the traditional understanding of immunity limited to vertebrates.

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