



The Ophuirid and the Sea Star IgKappa Genes

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Abstract

This study was performed from an evolutive point of view. The sea star and ophuirid IgKappa genes for so extended a period of evolution in organisms as distinctively different as sea star, fish, mammal, indicate that they play an essential role in the survival of organisms: role in the regulation of immune response, in *Asterids* and Ophuirids. The presence of Fc receptor gene, Fab gene in *Asterias rubens* complete these data.

Keywords: Ophuirid; Sea Star; IgKappa Genes

Introduction

The purpose of this work is to draw attention to the mass of Igkappa genes that has accumulated on the sea star immune system since 2011, on the ophuirid immune system since 2018. From these years, genomes of immunized and non-immunized animals to HRP (horse-radish peroxidase) have been studied [1,2]. Although sea star IgKappa gene has been isolated [2] and found in mouse, this gene has also been detected in fish (Zebra fish and *Larimichthys crocea*) and mammals.

Results

The sea star Igkappa gene is clearly the oldest IgKappa gene of the immune system of animals.

So, the ophuirid Igkappa gene. They show already two Ig sites [2] or more. The forms of Igkappa genes are all found in vertebrates.

The preservation of the Igkappa gene in immunized and non-immunized sea stars is an excellent opportunity for further experiments. It is important to notice that the Igkappa chain V-III region HAH of *Tupaia chinensis* is situated (in the assumptions behind the theory of evolution) between the Igkappa chain precursor V-II region (RPMI/133) and Igkappa chain precursor V-IV region/121.

Conclusion

The preservation of the IgKappa genes for so extended a period of evolution in organisms as distinctively different as sea star, ophuirid, fish, rodent, mammal, indicates that they play an essential role in the survival of the organisms, role in the regulation of the immune response.

Additionally, the existence of members of the IgKappa gene family with conserved functional characters, indicate that the sea star and ophuirid IgKappa gene have evolved prior to the evolutionary divergence between invertebrate and vertebrates.

On the other hand, the discovery of a Fc receptor gene, of a Fab gene, of MHC class I and class II genes in *Echinodermata* genomes, corroborate the presence of the primitive Invertebrate antibody: The Well-known IPA.

Bibliography

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