

Comparative Study: The Ophurid and the Sea Star Igkappa Genes Bioinformatic Data

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ABSTRACT

This study was performed from an evolutive point of view. The sea star and ophurid IgKappa genes indicate that they play an essential role in the survival of organisms: rôle in the expression of immune response, in Asterids and Ophurids. *Ophiocomina nigra* (Ophurids)IGK express an entire identity with Human IGK locus.

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 ophurid Immune system since 2018. From these years, genomes of immunized and non-immunized animals to HRP (horse-radish peroxydase) have been studied [1,2]. Sea star IgKappa gene has been isolated [2] so Ophurid IGKappa gene which has been synthesized

«de novo» [3]. They are, studied, briefly, in the present work, in terms of bioinformatic.

RESULTS

The sea star Igkappa gene is clearly the oldest IgKappa gene of the immune system of animals, so the ophurid Igkappa gene. Sea star IGK shows two Ig sites [2]. *Ophiocomina nigra* (Ophurids) more evolved shows an entire identity with Human IGK [3] (**Figure 1**).

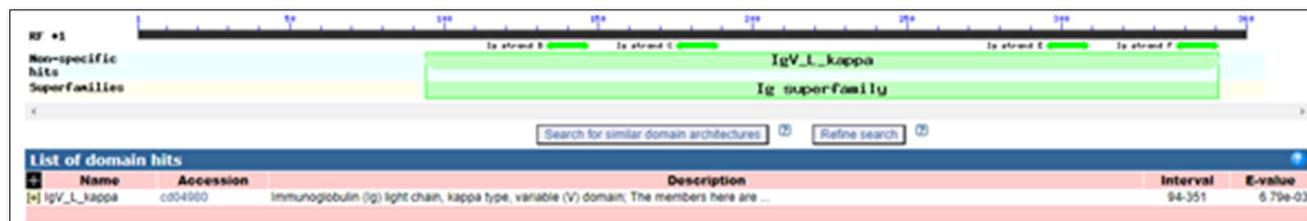


Figure 1. 100% Identities between *Ophiocomina nigra* IGKappa gene and Human IGK Locus.

The forms of Igkappa genes are all found in vertebrates.

We think the preservation of the Igkappa gene in immunized and non-immunized sea stars and in ophurids, are an excellent opportunity for further experiments in comparative immunology.

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

Additionally, the existence of members of the IgKappa gene family with conserved functional characters, indicate that the sea star and ophurid IgKappa genes have evolved prior to the evolutionary divergence between Invertebrate and Vertebrates.

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

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