Revealed «Oncologic Markers» in the Sea Star Antibody Response to Horse-Radish Peroxydase

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ABSTRACT

At least two genes found in the genome of Asterias rubens after immunizations to the antigen Horse-Radish Peroxydase (HRP), could play the role of oncologic markers: The first one (Igkappa chain V-V region T1 S 107 B precursor) reveals myeloma; The second (B cell CLL/Lymphoma 9-like) as the first one has a kinship to the IgKappa gene subfamily.

Keywords: Asterias Rubens, Antibody Response, Igkappa Precursor Genes, Myeloma, Lymphoma

1. INTRODUCTION

Leclerc and Vincent (2013) the sea star genome with Swissprot data, revealed, for the first time, a sea star Igkappa gene, in response to HRP immunizations.

On the other hand, oncologic markers, of the IgKappa subfamily, were also found. At our knowledge, it is also the first time, that such phenomenon was described.

2. MATERIAL AND METHODS

Sea stars Asterias rubens were obtained from the Biology Institute (Gothenburg University). Immunizations and sequencing have already been described in precedent papers (Leclerc et al., 2011; 2013). In 2013 transformation of RNA into DNA and sequencing were performed at Fasteris (Switzerland).

3. RESULTS AND DISCUSSION

It appears that the gene: Igkappa chain V-V region T1 is present, in a significant manner in the genome of immunized sea star to the antigen HRP.

The following Table 1 gives its characteristics.

Table 1. Identities of Igkappa chain V-V region T1 between sea star and mouse

Table 2. Identities of B cell CLL between sea star and mouse genomes.

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4. CONCLUSION

It is particularly interesting to find in the sea star genome such oncologic markers which are linked for the first one to mouse myeloma (Altenburger et al., 1980), for the second one to lymphoma (Toya et al., 2007). They are expressed in a significant manner in the sea star. It is advisable to ask if the sea star, itself possesses these markers, consequently to an immunization, like mammals and so reveal a disease. In the present time it is difficult to conclude. We just can say that it is the research of kappa genes in the sea star which have led us to this discovery. We expect that this last one will open a new field in the investigation of cancerology.

5. REFERENCES


