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Presence Of Plasmocytes in Non-Immunized A. Rubens Sea Stars

Michel Leclerc*

Immunology of Invertebrates, Orléans University, France

ABSTRACT

In this brief report, we recall the existence of sea star T and B lymphocytes in the sea star Asterias rubens. Otherwise the figure 1 shows sea star Plasmocytes, after centrifugation in a micro hematocrit centrifuge at 100g, in animals which have not been immunized. Their presence calls an explanation: Either they exist in a spontaneous way or, may be, they are induced by external immune causes.

Keywords: Plasmocytes, Sea Stars, Animals, Axial Organ, Lymphocytes.

INTRODUCTION

We have described in the past [1] plasmolymphocytic cells in the Axial Organ (AO) of starfishes or sea stars: Asterias rubens, after immunizations to HRP (Horse-radish peroxydase). More recently, we discover what we call sea star plasmocytes, in non-immunized A.rubens (Figure 1), at the level of the Axial organ, which has been considered by us, as a primitive lymphoïd organ. It merits to be said because it s the only lymphoïd organ which has been discovered in Invertebrates [2].

METHODS

The AO cells (from the whole AO cell population), were obtained after centrifugation at 100 g, in a micro hematocrit centrifuge and colored to Giemsa.

RESULTS

The Figure 1 shows plasmocytes of A.rubens with a diameter of 7-8 µ: they have a cytoplasm more important than in lymphocytes (either sea star T lymphocytes or B sea star lymphocytes [3]. We recall sea star lymphocytes can be separated into T and B by a nylon-wool column, according the well-known method of Julius et al. [4].

The plasmocyte nucleus seem reoriented in the Figure 1: it is due to the centrifugation. Some of them are reniform (3 nuclei out of 4 observed). At last some vesicles appear in the cytoplasm.

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***Corresponding Author**

Michel Leclerc

Immunology of Invertebrates, Orléans University, France, Tel: 0238410209

E-mail: mleclerc45@gmail.com

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Figure 1. Sea star Asterias rubens plasmocytes after centrifugation and coloration at Giemsa.

DISCUSSION AND CONCLUSION

The existence of sea star A.rubens plasmocytes in non-immunized A.rubens can be explained by:

The fact:

a) They exist in a spontaneous way.

b) Some external attacks like virus, microbes which surround the biotope can provoke their emergence.

We presume that sea star plasmocytes are issued from the lineage of B sea star cell subpopulation. It is correlated, in conclusion, to the existence of the **IPA (Invertebrate Primitive Antibody) and also Nanobodies in Invertebrates** [5]. It seems necessary to repeat again these data to the Scientific Communauty.

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