



The Sea Star Igkappa Gene: Effects against Human Melanoma Cells (A-375) Osteosarcoma Cells (U2OS Cells) and HeLa Cells - Preliminary Study

Michel Leclerc*

Division of Biology/Biochemistry, University of Orléans, France

Abstract

It was shown 32 years ago that the sea star Axial Organ cells (AO cells) produced a spontaneous cytotoxicity against mouse cancerous cells. Recently, we discovered a sea star Igkappa gene with immune properties. This gene was inserted in a CMV (*Cytomegalovirus*) and finally in a plasmid called «young» plasmid. The induced «young» protein exerted a spontaneous cytotoxicity against osteosarcoma cells (U2OS cells) against A-375 melanoma cells and HeLa cells.

Introduction

In 1983, Luquet and Leclerc shown that the Axial Organ cells (AO cells), exerted a spontaneous and induced cytotoxicity against mouse Sp2 myeloma cells and MBL2 cells [1]. The AO cells included essentially lymphocytes and phagocytes [1]. Thirty years later, we discovered a sea star Igkappa gene, with immune properties [2,3]. The aim of the present work was to study the behavior of the «young» protein secreted by the sea star Igkappa gene, in front of human malignant: A-375 melanoma cells, human Osteosarcoma cells (U2OS cells) and human malignant cells HeLa, by the use of plasmids.

Materials and Methods

Gene cloning in a *Cytomegalovirus* (CMV) was done in Germany (Eurofins Genomics, Figure 1 and 2), from the sea star Igkappa gene [2]. It constitutes the «promoter».

Following steps as plasmid realization in correlation with the promoter, plasmid amplifications, transfections were performed [4].

A-375 human melanoma cells were used. They were transfected by plasmids, after electroporation, at time t=0. (AMAXA process) or by classical electroporation for U2OS cells and HeLa cells [5]. At time t=24 h, Cell suspensions were put on slides. Observations were realized with an optical microscope or by spectrophotometry.

Cloning in N-terminal pCMV-Tag3B (c-mic tag)/ BamH1-EcoR1

GGA TCC GGA GGA ATG CGTGGCAACATGGCGTCTCTATGGATGTTCTTCTT
TGTCGTGGGGATAACTTTACAACGGAGTTTGGCGATTTACACGTTTCGCG
AGCAACCGTCGGACACTAGCGCGTTGCAGGGGAGCACAGTGGTGCTTCAC
TGCTCCGTTGAGCAGTACATAAACACCACGGCCATCGTTTTGGTGGAGCCG
TGACTCGGTCATCAGCCACAACAAAGACCTGAAACTGTCCAGTCTAAACA
CCGACCAGCTCCAAAGGTACTCGATTTACGGCGACGCATCTCGGGGGGAA
TTCAACCTTAAAATAGTGAACCTTACCGCCACAGACGCCCGCCAGTTACCG
CTGTCAGATG TAA GAA TTC

Results

The protein «young», also named: Invertebrate primitive antibody exert a spontaneous cytotoxicity 24 h after transfection against A-375 melanoma cells, U2oS cells and HeLa cells. Percentages are expressed in Figure 3. Western blots do not confirm, the protein expression because of the high lethality of cancerous cells which is obtained (The peak of the protein in western blots

OPEN ACCESS

*Correspondence:

Michel Leclerc, Division of Biology/
Biochemistry, University of Orléans, 556
rue Isabelle Romée, 45640 Sandillon,
France, Tel: 0238410209;
E-mail: mleclerc45@gmail.com

Received Date: 27 May 2020

Accepted Date: 19 Jun 2020

Published Date: 22 Jun 2020

Citation:

Leclerc M. The Sea Star Igkappa Gene:
Effects against Human Melanoma Cells
(A-375) Osteosarcoma Cells (U2OS
Cells) and HeLa Cells - Preliminary
Study. *Am J Cancer Res Ther.* 2020;
1(1): 1001.

Copyright © 2020 Michel Leclerc. This
is an open access article distributed
under the Creative Commons Attribution
License, which permits unrestricted
use, distribution, and reproduction in
any medium, provided the original work
is properly cited.

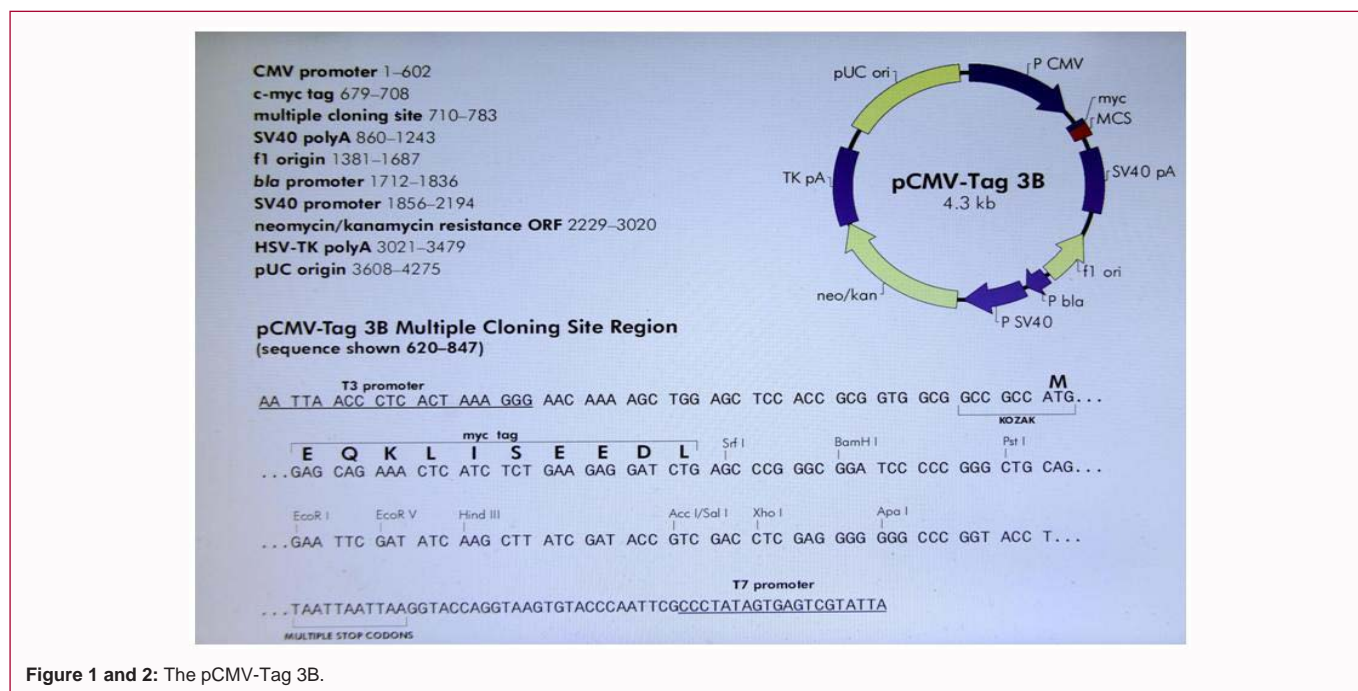


Figure 1 and 2: The pCMV-Tag 3B.

| | | |
|--------------------|-------------|-------------|
| LYSIS: A375 | U2oS | Hela |
| 100% | 100% | 70% |

Figure 3: Lethality percentage, 24 hours after electroporation.

would be situated at 12.000 daltons).

Controls: A-375 cells, U2OS, HeLa cells treated with alone electroporation show a weak lethality.

Conclusion

These results are of particular importance and could open the way to immunotherapy.

It is a preliminary work and we attempt, now, to test new lineages of human malignant cells and healthy cells.

References

1. Leclerc M. The sea star igkappa gene: Effects against human cancerous cells. SAJ Biotechnol. 2015;2:301.
2. Vincent N. Metagene. 2014;2:320-2.
3. Leclerc M, Otten P. Immune properties corroborated by A. Rubens sea star Igkappa gene. SAJ Biotechnology. 2014;1:104.
4. I-Fen Chen. Mol. Cancer Ther. 2006;5:1.
5. Flanagan M, Gimble J, Yu G, Wu X, Xia X, Hu J, et al. Competitive electroporation formulation for cell therapy. Cancer Gene Ther. 2011;18(8):579-86.