

Protector against Cnidarian's present on the sea coasts

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1. Introduction

Every years occur several cases of accidents between bathers and cnidarians. It is increasing year after year. Cnidarians are jellyfishes and caravels. The accidents cause discomfort on the skin where are touched by the animal. Moreover, it sometimes causes swelling and makes the bather afraid to go back into the sea [1]. There is only one product as competitor. However, it is sold only in one country in the Mediterranean and it has a high cost to import the product [2]. Thereby, this project looks to provide availability on a cheaper product to people avoid accidents.

2. Research Methods

The method was divided in two steps. On the first step, the blocker was developed as suspension with hydrophobic characteristics. It was made to act like one on the skin. The second step was composed by one efficiency test against the jellyfish *Chrysaora quinquecirrha*, which is the species available at the moment, but the protector is to block any kind of Cnidarian. The product was applied on the skin and then the animal was applied directly on the skin. The effect was rated using a scientific method based on the method used by Kim Alexander Tonseth of the Department of Plastic and Reconstructive Surgery of the University Hospital of Oslo. For this, one sunblock was used in the comparison about the physical barrier effects. The following image represents one of the tests performed in the research, in which the area of the left forearm was higyeny and applied the Cnidarian. After this the timing was started, according to the methodology.



Figure 1 – Test with researcher - Application of Cnidarian and time counting.

3. Results

The results were that the sunblock has no efficiency as physical barrier like the jellyfish block presents. The test was done on triplicate by the researcher. Besides that, three volunteers from AquaRio (The Marine Aquarium from Rio de Janeiro) also performed the experiment through one blind test. They did not know each sample composition. The tests with skin protected with the product revealed no one common allergic reactions by the *Chrysaora quinquecirrha*. There were the same results overall tests

performed. The following image (from an AquaRio volunteer) shows the comparison between the right arm with sunscreen, showing redness and swelling. While the left arm with the Cnidarian Shield remains with normal skin.



Figure 2 – Test with AquaRio Volunteer 1 – Result



Figure 3 - Test with AquaRio Volunteer 2 – Result

4. Conclusions

From the data, it can be concluded that the potential of the protector developed not only to reduce the incidence of cases involving bathers and cnidarians, but also to make the population more accessible, since the price of the raw material is about 100 times cheaper than the product available in the Mediterranean, which costs about \$ 111.00 per 100 ml. This is not so useful for bathers on your vacation, but also for people who work or who have contact with these animals every day.

5. References

- [1] ANDERLUH, G. & Macek, P. 2002. **Cytolytic peptide and protein toxins from sea anemones** (Anthozoa: Actiniaria) *Toxicon* 40: 111-124
- [2] ÁGUAS-VIVAS invadem as praias do Mediterrâneo. **BBC Brasil**, 9 ago. 2006. Disponível em: <http://www.bbc.com/portuguese/ciencia/story/2006/08/060809_invasoaguasvivas v.shtml> Acesso em: 20 jun.