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POSTERS

LANGERHANS CELLS, MORPHOLOGICAL AND IMMUNOHISTOCHEMICAL CHARACTERIZATION IN STRIPED DOLPHIN (*STENELLA COERULEOALBA*) EPIDERMIS

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The skin is the primary interface between the body and the environment, and has a central role in host defence. Langerhans cells (LCs), play a central role within inflammatory and immune responses in the epidermis of terrestrial and aquatic mammals, through their specialized function in antigen capture. Langerin/CD207 is a cell surface receptor of Langerhans cells (LC) and represents a key molecule to mark LCs [1, 2]. The aim of this study was to characterize immunohistochemically with anti langerin/CD207antibody, Langerhans cell in the dolphin *Stenella coeruleoalba epidermis*. An adult male striped dolphin, was found live stranded (length: 197 cm), on April 2011 in the Apulian coast (Adriatic Sea). The samples obtained were treated in accordance with protocol for optical microscopy. Some serial sections were stained with hematoxylin and eosin (H&E), [3]; for immunofluorescence investigation, serial sections were treated with langerin/CD207 antibody. In this study, the immunoreactivity of Langerin/CD207 antibody, revealed numerous Langerhans cells (LCs) with a polyhedral shape, located in the epidermal suprabasal layer (stratum spinosum). These cells present an irregular shape with long cytoplasmic processes extending among keratinocytes, forming a delicate network. Future studies will be aimed to characterize different dendritic cells populations present in the dolphin's skin.

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MOLECULAR DYNAMICS AND UV SPECTROSCOPY TO INVESTIGATE COLLAGEN FIBRILLOGENESIS

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Collagen is a fibrous protein representing the main constituent of connective tissue in mammals, with a basic structural unit called tropocollagen. Tropocollagen is a triple right-handed helix consisting of Gly-Xaa-Yaa repetitions, in which one-thirds of the X and Y residues are either prolines or hydroxyprolines (Hyp). Collagen triple helices associate in fibrils, and the alignment of them yields to the characteristic fibres, where tropocollagen molecules are staggered side-by-side with a shift of 234 residues between two neighbours tropocollagens. MD simulations were performed to study tropocollagen aggregation in physiological conditions. Two tropocollagen fragments with different hydropathic profiles were chosen and built from *Rattus norvegicus* type I collagen sequence. Other fragments were selected from the same sequence with a shift of 234 residues upstream and downstream of it. Association of two, three and four fragments in MD simulations shows that the amino-acidic composition of the triple helices strongly influences the assembly propensity. Fragments rich in charged residues needs a lateral addition of individual tropocollagens to self-assembly, while poorly charged segments easily associate in pairs. This behaviour suggests a cooperative binding mechanism at tropocollagen level. Rat tail tendon collagen was prepared at low temperature and at different pH. *In vitro* collagen self-assembly was monitored by measuring the turbidity changes of the solution as observed from the increase in absorbance at 310 nm. Curves of aggregate fractions *vs* time display a sigmoid profile, composed by three defined regions (lag, growth, plateau) indicating, according with literature, a cooperative process with a very short lag phase.

EFFECTS OF MIXTURE OF ATRAZINE, DESISOPROPYLATRAZINE AND DESETHYLATRAZINE ON DEVELOPMENT OF EARLY LIFE STAGES OF ZEBRAFISH (*DANIO RERIO*)

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Atrazine is one type of chloro-s-triazine herbicides and it is considered moderately toxic to aquatic animals. The aim of this study was to assess the acute embryotoxicity of a mixture of atrazine and two of its metabolites, desisopropylatrazine and desethylatrazine. As a model organism we used zebrafish (*Danio rerio*), which belong to one of the model fish organisms commonly used in toxicity tests to determine negative effects of various substances occurring in aquatic ecosystem. Toxic effects of were studied using evaluation of lethal endpoints, development disorder, and other sublethal endpoints such as hatching rate, formation of somites, and development of eyes, spontaneous movement, heartbeat, blood circulation, pigmentation, or edema at 24, 48, 72, and 96 hours post fertilization. The embryonal toxicity test was performed through the modified method of Fish Embryo Acute Toxicity (FET) Test (OECD guideline 236). Newly fertilized zebrafish eggs were exposed to various concentrations of a mixture, which include environmental levels in aquatic environment and multiples of environmental relevant concentration to find out if the negative effect is dose dependent. Our results showed that hight concentrations of these compounds cause significant changes in development after 48 hours post fertilization.

NEW SILVER NANOPARTICLES DEVELOPMENT STARTING FROM THE EXTRACT OF *ARTEMISIA ANNUA*: GREEN SYNTHESIS, CHARACTERIZATION AND ANTI-MALARIAL ACTIVITY

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