PROTECTIVE EFFECTS OF A NOVEL SEROTONIN-MODULATING ANTI-CONSOLIDATION PROTEIN (SMAP) AGAINST INFECTIONS AND/OR TOXIC SHOCK

Description

Nowadays physicians are faced with the serious problem of ineffectiveness of a wide range of antibiotics in treatment of bacterial infections due to a high mutation rate of the bacterial species. This leads to poor recovery and serious complications of infectious diseases and even to death.

A novel serotonin-modulating anticonsolidation protein (SMAP) having M_r186 kDa, being in linear relationship with serotonin level and being non-species specific, was identified and purified first from the rat brains and later from the cow brains in the Department of Ecological Physiology & Toxicology of Karaev Institute of Physiology, Azerbaijan NAS. SMAP administration to the sturgeon juveniles kept in the water, containing sediments from Baku Bay (0.8 ppt, 7 days), polluted with industrial wastes, leads to two-time decrease of mutagenicity level in their tissues. This data indicate to antitoxic activity of SMAP realized through upregulation of heat shock proteins (Mekhtiev et al., 2008).

Innovative Aspect and Main Advantages

Main competitive advantages of SMAP are:

- Natural origin;
- Presence in human tissues;
- Quick and mighty antitoxic effect;
- .Lack of side effects while administered;
- Easy way of administration.

Areas of Application

After thorough studies, this protein could be recommended for application in the clinical practice as a therapeutic remedy to combat against toxic shock caused by agents of both chemical and bacterial origin.

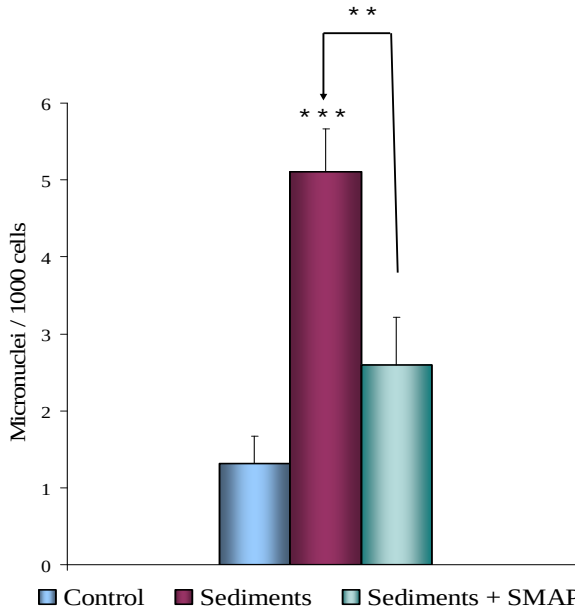

Figure. Impact of sediments and SMAP protein on micronuclei amount in sturgeon erythrocytes. ** - p<0,01; *** - p<0,001.

Stage of Development

Presently experimental studies aimed to realizing multidisciplinary examination of antitoxic activity of SMAP, are in progress.

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