

ABSTRACT
DEGRANULATION EFFECTS OF SUNSET YELLOW ON DERMAL
AND
INTESTINAL MAST CELLS OF CHICKEN EMBRYO

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In this study, the degranulation effect of sunset yellow (E110) which is used as artificial coloring agent in ready food was histologically examined on dermal and mucosal mast cells of chicken embryo. Experimental set was divided into two groups as control and treatment. Sunset yellow (2.5mg/kg) was injected into vitellus of treatment group embryos of eggs on the 15th day of incubation. Skin and intestine tissues obtained from embryos were evaluated, following routine histological procedure, 6, 12, 24 hours after injection.

6 hours after injection of sunset yellow, a large number of mast cells with tightly packed granule in the samples of skin tissues were observed. After 12 hours, medium to high levels of degranulation was determined while high levels of degranulation was seen in most of mast cells after 24 hours treatment. Moreover, examination of intestinal mast cells showed that while injection of sunset yellow caused low level degranulation after 6 hours, high level degranulation was observed after 12 hours of injection. It was observed although the number of mast cells containing tightly packed granules were less in numbers but degranulation continued at high levels. In both types of tissues, it was found that partially degranulated mast cell formed loose and coarse granules where mast cells showing high level of degranulation have brighter cytoplasm since they contain less granules.

In conclusion, it was found that sunset yellow treatment triggered mediator which is located in mast cells and therefore caused degranulation in mast cells. Degranulation levels showed differences which was associated with the exposure time to sunset yellow.

Key Words: Sunset yellow, chicken embryo, mast cell, skin, intestine.