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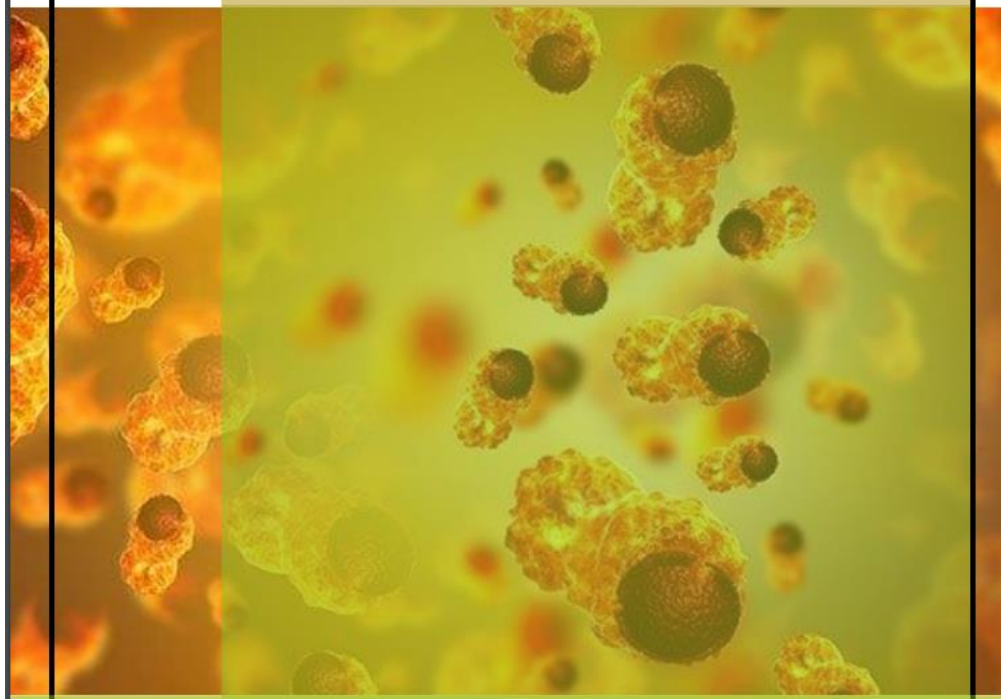

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## ANALYSIS OF INVASIVE PROPERTIES OF RETINOBLASTOMA AND UVEAL MELANOMA XENOGRAFT USING CHICK CHORIOALLANTOIC MEMBRANE ASSAY

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**Introduction:** Retinoblastoma (RB) and uveal melanoma (UM) are the two most invasive of ocular malignancies. The current research on these often relies on nude mice model and matrigel invasion assay to demonstrate their metastatic behaviour using cell lines. Recent studies have underlined the implication of utilizing chorioallantoic membrane assay (CAM) to understand the metastatic potential of patient derived xenografts (PDXs). In this study the invasive property of RB and UM PDXs were analysed on chick CAM. **Methodology:** RB and Uveal Melanoma tumors were isolated after compliance from donor patients. The tumour was dissected and 2-4mm of the tumor tissue were placed onto the CAM, On the 17$^{th}$ day of chick embryonic development, the CAM tissue bearing the tumor was excised and fixed in 4% formaldehyde for H/E staining and immunohistochemistry (IHC) analysis. Synatophysin anti human antibody was used for immunohistochemical staining of RB cell invasion in CAM. **Result:** Examination of CAM by histology revealed that the CM xenograft melanoma invaded into the mesoderm of the chick CAM membrane. Further both the RB and UM tissues induced angiogenesis in the area of in the implantation on the chick CAM.The immunohistochemical analysis revealed anti-human synaptophysin positivity in RB cells which were attached to the ectoderm of the CAM and in cell invading into the CAM mesoderm. **Discussion:** An increased vascular growth and invasion of both RB and UM PDXs shows that the chick CAM assay model can be a good alternative to study invasive properties of Ocular malignancies.

Keywords: Retinoblastoma, Uveal Melanoma, Chorio allantoic membrane assay, Patient derived Xenograft.

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## INVESTIGATION OF THE ROLE OF CYCLOOXYGENASE-2 IN SQUAMOUS CELL CARCINOMA OF THE EYELID USING IMMUNOHISTOCHEMISTRY

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Squamous cell carcinoma (SCC) of the eyelid is a malignant tumor which arises as a result of abnormal growth of squamous cell layer of the skin epithelium. Cyclooxygenases are enzymes which are crucial for lipid metabolism. Cyclooxygenase-2(COX-2) is a mitogen-inducible isoform of cyclooxygenase (prostaglandin-endoperoxide synthase). The expression of COX-2 is undetectable during normal, non-pathological conditions but is rapidly induced in various cancers and its inhibition by Non Steroidal Anti-inflammatory Drugs (NSAIDs) is known to reduce the risk of many cancers by suppressing and preventing tumorigenesis. Aim of our study is to investigate the role of COX-2 signalling pathway in human eyelid SCC and its association with clinicopathological parameters. For this, 20 histopathologically confirmed cases of SCC were selected for the study. Cytoplasmic expression of COX-2 was detected in 80% of the SCC cases. COX-2 expression was found to be correlated with size of the tumor; 63% of tumor cases with size >3cm showed positive expression of COX-2. Significant expression of COX-2 was observed in the invasive front as well as infiltrating lymphocytes. COX-2 expression was found to be associated with differentiation as high expression of COX-2 was observed in 60% well differentiated (WD) SCC cases, highlighting significance of COX-2 in differentiation in SCC. For the first time, COX-2 expression has been demonstrated in eyelid SCC, however, study in large cohort is required for further statistical analysis and significant correlation with these parameters.

Keywords: Squamous cell carcinoma, Cyclooxygenase 2, Non-steroidal anti inflammatory drugs.