# CONTROLLED-RELEASE DELIVERY SYSTEMS TO TEST CURCUMIN EFFECT ON ANGIOGENESIS

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Curcumin is a chemopreventive phytochemical with its antiangiogenic activity arising from COX-2 inhibit on mechanism, and which could be useful in the treatment of several cancers targeting angiogenesis. Our aim to evaluate two biodegradable polymeric delivery systems, which would release curcumin locally. The effectiveness of curcumin release from PLLA and a hydrogel of xanthan: galactomannan, was determined by a chick chorioallantoic membrane (CAM) assay. CAM was exposed by cutting a window (1 $cm^2$) on fertilized, 5-day egg shells, using the false air sac technique. After one week of deposition test materials on CAM (with and without 50 µg curcumin), the number of vessels which intersected a square grid line, superimposed on the CAM image, was counted. Vascular density index (VDI %) was defined as the ratio of mean number of vessels between test and the control groups (without implants). PLLA developed erythema and opacity, and VDI was 150%, while with PLLA-curcumin VDI was 50%. The VDI in hydrogel-treated CAM was 50%, and was 10% inhibited with curcumin addition. CAM is a *in vivo* method for studying tissue reactions to biomaterials and the increased VDI could suggest an inflammatory response. However, curcumin effectively gave rise to antiangiogenic and anti-inflammatory effects when released from these biomaterials, the hydrogel being more biocompatible than PLLA. Supported by UFPR-PRONEX