

Giovanna Pedrosa Vicente¹; Ricardo de Francisco Strefezzi¹; Leonardo Della Salda²

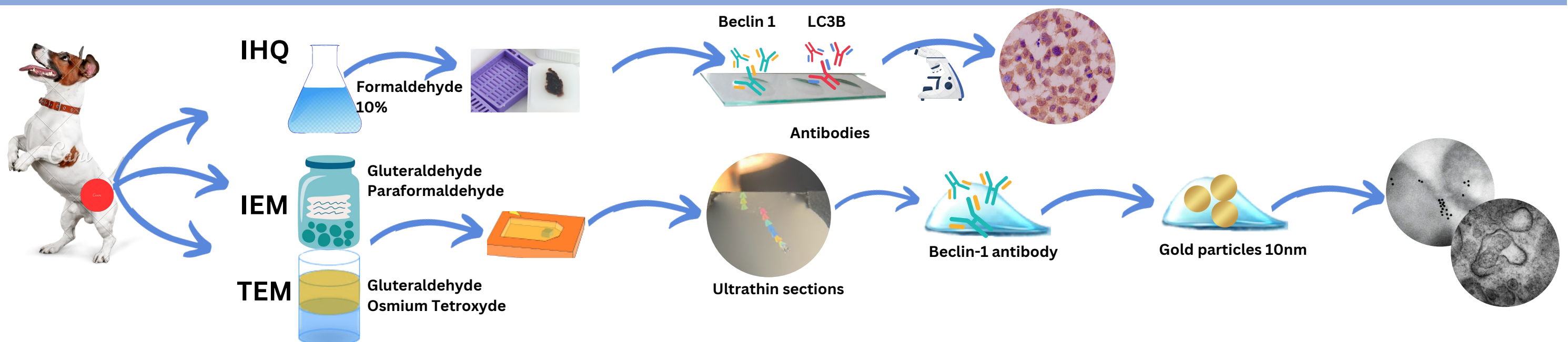
¹Laboratório de Oncologia Comparada e Translacional, Universidade de São Paulo, Pirassununga (rstrefezzi@usp.br);

²Università Degli Studi di Teramo (Teramo, Italy)

Introduction and Objective

- Mast cell tumour (MCT) is the most common malignant skin neoplasm in dogs
- Histopathology is routinely used to predict neoplastic behavior but new prognostic markers are needed
- Autophagy is a natural catabolic mechanism mediated by Beclin-1 and LC3B protein which may favour cancer progression through reuse of degraded structures that provide energy self-sufficiency to the cancer cell
- The objective of this study was to characterize Beclin-1 and LC3B expression in MCTs of different histopathological grades using immunohistochemistry, electron and immunoelectron microscopy (TEM and IEM)

Materials and Methods



Results

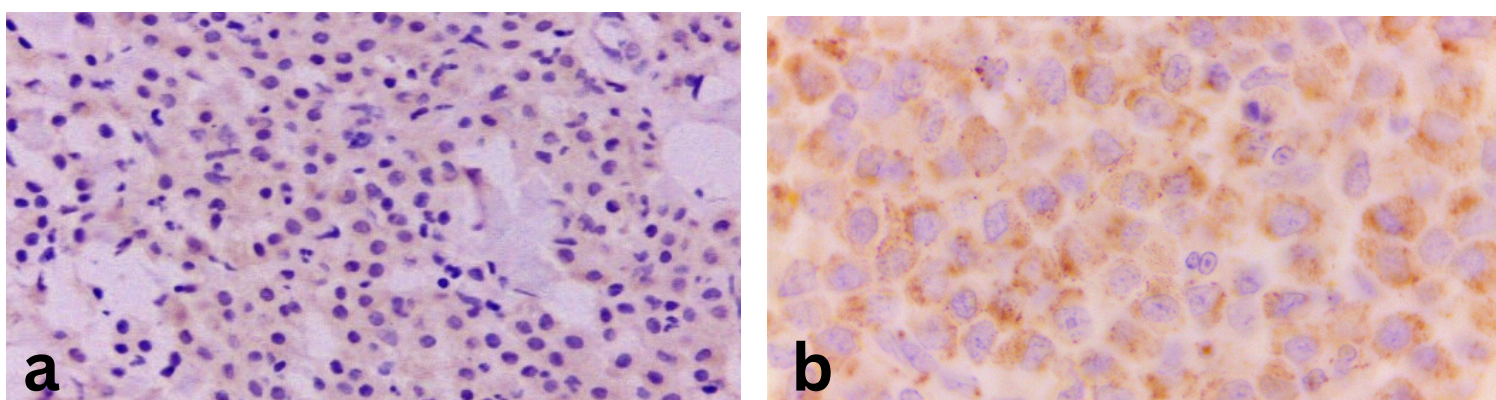


Fig. 1 - (a) Beclin-1 expression in MCT, dog (40x obj.); (b) Diffuse and granular cytoplasmic and perinuclear immunolabeling in MCT, dog (100x obj.)

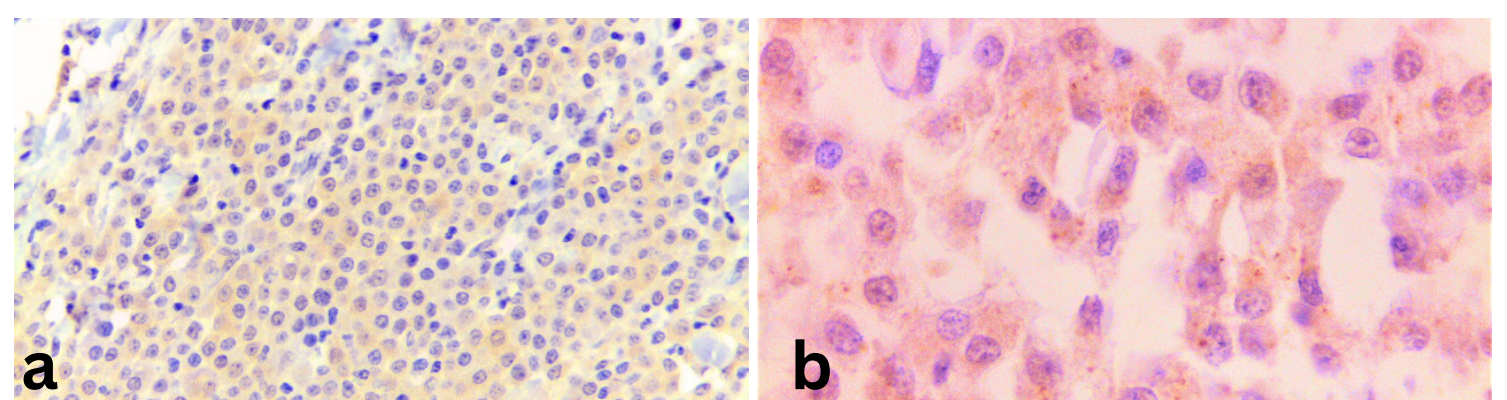


Fig. 5 - (a) Diffuse (40x obj.) and (b) granular LC3B expression in MCT (100x obj.)

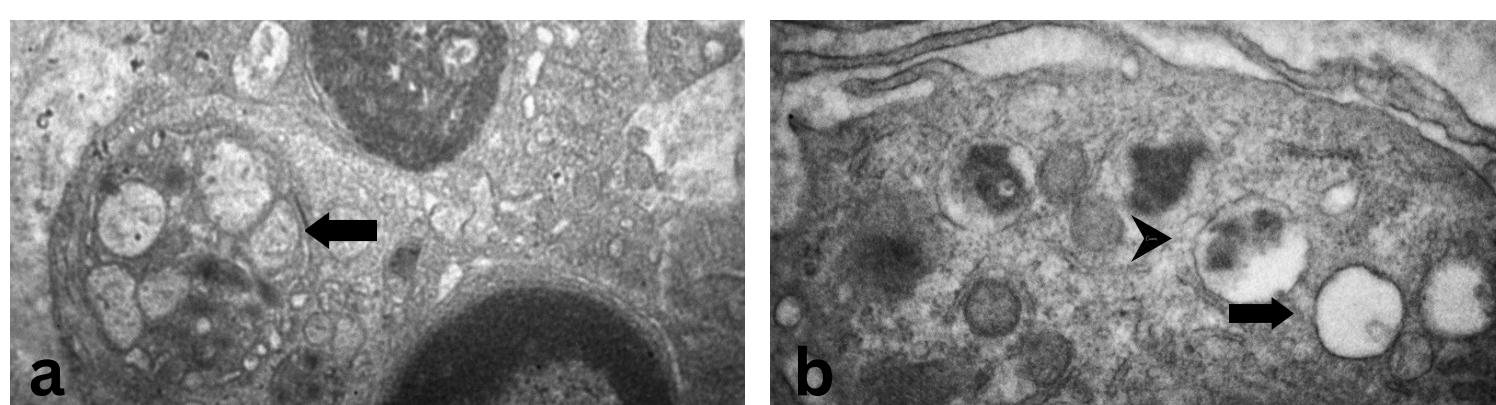


Fig. 2 - (a) Autophagosome containing mitochondria (arrow); (b) Different autophagy stages - Autophagosomes (arrow) and autophagolysosomes (head-arrow). (x12000), TEM.

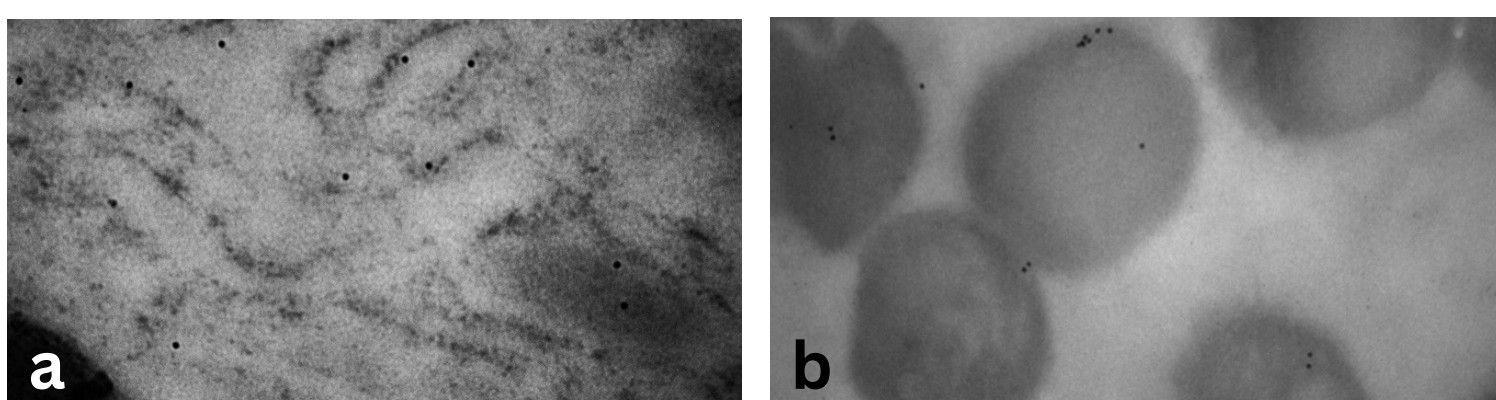


Fig. 3 - (a) Rough endoplasmic reticulum (x20000) and (b) mast cell granules (x20000) immunostained for Beclin-1 (black dots), IEM.

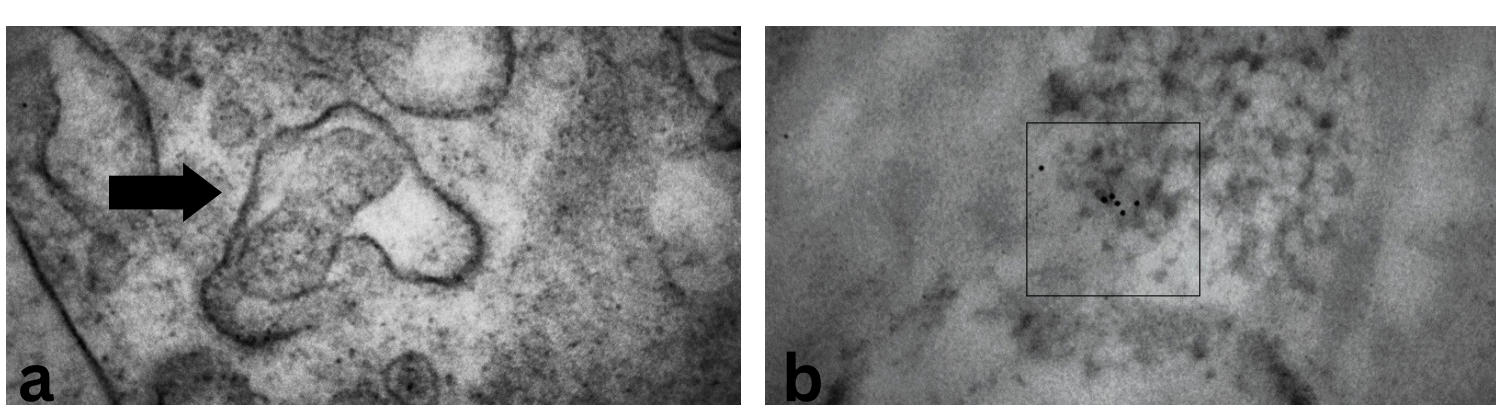


Fig. 4 - (a) Vesicular body formed by Rough Endoplasmic reticulum containing a mitochondria (arrow) (x3000), TEM; (b) Autophagy vesicles (square) close to the nucleus, immunostained for Beclin-1 (black dots). (x3000), IEM.

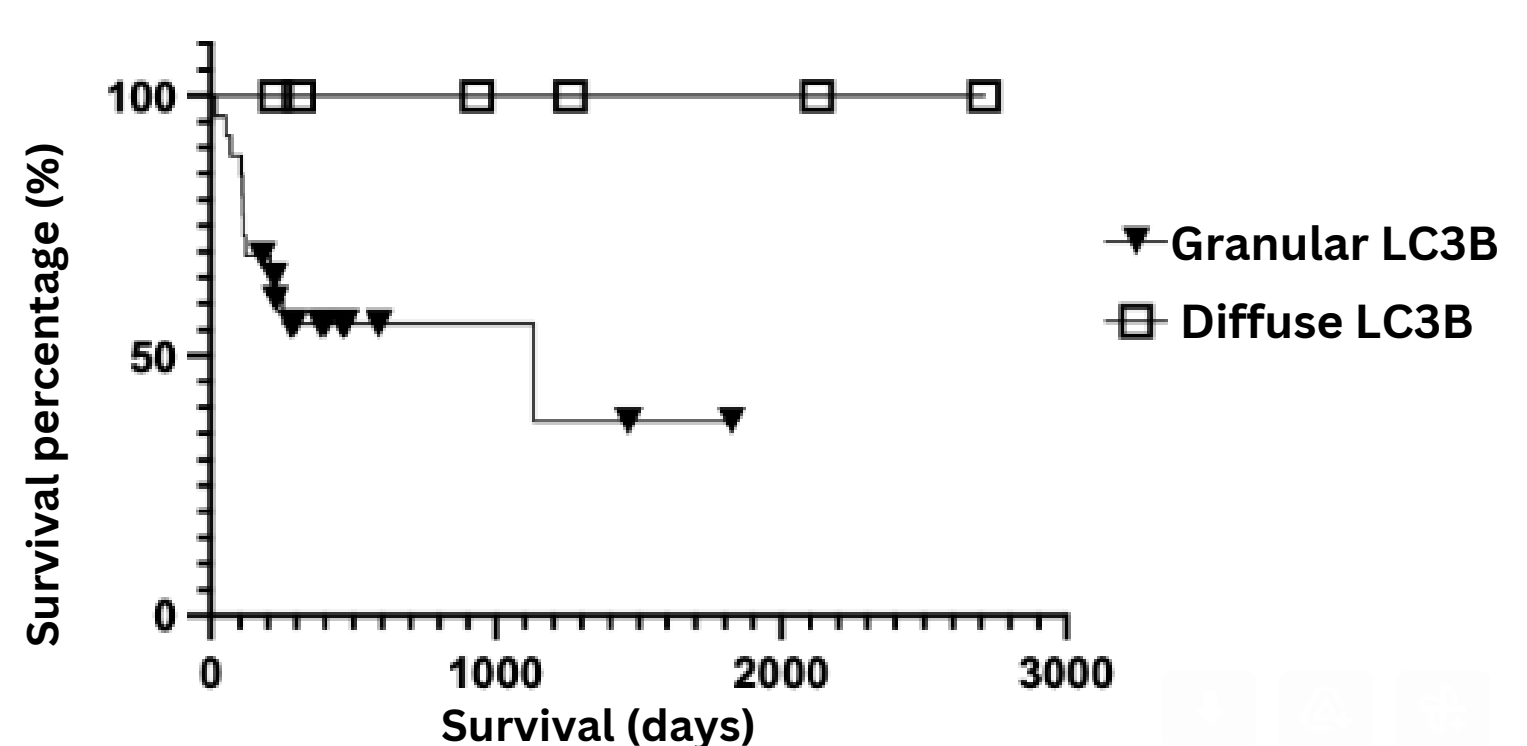


Fig. 6 - 4 Kaplan-Meier overall survival. Curves for patients with granular and diffuse expression patterns (p= 0.0409, median survival for the granular group = 1134 days).

Conclusions

- Beclin-1 is expressed by MCTs but its localization is not restricted to autophagic vesicles
- Dogs with MCTs showing a granular pattern for LC3B have a shorter post-surgical survival time