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Immunoexpression of Cathepsin D and S100A4 Protein and Their Molecular Subtypes in Canine Mammary Carcinomas

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ABSTRACT

Cathepsin D (CD), a lysosomal protease, and S100A4 protein, a calcium binding motif, are considered to be involved in metastasis in various human cancers. No data regarding such proteins are available for canine mammary carcinomas (CMCs). Accordingly, their expression in association with known factors of prognosis was investigated in this study. For that, 66 surgically resected CMCs were submitted to an immunohistochemical evaluation using anti CD, S100A4 protein, HER2, estrogen receptor α , cytokeratin 5, and p63 antibodies, further characterizing the tumors' molecular subtype. An increase in S100A4 immunoexpression by neoplastic luminal mammary cells was associated with an infiltrative tumor mode of growth, consequently leading us to conclude that S100A4 protein could be related to progression in CMCs. Additionally, the occurrence of the luminal A molecular subtype was associated with the complex histotype in CMCs. Although we have demonstrated that changes in S100A4 protein immunoexpression occurs in CMCs, further studies are needed to determine whether this represents important independent biomarkers for CMCs.

KEYWORDS

Cathepsin; Mammary Tumors; Metastasis-Associated Proteins; Molecular Subtypes; S100 Protein

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