Expression of claudin-5 and prostate specific membrane antigen in canine hemangiosarcoma cells

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Hemangiosarcoma (HSA) is an aggressive form of malignant cancer that develops from the vascular endothelial cells of various body tissues, most commonly in the spleen and heart. HSA affects dogs more than any other species and is difficult to diagnose without surgical biopsy. There is a need for canine HSA-specific markers that can be applied to minimally invasive diagnostic techniques such as immunocytochemistry or flow cytometry. The purpose of this study is to evaluate the expression of two candidate markers, claudin-5 (CLDN5) and prostate specific membrane antigen (PSMA) on canine HSA cells. Both CLDN5 and PSMA have been utilized as differential diagnostic markers of canine HSA via immunohistochemistry but have yet to be validated for immunocytochemistry or flow cytometry. JHE and DAL4 cell lines were used to evaluate CLDN5 and PSMA expression in canine HSA cells using immunofluorescence with confocal microscopy, western blotting, and flow cytometry. Canine aortic endothelial cells (CnAOEC) and human prostatic carcinoma cells (PC3) were used as positive controls for CLDN5 and PSMA, respectively. Preliminary results demonstrate variable expression of both markers across all cell lines. Currently, CLDN5 and PSMA expression patterns are not consistently observed across cell lines or assays. Therefore, at least two additional canine HSA cell lines (EFS and EFB) will be assessed prior to determining if these markers are suitable for immunocytochemistry or flow cytometry.

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