

Estrogen Receptor-Alpha (ER- α) Immunoeexpression in Uterine Leiomyomas and Matched Myometria in Potbellied Pigs (*Sus scrofa*)

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Background/Objective: Uterine leiomyomas (fibroids) commonly occur in adult female potbellied pigs 5 years of age and older. The pathogenesis of fibroids in potbellied pigs and women remains unknown; however, it has been reported in the literature, that in women, these tumors are hormone dependent. Prominent ER- α staining has been reported in the myometrium of the sow during specific stages of the estrous cycle, but little data exists on the presence of this receptor in potbellied pig leiomyomas. In this study, we determined ER- α expression in porcine tumors versus matched myometria.

Methods: Immunohistochemistry was performed on formalin-fixed tissues obtained from potbellied pigs. Semi-quantitation of ER- α was based on the staining intensity (range=0-4) and statistical analysis of scores for positively staining nuclei in uterine leiomyoma and myometrial cells.

Results: ER- α was localized to the nuclei of tumor and myometrial cells and staining intensity varied among tumors. The overall intensity scores for the leiomyomas were higher than those for myometrial samples, similar to that observed in women. However, statistical analyses revealed no significant ($p=0.50$) difference in staining intensity for pig tumors compared to matched myometria. The lack of statistical significance is likely due to low power as a result of the small sample size. The majority of pigs with data on both tissues had higher average scores for the tumor than for normal myometrium; if this tendency continues in a larger sample, we would expect to find a significant difference.

Conclusions: The findings support further investigations into using the potbellied pig as a suitable animal model for studying fibroids in women, as well as understanding the regulation of ER- α expression in tumors during the estrous cycle.