



P53 Activin B levels during sheep folliculogenesis, and effects on thecal androgen production
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Activin $\beta A/\beta B$ subunits are both present in ovaries, resulting in the presence of either activin A (βA dimer), or activin B (βB dimer). Both activin A and B are important in developmental processes, and each appears to have a distinct role. Previously we showed that activin A suppresses androgen production from primary sheep theca cells *in vitro*. We now confirm a similar function for activin B, and, utilizing a newly developed ELISA (Ludlow et al) we have mapped activin B concentrations in follicular fluid collected from sheep follicles during all stages after antral development. In this study, individual follicles >1mm in diameter were collected from sheep during anestrus, in the late follicular phase just prior to the LH surge, and just after the LH surge ($n=10$ at each phase). Follicular fluid was collected from each follicle and activin B concentrations measured. The results showed that during anestrus, follicles of <2.5mm diameter contained approximately 750ng/ml activin B, and this concentration then decreased by half at diameters of 2.5mm or greater reaching as low as 50ng/ml by the preovulatory stage. Follicles collected just prior to ovulation contained approximately 1000ng/ml in early stages of development (<2.5mm diameter), half that at 2.5-3mm, and levels decreased to about 50ng/ml as follicles reached preovulatory size. After the LH surge, levels of activin were around 1400ng/ml in <2.5mm follicles, and again, levels decreased by about half at 2.5-3mm and again decreased to 50ng/ml in larger preovulatory follicles. In summary, the results showed that at early antral stages of development (<3mm), sheep follicles contain high levels of activin B within the follicular fluid, and the amounts of activin B decrease as the follicles continue development. These results suggest that activin B is produced by follicles at early stages of development at levels able to modulate androgen production.
