

Differential Expression of the C-Type Lectins in the Mouse Vagina

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Estrogen regulates the proliferation and differentiation of mouse vaginal epithelial cells. The goal of this study is to identify estrogen-responsive genes related to the proliferation and differentiation in the vagina. We used differential display to determine the specific genes regulated by estrogen. Two estrogen-regulated transcripts, designated as DDV10 and DDV11, were identified from the differential display bands. These clones are the membrane proteins and have a c-type lectin domain in C-terminal region. So, we found that these two clones belong to the C-type lectin family. The estrogen sensitivity of DDV10 and DDV11 expressions was verified by Northern blot and RT-PCR analyses. Characterization of DDV10 expression in the vagina showed that ovariectomy decreased DDV10 transcription, but estrogen treatment to ovariectomized mice produced a rapid increase in DDV10 messenger RNA. In contrast, DDV11 is negatively regulated by estrogen. These results suggest that DDV10 is up-regulated by estrogen may play a role for proliferation and/or cornification of vaginal epithelium, and DDV11 is down-regulated by estrogen may play a role for apoptosis of vaginal cells.