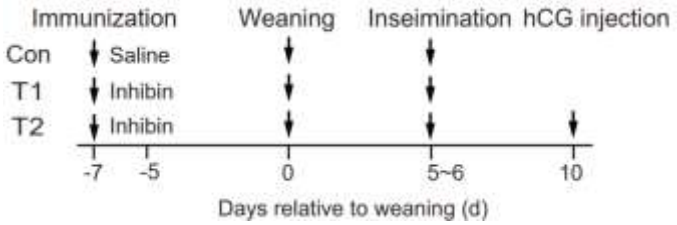
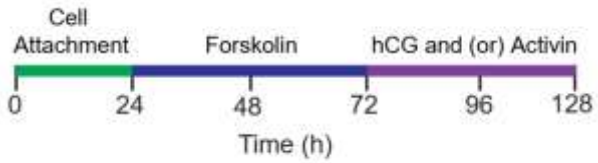


Appendix A Design of the *in vivo* experiments. Lactating sows were randomly assigned to three groups: the control group (Con, *n*=56), treatment group 1 (T1, *n*=56), and treatment group 2 (T2, *n*=50). Seven days prior to weaning, sows were either immunized with inhibin or saline in mineral oil adjuvant. Five to 6 days after weaning, sows exhibiting signs of oestrus were artificially inseminated at the detection of oestrus and at 24 h intervals while they continued to exhibit oestrous. Sows in the T2 group were further treated with 1000 IU hCG at 5 days after insemination.



Appendix B Design of *in vitro* cell experiments. Primary granulosa cells (GCs) were isolated and cultured for 24 h, and unattached cells were removed *via* two washes. Forskolin (10 μmol L^{-1}) was added to the medium and incubated for 48 h to induce the luteinization of GCs. Then, activin and (or) hCG were added to the medium, and the cells were incubated for another 48 h. The culture medium was collected for the detection of P4, and GCs were collected for the detection of StAR, Cyp11a1 and HSD3B gene and protein expression.

Appendix C Summary of sow reproductive performance after pre-weaning immunization against inhibin (*in vivo* experiment)

Group[1)]	Oestrus rate (%)[2)]	No. of total piglets	No. of live piglets
Con (*n*=56)	89.29 (50/56)	10.22±0.38	9.96±0.37
Treated (*n*=106)	93.40 (99/106)	10.99±0.25	10.79±0.24
P-value	0.18	0.068	0.044

[1)] Con means control sows, Treated means sows that were immunized against inhibin.

[2)] number of sows in oestrus/number of sows per group.

The numbers of total piglets and live piglets are presented as the mean±SE.