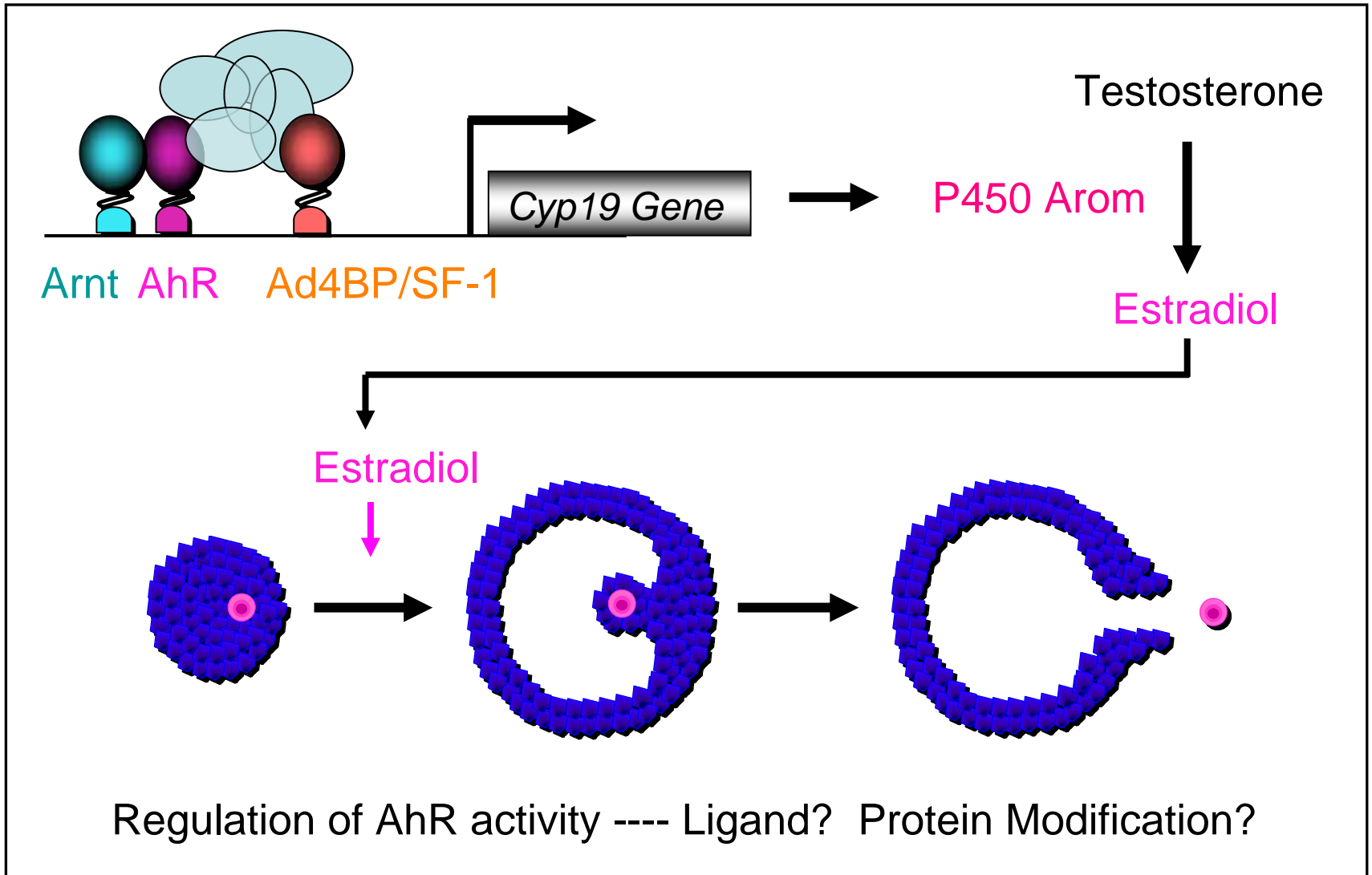


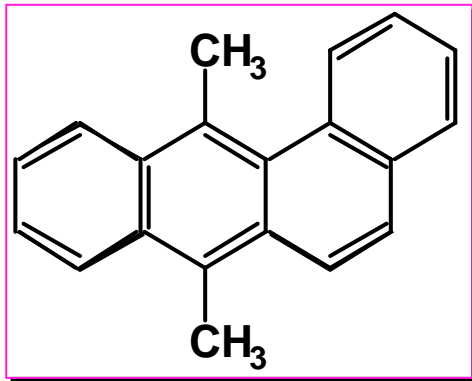
AhR is implicated in E2 production via activation of CYP19



Exogenous AhR-ligand has an ability to induce P450 aromatase expression in ovary regardless of the phase of estrus cycle ?

DMBA

(9,10-Dimethyl
-1,2-benzanthracene)



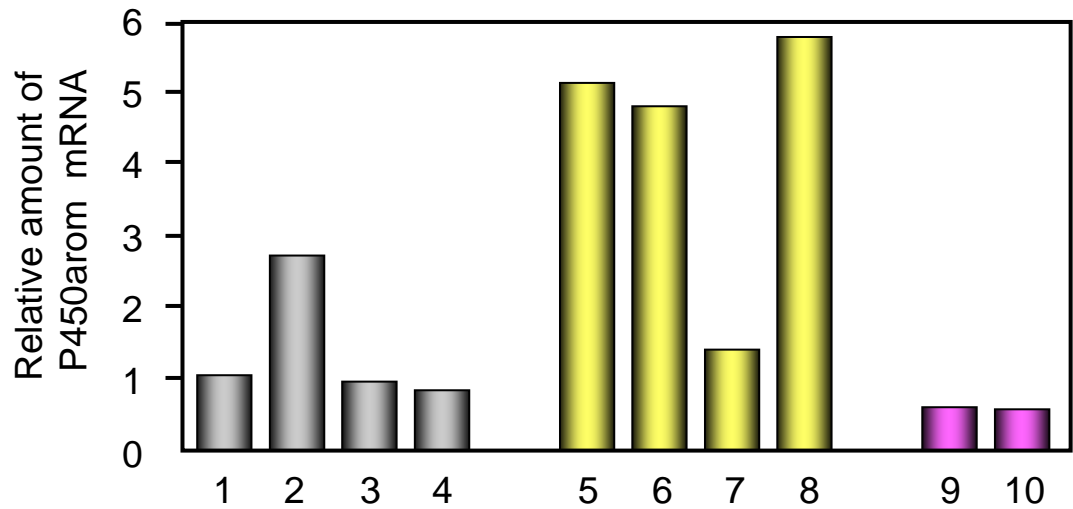
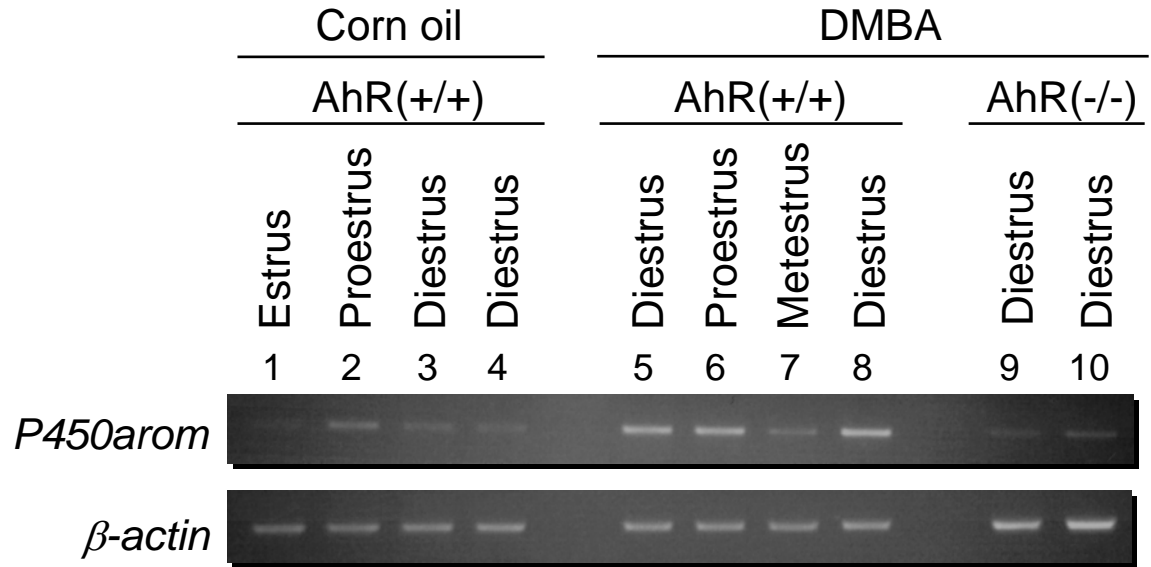
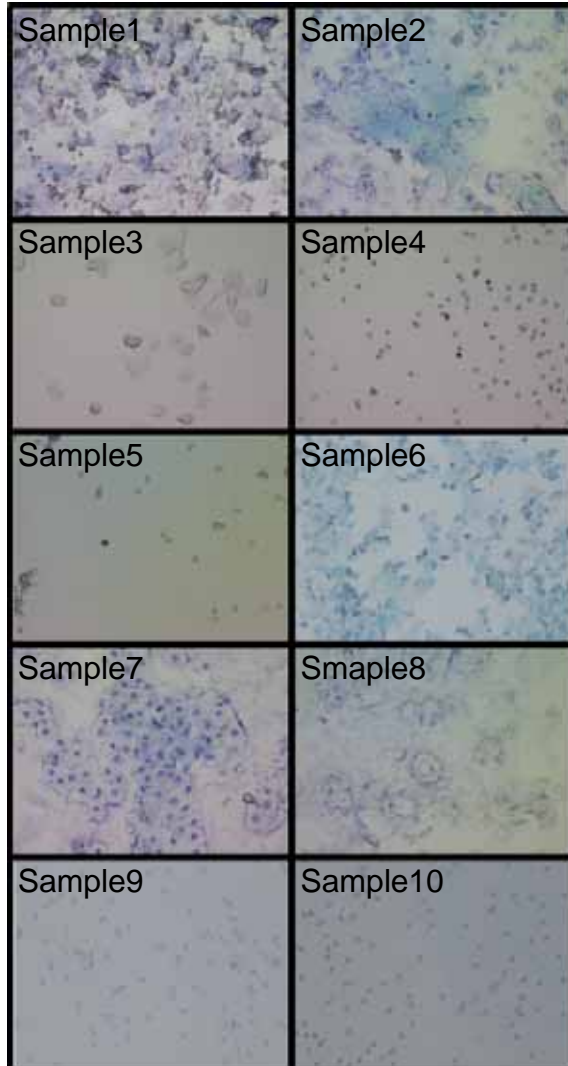
- 1, Check the vaginal smear to determine the phase of estrus cycle.
- 2, Intraperitoneal injection of 5 mg/kg of DMBA.

↓
5hr

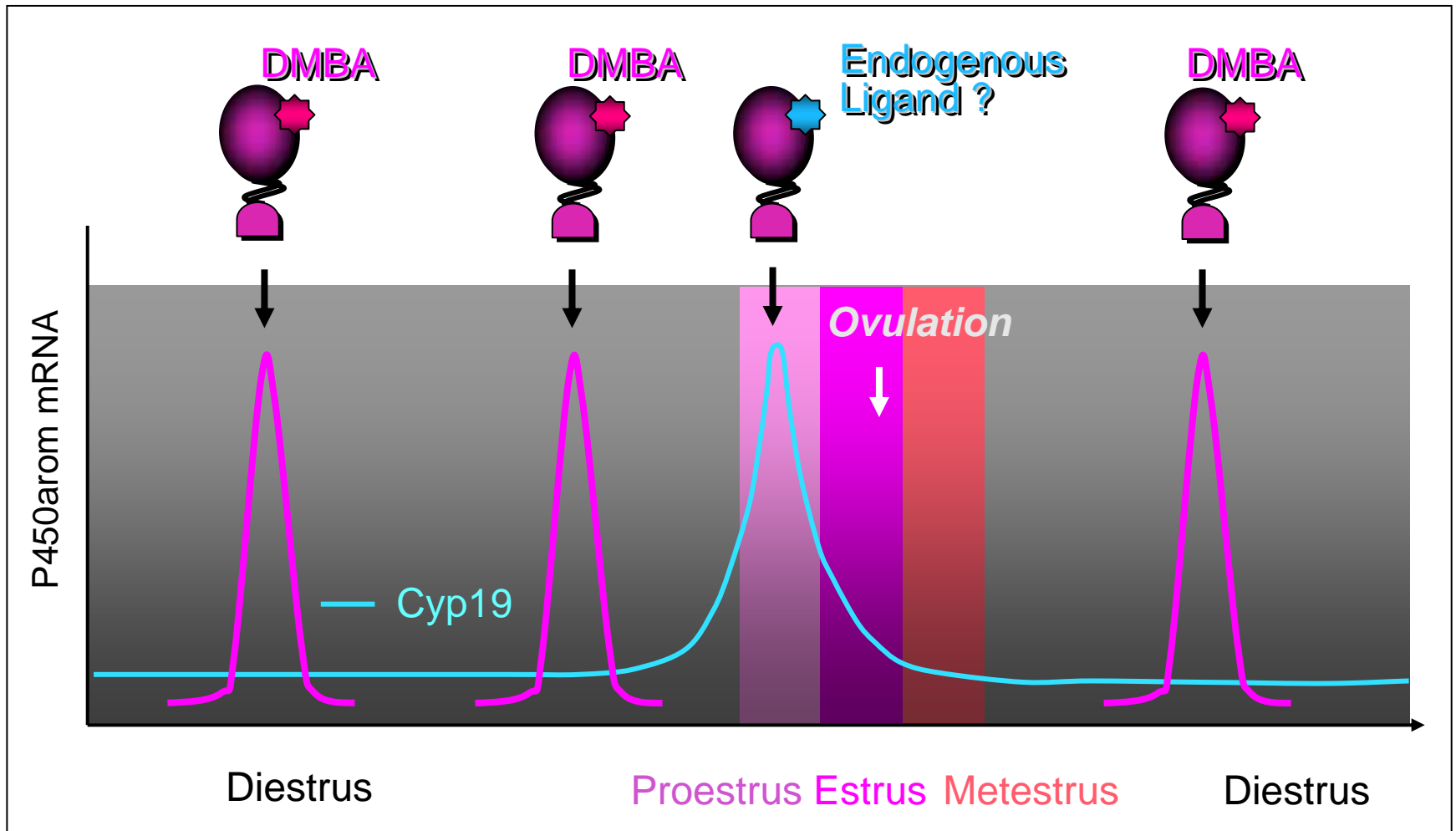
- 3, Prepare RNA from the ovaries.
- 4, Determine the expression level of *P450arom* by RT-PCR.

Expression of P450arom in the Ovary induced by Intraperitoneal Injection of AhR-ligand, DMBA

Vaginal smear of the mice subjected to the experiment



AhR aberrantly induces Cyp19 Expression in the Ovary when activated by Exogenous Ligand, DMBA



As the conclusion of our present study,

- ◇ AhR knockout females show subfertility, decreased ovulation and incomplete follicular maturation. These are probably caused by the decreased expression of P450 aromatase and thus insufficient amount of intraovarian estradiol.
- ◇ AhR activates P450 aromatase gene transcription by binding to XRE. P450 aromatase gene transcription is activated synergistically by AhR and Ad4BP/SF-1.
- ◇ We propose a novel model for estrogenic activity of AhR ligands, in which AhR with its ligands activates P450 aromatase gene expression even when P450 aromatase gene should be downregulated.