

平成27年度 第1回 応用動物科学セミナー

Sex reversal and consequent oocyte differentiation in the B6.YTIR mouse

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In mammalian development, the gonadal sex, testis or ovary, is determined by the Sry gene on the Y chromosome. Consequently, germ cells undergo sexual differentiation dependent on the gonadal environment. Therefore, when the gonadal sex is reversed, XX germ cells in the XX testis enter the resting stage of prospermatogonia whereas XY germ cells in the XY ovary enter into the meiotic prophase and become primary oocytes. However, sex reversal in the germ cells discordant with chromosomal sex often results in subfertility or infertility dependent on the germ cell sex, the cause of sex reversal, and the genetic background. Our laboratory is particularly interested in the behavior of sex chromosomes in the female germline. I will briefly describe the mechanism of sex reversal in the B6.YTIR mouse, in which Sry is normally expressed but its target Sox9 is upregulated inefficiently, resulting in partial or complete sex reversal (1, 2). I will then compare the pairing and synapsis between the X and Y chromosomes during the meiotic prophase between B6.YTIR spermatocytes and oocytes, with emphasis on the possible surveillance mechanism (3, 4). I will finally discuss the cause of infertility in the XY oocyte, which can be attributed to the expression of Y-linked genes and consequent cytoplasmic defects (5, 6).

● 6月8日(月) 17:30 ~ 18:30 農学部3号館217号教室

● 本セミナーは講義としてカウントしません。したがって、レポート提出も必要ありません。

● 問い合わせ先:

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2. Park et al. (2011) Differentiation 82: 18-27.
3. Alton et al. (2008) Reproduction 135: 241-252.
4. Taketo & Naumova (2013) Chromosoma 122: 337-349.
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