

## **p63 and Notch pathway in male germ cell tumors**

**Tetsuo Hayashi**<sup>1</sup> Soichiro Yoshida<sup>1</sup> Atsushi Yoshinaga<sup>1</sup> Rena Ohno<sup>1</sup>  
Nobuyuki Ishii<sup>1</sup> Toshiya Terao<sup>1</sup> Takumi Yamada<sup>1</sup>

<sup>1</sup> Department of Urology, Saitama Medical Center, Saitama Medical School, Kawagoe, Saitama, Japan

The male germ cell tumor is uniquely radio-sensitive and chemo-curable and the balance between differentiation and apoptosis of male germ cells is governed by TAp63, one of p63 isoforms, through the Notch pathway and p53 target genes. Therefore, we examined the expressions of p63, Notch 1 and Jagged 2 in testicular germ cell tumors with the aim of evaluating their possible relationship with the pathogenesis of germ cell tumors. TAp63, Notch 1 and Jagged 2 mRNAs were expressed in non-cancerous testicular tissues, and p63, Notch 1 and Jagged 2 proteins were detectable in germ cells. In seminomas, Notch 1 and Jagged 2 mRNAs were expressed at low level, whereas TAp63 mRNA was highly expressed, and the tumor cells were negative for Notch 1 and jagged 2 proteins, while p63 protein was detectable. On the other hand, in embryonal carcinomas and choriocarcinomas, TAp63 and Jagged 2 mRNAs were expressed at low level, whereas Notch 1 mRNA was highly expressed, and tumor cells were negative for p63 and Jagged 2 proteins but Notch 1 protein was detectable. In teratomas, TAp63, Notch 1 and Jagged 2 mRNAs were highly expressed and p63, Notch 1 and Jagged 2 proteins were detectable. Our results offer, for the first time, the possibility that the activity of the p63 and Notch pathway correlates with the different histological subtypes of male germ cell tumors, which may be responsible for characteristics of cancer cells such as responses to chemotherapy and/or irradiation.