

# Genetics of Testicular Germ Cell Tumors

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## Abstract

Testicular germ cell tumor (TGCT) is the most solid tumor in 20-40 years old man. TGCT account for 95% of testicular tumors and represent a unique type of human cancer from several different perspectives. TGCT arise by transformation of germ cells. The Transformed germ cells exhibit ploripotentially to differentiate into embryonic, Extra-embryonic, and somatic tissue types, and are highly sensitive to cisplatin-based chemotherapy. Investigation into the genetics of TGCT can provide methods of molecular diagnosis and help to the understanding of molecular basis of transformation, differentiation and sensitivity/resistance . The molecular basis for the chemosensitivity of these tumors is poorly understood, although initial stadies suggest that wild-type p53 might play a central role, further studies will provide insights into why other other solid tumors remain far from curable. The following review will provide information about genetic altration and chromosomal aberration occur in TGCT. These studies have identified multiplication of 12p, manifested in 1 (12p) or tandem duplication of 12p, As a unique change in TGCT which serves as a diagnostic marker. These data also indicate that multiple genetic events play a role in distinct pathways in the development of TGCT, and further elucidation of the underlying genetic and biochemical mechanisms is central to unraveling biology and improving treatment of TGCT.

**Key Words:** Cancer genetics, testicular cancer, germ cells.

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