

#4016 Molecular Cloning of a Novel Gene Which Appears to be Down-Regulated in Testicular Cancer. Liu-Ying Luo, Antoninus Soosaipillai, Klaus Jung, and Eleftherios Diamandis. *Mount Sinai Hospital, Toronto, ON, Canada, University Hospital Charite, Berlin, Germany, and University of Toronto, Dept. of Lab Medicine and Pathobiology, Toronto, ON, Canada.*

In our efforts to identify immunoreactive antigens in ovarian cancer, we used the method of immunoscreening of an ovarian carcinoma cDNA expression library with ascites fluid from ovarian cancer patients. Among many positive clones, one was found to contain partial sequence of a novel gene. By searching expressed sequence tags (ESTs) and human genome project databases, we were able to obtain the full-length cDNA sequence (1.4 kb) and establish the genomic organization of this new gene. We also identified two alternatively spliced forms, encoding for slightly different proteins. The longer form (1.4 kb) is predicted to encode for a 27.6 kDa protein of 245 amino acids. The shorter form (1.3 kb) encodes for a truncated protein of 20.7 kDa and 208 amino acids. These proteins are not significantly homologous to any known protein in the Genbank database. This gene is composed of nine exons and eight introns. By fluorescence in situ hybridization (FISH), it was mapped to chromosome 4p11. This gene is highly expressed in many tissues, including testis, brain, placenta, ovary, prostate, and mammary gland. The high level expression of the shorter form is restricted to the central nervous system, including brain, cerebellum, and spinal cord, suggesting that this form may have a unique function in the central nervous system. Considering the widespread tissue distribution of this new gene, we hypothesized that it might also play a role in cancers other than ovarian. We thus investigated whether this novel gene is differentially expressed in testicular tumors. By RT-PCR, we found that this gene was significantly down-regulated in the majority of testicular tumors, in comparison to adjacent normal tissues. We thus named this novel gene DTC (down-regulated in testicular cancer). Our results indicate that the DTC gene may play a role in ovarian and testicular cancer and in the function of central nervous system.