Coordinate regulation of RARgamma2, TBP, and TAFII135 by targeted proteolysis during retinoic acid-induced differentiation of F9 embryonal carcinoma cells

ABSTRACT
The results suggest that normal F9 cell differentiation requires the appropriately timed proteolysis of TBP and TAFII135, which is necessary for the regulation of genes by transactivators and other basal transcription factors.

INTRODUCTION
Germline mutations in the BRCA1 or BRAC2 genes are responsible for hereditary breast cancer susceptibility. BRCA2 is connected to breast cancer in both women and men, and moderately increased risk for ovarian cancer. Zabludoff et al. discovered that Brca1 mRNA levels were highest in the testis and the ovaries in adult mouse tissues. In tests, it was discovered that Brca1 mRNA expression was high in the testis of mice and high for meiotic cells and postmeiotic round spermatids, but low and non-expressed in premeizoid germ cells; and Brcas1 also expressed at low levels in Sertoli cells. Blackshear et al., on the contrary, demonstrated in the mouse that Brca1 and Brc■2 mRNA are expressed in mitotic spermatogonia (along with early meiotic prophase phomalysies); Sertoli cells, and Leydig interstitial cells were found to be non-reactive for Brcas1&Brca2 transcripts. Specifically, Brca1 and Brc■2 transcripts were found in the normal mouse adult ovary, which were localized to granulosa cells, thecal cells (thecic cells), oocytes, and luteal cells of newly formed corpora literarum, as well as surface epithelium. Given these results, we immunochemically examined the presence of human BRCA1 and BRAC2 proteins in an ovotestis using a different panel of antibodies against BRAF1 (Becky-5-K) and Bacillan's companion antibody BLR2.

CONCLUSION
Findings This report describes the rapid identification of RAR agonists with new structural properties, by virtue of a powerful virtual ligand screening approach and research strategy whereby no existing 'ligans' are considered. Here, we present one of the molecules as a suitable foundation for developing novel receptor-activated (RAR) ligands with specificity and toxicity profiles that could be useful in cancer treatment.