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EFFECTS OF THE ESTROGEN RECEPTOR AGONIST ON MORPHOLOGIC CHANGES IN MOUSE OVARY, OVIDUCT AND UTERUS

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The morphological modifications of mouse reproductive organs were investigated in animals treated with estrogen receptor agonist (PPT). PPT was subcutaneously given to adult female mice at a weekly dosage of 3mg/animal in a volume 0.06 ml of vehicle for 3, 5 and 8 weeks. Effects of PPT on reproductive organs were analyzed using a light microscope. PPT induced decreases of body and ovary weights with experimental time. PPT enhanced number of primordial follicles in ovary compared with controls. Lumen of oviduct was dilated by PPT treatment. The number of ciliated cells was increased in ampullar portion. The luminal diameter of uterus was increased with PPT administration. The uterine myometrium and endometrium height was decreased by PPT treatment. These data indicate that PPT treatment induced morphological change of female reproductive organs resulting in alteration of fertility.

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Screening of DNAzymes directed against β-catenin gene expression for the therapy of colon cancer

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The Wnt signaling pathway is conserved in various species from worms to mammals, and plays important roles in cellular proliferation, differentiation, and migration. Wnt stabilizes cytoplasmic β-catenin and then the accumulated β-catenin is translocated into the nucleus, where it activated the transcriptional factor T-cell (Tcf)/lymphoid enhancer factor (Lef), and thereby stimulated the expression of genes including *c-myc, c-jun, fra-1,* and *cyclin D1,* which are necessary for proliferation of cancer. A class of antisense oligodeoxynucleotides, know as the "10-23" DNAzyme, which is a small catalytic DNA, has been shown to efficiently cleave target RNA at purine-pyrimidine junctions *in vitro*. We have designed a strategy to identify accessible cleavage sites in the β-catenin RNA, accumulation of which leads to a development of colon cancer, from a pool of random DNAzyme library. The screening procedure, which includes binding of DNAzyme pool to the target RNA under inactive condition, selection and amplification of active DNAzymes, incubation of the selected DNAzymes with the target RNA, and target site identification on sequencing gels, identified 2 potential cleavage sites in the target RNA. Corresponding DNAzymes were constructed for the selected target sites and were tested for RNA-cleavage. Thus, selected DNAzymes that can specifically cleave β-catenin RNA are potentially useful as gene-inactivating agent for the treatment of colon cancer.