

## SYNTHETIC RECEPTORS INDUCE ANTI ANGIOGENIC MILIEU IN *IN VITRO* MODEL OF CYTOTROPHOBLAST CELLS

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**Abstract:** Synthetic receptors (SR) were used to explore the receptor/ligand binding affinity using cytotrophoblast (CTB) cells. The human extravillous CTB cells (Sw.71) used in this study were derived from first trimester chorionic villus tissue. Culture media of CTB cells treated with a  $\geq 1$ nM SR level revealed sFlt-1 (Soluble fms-like tyrosine kinase-1) and sEnd (a soluble form of endoglin) secretions that were significantly increased while VEGF (vascular endothelial growth factor) and PlGF (placental growth factor) were decreased in the culture media. The AT<sub>2</sub> receptor (Angiotensin II receptor type 2) expression was significantly upregulated in  $\geq 1$  nM SR-treated CTB cells as compared to basal; however, the AT<sub>1</sub> (Angiotensin II receptor, type 1) and VEGFR-1 (vascular endothelial growth factor receptor 1) receptors expression was downregulated. The anti-proliferative and anti-angiogenic effects of this compound on CTB cells are similar to the effects of cardiotoxic steroids (CTS). The receptor/ligand affinity of SR on CTB cells provides us a critical clue to the design of a potent inhibitor to prevent CTS-induced impairment of CTB cells.

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