

Human trophoblast differentiation: possible role for trophoblast cell surface antigen 2

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Human trophoblast cell surface antigen 2 (Trop2) is a 40-kDa transmembrane glycoprotein, encoded by TACSTD2 gene and identified for the first time in human trophoblast and choriocarcinoma cell lines. Trop2 has a short intracytoplasmic tail essential for the control of several pathways that regulate cellular functions such as cell-cell adhesion, cell proliferation and mobility [1]. We analysed the expression of Trop2 in human normal placentas during gestation and in placentas complicated by preeclampsia (PE). Trop2 protein expression and miR125b1 were analysed by morphological and bio-molecular techniques. Trop2 increased during gestation, i.e. from first to third trimester of gestation while it was low expressed in placental tissues collected from patients with PE. Since PE is a pathology associated with placental hypoxia, we demonstrated that Trop2 is downregulated in hypoxic conditions by in vitro model. Our study suggests a possible involvement of Trop2 in maintaining trophoblast morphology and function during placental development in normal and PE conditions.

References

- [1] McDougall ARA, Tolcos M, Hooper SB, Cole TJ, Wallace MJ. Trop2: From development to disease. *Dev Dyn.* 2015;244:99–109.

Keywords

Placenta, development, immunohistochemistry, preeclampsia