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Abstract

The Role of Trophoblastic Stem Cells Conditioned Media on JAR Cell Culture †

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Abstract: Trophoblasts are placenta-specific epithelial cells which play an important role in embryo implantation. Trophoblast stem cells (TSCs) are precursor cells of placenta and can be derived before or after implantation. During TSCs culture, several molecules and small vesicles such as exosome are secreted. Exosomes, play an important role in intercellular communication, signal transduction and cell property regulation via carrying genetic material. The aim of the study was to investigate the role of TSCs released factors on human choriocarcinoma cell line (JAR). TSCs were obtained from E14 placenta and cultured for a week. Then conditioned media were collected. JARs were cultured in JAR culture media with/without TSCs conditioned media for 48 h then anti-MMP2, anti-Jagged1, anti-IL10 immunoreactivities were analyzed. The culture media were also collected for evaluation of Exosome and miRNA using miRCURY™ Kit. After TSCs conditioned media incubation; JAR cells spheroids size was different and signaling molecules expression for invasion and adhesion decreased. The amount of miRNA was changed after incubation. In conclusion, TSCs conditioned media was effect JAR cells properties via expressing of signaling molecules and exosomal-fragments. Therefore, TSCs products, which might be used to reduce different cancer cells invasion and adhesion properties, could be further analyzed.

Keywords: TSCs; JAR; miRNA