1. No.

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2. Title

Effect of Cigarette Smoking on the Mechanism of Blastocyst Implantation with Special Reference to Glycoconjugate-lectin-binding

3. Period

2018-2020

4. Summary

This study revealed the effect of cigarette smoking on the expression of galectins and their ligand glycoconjugates in the mouse uterus, oviduct, and cultured human endometrial adenocarcinoma Ishikawa cells and choriocarcinoma BeWo cells. Candidates for the ligand glycoconjugates are Muc1 which is known to block implantation in women, keratan sulfate which is reported to exist on Muc1, and sialid acids that affect galectin-sugar-binding. In the uterus, nicotine administration decreased the expression of both galectin-1 and galectin-3. Galectin-3 and Muc1 expression in the endometrium disappeared by nicotine treatment. In the oviduct, cytoplasmic galectin-3 immunoreactivity in ciliated cells decreased but cilial galectin-3 was concentrated by nicotine treatment. Cigarette smoking extract (CSE) decreased the expression of galectin-1 in Ishikawa cells and the expression of both galectin-1 and galectin-3 in BeWo cells. Because nicotine or CSE treatments altered the expression and localization of Muc1, keratan sulfate, and sialic acids, cigarette smoking affects the expression and interaction of galectins and ligand glycoconjugates.