

A NOVEL ENDOMETRIAL ORGAN CULTURE SYSTEM: OBSERVATIONS ON ITS USE FOR STUDIES OF THE INITIAL PHASE OF EMBRYO IMPLANTATION

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An endometrial organ culture system has been developed (1,2) which includes the following specific features:

1. Preincubation of endometrial fragments in shaker culture results in regeneration of a complete epithelial lining;
2. preservation of organotypic tissue structure is quite satisfactory, and there is no central necrosis;
3. certain hormone responses can be obtained in vitro;
4. blastocysts show remarkably good development in co-culture with these precultured endometrial fragments.

This system has proved useful for studies on the initial phase of blastocyst implantation in vitro (2). Most remarkably, with rabbit material selectivity is observed for trophoblast attachment and invasion, while various types of malignant tumor cells are found unable to penetrate the intact uterine epithelium under the in vitro conditions used (3). It is concluded that trophoblast-endometrial interactions show specific features, not common to all invasion processes, and that the model described may be useful for the study of molecular mechanisms involved.

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