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ABSTRACTS

Gap junction formation in rabbit uterine epithelium during the periimplantation phase
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Gap junction formation was studied in the uterine epithelium of nonpregnant as well as pregnant and pseudopregnant rabbits at day 7 post coitum (p.c.) and post human gonadotropin injection (p. hCG) using freeze-fracture, immunocytochemistry as well as intracellular Lucifer yellow injection. Freeze-fracture replicas reveal an extremely large number of gap junctions in the uterine epithelium of the implantation chamber at day 7 p.c. This is paralleled by the presence of gap junction protein (26k) as shown immunocytochemically with a monoclonal antibody. At this particular stage Lucifer yellow injection revealed extensive dye spreading in epithelial cells of the implantation chamber, pointing to intercellular communication. In contrast, uterine epithelia of nonpregnant as well as pseudopregnant animals at day 7 p. hCG show a low degree of coupling. The presence of the blastocyst is a necessary condition to induce gap junctions as demonstrated by unilateral pregnancy produced by tubal ligation. Thus, gap junction formation is one of the first maternal responses to a locally acting signal of the blastocyst.

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