

34th Meeting of the

European Tissue Culture Society (ETCS)**Heidelberg, 8–10 October 1986****ABSTRACTS**

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CTOC Fine structural changes in the basal lamina of the uterine epithelium in preparation for trophoblast9 invasion
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Trophoblast invasion appears to stop temporarily, before progressing into endometrial stroma at the residual basal lamina, which therefore, seems to form some kind of barrier (Schlafke und Enders 1975, 1985). We have studied fine structural changes of the basal lamina in the uterine epithelium as related to implantation in the rabbit. Changes are already observed at day 7 post coitum when implantation starts at the antimesometrial side of the implantation chamber. In this modification the basal lamina appears as a fuzzy structure, missing the lamina lucida. These structural changes are restricted to the epithelial regions where invasion of the trophoblastic knobs starts. At the mesometrial side, part of the basal lamina is converted into amorphous material. This is remarkable since trophoblast attachment and invasion will not commence before one day later. Then, at 8 d p.c., the basal lamina throughout the implantation chamber is transformed into a thinned-out structure; at the mesometrial side it is even partly lacking. Typically, the uterine epithelial cells of the implantation chamber now form numerous cell processes on the basal side which penetrate the vestiges of the basal lamina and extend into the stroma.

By contrast, the blastocyst-free segments of these uteri reveal an intact basal lamina structure with lamina lucida and lamina densa. On day 8 p.c. the latter is replaced by an enormous accumulation of amorphous material (basal lamina material?).

We conclude that the basal lamina of the uterine epithelium undergoes remarkable changes even before trophoblast invasion which might facilitate trophoblast penetration through this specialized type of epithelium.

Supported by DFG Wi 774/1-1 and De 181/9-6

Supplement 15 (Vol. 42) 1986**European
Journal of Cell Biology****WISSENSCHAFTLICHE VERLAGSGESELLSCHAFT MBH STUTTGART**