

31. IMMUNOLocalISATION OF INTERLEUKIN-11 AND ITS RECEPTOR IN ENDOMETRIUM OF INFERTILE WOMEN DURING THE IMPLANTATION WINDOW

C. Stoikos¹, E. Dimitriadis¹, M.A. Stafford-Bell², G. Kovacs³ and L.A. Salamonsen¹

¹Prince Henry's Institute of Medical Research, Clayton, 3168, Vic; ²Canberra Fertility Clinic, Deakin, 2600, ACT; ³Department of Obstetrics and Gynaecology, Monash University, Clayton, 3168, Vic.

The human endometrium is normally a hostile environment to embryo implantation except for a limited phase of the menstrual cycle known as the "window of receptivity". Mice with a null mutation in the gene encoding for the interleukin (IL)-11 receptor alpha (R α) are infertile due to a failure of embryo implantation¹. In the human endometrium IL-11 localises in a pattern suggesting a role in human fertility². The aim of this study was to examine the temporal and spatial location of IL-11 and IL-11R α in endometrium from infertile women (infertile) and women with normal menstrual cycles and no known endometrial dysfunction (normal). Immunohistochemistry was performed on tissues collected between 5 and 10 days after ovulation. IL-11 and IL-11R α immunoreactivity was absent in a sub-population of tissues from infertile women. In the infertile tissues that exhibited staining, IL-11 stained minimally in glandular and luminal epithelial cells, stromal cells, and vascular smooth muscle and endothelial cells. Similarly, IL-11R α immunoreactivity was minimal in all major cellular compartments, with the luminal epithelial cells and vascular smooth muscle cells showing the lowest staining. By contrast, IL-11 and IL-11R α immunostaining was found in all normal tissues. Furthermore, staining for IL-11 and IL-11R α was high in the glandular epithelial cells of the normal tissues. Moderate to low staining for IL-11 and IL-11R α was seen in stromal and vascular endothelial cells, while low staining was apparent in the vascular smooth muscle and luminal epithelial cells. Staining for IL-11 and IL-11R α was overall markedly higher in normal compared to infertile tissues. These data suggest a role for IL-11 in the preparation of a receptive endometrium, which is critical in the establishment of pregnancy.

(1) Robb *et al.* (1998) *Nat. Med.* **3**: 303–308. (2) Dimitriadis *et al.* (2000) *Mol. Hum. Reprod.* **6**: 907–914.