

HUMAN ENDOMETRIAL FLUID ASPIRATE PROTEOMIC ANALYSIS: EXTENSIVE PROTEIN MAPPING BY 2D-ELETOPHORESIS AND MALDI TOF/TOF

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Endometriosis is a widespread condition, frequent in infertile women and progressive. Proteomic approaches have been directed to the discovery of biomarkers and study of this disease by using serum, endometrial tissue or peritoneal fluid. However, a more convenient procedure is to isolate the aspirate of the endometrial fluid because it's a safe, easy and standard clinical procedure, and focused on the target tissue in endometriosis, so the proteome of this secretion directly reflects the state of the endometrium. Endometrial aspirates were collected from women with ages ranging between 18 and 45 with no laparoscopic evidence of endometriosis or other endometrial alteration. Only endometrial fluid aspirates without blood or tissue contamination were pooled. Serum albumin and class G immunoglobulins were specifically immunodepleted. Purified proteins were resolved by 2DE electrophoresis and after Flamingo staining, over 600 different protein spots were detected. Spots were picked and digested in an automatic fashion. MALDI TOF/TOF analyses were firstly performed in automatic fashion, where approximately half of the analyzed spots happened to be unambiguously identified. After supervision, samples with no significative good enough score, were analyzed manually either by MALDI TOF/TOF or nano LC MS/MS mass spectrometry. In this study we report 459 spots identified, compiling 220 proteins, covering 16 protein groups according to Gene Ontology. In our knowledge, this is the first time endometrial fluid aspirate is extensively mapped combining 2DE and mass spectrometry techniques. The resulting proteomic catalogue offers new perspectives for biomarker discovery and non invasive diagnosis, both in endometriosis and embryo implantation studies.