# Abstract Details

**Session title:** Embryology
**Session type:** Poster viewing
**Presentation number:** P-134

## Abstract title:

Protein profile of euploid single embryo transfer reveals differential patterns among them.

M. Meseguer Escriva[1], L. Bori[1], R. Del Gallego[1], J. Remohi[1], A. Quinonero[1], F. Dominguez[1].
[1]Instituto Valenciano de Infertilidad, IVF Laboratory, Valencia, Spain.

**Study question:**

Can we differentiate the implantation potential of euploid single blastocyst transfers using a proteomic profile?

**Summary answer:**
A differential proteomic profile can be observed among all single blastocyst transfered depending on their implantation (yes/no), quality and culture media used.

**What is known already:**
There have been initial attempts to select the best embryo for transfer according to proteomic patterns of developing embryos. Nevertheless, euploid single embryo transfers have never been assessed before. In this study a well-defined population of euploid and good quality blastocyst were singled transferred, and their culture media analyzed in order to determine the secretomic profile and its relation with implantation potential.

**Study design, size, duration:**
81 euploid single blastocyst transfer (SET) conditioned media (CM) and 8 controls were recruited for the study from September 2017 to March 2018 in our clinic. Morphokinetic and Morphology parameters were also recorded from all embryos using a Time-Lapse monitoring incubator (Embryoscope, Vitrolife).

**Participants/materials, setting, methods:**
Eighty-one patients included in our PGT program were enrolled in this study from which 81 euploid blastocyst were analyzed. A Proximity Extension Assay (PEA) technology was used for analyzing 25 different secreted proteins in all media, including IL-6, IL-8, VEGFA, MCP-1, IL-1, CSF-1, SCF and others. Classical Morphology of blastocyst were evaluated including grade of expansion, inner cell mass (ICM) and trophoectoderm (TE). Additionally morphokinetcis and morphology dynamics were evaluated by using EmbryoVIewer (Vitrolife, Denmark).

**Main results and the role of chance:**
First, we observed a clear protein pattern of consumption and secretion of the blastocyst when we compared with controls in all proteins analyzed. We confirmed a significantly high secretion of IL-6 and IL-8 of growing embryos, highlighting the potential of these molecules during the embryo development.Concerning the differences between implanted and non-implanted embryos only IL-8 seem to have a significant difference between groups. Furthermore, most of the protein concentrations presented a pattern of higher values in full hatched blastocyst and were directly related with ICM and inversely with TE quality.

**Limitations, reasons for caution:**
Although we use the most sensitive system available in the market to measure proteins, the very low amount of some of them make us difficult to asses their implication in the implantation potential of these blastocyst.

**Wider implications of the findings:**
Using a combined biochemical/morphology/morphokinetic approach we may be able to distinguish an embryo with higher implantation potential, compared to those that will have very low chances of implantation.

**Trial registration number:**
Not applicable.

**Keywords:**
blastocyst
poteomics
time-lapse