## POS-C05

*PD en Investigación Biomédica*

### SERUM AND FOLLICULAR FLUID DISTRIBUTION OF HUMAN PON1 AND PON3 ENZYMES

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Physical and mental health is compromised in women suffering from infertility and is currently considered a sociological problem. Assisted reproduction techniques (ART) are helping these women to overcome this problem, so that improvements in the area are of great interest. It is known that ROS and antioxidants play an important role in reproduction; therefore the control of redox balance and the enzymes which are responsible for its preservation is essential. The human paraoxonase (PON) gene family consists of three members (PON1, PON2, and PON3) that exhibit antioxidant activities. The aim of this study was to characterize the extracellular paraoxonase system (PON1 and PON3) in serum and follicular fluid (FF). Samples were retrieved from the same women undergoing an ovarian stimulation cycle. To this end, PON1 (arylesterase and paraoxonase) and PON3 (simvastatinase) activities were measured by spectrophotometric and HPLC methods, respectively. Protein expression was detected by quantitative western blotting using specific antibodies. The results indicate that all analyzed PON1 activities were significantly higher ($p<0.05$) in serum than in FF. However, PON1 expression did not show significant differences between both fluids. Regarding PON3 activity, no differences were found between serum and FF, but, in contrast, its expression was significantly higher ($p<0.05$) in serum than in FF. This work was supported by the Basque Country Government (Dep. Education, Universities and Research, ref. IT687-13), and UPV/EHU (CLUMBER UFI11/20 and PES13/58). The work was approved by the Ethics Committee of the UPV/EHU (M10_2015_180_RUIZLARREA), and performed according to the UPV/EHU and IVI-Bilbao agreement (October 5, 2015).