

Protein tyrosine phosphorylation in epididymal and ejaculated mouflon (*Ovis musimon*) sperm

Lucía Martínez-Fresneda^{1,2,3*}, Dawit Tesfaye², Karl Schellander², Francisco A. García-Vázquez³ & Julian Santiago-Moreno¹

¹ Department of Animal Reproduction, INIA, Madrid, Spain.

² Department of Animal Breeding and Husbandry, Institute of Animal Science, University of Bonn, Bonn, Germany.

³ Department of Physiology, Faculty of Veterinary Science, International Excellence Campus for Higher Education and Research "Campus Mare Nostrum", University of Murcia, Murcia, Spain. *E-mail: lmar@itw.uni-bonn.de



Introduction: Capacitation is a series of biochemical and physiological changes that sperm must undergo to fertilize the egg. Among others, this process is associated with an increase in protein tyrosine phosphorylation (PTP). Although widely study in domestic species including small ruminants, capacitation is poorly known in wild species.

Objective: To evaluate the PTP pattern of frozen-thawed mouflon epididymal and ejaculated sperm.

Methods

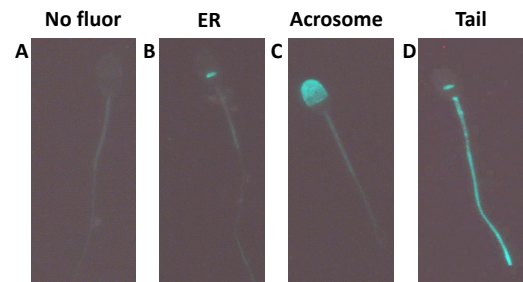
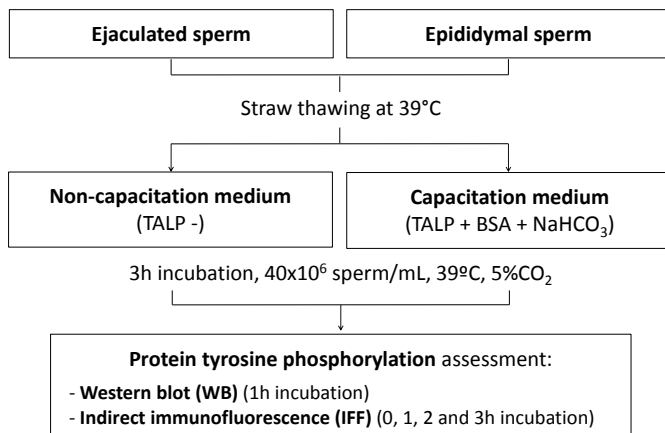
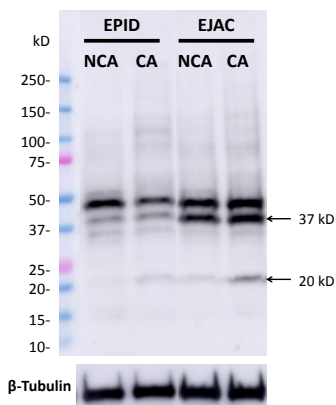


Fig 1: Protein tyrosine phosphorylation in ejaculated and epididymal sperm by IFF. Sperm cells were categorized in four groups: sperm with no fluorescence (A), with fluorescence in the equatorial region (ER; B), in the acrosome (C) and in the tail (D).

Anti-Phosphotyrosine quantification results

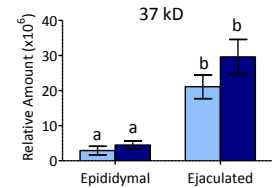
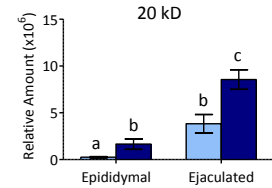
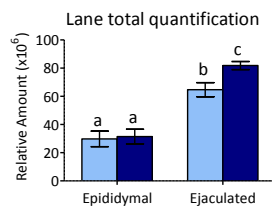
WB results



EPID: epididymal; EJAC: ejaculated
NCA: non-capacitated; CA: capacitated

Different letters indicate significant differences ($p < 0.05$)

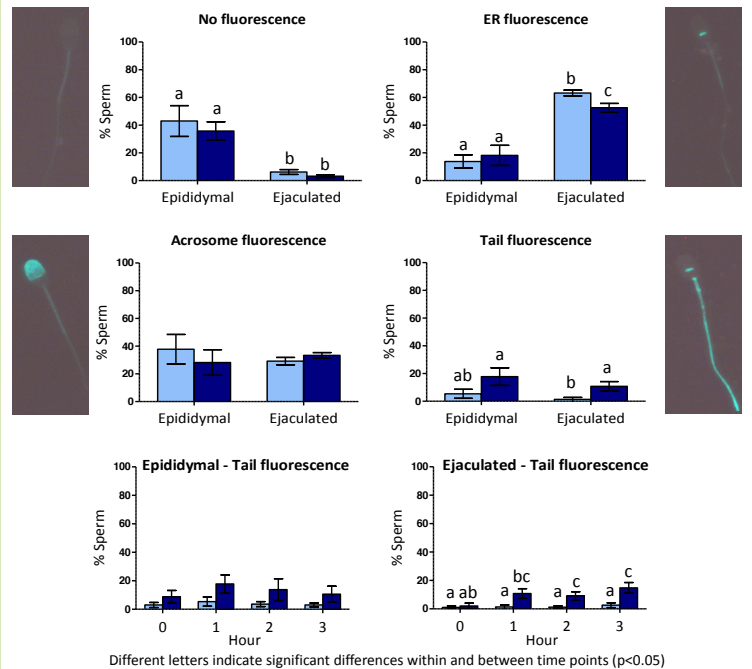
Not-Capacitated Capacitated



IFF results

Not-Capacitated Capacitated

1h incubation



Conclusions:

- Ejaculated sperm responded to capacitation milieu by an increase in protein tyrosine phosphorylation but not epididymal sperm.
- Further studies are required to evaluate if the contact with seminal plasma could explain the differences between ejaculated and epididymal sperm capacitation.

Acknowledgments: Supported by European Union H2020 Marie Skłodowska-Curie Action REPBIOTECH 675526 and MINECO grant AGL2014-52081-R.