Title	Sperm NOTCH proteins as novel biomarkers of bull fertility

Keywords	NOTCH; Bull spermatozoa; Fertility biomarkers

Summary	Bull subfertility and infertility is responsible for heavy economic losses in beef and dairy industries. Although semen parameters are routinely used to evaluate semen quality in animals and humans, their fertility predictive value remains sub-optimal as they fail to accurately predict the fertilizing ability of spermatozoa. Therefore, new insights on the molecular mechanisms that control the functional competence of spermatozoa are needed in order to develop clinically valuable fertility biomarkers. This proposal considers the evaluation of sperm NOTCH signaling proteins as novel biomarkers of bull fertility and therapeutic targets in Assisted Reproductive Technologies (ART). In particular, the project explores the use of NOTCH proteins as biomarkers associated with sperm capacitation/acrosome reaction. The knowledge generated is expected to provide an in-depth characterization of NOTCH proteins in sperm function, and potentially their inclusion as biomarkers of male fertility in sperm analysis protocols, and in ART (improving current sperm selection and cryopreservation techniques).

Supervision	
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