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Role of reproductive fluids and extracellular vesicles in embryo-maternal interaction during early pregnancy in cattle

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Abstract

The coordinated interaction between the developing embryo and the maternal reproductive tract is essential for the establishment and maintenance of pregnancy in mammals. An early cross-talk is established between the oviduct/uterus and the gametes and embryo. This dialogue will shape the microenvironment in which gamete transport, fertilisation, and early embryonic development occur.

Due to the small size of the gametes and the early embryo relative to the volume of the oviductal and uterine lumina, collection of tissue and fluid adjacent to these cells is challenging in cattle. Thus, the combination of in vivo and in vitro models seems to be the most appropriate approach to better understand this fine dialogue. In this respect, the aim of this review is to summarise the recent findings in relation to gamete/embryo-maternal interaction during the pre-elongation period.

Author keywords

cattle; EV biomarkers; extracellular vesicles; miRNA; mRNA; oviductal fluid; oviductosomes; uterine fluid; uterosomes

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