1. Institution: Royal Veterinary College, University of London, UK.

2. Principal investigator and contact person

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3. Key personnel

NAME	EMAIL	RESEARCH AREA DETAILS
Waleed Marei	wmarei@rvc.ac.uk	Diet, oocyte maturation and embryo development

4. Research profile

During my research career **I** have worked on embryo development, implantation and dietary improvement of fertility. I carried out my PhD studies at the Roslin Institute, Edinburgh, with Prof. Keith Campbell, in Prof. Ian Wilmut's group. This is an internationally known research group who created Dolly the first cloned sheep. This provided excellent training in embryological techniques of farm animals. In my first post-doctoral position at the University of Manchester, worked with Dr. Sue Kimber (School of Life Sciences, University of Manchester) investigating the role of leukaemia inhibitory factor (LIF) on implantation in mice. This enabled me to understand the complex mechanism of embryo implantation and learn a range of cellular and molecular biological techniques. During my second employment as a research fellow, I worked with Prof Bob Webb at the University of Nottingham, investigating the effects of diet on oocyte and embryo quality in lactating dairy cows. This included both in vivo and in vitro experiments and also expanded my experience about oocytes and embryos. We have shown that diets can influence oocyte and embryo quality, profiles of hormones and local production of ovarian growth factors thereby influence reproductive function. I was appointed as lecturer in reproduction in 2006 at the RVC. In the new position, I have continued my research in the field of oocyte maturation and embryo development. In 2009, I was awarded a research grant to study the role of hyaluronan on embryo development and implantation in sheep.

5. Key technologies and tools

- In vitro oocyte maturation, fertilization and embryo culture
- Differential staining combined with TUNEL labeling for assessing embryo quality
- Immunohistochemical examination of protein expression in uterus and ovaries
- PCR and qPCR
- Western blot
- ELISA
- Radioimmionoassay for steroid hormones and prostaglandins
- HPLC for measuring hyaluronan in tissue extracts and culture media

6. Selected publications (max. 5)

1. Marei, WF; Wathes, DC; Fouladi-Nashta, AA (2009) The Effect of Linolenic Acid on Bovine Oocyte Maturation and Development. BIOLOGY OF REPRODUCTION, 81:1064-1072. .

2. Fouladi-Nashta, AA; Gutierrez, CG; Gong, JG, et al. (2007) Impact of dietary fatty acids on oocyte quality and development in lactating dairy cows. BIOLOGY OF REPRODUCTION 77: 9-17.

3. Fouladi-Nashta, AA; Campbell, KHS (2006) Dissociation of oocyte nuclear and cytoplasmic maturation by the addition of insulin in cultured bovine antral follicles. REPRODUCTION , 131: 449-460.

4. Fouladi-Nashta, AA; Jones, CJP; Nijjar, N, et al. (2005) Characterization of the uterine phenotype during the peri-implantation period for LIF-null, MF1 strain mice. DEVELOPMENTAL BIOLOGY, 281: 1-21.

5. Fouladi-Nashta, AA; Alberio, R; Kafi, M, et al (2005) .Differential staining combined with TUNEL labelling to detect apoptosis in preimplantation bovine embryos. REPRODUCTIVE BIOMEDICINE ONLINE 10: 497-502.