

1. Institution

Reproduction and Obstetrics Unit and Physiology and Developmental Biology Unit, Faculty of Veterinary Medicine, Avenida da Universidade Técnica, Alto da Ajuda, 1300-477 Lisboa, Portugal

2. Principal investigator and contact person

Luís Lopes da Costa, DVM, PhD, tenured full professor, chairman reproduction and obstetrics (lcosta@fmv.utl.pt)

3. Key personnel

José Robalo Silva, professor	jrobalo@fmv.utl.pt	Endocrinology, sperm technology
Luísa Mateus, associate professor	lmateus@fmv.utl.pt	Endocrinology, uterine function
Graça Ferreira Dias, associate professor	gmfdias@fmv.utl.pt	Uterine-ovarian relationships
António Duarte, associate professor	aduarte@fmv.utl.pt	Developmental biology, genomics
João Chagas e Silva, senior scientist	adnestorch@fmv.utl.pt	Reproductive technologies on farm
Patrícia Diniz, scientist	pdiniz@fmv.utl.pt	Gamete, embryo and cell technologies
Ana Torres, PhD student	anacatarinatorres@gmail.com	Gamete-embryo-cell interactions
Mariana Raposo, PhD student	mariana.r.batista@gmail.com	Gamete-embryo-cell interactions
Elisabete Silva, post-doc	elisabetesilva@fmv.utl.pt	Genomics, transcriptomics, proteomics

4. Research profile

The lab has three main research areas: a) the relationships between the embryo, uterus and ovary that are relevant to embryo survival, using in vitro and in vivo approaches in the cow, mare and mice models; b) the function of developmentally relevant genes in embryonic angiogenesis and in adult reproductive and placental neoangiogenesis, using the mice and cow models; and c) the relationships between the ovary and the uterus in the development of genital tract disease, using the mare, cow and bitch models.

5. Key technologies and tools

In vivo reproductive technologies – in vitro embryo production and manipulation – radioimmuno and immunoenzymatic assays - immunohistochemistry – flow cytometry and cell sorting – reproductive and embryonic stem cell culture - hybridisation in situ – real time and conventional PCR – microarrays.

6. Selected publications (max.5)

Duarte A, Hirashima M, Benedito R, Trindade A, Diniz P, Bekman E, Lopes da Costa L, Henrique D, Rossant J (2004). Dosage sensitive requirement for mouse *Dll4* in artery development. *Genes and Development* 18: 2474-2478.

Chagas e Silva J, Lopes da Costa L (2005). Luteotrophic influence of early bovine embryos and the relationship between plasma progesterone concentrations and embryo survival. *Theriogenology* 64:49-60.

Chagas e Silva J, Diniz P, Lopes da Costa L (2008). Luteotrophic effect, growth and survival of whole versus half embryos and, their relationship with plasma progesterone concentrations of recipient dairy heifers. *Animal Reproduction science* 104:18-27.

Trindade A, Kumar SR, Schemet JS, Lopes da Costa L, Becker J, Jiang W, Liu R, Parkash GS, Duarte A (2008). Overexpression of *Delta-like 4* induces arterialization and attenuates vessel formation in developing mouse embryos. *Blood*. *In Press*.

Roberto da Costa RP, Costa AS, Korzekwa A, Platek R, Siemieniuch M, Galvao A, Redmer DA, Robalo Silva J, Skarzynski DJ, Ferreira-Dias G. (2008) Actions of a nitric oxide donor on prostaglandins production and angiogenic activity in the equine endometrium. *Reproduction, Fertility & Development* 20:674-683.