

TITOLO DEL PROGETTO: Advanced Studies on Improving Sheep Fertility by Using Artificial Means of Reproduction

ACRONIMO: SHEEPREP

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PROGRAMMA: FP7-PEOPLE-2011-IRSES

PROJECT REFERENCE: 295137

CONTRIBUTO UNIONE EUROPEA: 197 700 €

CONTRIBUTO ASSEGNATO UNIMOL: 197 700 €

DURATA PROGETTO: 2 anni dal 01/01/2012 al 31/12/2013

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AREA SCIENTIFICA – KEY WORDS: Artificial insemination (AI) in livestock has made it possible to optimize reproduction efficiency. AI is undoubtedly the management technique that has most contributed to the genetic improvement of livestock in modern animal production. By

comparison to the other currently available preservation methods of semen, cryopreservation is an established industry used worldwide for performing AI, as it can preserve cells life indefinitely. The main disadvantage of semen cryopreservation is that freezing and thawing induce several forms of cellular lesions, which reduce dramatically the quality and subsequent fertilizing ability of the semen. Sperm motility, viability, membrane integrity and biochemical parameters are all routinely used tests to assess the quality of frozen-thawed semen. However, acceptable motility and viability of spermatozoa do not necessarily lead to acceptable conception rates. By this research project, we aim at increasing the conception rate in ewes following AI, by using frozen-thawed semen. In order to achieve this goal, we have the following objectives: to improve the freezing technologies, to evaluate the cytological and cryobiological indexes of the spermatozoa, to obtain accurate biochemical and electronmicroscopical profiles of the cryopreserved cells, and to test in vivo the efficiency of different preserving and AI technologies, on the cryobiological parameters and reproduction indexes.