**Maternal recognition of pregnancy**

In most domestic species, the establishment and maintenance of pregnancy require that the luteal phase of the oestrous cycle is prolonged by the persistence of a single corpus luteum (CL) or a number of corpora lutea (CLs). As a result of the persistence of the luteal tissue, progesterone concentrations remain elevated. This results in a negative feedback on the hypothalamus and anterior pituitary with a resultant inhibition of follicular development and ovulation and, in polyoestrous species, a prevention of return to oestrus . In many species, the placenta subsequently replaces or supplements the luteal source of progesterone. The presence of a viable, developing embryo(s), however, prevents the CL from regressing and thus, in polyoestrous species, inhibits the return to oestrus.

***The sheep***

In sheep , the conceptus produces a protein. It was named ovine trophoblast protein or oTP-1.This substance has been shown to be a type 1interferon, which together with the same substance produced by the bovine conceptus, is classified as a **tau interferon (IFN-τ)**. It is produced by the trophectoderm from about day 10, when the blastocyst starts to elongate. The effect of IFN-τ in the maternal recognition of pregnancy is to alter the dynamics of PGF2α secretion at this early stage of pregnancy, compared with the same stage of the oestrous cycle. IFN-τ prevents the rise in endometrial estrogen receptors which precedes the rise in endometrial oxytocin receptors ,which is necessary for the secretion of PGF2α.The consequence of this is that there is a reduction in the synthesis of PGF2α from arachidonic acid.

***The cow***

In the cow, the importance of the blastocyst in prolonging the life span of the CL., if the blastocyst was removed at day 17 or day19, the interestrus intervals were extended to 25and 26 days, respectively, compared with those in which the embryo was removed at day 13, or which were not mated; in the latter cases the intervals were 20–21 days. The anti luteolytic signal produced by the bovine conceptus is called bovine trophoblast protein (bTP-1) As in sheep, it is now classified as tau interferon (bIFN-τ), with maximum secretion occurring between days 16and 19 of gestation; it is first secreted at the time of elongation of the blastocyst and, unlike oIFN-τ, continues to be secreted until day 38 of gestation As in the ewe, It is likely that bIFN-τ exerts its anti luteolytic effect by modifying oxytocin receptors, there by inhibiting the synthesis from arachidonic acid and subsequent release of PGF2α.

***The goat c***

In the goat, the removal of conceptuses from the uterine lumen between days 13 and 15 does not prolong the life span of the CL, but removal on day 17 increases the inter oestrus interval by 7–10days. The caprine conceptus secretes a protein, originally designated cTP-1, which as in other ruminants is cIFN-τ .

***The mare***

In the mare, the mechanisms responsible for the recognition of pregnancy are less well understood. The importance of the migration of the conceptus within the uterine lumen until it becomes „fixed‟ at 16–18days of gestation at the base of the uterine horn has been demonstrated in some experiments. By restricting the mobility of the conceptus using ligatures at various parts of the uterus, the maternal recognition was compromised so that the CL regressed spontaneously. It is likely that the stimulus elicited by the migratory conceptus in its contact with the endometrium is comparable with the stimulus associated with the rapid elongation of the blastocyst in ruminants and the pig.