

Ability of three different antisera to recognize Pregnancy-Associated Glycoproteins in heifers during the first fifty days of gestation

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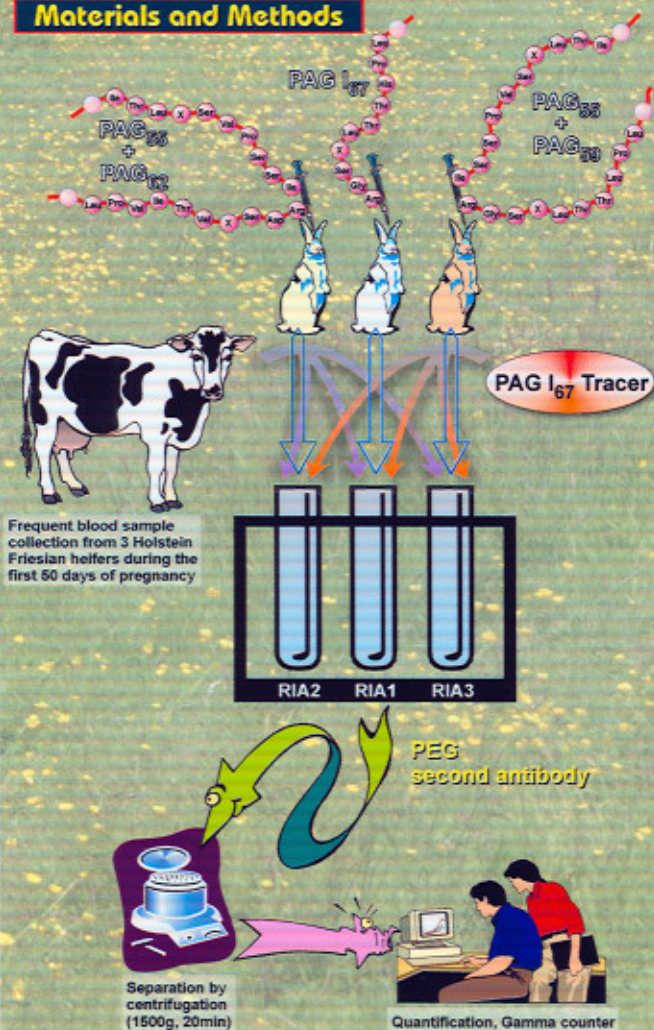
Introduction

- Glycoproteins related to pregnancy were isolated from the ruminant placenta during the last two decades: PSPB (Butler et al. 1982), PAG_{I67} (Zoli et al. 1991), PAG₅₅, PAG₅₉, PAG₆₂ (Garbayo et al. 1998).
- Pregnancy-associated glycoproteins (PAGs)
 - Acidic glycoproteins belonging to the aspartic proteinase family (Xie et al. 1991)
 - Some of the PAGs are expressed in the mono- and binucleate cells of the ungulate placenta, while others were localized only in the binucleate cells (spatial expression pattern) (Green et al. 2000)
 - During certain stages of pregnancy some PAGs were expressed, while others were absent. (temporal expression pattern) (Garbayo et al. 1999, Green et al. 2000)
 - Good markers of the fetoplacental function, they can be used for:
 - Pregnancy followup
 - Pregnancy diagnosis
 - Diagnosis of embryonic/fetal death, placental abnormalities
- Is it possible to detect PAGs secreted into the blood of pregnant heifers during different stages of pregnancy using antisera produced against the available PAG molecules?

Aim

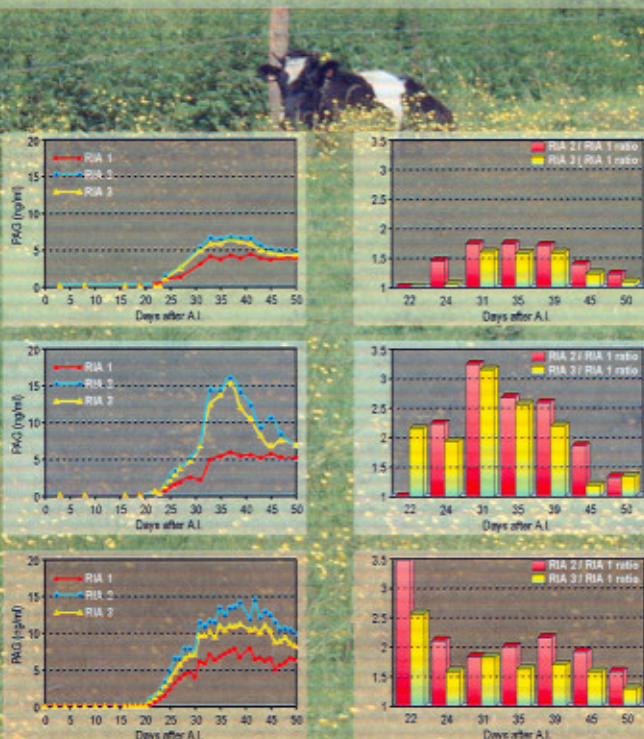
The aim of this experiment was to characterize the PAG profile of three heifers during the first 50 day period of pregnancy using three different antisera.

Materials and Methods



Results

- PAG molecules appear in the maternal circulation at around 19-22 days after AI
- Intensive increase till days 33-37
- Plateau in the profile of RIA 1, decrease in the profiles of RIA 2 and RIA 3 from days 35-40 till day 50
- Between days 21-31 and 39-50 high RIA 2/ RIA 1 and RIA 3/ RIA 1 ratios were observed



Conclusions

- Between days 21-31 and 39-50 PAG molecules non identical with PAG_{I67} are secreted into the maternal blood
- RIA 2 and RIA 3 are able to better recognize the PAG molecules secreted into the maternal blood early after insemination

Perspectives

- Purification of PAGs different than PAG_{I67} till homogeneity from early stage (21-50 day-old) placenta
- Development of homologous RIA systems for the detection of these molecules
- Stage specific pregnancy detection, with increased efficiency using PAG RIA systems, diminishes problems concerning the slow elimination of the only known bovine PAG after parturition

References

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