COMPARISON OF NATIVE AND INHERITED IMMUNOGLOBULINS IN RABBITS IMMUNIZED AGAINST BOVINE PREGNANCY-ASSOCIATED GLYCOPROTEIN-1 (boPAG-1)

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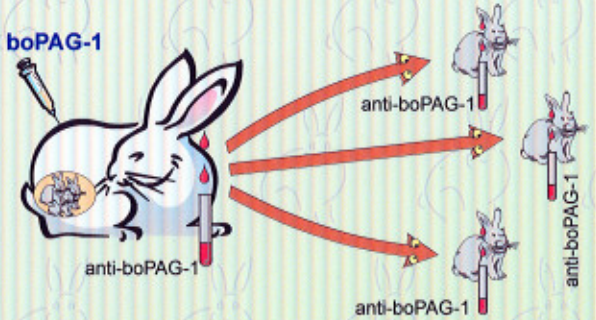
Abstract



Antibodies against Pregnancy-Associated Glycoproteins (PAGs) have been produced in rabbits and used in RIA methods for pregnancy diagnosis and to monitor feto-placental well being in ruminant species. In mammals, immunoglobulins are transferred from the mother to the fetus during gestation (via the placenta) and/or around parturition (via the colostrum). The aim of this study was to compare the properties of immunoglobulins against bovine PAG-1 (boPAG-1) in the sera of one previously immunized female rabbit and its newborns (n=3). Blood samples were collected 35 days after parturition. Sera were sequentially diluted to determine the optimal titers, then they were compared in the classical RIA using boPAG-1 as standard and tracer. The titer was higher in the maternal sera (1:400 000) and similar between does (1:1000, 1:2000 and 1:3000 for rabbits 747, 748 and 749, respectively). The binding rate varied between 23% and 36%. Standard curve profiles and other parameters (slope, ED-20, ED-50 and ED-80) were very similar when maternal and kid antisera were used. In conclusion, the inherited immunoglobulins keep their properties to bind a pure preparation of boPAG-1 after transfer to the does.

Aim

The aim of this study was to compare the properties of rabbit immunoglobulins against boPAG-1 in the sera of one immunized female and its newborns.

Introduction

- Animal of choice for production of polyclonal antibodies;
- Passive transfer of maternal antibodies to the fetus/newborn occurs either during pregnancy (across the yolk sac membrane) and after parturition (by colostrum consumption);
- Antibodies against pregnancy-associated glycoprotein (PAGs) are raised in rabbits and used in RIA methods for pregnancy diagnosis and to monitor feto-placental well-being in ruminant species;
- Capacity of inherited immunoglobulins against bovine PAG-1 (boPAG-1) to bind a pure preparation of boPAG-1 in a radioimmunoassay (RIA) has never been tested.

Materials & Methods

- Blood samples were collected 35 days after parturition from one previously immunized female and its newborns (n = 3);
- Maternal (rabbit 736) and newborn (rabbits 747, 748 and 749) sera were sequentially diluted to determine the optimal titers;
- Diluted antisera were compared in a classical boPAG-1 RIA (boPAG-1 as standard and tracer).

Results

Table 1 - RIA parameters of native and inherited immunoglobulins against boPAG-1.

Antiserum	Binding rate	Estimated Dose		
		B/Bo = 20%	B/Bo = 50%	B/Bo = 80%
AS # 736	0.24	3.015	0.769	0.196
AS # 747	0.36	4.814	1.613	0.540
AS # 748	0.26	4.462	1.161	0.302
AS # 749	0.23	3.522	0.754	0.161

Results (cont')

The titrer was higher in maternal serum (1:400 000) and similar between does (1:1 000, 1:2 000, and 1:3 000 for rabbits 747, 748, and 749 respectively).

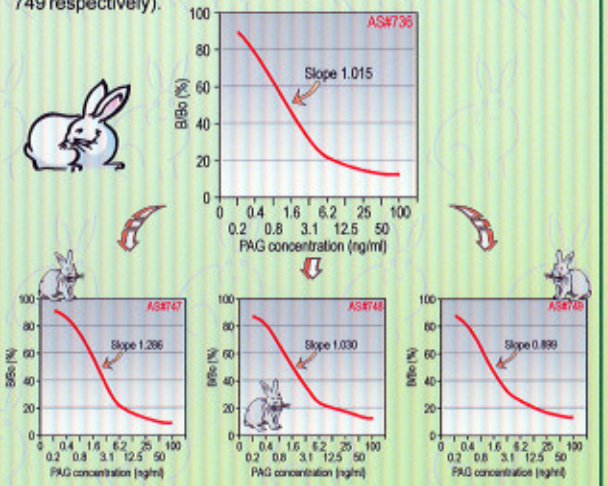


Figure 1 - Standard curves with use of maternal (AS#736) and newborn (AS# 747, 748, and 749) antisera against boPAG-1.

Conclusions

- In conclusion, the inherited immunoglobulins keep their properties to bind a pure preparation of boPAG-1 after transfer to the does.
- The slight differences observed among does may be due to the proportion of the different classes of immunoglobulins inherited through the placenta and colostrum.

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