

ABSTRACT

THE ROLE OF INSULIN LIKE GROWTH FACTOR – I COMPLEX OF GOAT SEMINAL PLASM TO THE BIOLOGICAL POTENCY OF SPERM POST CENTRIFUGATION

The objective of this research was to analyzed the role of Insulin Like Growth Factor–I Complex of goat seminal plasm against the biological potency of sperm post centrifugation. This research consisted of two phase. The first phase was explorative laboratory experiment concerned with identification, isolation and characterization of Insulin Like Growth Factor–I Complex of goat seminal plasm by using gel Native Poly acrylamid gel electroforesis. Results of gel Native PAGE indicated that of goat seminal plasm with Comassie blue stain consisted of seven bands but with Glicoprotein stain consisted of nine bands. Running repeat resulted of the first band protein sample of goat seminal plasm with molecular weight 150,288 kDa. Biochemichal characterization of carbohydrate content of Insulin Like Growth Factor – I Complex was equal to 1,742 µg/ml. Result of Western Blot indicated that molecule of IGF- I Complex of goat seminal plasm to bound specific with anti IGF-I Complex at protein ribbon. Result of imunofluorescen indicated that protein IGF-I Complex could recognize membrane plasm at the part of head of goat sperm.

The second phase concerned with the role of IGF-I Complex to the biological potency of post centrifugation sperm. Medium supplementation with BO, BO+IGF-I Complex and IGF-I Complex were supplemented to sperm post centrifugation to show the significantly different ($p<0,05$) of the percentage of motility, viability, intact of plasm membrane, intact of acrosomal cap, capacitation, reaction of acrosome and level of malondialdehide (MDA) at incubation for 30 minutes and also 60 minutes. Duncan test indicated that the best medium was IGF-I Complex. Correlation test indicated that there were correlation between percentage of intact plasm membrane of sperm with motility of sperm, between percentage of intact plasm membrane of sperm with viability of sperm and between correlation MDA level with percentage of intact plasm membrane of sperm.

From results above can be concluded that protein of IGF- I Complex can improve the quality of goat sperm post centrifugation and furthermore it is suggested to experiment of IGF- I Complex used for the process of in vitro fertilization and also for process of frozen semen production.

Key word :

- goat seminal plasm
- IGF-I Complex
- capacitation
- acrosom reaction
- malondialdehyd