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## DIFFERENTIAL PROTEIN PATTERN IN CERVICAL MUCUS AND BLOOD SERUM OF NORMAL FERTILE AND REPEAT BREEDER KANKREJ CATTLE

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### ABSTRACT

The cervical mucus and blood serum of normal fertile (n=10) and repeat breeder (n=20) Kankrej cattle revealed 8 to 10 protein bands by SDS-PAGE. The cervical mucus of repeat breeder cattle contained proteins of comparatively higher molecular weight than their normal fertile counterparts, whereas, the serum of normal fertile cattle contained proteins of higher molecular weight than the repeat breeder Kankrej cattle.

**Keywords:** Blood serum, Cattle, Cervical Mucus, Repeat breeder, SDS-PAGE

Cervical mucus secreted by the cells of endocervix play a vital role in the breeding efficiency of cattle by providing an immediate nourishing and protective environment to spermatozoa (Sharma and Tripathi, 1987). The different fractions of total proteins in cervical mucus and serum may vary in animals of abnormal reproductive activity. Thus, the present study attempted to find out the protein pattern in cervical mucus and serum of normal and repeat breeder Kankrej cattle.

Thirty apparently healthy female Kankrej cattle with normal reproductive tract, clear cervical discharge and showing regular cyclicity were categorized into normal fertile (n=10) and repeat breeder (n=20) group. Estrual cervical mucus was collected aseptically by per rectal manipulation of cervix and the collected mucus samples were transferred into a clean, dry and sterilized glass vial. The jugular vein blood samples were collected aseptically in sterilized glass vial, serum was separated and samples were stored at -20°C. In case of thin and thick mucus samples, respective dilution up to 1:3 and 1:8 was made with triple glass distilled

water using vortex machine. The sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE) of serum and cervical mucus was carried out in 10% separating gel using discontinuous system of electrophoresis. Total proteins in serum and cervical mucus samples were determined using a kit through biuret method.

The protein fractionation pattern revealed 8 to 10 protein bands in cervical mucus and blood serum of normal and repeat breeder Kankrej cattle (Table). A previous study reported only two protein bands by SDS-PAGE (Sharma and Tripathi, 1986). Furthermore, the protein pattern analysis of cervical mucus suggested comparatively higher molecular weight proteins in repeat breeder as compared to normal fertile Kankrej cattle (Table). Moreover, one to two extra protein bands were revealed in the blood serum as well as cervical mucus of repeat breeder Kankrej cattle (Table). In brief, the blood serum of normal fertile Kankrej cattle had higher molecular weight proteins but more number of protein fractions were recorded in the blood serum of repeat breeder cattle. However, in the cervical mucus, the molecular weight trend was opposite between normal and repeat breeder cattle.

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**Table 1: Protein pattern (SDS-PAGE) in cervical mucus and blood serum of normal fertile and repeat breeder Kankrej cattle**

No.	Cervical mucus		Molecular weight marker	Blood serum	
	Normal fertile cattle	Repeat breeder		Normal fertile cattle	Repeat breeder
1	141	176	225	216	199
2	49	145	150	184	164
3	32	46	100	127	87
4	24	31	75	58	57
5	19	25	50	30	31
6	16	20	35	18	21
7	15	19	25	15	19
8	13	14	15	13	18
9	-	12	10	-	13
10	-	-	-	-	11

#### REFERENCES

Sharma, V.K. and Tripathi, S.S. (1987). Physio-chemical properties of cervical mucus in relation to conception in normal and repeat breeding crossbred cows. *Ind. J. Anim. Reprod.*, **8**: 39-42.