

THE PREVALENCE OF THE GENES RESPONSIBLE FOR BOVINE LEUKOCYTE ADHESION DEFICIENCY IN DAIRY CATTLE

A.M. Shalabayeva, T.Y. Yechshzhanov, S.A. Zhamaliyeva
e-mail: aidaoka@mail.ru

L.N. Gumilyov Eurasian National University, Astana, Kazakhstan

According to the assignment of President of the Republic of Kazakhstan, 80% of dairy products in markets should consist of domestic products. Therefore, it is important to increase livestock production and productivity.

Today, there are more than 6000 American Holstein cattle in Kostanay region. When they reach 16-17 months and 380-400 kg in weight intensive technology method is used in order to breed them. This technology allows to fertilize the young breeders and to increase the production of well-bred cattle and thus gives profitable economic opportunity [1].

Since the second half of XX-th century, Holstein cattle breed has been used widely across the world. The breed is used not only for meat production but also for the improvement of milk quality. In order to increase the selective breeding the use of the breed resources is important. In many countries, there are wide gene resources of breed to increase breeders for milk.

The use of increased the production of cattle in Kazakhstan. In Russia, more than 5000 kg of milk products of well-bred cattle are obtained only from Holstein cattle. Therefore, in the case of Kazakhstan Holstein breeders also increases the milk products.

Black and Wight Holstein Friesians are known the world's highest-production dairy animals. The increase of breeders by new reproduction methods will lead to widely spread of genetic defects.

DNA-markers give opportunity to detect the productivity and genetic disorder genes. The screening of well-bred products is very important today. This allows to identify the hereditary diseases in cattle [3].

Bovine leukocyte adhesion deficiency (BLAD) is a hereditary disease in *Holstein* dairy cattle. The gene which is responsible for this disease has a recessive inheritance. This monogenic disease is found only in homozygotes. The symptoms of disease include wounds around mouth, gingivitis, long catarrh of the lungs, and deficiency of wound recovery mechanisms, anorexia, prolonged dermatitis, and diarrhea.

The disease is caused by a missense point mutation, where adenine substitutes guanine at position 383 in the CD18 gene, resulting in a substitution of aspartic acid by glycine at position 128 (D128G)[4].

This kind of genetic mutation may lead to physiological disorders stated above. So, bovine leukocyte adhesion deficiency in black cattle reduces the productivity and fitness. Therefore, it is important for producers to find the genetic methods that detect BLAD (Bovine Leukocyte Adhesion Deficiency) mutation transporters.

According to above information, it is clear that well-bred cattle in the territory of the Republic of Kazakhstan should be tested genetically for BLAD by polymerase chain reaction.

References

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