

Leukocyte Virus And Immunological Response Of The Body**Boutaev Makhmud Qarshievich**

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Received: March 22, 2024; Accepted: Apr 29, 2024; Published: May 22, 2024;

Abstract: This study examined the immunological condition of cattle infected with spontaneous leukosis. Specifically, it compared the levels of immunoglobulins in cattle infected with leukosis viruses from three different genera to those in healthy cattle. The moles in the experiment were vaccinated against protein illness to artificially stimulate their immune response. Significant alterations were noted in IgG2, and it was discovered that the distinction between breeds was hindered

Keywords: Cattle Leukosis Virus, Oncornavirus, Igg2, Immunoglobulins, Antigen, Rid+, Rid -, Cattle Breeds, Bushuev, Schwysted, Black-Ola, Imundepressive State, Biochemical Analysis, Dynamics Of The Amount Of Immunoglobulins.

This is an open-access article under the [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) license**Introduction**

. During the course of development, humans and animals have developed a defense mechanism to protect against the harmful effects of several types of disease-causing microbes. Immunoglobulins are one of the components of the Chimo system. Immunoglobulins serve as a measure of the body's humoral immunity, indicating the level of protection against external factors such as diseases, foreign organisms, and chemicals. Immunoglobulins, which are composed of proteins, are present in blood plasma and serum. Immunoglobulins can be described as antibodies that counteract cells. The primary role of antibodies is to identify and neutralize foreign agents, such as antigens, to prevent injury. Cattle leukosis is a chronic viral disease caused by a kind of oncornavirus that leads to the development of neoplastic irreversible alterations and tumors in the bodies of affected animals. Scientists hypothesize that oncornavirus can have varying impacts on the body, including depression, immunocompromisation, and little alteration in certain circumstances (2, 3, 7, 9). An experimental investigation examining the immune response to foreign antigens derived from oncovirus-induced damage in both healthy and affected animals was conducted to provide some degree of clarification. This work holds potential significance. Based on the findings of this experiment, we obtained further insights into the levels of immunoglobulin content in the cow breed, as well as the impact of oncornavirus infection, which may lead to a potential condition of depression in the body.

Furthermore, oncornavirus type S gradually manifests within the animal's body over time, and in certain instances (ranging from 5-25%), it progresses to the hematological and final phases of the disease. Frequently, though, clinical or hematological indications are not evident (75-95%), and the animal might remain healthy throughout its productive lifespan. In our perspective, the

immunological state has a significant position in these instances. Research indicates that specific viruses have detrimental effects on the body, compromising the immune system and facilitating the proliferation of other microbes, in addition to their harmful nature. An immunodeficiency condition refers to such conditions. The literature (1, 2, 5, 6, 8, 9) acknowledges the potential association between comparable cattle and the leukosis virus.

Analysis of literary works. As per the International Classification, whey proteins, which contain "antibodies" and were previously referred to as gamma-globules, are now recognized as immunoglobulins and are represented by the symbol Ig. Immunoglobulins in animal or human organisms are primarily categorized into five classes: IgD, IgE, IgM, IgG, and IgA. They vary in terms of their weight, structure, and the functions they carry out (3,4,7). IgD lacks diagnostic significance. Detected in minute quantities in serum (less than 1%). Immunoglobulin IgD principally functions in the activation of V-lymphocytes and partially serves to supplement or substitute IDM with its functional role.

IgE is involved in allergic reactions and is utilized for the identification of specific helminth infections. Immunoglobulin IgE is exclusively present in mammals and has been identified in minimal quantities in plasma.

When assessing the condition of the immune system, the presence of immunoglobulins IgM, IgG, and IgA is crucial for immunological development and diagnosis (3,7). IgM is the initial antibody to be generated in response to an infection in animals. Immunoglobulin IgM is produced by V-lymphocytes. They constitute 5-10% of the total immunoglobulin levels in the bloodstream. IgM is regarded as a marker for the initial stage of infection, exhibiting a significant rise within the first few days of the infection and persisting for 3-4 weeks. Subsequently, the concentration of IgM drops while IgG takes over as the primary antibody (3,4, 7).

IgG is an immunoglobulin that plays a crucial role in the fundamental immune response, enhances immunological resilience, and provides long-term protection against recurring harm. The quantity of it constitutes 70-80% of the overall immunoglobulin content. Immunoglobulin IgG can persist in the body for an extended period by undergoing replication within a few weeks following injury or vaccination. It plays a crucial role in the development of humoral immunity. The principle of immunity provides the foundation for the idea of vaccine prophylaxis. IgG immunoglobulins are also produced by V-lymphocytes. Within the animal kingdom, the immunoglobulin G (IgG) is further categorized into two subclasses known as IgG1 and IgG2 (3,4). IgA is primarily produced in the mucous membranes of the body, with its major function being to protect the respiratory system, stomach, and intestines. Its role is to safeguard the mucous membranes of these organs by preventing the attachment of foreign substances to them. The quantity of IgA constitutes 15-20% of the overall quantity of globulins (7).-

Methods

The animal body's capacity to generate antibodies against certain antigens is mostly utilized in immunological responses, diagnostic investigations, and assessing the overall immune status. These antibodies are identified through specific reactions. This article presents the findings of a comparative

investigation on the levels of immunoglobulins in moles of three different genera, both infected with oncornavirus and healthy (identified by Rid).

Out of the experimental har breed, 20 cattle were given, with 10 being damaged Reed+ and 10 being healthy Reed-. Among these groups, the first and second groups, known as The Black-grey breed, have been identified by experts as the third most resistant breeds of onkornavirus, based on early research conducted by Guru-the Bushuev and the shvisized breeds. The hemoglobin content, erythrocyte count, and leukocyte count in all the blood samples acquired from the participants in the experiment were within the normal range for physiological conditions. The trials were conducted during the peak of the immunological state, specifically in August, when storage conditions and feeding ratio were consistent.

To assess the immunological status of the cattle in the experiment and evaluate their immune response to a foreign antigen, the cows were administered a universal protein vaccination the day prior. Immunological tests were conducted on the animals in the experiment, both before and after vaccination, at 10-day intervals for a duration of one month. Blood samples were taken during these tests. The blood extraction and exams were conducted in full adherence to the standard procedures followed for general admission. Immunoglobulins were quantified using the modified Lowry technique to determine the amounts of IgG1, IgG2, and IgM. The data were statistically analyzed and presented using the mean value, which is statistically significant.

Results and Discussion

The match results demonstrated that oncornavirus can be induced by other viruses, including igg1 and IgM. However, several research have indicated that igg2 has lower activity compared to igg1. Consequently, these outcomes were invalidated. As a result, immunoglobulin IgG2 has emerged as a highly potent anticancer medication. The quantity of immunoglobulin IgG2 is displayed in Table 1 and the accompanying graphic.

The concentration of IgG2 in urine (mg/ml) Table 1

N o	The breeds of livestock	numb er of heads	Results of RID	Before vaccination	After 10 days	After 20 days	After 30 days
1	Bushuev breed	10	RID-	15,52±0,80 (100%)	18,70±1,39 (121,06%)	19,12±1,25 (123,20%)	16,92±1,10 (109,02%)
2	Schwysla chg.breed	10	RID -	19,66±0,69 (100%)	18,85±0,95 (95,88%)	20,83±0,92 (106,27%)	19,44±0,51 (99,18%)
3	Black- grey breed	10	RID -	16,70±1,36 (100%)	18,00±1,31 (107,78%)	18,59±0,92 (111,32%)	20,78±1,35 (124,43%)
4	Bushuev breed	10	RID +	16,36±0,90 (100%)	18,18±1,05 (111,12%)	17,79±0,58 (108,74%)	17,14±1,15 (104,76%)

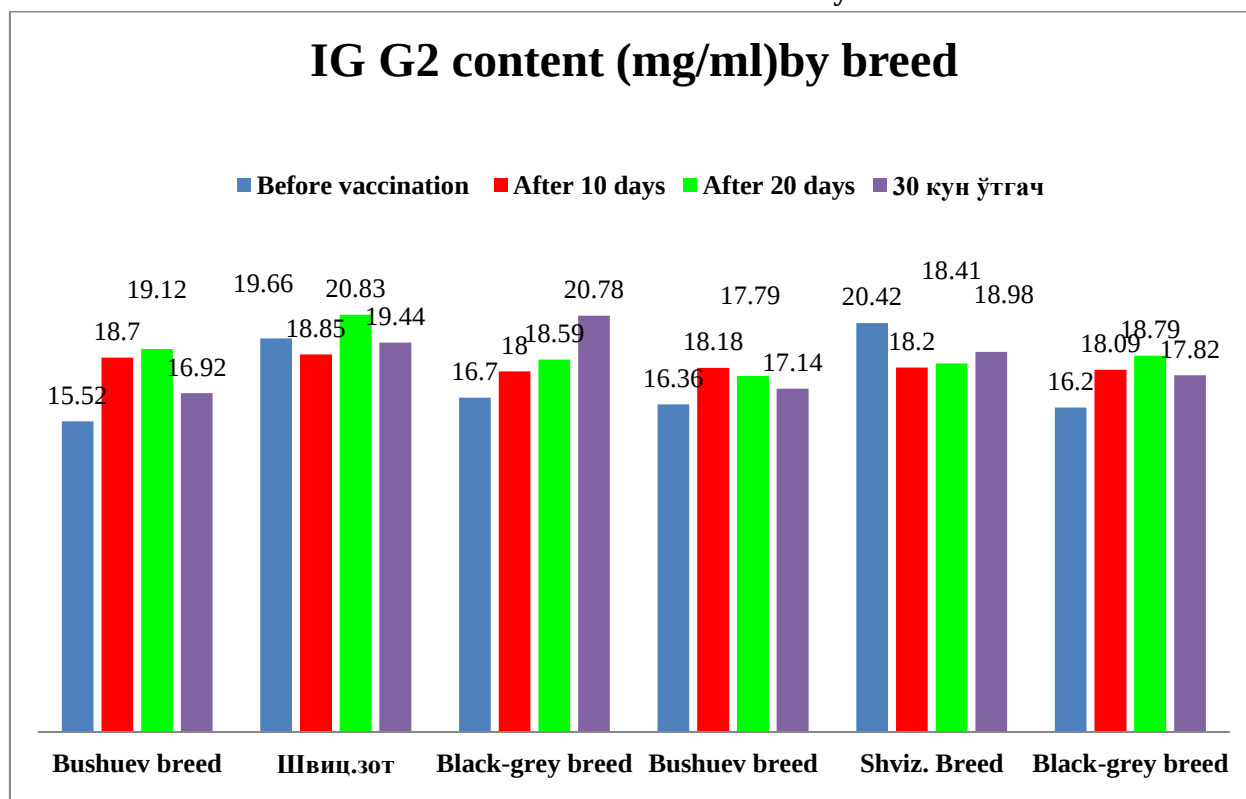
5	Schwysla chg.breed	10	RID +	20,42±1,14 (100%)	18,20±0,30 (89,13%)	18,41±1,13 (90,16%)	18,98±2,63 (92,95%)
6	Black- grey breed	10	RID +	16,20±1,36 (100%)	18,09±1,20 (111,67%)	18,79±1,30 (115,99%)	17,82±0,68 (110,00%)

Distinct breed variation was detected in the immunological response of bornavirus-free moles to the vaccine, specifically in the classic form Bushuev and Black-grey breed moles. The immunoglobulin content in the Bushuev breed was measured before vaccination and found to be 15.52 ± 0.80 mg/ml (100%). After 10 days, this value increased to 18.70 ± 1.39 mg/ml (120.49%), and after 20 days it further increased to 19.12 ± 1.25 mg/ml (123.20%). After 30 days, the immunoglobulin content decreased to 16.92 ± 1.10 mg/ml (109.02%). These changes in immunoglobulin content were statistically significant. The levels of indicators in Black-grey breed moles were pre-inoculated at 16.70 ± 1.36 mg/ml (100%). After 10 days, the levels increased to 18.00 ± 1.31 mg/ml (107.78%). After 20 days, the levels further increased to 18.59 ± 0.92 mg/ml (111.32%). Finally, after 30 days, the levels reached 20.78 ± 1.35 mg/ml (124.43%). In swivel moles, the level of immunoglobulin IgG2 remained quite stable, with no change observed even after vaccination and before vaccination. There was even a little drop in the quantity of IgG2, as indicated in Table No. 1. Based on the data, it can be inferred that the immune response of leukocyte virus holi Bushuev and Black-grey breed cattle yielded the anticipated outcome. It is important to mention that visited moles have a significantly higher concentration of immunoglobulin IgG2 compared to Bushuev and Black-grey moles. However, this high IgG2 content does not correspond to a strong immunological response. For instance, before vaccination, the Bushuev breed exhibited an IgG2 concentration of 15.52 ± 0.80 mg/ml (100%). In contrast, the schwysened breed had a concentration of 19.66 ± 0.69 mg/ml or 126.68% in the bull. The Black-grey breed Molla had a concentration of 16.70 ± 1.36 mg/ml, while the schwisized breed had a concentration of 19.66 ± 0.69 mg/ml, resulting in a 120.17% increase compared to the Black-grey breed. The indicators in the table suggest that a thorough investigation should be conducted to determine whether there is a correlation between the breeds of healthy cattle that are free of oncornavirus and the immunological response to foreign antigens, as well as the underlying reason.

The levels of Immunoglobulin IgG2 in moles infected with onkornavirus were described with clear indications. In this instance, the Bushuev and Black-grey breeds exhibited similar indications, with a comparatively lower immune response compared to healthy cattle of the same breed (Table No. 1). The growth rate of the immune response in the Bushuev breed was observed to be 111.12% after 10 days of vaccination, 108.74% after 20 days, and 104.76% after 30 days. The growth rate of the indicator in Black-grey breed cattle was 111.67%, 115.99%, and 110.00% respectively. In Schwysted cattle, the hemoglobin levels were shown to increase significantly following immunization, reaching 89.13%, 90.16%, and 92.95%. Evidence indicates that cattle infected with the leukosis virus exhibited an immunological response to foreign antigens that was half as strong as that of healthy cattle. This can be viewed as an immunosuppressive state.

Table No. 1 contains the most intriguing facts regarding the quantity of IgG2. These statistics were used to create a diagram, resulting in the manifestation of the following graph.

Diagram illustrating the distinguishing characteristics between moles infected with oncornavirus and moles that are healthy.



RID-

RID-

RID-

RID+

RID+

RID

The diagram illustrates that the Bushuev breed displayed a proportional increase in response to the antigen in healthy moles compared to IgG2 levels before vaccination. This increase was almost equal to the causative agent before vaccination within 30 days. Conversely, the growth rate of IgG2 levels in cattle infected with the leukosis virus slowed down. On the other hand, the IgG2 levels in both healthy and infected cattle of the specified breed remained virtually unchanged, with a decline. The causative agent had the highest occurrence rate (124.43%) in the healthy group (RID-) of Black-grey moles, suggesting a typical immune response. In the RID+ moles of the same breed, the growth rate of IgG2 was only 110.0% to 115.12%, indicating that the growth indicators, relative to RID-, were 1.5-2 times lower. We consider these changes to be crucial due to the documented impact of oncornavirus on the immune system, particularly in cattle of the Black-grey breed. Oncornavirus can induce an immunosuppressive state in infected animals. Additionally, the Bushuev and Schwysted breed moles contribute to less pronounced hematological or terminal stages of leukemia, which suggests a higher resistance of the immune system to the virus. Therefore, we propose that selection efforts prioritize individuals and breeds with a greater level of resistance to various diseases. -spasi-

Conclusion

1. Based on the findings, there are variations in immunoglobulin levels among different breeds. The concept of endurance within different breeds necessitates a more thorough examination. Furthermore, it was revealed that oncornavirus had an affinity for a certain species of moles, leading to the development of an immunodepressive condition.
2. Research has not demonstrated a stronger immune response in Bushuev and shvising breeds, which are considered reasonably resistant to onkrnavirus, compared to the moil black-ola breed. Therefore, under its original circumstances, the concept of relative resilience implies a reliance on another component.
3. There is a distinct disparity in the immunological response between black-ola cattle that are infected with oncornavirus and healthy cattle, indicating that oncornavirus is the primary cause of the infection. Thus, it is conceivable that the virus can induce the formation of an immunodepressive state throughout this phase..

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