

# KOGLUMET

THE GUARDIAN OF HEALTH



IMMUNOMADULATOR

ANTIVIRAL  
DRUG

ab(Bio)om

A.B.-BIOKOM



# KOGLUMET

**A DRUG WITH EXPRESSED IMMUNOMODULATING, ANTI-VIRAL, ANTI-MICROBIAL AND ANTI-PARASITIC PROPERTIES, THE MECHANISM OF ACTION OF WHICH IS BASED ON THE RESTORATION AND EFFECTIVE MOBILIZATION OF THE ORGANISM'S NATURAL PROTECTIVE FUNCTIONS**

**KOGLUMET** is a hydroxo complex of the vital microelement cobalt with natural biologically active substances – glutamic acid and vitamin U.

## INDICATIONS FOR USE

### Koglumet as an immunomodulatory agent:

- Secondary immunodeficiency states: acute, chronic relapsing infections and infectious-inflammatory diseases;
- Skin diseases: psoriasis, allergic dermatosis, herpes zoster;
- Urogenital infections of viral, bacterial and fungal etiology, chronic urethritis ureomycoplasmic etiology, colpitis and chronic endocervicitis of mycotic etiology, bacterial vaginosis, chronic urethritis of chlamydial- bacterial etiology and etc.

### Koglumet as an antiviral (forming a cytokine) agent:

- Etiology of parasitic diseases, toxoplasmosis, clamidiosis;
- Chronic hepatitis B, C;
- CMV ;
- Herpes ;
- HIV infection and AIDS ;

## METHOD OF APPLICATION AND DOSAGE.

To be consumed orally. The drug is prescribed as monotherapy or as part of complimentary therapy, should be taken 30-60 minutes before a meal, according to the scheme depending on the nosologic form of disease.

As an immunomodulatory agent	Dosage	Cure
Secondary immunodeficiency states: acute, chronic relapsing infections and infectious-inflammatory diseases	1 tablet 2-3 times a day	10-15 days
Skin diseases: psoriasis, allergic dermatosis, herpes zoster	1 tablet 2-3 times a day	14 days
Urogenital infections of viral, bacterial and fungal etiology, chronic urethritis ureomycoplasmic etiology, colpitis and chronic endocervicitis of mycotic etiology, bacterial vaginosis, chronic urethritis of chlamydial-bacterial etiology and etc	1 tablet 2-3 times a day	14 days
As an antiviral (forming a cytokine) agent	Dosage	Cure
Chronic hepatitis B and C	1 tablet 2-3 times a day	Up to 2 month
For chronic intracellular infections (TORCH-infections): cytomegalovirus, herpes (herpes simplex and herpes zoster), toxoplasmosis, and clamidiosis	1 tablet 2-3 times a day	Up to 1 month
It is used in all stages of HIV infection. In the initial stages of HIV infection, Koglumet is used as a monotherapy drug. Patients with a progressive stage of HIV infection and with mixed infections such as "HIV/Tuberculosis" or "Tuberculosis/HIV", Koglumet should be used in combination with ARVT drugs.	1 tablet 2 times a day; With concomitant liver diseases, Anemias and tuberculosis: 1 tablet 3 times a day	Not less than 6 month, interval between the courses of treatment-no more than 3 month

\* - If necessary, the cure can be extended or prescribed iteratively. The break between the courses is not more than 1 month.

**SIDE EFFECTS.** The drug is transferred well. Any side effects are not revealed.

**CONTRAINDICATIONS.** Increased sensitivity to the components of the drug.

**DRUG INTERACTIONS.** The phenomena of incompatibility of Koglumet with drugs of basic therapy was not detected.



## IMMUNOMODULATING PROPERTIES OF KOGLUMET

- Koglumet has a pronounced immunomodulating effect. Under its influence, an effective and high immunological response is achieved in a short time. (Fig. 1)
- The drug under various immunopathological conditions has a stimulating effect on the proliferation of stem cells, from which all of the elements of the hematopoietic and immune system. (Fig. 2)

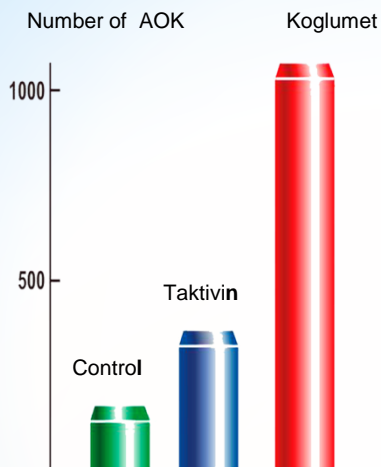


Fig 1. Koglumet's influence on the number of antibody-producing cells on the spleen

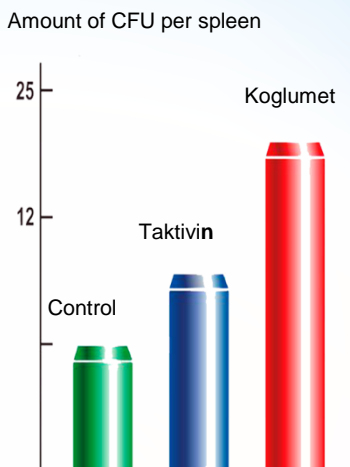


Fig 2. Influence of Koglumet on stem cell proliferation. (CFU-Colony Forming Units)

- Koglumet displays the properties of an inducer of a mixed immune response: in relatively mild forms of immunodeficiency under the influence of the drug, activation of cellular immunity (Th1 type) prevails; and in comparatively more severe forms, humoral type (Th2) of the immune response is activated to a greater extent.
- Under the influence of the drug, the number of lymphocytes significantly increases as markers of activation of the growth of immunocompetent cells.
- Koglumet has a stimulating effect on the intracellular processes occurring in immunocytes, and thereby contributes to the rapid maturation and the synthesis of specific receptor molecules.

## USE OF KOGLUMET IN TREATMENT OF PSORIASIS

- The inclusion of Koglumet in the complex of treatment of patients with psoriasis leads to an earlier and more effective resolution of skin process. (Fig. 3)
- Under the influence of the drug, the appearance of new elements of the rash, their peripheral growth and the intensity of itch are intensively reduced and stopped early terms from the start of the treatment.



a

b

Fig 3. Patient X. 14 years old. Psoriasis en plaque. (a-before the treatment; b- after the complex therapy with Koglumet)

- The drug completely restores the antitoxic function of the liver and normalizes a number of indicators of the immune system, which are important in the development and course of psoriasis. At the same time, the immunologic effect of Koglumet is manifested primarily through its modulating influence on the levels of CD3+ - T-lymphocytes, CD4+ - T-helpers and CD8+ - T-suppressors.
- Under the influence of Koglumet, the period of remission of the disease is significantly prolonged.
- Important properties of Koglumet in psoriasis are also include its pronounced antioxidant, regenerative activity.

## ANTIVIRAL PROPERTIES OF KOGLUMET

- The drug has a high stimulating effect on the process of cooperation of T- and B-lymphocytes and thereby promotes to the effective production of antibody-producing cells (Fig. 4). As a result, the organism's ability fight with various infections, including viruses, increases.
- The antiviral properties of Koglumet are also due to its high interferon (IF) inducing activity. Under its influence, the synthesis of "early" (within no more than 12 hours) and prolonged interferon is observed, which significantly distinguishes it from other low-molecular IF inducers (Fig. 5).

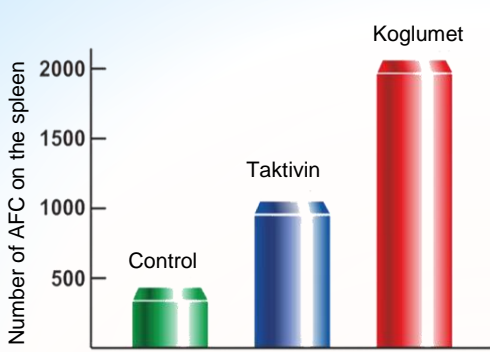


Fig 4. Koglumet's influence on the cooperative of T and B lymphocyte in the immune response

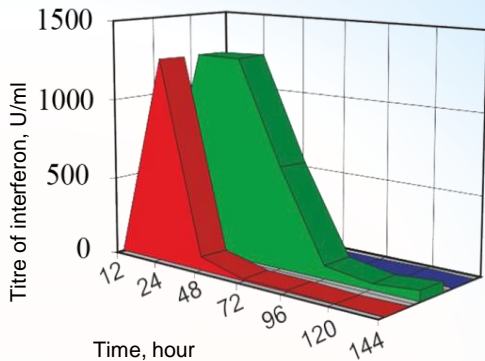


Fig 5. Dynamics of the influence of Koglumet (green) and Amiksin (red) on IF products with their one-time use

- Koglumet, through the mechanism interleukine induction, promotes the growth and differentiation of B-lymphocytes, activates macrophages, T-lymphocytes, induces the production of immunoglobulins of certain classes.

## USE OF KOGLUMET IN TREATMENT OF TORCH-INFECTIONS

- Koglumet, in a short period of time, promotes the formation of an adequate antiviral, antiparasitic, antimicrobial response of the body through the mechanisms of normalization of almost all parameters of the immune system of patients, which is important in chronic infections including TORCH infections.

### TOXOPLASMOSIS

- The inclusion of Koglumet in the complex therapy of patients with toxoplasmosis contributes to a decrease in the serum positivity rate (specific IgG ELISA results) by almost 2 times (Fig. 6), which indicates that a significant decrease in the antigenic load in the body of the sick.

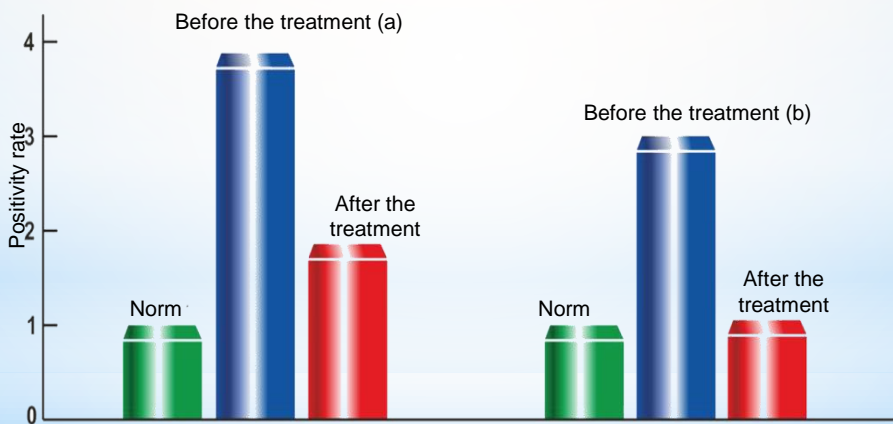


Fig 6. The influence of Koglumet on the first 10 days of its use in toxoplasmosis (a) and chlamydia (b)

- The use of Koglumet in the complex therapy of acute toxoplasmosis helps to prevent the negative effects of antibiotic and chemotherapy.

### CYTOMEGALOVIRUS

- The use of Koglumet in the treatment of CMV infection simultaneously achieves both high antiviral and immunomodulatory effects. This creates the possibility of preventing complications of the disease (hepatitis, encephalitis, etc.).
- Patients with CMV infection, the appointment of Koglumet in complex therapy has a significant positive effect on the clinical course of the disease – in a short period of time it helps to reduce discharge from the genital tract, the disappearance of subjective sensations characteristic of disease.

## HERPES

- The use of Koglumet in the treatment of herpesvirus infection is accompanied by an improvement in the general condition, a rapid regress of the skin-pathological problem. Resorption of vesicular elements with the appearance of crust in overwhelming cases is no more than 2 days. Recovery under the influence of the drug coming at the earliest possible date (Fig. 7).

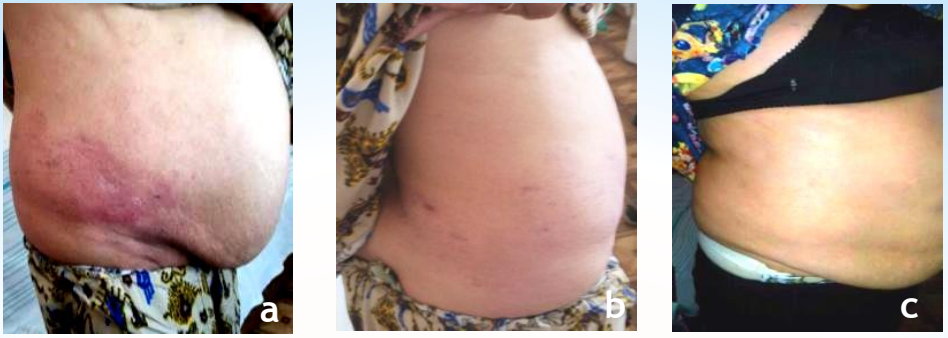


Fig 7. Patient R. Izzatoy, 63 years old. The dynamics of Koglumet effect on the treatment of herpes zoster (a - before the treatment , b - the 3rd day of the therapy, c - the 5th day of the therapy )

- The use of Koglumet in the treatment of herpes contributes to the simultaneous solution of two important issues of therapy:
  1. It creates the possibility of an effective fight against the virus by increasing the synthesis of cytokines (interferons, interleukins) and antibodies under the influence of the drug;
  2. In a short period of time, the immune status of patients is restored, which has a prolonged nature, and as a result of this, frequent relapses of the disease are prevented.

## USE OF KOGLUMET IN THE TREATMENT OF CHLAMYDIA

Koglumet, when included in the complex therapy of patients with chlamydia, has a therapeutic effect in a short time – starting from 2-3<sup>rd</sup> day of treatment, there is a significant decrease in subjective sensations in the form of discomfort during urination, reducing burning and discharge from urethra.

- Due to the fact that the usage of Koglumet in the treatment of chlamydia, in a short period of time it contributes to a decrease in the serum positivity rate (IFA results for specific IgG) by more than 2 times, and as a result, it leads to an almost complete absence of antigenic load in the patient's organism (Fig. 6,b).
- Koglumet promotes quick and effective sanitation of the body: the drug during the first 10 days of use contributes to the fact that the pathogen of chlamydia is not detected in 100% of cases during control bacterioscopic studies. In addition, there is a significant decrease in the number of leukocytes in smears (urethra, cervix, and vagina) from 1.5 up to 3 times, confirming the high clinical efficiency of the drug.
- With the use of Koglumet in chlamydia, both antimicrobial and prolonged immunostimulating effects are achieved. Due to this, the drug promotes the formation of long periods of remission.
- The drug taken by the patients with chlamydia with false positive reactions to syphilis contributes to the complete negativity of the latter. As a result, there is no need for serological monitoring, which is of great clinical importance in the diagnosis of syphilis.

## USE OF KOGLUMET IN TREATMENT OF HIV-INFECTION

- The use of Koglumet in HIV-infected and AIDS patients as a monotherapy drug or in combination with ARVT drugs is accompanied by a significant stabilization of the clinical picture of the underlying disease, a noticeable improvement in immunological parameters, a decrease in viral load (Fig. 8), as well as an intensive regression of concomitant diseases (hepatitis, anemia, TORCH infections, etc.) and conditions associated with opportunistic infection (table).
- The high effect of Koglumet's influence on opportunistic diseases (infections) in HIV infections is associated with that the drug completely cancels the competition of antigens in the immune response (Fig. 9). As a result of this, a pronounced immune response is formed for each type of polyantigens. And as a consequence, patient with HIV infection will have an opportunity of effective fight as with main infection and with opportunistic infection (table).
- Koglumet displays high hematopoietic and hepatoprotective activity in HIV treatment accompanied by anemia and viral hepatitis B and C.
- Koglumet, unlike other low-molecular interferon inducers, also displays therapeutic efficiency in the late stages of AIDS (Fig. 8)
- Interruptions while taking the drug by HIV- infected people do not lead to the emergence of resistance to Koglumet.



• The combined use of ARVT and Koglumet contributes to a significant reduction of side effects and prevention of symptoms of typical ARVT therapy complication.

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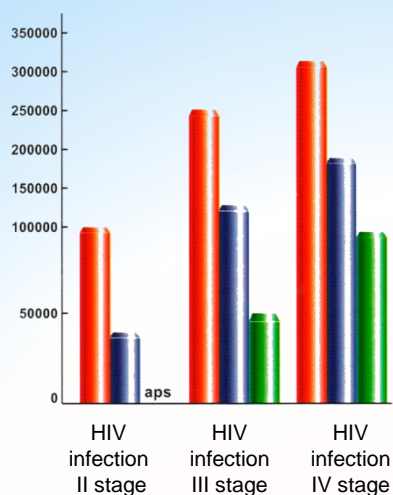


Fig 8. The effect of the Koglumet under its Individual use on viral load (red columns-before treatment, bleu columns – at the end of 6 th month of therapy )

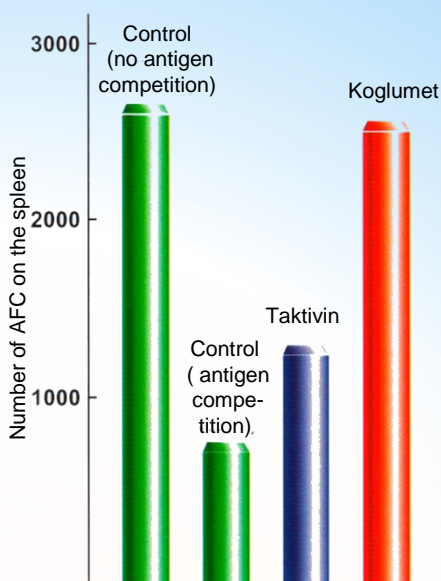


Fig 9. Influence of Koglumet on the competition of antegens in immune response

Influence of Koglumet on the timing of regression of HIV-associated diseases and conditions when used as a monotherapia drug

Indicators	Regression timing
Infection of genito-urinary organs	no more than 1 month ( 100% of patients)
Expressed intoxication	no more than 1 month ( 100% of patients)
Multiple boils	no more than 1 month ( 100% of patients)
Frequent semi-formed stools	no more than 1 month ( 100% of patients)
Herpetic eruptions	no more than 3 month ( 100% of patients)
Allergic rash, itch	no more than 3 month ( 100% of patients)
Oral aphthosis disease	no more than 3 month ( 100% of patients)
Generalized lymphadenopathy	no more than 6 month ( 92,6% of patients)
Fungal lesions of the skin and mucous membranes	no more than 6 month ( 93,7% of patients)
Persistent fever	no more than 6 month ( 93,3% of patients)
Weight loss over 10kg in a month.	no more than 6 month ( 83,3% of patients)
Lack of appetite, weakness	no more than 6 month ( 100% of patients)

## REFERENCE LIST

1. Instructions for the use of Koglumet (approved by the Ministry of Health of the Republic of Uzbekistan 14.03.2013 №: 5).
2. Report of studies of the pharmacological properties of the drug.
3. Drug clinical trial reports: • Republican Specialized Scientific and Practical Medical Center for Dermatology and Venereology, Ministry of Health of the Republic of Uzbekistan ( professor Mavlanova Sh. Z., professor Yuldashev K.A., et.al.); • Urban Rehabilitation Center of Chronic Infectious and Somatic Pathologies (professor Arifkhodjaeva F.A., professor Pechenitsina T.V.); • Republican Center of Fighting with AIDS under the Ministry of Health of the Republic of Uzbekistan (professor Atabekov N.S., candidate of medical sciences Babakhodjaeva D.I.); • Research Institute under the Ministry of Health of the Republic of Uzbekistan (candidate of medical sciences Baydjanov A. K.)
3. Абдуллаев М.И., Маннанов А.М., Бабабекова Н.Б. Клинико-иммунологическая эффективность коглумета при комплексном лечении детей, больных псориазом // Инфекция, иммунитет и фармакология. Ташкент, 2012. №5. С.26-36.
4. Бабаходжаева Д.И. Изучение клинической эффективности препарата «Коглумет» у больных ВИЧ-ассосированным туберкулезом // Врач-аспирант. – Воронеж, 2010. №1(38). С. 35-42
5. Бабаходжаева Д.И. Клиническое течение и иммуноцитокинный статус ВИЧ-ассосированного туберкулеза //Автореф. ... канд. мед.наук. Ташкент. 2011 год.