# FERROCOMED

# MULTICOMPONENT, INNOVATIV DRUG WITH ANTIANEMIC ACTIVITY

# INSTRUCTIONS FOR USE

# «A P P R O V E D»

By THE MINISTRY OF HEALTH OF THE REPUBLIC OF UZBEKISTAN

Main department for quality control of medicines and medical equipment

This instruction should be read before you start taking this medicine, as it contains important and useful information for you. For more information, you can cjntact your doctor or pharmacist, or the company itself

## Brand Name: Ferrocomed

Active Ingredients: Glutafer, Cobavit, Glutamed Release form: Tablets in blisters and in bottles Composition: 1 tablet contains active substances:

- glutafer (a complex of iron (III) with glutamic acid) - 0.020 g (equivalent to 5.6 mg of elemental iron);

- kobavit (cobalt complex with glutamic acid and vitamin U) - 0.010 g;

- glutamed (a complex of copper (II) with glutamic acid) - 0.005 g.

*Excipients:* Sugar, starch, calcium stearate or stearic acid.

Pharmacotherapeutic group: Remedy stimulating erythropoiesis.

# **Pharmacological properties**

Ferrocomed is a combined three-component antianemic drug.

The pronounced clinical effect of the drug as a stimulant of erythropoiesis is due to both the properties of the constituent components and the fact that they are connected into a single composition biocomplexes, which are closest to the form of macro- and microelements in a living organism, which contributes to a significant increase in their bioavailability and endogenous activity.

Iron, cobalt and copper, the composition of the active components of the drug are vital elements.

Iron is an indispensable component of various proteins and enzymatic systems, providing the necessary level of systemic and cellular aerobic metabolism, as well as redox homeostasis in the body.

Iron-containing complexes in the human body are divided into two groups: porphyrin and non-porphyrin. The porphyrin group includes hemoglobin, myoglobin and heme-containing enzymes - cytochromes, cytochrome oxidase, catalase, peroxidase. Nonporphyrin iron is composed of transferrin, ferritin, hemosiderin and some iron proteins. Hemoglobin is part of red blood cells, is synthesized in their young forms. Hemoglobin is a carrier of exogenous oxygen and endogenous carbon dioxide. Myoglobin is a respiratory protein of the heart and skeletal muscles, transports oxygen and regulates its content in the muscles. Ferritin and hemosiderin are reserve compounds of iron cells, located mainly in the reticuloendothelial system of the liver, spleen and bone marrow. Transferrin serves as a transport form of iron. Iron-containing enzymes and non-porphyrin iron in the cells are located in the mitochondria, perform respiratory and catalytic functions, and participate in redox processes.

Cobalt, which is a structural element of Cobavit, plays an extremely important role in the body. It has a positive effect on protein, fat and carbohydrate metabolism, promotes the accumulation of vitamins A, C and K in the body, as well as B vitamins, enhances the synthesis of proteins, nicotinic acid, pyridoxine, NAD. It activates enzymes of the antioxidant system, increases basic metabolism, improves tissue respiration and nitrogen metabolism. Under its influence, mineral metabolism is enhanced, including the absorption of iron, calcium and phosphorus.

Cobalt, in the presence of iron and copper, significantly increases the activity of the hematopoietic system. In this case, cobalt stimulates the formation of red blood cells, directly affects the hematopoietic functions of the bone marrow, regulates and activates the synthesis of protoporphyrin, and thereby accelerates the synthesis of hemoglobin. It enhances the production of erythropoietin, increases the content of reticulocytes, causes bone marrow hyperplasia, promotes the replacement of yellow bone marrow with red and the appearance of extramedicular foci of hematopoiesis.

Glutamed copper is essential for hematopoiesis, osteogenesis, pigmentation and keratization. The role of copper is associated with its participation in the construction of a number of enzymes and proteins. It regulates the processes of biological oxidation and ATP generation, the synthesis of connective tissue proteins (collagen and elastin) and iron metabolism, activates glycolysis and tissue respiration. Copper is part of the complex proteins of red blood cells and the liver, catalyzes the incorporation of iron into the heme structure and promotes the maturation of red blood cells in the early stages of their development.

It reduces the level of cholesterol in the blood and prevents the destruction of the walls of the aorta due to the participation in the synthesis of desmosin and isodesmosin, which are necessary for cross-linking of elastin. Under the influence of copper, the body accumulates B vitamins, vitamins A and E, normalizes fat metabolism, including the synthesis of phospholipids, and metabolism of carbohydrates, and increases the body's immunobiological stability.

Glutamic acid, which is an integral part of all three components of ferrocomed, promotes the synthesis of acetylcholine, the transfer of potassium ions, participates in the protein and carbohydrate metabolism of the white and gray matter of the brain, plays an important role in the energy supply of brain functions, in the biosynthesis of folic acid (pteroylglutamic acid). It plays an important role in the redox reactions that occur in the cells of the brain tissue with the release of energy stored in the form of ATP, and acts as a neurotransmitter, etc.

One of the main functions of glutamic acid is its participation in the process of nitrogen exchange. It contributes to the neutralization of ammonia and its excretion by the kidneys. The binding and neutralization of ammonia plays an important role in the normal activity of the central nervous system.

Vitamin U, which is part of Cobavit, plays a key role in the metabolic processes of the body by actively participating in important biochemical reactions: transmethylation, transulfurization, transamination. It has detoxifying, regenerating, antioxidant properties. In transmethylation reactions, it acts as a donor of methyl groups necessary for the synthesis of phospholipids of cell membranes, neurotransmitters, nucleic acids, proteins, hormones, etc., and also transfers them by radical methylation and a number of toxic compounds of exo- and endogenous nature into non-toxic forms.

Normalization under the influence of vitamin U of the synthesis of endogenous phosphatidylcholine in hepatocytes, promotes the regeneration of membranes, increase their fluidity and polarization, as a result, liver functions are restored and activated. It also reduces the toxicity of bile acids in hepatocytes by activating conjugation processes, has a lipotropic effect, which prevents fatty degeneration of the liver, and also exhibits antihistamine and antiatherosclerotic properties.

The biocomplexes of cobalt and copper introduced into the composition of the drug not only have their own hematopoietic activity, but also due to the synergistic effect, they mutually reinforce hematopoietic activity and provide fast and efficient assimilation of iron (both contained in Ferrocomed and iron from food), contribute to the inclusion of iron in the synthesis of hemoglobin, activate bone marrow functions. The drug also promotes the inclusion of tissue iron in the composition of hemoglobin. Under the influence of Ferrocomed, an intensive increase in iron reserves in the form of ferritin is observed in a short time. Due to these properties of Ferrocomed, an early and high increase in hemoglobin level, the number of red blood cells and reticulocytes is observed. Symptoms of asthenisation (general weakness, fatigue, sweating, etc.) also disappear in a short time.

Ferrocomed has an "aftereffect", as a result of which the increase in hemoglobin and the increase in the number of red blood cells continue after the completion of the course of treatment. This is a consequence of the fact that the endogenous systems induced by Ferrocomed, responsible for the assimilation and involvement of iron in metabolic processes, remain in an active state even after the end of the drug.

The drug effectively restores the broken links of protein-exchange processes characteristic of irondeficient states, due to which it prevents the occurrence or contributes to the disappearance of states of a dis- and hypoproteinemic nature.

Iron, which is part of the drug, is absorbed almost completely, due to which the blackening of feces and dyspeptic symptoms are not observed when taking Ferrocomed.

In cases of prolonged use, Ferrocomed does not have an irritating and erosive effect on the mucous membrane of the stomach and small intestine, and does not exert a depressing effect on the functions of blood-forming organs.

The drug has an immunomodulating effect, which is important for severe and protracted forms of anemia, accompanied by an immunodeficiency state.

## Indications for use

The drug is used for iron deficiency anemia of any genesis, for mixed anemia of anemia (vitamin B12, folic acid and iron deficiency) and chronic posthemorrhagic anemia.

#### **Dosage and administration**

The drug is taken orally with water, 1.5-2 hours before meals (patients with diseases of the

gastrointestinal tract after eating), according to the following scheme:

The severity of anemia	Doses	Duration of therapy
Severe	1 tablet 3 times a day	Until the hemoglobin level normalizes.
Moderate	1 tablet 2 times a day	Until the hemoglobin level normalizes
Mild	1 tablet 1–2 times a day	Until the hemoglobin level normalizes
Children with anemia from 2 years of age and older, take one tablet 1 or 2 times a day until the hemoglobin level normalizes		

## Side effects

The drug is well tolerated. In very rare cases, nausea is possible.

#### **Contraindications**

The drug should not be used in conditions characterized by an increased iron content in the body (hemolytic anemia, hemosiderosis, hemochromatosis), hypersensitivity to the drug.

#### **Drug interactions**

Tetracycline drugs should not be prescribed at the same time as Ferrocomed because of a deterioration in their absorption.

#### **Special instructions**

When iron, cobalt and copper are deficient in the human body, erythropoiesis is inhibited, leading to the development of various forms of anemia, phagocytosis, the activity of natural killers and the bactericidal ability of serum are reduced, which leads to a decrease in the body's resistance to harmful environmental influences (a decrease in general resistance), and as a result, secondary diseases develop. In addition, with endogenous copper deficiency, growth retardation, hypotrophy, degenerative changes in aortic elastin, pigmentation disorders, gastrointestinal upsets, accelerated destruction of red blood cells, and the maturation of a number of granular leukocytes are stopped. In chronic copper failure, there is a violation of osteogenesis with changes in the skeleton (similar to those observed with rickets), destruction of the ends of long bones.

Ferrocomed, subject to the dosing regimen indicated in the instructions for use, completely satisfies the daily requirement of the human body not only for iron, but also for such vital trace elements as cobalt and copper.

Ferrocomed belongs to the group of harmless drugs.

The drug should be stored out of the reach of children. Do not used after the expiration date.

#### Use during pregnancy and lactation

Ferrocomed belongs to the group of harmless drugs, and due to this, it can be used both during lactation and during pregnancy, including the first trimester, with the exception of the period of toxicosis of pregnant women.

Influence on the ability to drive a car and complex mechanisms

No studies have been conducted on the effect of Ferrocomed on the ability to drive or use machines.

#### Overdose

Due to the fact that Ferromed is a harmless drug, the possibility of intoxication due to an overdose of the drug is unlikely.

#### **Storage conditions**

In a dry place protected from light, at a temperature not exceeding 25 ° C.

#### **Shelf life**

4 years.

**Terms of dispensing from pharmacies** On prescription.

#### Manufacturer

LLC "A.B.- BIOKOM"

The comhany cares about the quality of its products and the health of consumers. In this regard, your feedbeck and wishes about the drug, about its effectiveness, or about the possible side effects identified in you, as well as any important information about the drug for you, please inform us in written form or by phone

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