

## **Bemiton® [Metaprot®]**

Ethylthiobenzimidazole hydrobromide

### **Pharmacodynamic Properties**

Metaprot® is an adaptogenic drug with nootropic, antihypoxic, antioxidant and immunomodulatory effects. It activates the synthesis of RNA and then proteins, including enzyme and related to the immune system. It results in activation of synthesis of gluconeogenesis enzymes which enforces recycling of lactate (a factor limiting performance) and resynthesis of carbohydrate - a source of energy at intensive loads, which leads to an increased physical performance. Enhanced synthesis of mitochondrial enzymes and structural proteins of the mitochondrial result in increased energy production and provides an increase in the maintenance of a high degree of conjugation of oxidation and phosphorylation. It boosts the synthesis of antioxidative enzymes and has antioxidant effects. Metaprot enhances the synthesis of antioxidant enzymes and has a pronounced antioxidant activity. It increases resistance to extreme factors - physical activity, stress, hypoxia, hyperthermia. Metaprot increases efficiency during physical exercises.

It has a pronounced effect antiasthenic, accelerates recovery after extreme impacts.

### **Pharmacokinetics**

After oral administration it is well absorbed from the gastrointestinal tract. After a single dosage, it is detected in the blood in 30 minutes. The maximum effect is achieved in 1-2 hours and lasts 4-6 hours. In case of prolonged period of therapy, especially in high doses, there is a tendency to accumulation of the drug with an increase in its concentration in the blood by 10-12 day use.

Actively metabolized in the liver.

### **To be Used for**

- Improves and restores health, also under extreme conditions (heavy exercise, hypoxia, overheating);
- Adaptation to a variety of extreme factors;
- Asthenic disorders of different nature (in neurasthenia, somatic diseases, after serious infections and intoxications, in pre-and postoperative period in surgical interventions);
- In the complex therapy: cerebral trauma, meningitis, encephalitis, cerebral circulatory disorders, and cognitive disorders. **Dosage and Administration** It should be taken orally.

*Adults:* 250 mg 2 times a day after meals. If necessary, the dose may be increased to 750 mg (500 mg in the morning and 250 mg after lunch) For people with body weights over 80kg: not more than 1000 mg (500 mg in the morning and 500 mg after lunch).

The treatment period: 5 days with 2 days break to avoid accumulation of the drug. One-off increase in working capacity under extreme conditions: 40-60 mins. before the planned activity (500-750 mg). In case of continuing activities 250mg should be taken in 6-8 hours. The maximum daily dosage is 1500mg. the next day 1000mg. **Contraindications**

Hypoglycemia, liver dysfunction, epilepsy, hypertension, glaucoma, ischemic heart disease, arrhythmias, lactase deficiency, lactose intolerance, malabsorption of glucose-galactose, pregnancy, lactation, children's age, and hypersensitivity to the drug.

### **Side Effects**

From the digestive system: discomfort in the stomach and liver, rarely - nausea, vomiting.

CNS: headache.

Allergic reaction: facial flushing, rhinitis. **Overdosage**

Symptoms: irritability, sleep disorder.

Treatment: gastric lavage, activated charcoal, if necessary - symptomatic therapy. **Drug Interactions**

Inhibitors of microsomal liver enzymes CYP1A2, CYP2C9, CYP2D6, CYP3A4 (for example, cimetidine) may increase the drug concentration in blood.

Metaprot enhances the positive effects of metabolic drugs (including inosine), neuroprotective drugs (including Piracetam) antihypoxic funds (including trimetazidine), potassium and magnesium aspartate, glutamic acid, vitamins (in t. including  $\alpha$ -tocopherol), as well as antianginal agents (nitrates, betablockers).

**Pregnancy and lactation**

The drug should not be administered during breast-feeding.

**Cautions**

The drug should not be taken in the evening (perhaps violation of sleep).

During the treatment, a diet rich in carbohydrates is recommended.