

Multimino-V

Injection

For Veterinary Use Only

COMPOSITION: Each 100ml contains:

L-Carnitine.....	500mg
Thiotic Acid.....	20mg
Pyridoxine Hydrochloride	15mg
Cyanocobalamin	3mg
DL-Acetyl methionine	2000mg
L-Arginine	240mg
L-Ornithine	120mg
L-Citruline	120mg
L-Lysine	50mg
Glycine	150mg
Taurine	150mg
Aspartic Acid	150mg
Glutamic Acid	150mg
Fructose	5000mg
Sorbitol	8000mg

PHARMACOLOGY

A non-essential amino acid and a precursor of arginine. Citruline supplements have been claimed to promote energy levels, stimulate the immune system and help detoxify ammonia (a cell toxin) cycle. Aspartic acid serves as a precursor for synthesis of proteins, oligopeptides, purines, pyrimidines, nucleic acids and L-arginine. L-aspartate is a glyco-genic amino acid, and it can also promote energy production via its metabolism in the Krebs cycle. These latter activities were the rationale for the claim that supplemental aspartate has an anti-fatigue effect on skeletal muscle, a claim that was never confirmed. DL-Methionine is a principle supplier of sulfur which prevents disorders of the hair, skin and nails; helps lower cholesterol levels by increasing the liver's production of lecithin; reduces liver fat and protects the kidneys; a natural chelating agent for heavy metals; regulates the formation of ammonia and creates ammonia-free urine which reduces bladder irritation; influences hair follicles and promotes hair growth. L-methionine may protect against the toxic effects of hepatotoxins, such as acetaminophen. Methionine may have antioxidant activity. L-Carnitine is synthesized primarily in the liver and also in the kidneys, and must be transported to other tissues. It is most concentrated in tissues that use fatty acids as their primary dietary fuel, such as skeletal and cardiac (heart) muscle. In this regard, L-carnitine plays an important role in energy production by chaperoning activated fatty acids (acyl-CoA) into the mitochondrial matrix for metabolism and chaperoning intermediate compounds out of the mitochondrial matrix to prevent their accumulation. Thiotic acid (Lipoic Acid), a sulfur containing compound of vitamin-like enzyme cofactor, is an essential nutrient in

metabolic cycle. It plays the crucial role in energy reactions that turn both fats and carbohydrates into energy. Lipoic acid is a metabolic antioxidant both fat and water soluble. It also enhances and recycles other antioxidants. It is used for detoxification of heavy metal poisoning in the body. Pyridoxine is required for the production of the monoamine neurotransmitters, dopamine, norepinephrine and epinephrine, as it is the precursor to pyridoxal phosphate: cofactor for the enzyme aromatic amino acid decarboxylase. Cyanocobalamin is considered to be a cofactor. Basic nervous system functions such as neurotransmitter synthesis and healthy cell-to-cell communication would not be possible without the presence of necessary vitamin, mineral and amino acid cofactors. Supplementing a balanced diet with vitamin B12 has been clinically shown to promote energy and positive mood balance. Because of its nutritive value, Cyanocobalamin is formulated along with other essential vitamins, minerals and amino acids that are associated with healthy nervous system function. L-Ornithine, a non-essential and no protein amino acid, ornithine is critical for the production of the body's proteins, enzymes and muscle tissue. Ornithine plays a central role in the urea cycle and is important for the disposal of excess nitrogen (ammonia). Ornithine is the starting point for the synthesis of many polyamines such as putrescine and spermine. Ornithine supplements are claimed to enhance the release of growth hormone and to burn excess body fat. Ornithine is necessary for proper immune function and good liver function. L-lysine ensures the adequate absorption of calcium; helps form collagen, aids in the production of antibodies, hormones & enzymes. Lysine may be effective against herpes by improving the balance of nutrients that reduce viral growth. A deficiency may result in tiredness, inability to concentrate, irritability, bloodshot eyes, retarded growth, hair loss, anemia & reproductive problems. L- glutamic acid, In addition to protein synthesis, it is the most widespread neurotransmitter in brain function, as an excitatory neurotransmitter and as a precursor for the synthesis of GABA in GABAergic neurons.

INDICATION:

- Multimino-V is very useful in improvement of metabolic Functions by its powerful antioxidant activity and improved production of bile.
- Multimino-V is very useful in cases of liver disease due to infection/liver flukes as well as due to overmedication with anti-parasitic products.

- Multimino-V is very useful in treatment of chronic hepatitis as it helps in hepatic and non hepatic ammonia detoxification.
- Multimino-V is very useful during and after viral and bacterial diseases and mycotoxin poisoning by improving immunity.
- Multimino-V improves feed consumption.
- Multimino-V is very useful in cases of hypoglycemia, chronic fatigue, and muscular cramps.
- Multimino-V builds muscles so is very important in meat production farming.
- Multimino-V increases egg production and strengthens egg shells.
- Multimino-V is very useful nerve tonic stimulant.

DOSAGE AND ADMINISTRATION

Administer following dose by intravenous, subcutaneous or intraperitoneal route twice daily.

Cattle/ Buffalo & Horses: 250-500ml.

Sheep, Goat and Calves: 250ml.

Lambs & Goat Kids: 20-40ml/10kg body weight.

Dogs & Cats: 2-4ml/kg body weight.

Poultry: 0.5ml/kg body weight.

Orally: 1-2ml/liter of drinking water.

TOXICOLOGY

Taking more than prescribed doses of L-carnitine often causes diarrhea along with a noticeable increase in appetite. There are no reports of toxicity from alpha-lipoid acid overdose. The list of possible mild side effects of Pyridoxine Hydrochloride includes numbness, drowsiness, loss of coordination, poor circulation, low serum folic acid levels, photosensitivity and irritation. Occasionally nausea, decreased appetite, vomiting and diarrhea may occur with DL-acetyl methionine. L-Arginine can cause inflammation in lungs, thereby worsening the asthma. Breathing problems, swelling of the legs, headaches, low blood pressure, diarrhea, chest pain, nausea and blotting. Citruline side effects have not been reported in clinical results or medical literature. There have been a few reports of nausea, vomiting, stomach upset, and drowsiness due to overdose of glycine. There are no scientific studies of adverse effects of L-Aspartic acid available. There are no reported side effects of L-ornithine. No major side effects of L-lysine have been discovered till now. There are no known horrendous taurine side effects on the body till today. Glutamine supplement is considered safe when used in accordance with proper dosing guidelines. Animals with kidney disease, liver disease, or Reye's syndrome

should not be given glutamine. Supplemental L-glutamine is contraindicated in those hypersensitive to any component of a glutamine-containing product. One of the sorbitol effects is diarrhea, abdominal pain, bloating, nausea, anal irritation. Sorbitol can also cause allergies, such as a skin rash, itching and swelling, black, tarry stools. In severe cases, sorbitol can also cause seizures. Fructose may cause signs like jaundice, seizures, vomiting and large liver.

Storage:

- Store between 15-25°C in a cool and dry place.
- Keep out of the reach of children
- Consult the veterinarian before use

Withdrawal Time: Nil

Selmore's Specs.



Manufactured by:
Selmore Pharmaceuticals (Pvt) Ltd.
36 Km Multan Road, Lahore, Pakistan.

