PROTOCOL
FOR LIFE BALANCE™

Technical Information Sheet

Cardiovascular Support

D-Ribose Powder

Description

Ribose is a pentose (5-carbon) sugar essential for the production of DNA and RNA. Ribose also is a fundamental building block of adenosine triphosphate (ATP), the preferential source of energy for skeletal, muscle and heart tissue.*

Features & Benefits

- Is a building block of ATP, the chemical form of energy within all cells*
- Supports muscle recovery*
- Supports energy production and storage in muscle tissue*
- May help to reduce or alleviate nocturnal leg discomfort*

Suggested Usage

As a dietary supplement, take 2 level teaspoons (5 g) 3 times daily or as directed by a healthcare professional.

Allergen Checklist

Contains no salt, starch, yeast, wheat, gluten, soy, milk, egg, shellfish or preservatives. Vegetarian/ Vegan Product.

Cautions / Interactions

Ribose may theoretically interact with salicylate drugs, antidiabetes drugs, alcohol, insulin, and propranolol; it may alter the hypoglycemic effect of medications/ drugs.[7]

Technical Summary

* 100% Pure
* Fuels ATP Energy Production*
* Bioenergy RIBOSE
* Vegetarian Product

Ribose occurs naturally in all living cells. It is a simple sugar that begins the metabolic process for ATP production. D-Ribose works synergistically with, and enhances the benefits of creatine supplements.*

Mechanisms of Action

Ribose availability is rate-limiting for the supply of phosphoribosyl-pyrophosphate (PRPP), and thereby for both the salvage and de-novo synthetic pathways that maintain adenine, ADP, and AMP levels for the resynthesis of ATP for cellular energy.[1-5] Ribose normally is formed via the pentose phosphate pathway (PPP). In heart and muscle, there may be a low availability of glucose-6-phosphate dehydrogenase, and this factor can limit production of ribose from glucose under certain conditions. Supplemental ribose enters the PPP by being phosphorylated to ribose-5-phosphate by ribokinase. Supplemental ribose thus bypasses the rate-limiting glucose-6-phosphate dehydrogenase step to PPP, directly elevating PRPP levels. Recovery of ATP levels is faster with adequate levels of PRPP available for either salvage of the metabolites or resynthesis of ATP. Experimentally, exogenously supplied ribose appears to increase the amount of PRPP available. [1-5] This is one key to recovery of depleted ATP levels under conditions of high metabolic demand.*

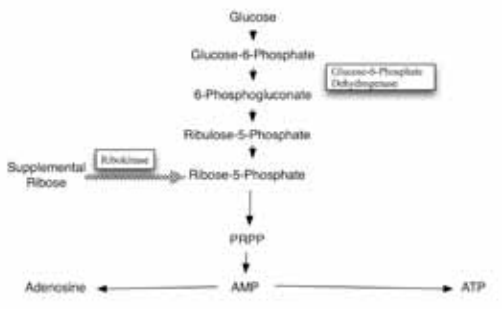


Fig. 1 Ribose normally is formed via the pentose phosphate pathway (PPP). In heart and muscle, there may be a low availability of glucose-6-phosphate dehydrogenase, and this factor can limit production of ribose from glucose under certain conditions. Supplemental ribose enters the PPP by being phosphorylated to ribose-5-phosphate by ribokinase.

*This statement has not been evaluated by the FDA. This product is not intended to diagnose, treat, cure or prevent any disease.

Clinical Applications

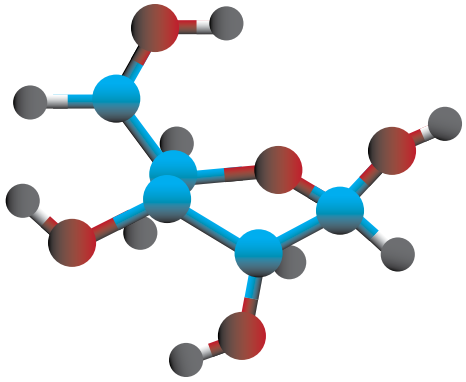
Studies have looked at the benefits of ribose ingestion under conditions of heightened energy demand. The effect of oral ribose supplementation on the resynthesis of adenine nucleotides and performance after one week of intense intermittent exercise was examined in eight subjects in a randomized double-blinded crossover design study. The subjects performed cycle training consisting of 15 x 10 sets of all-out sprinting twice per day for seven days. After training the subjects received either ribose or placebo three times per day for three days. An exercise test was performed at 72 hours after the last training session. The results support the hypothesis that the availability of ribose in the muscle is a limiting factor for the rate of resynthesis of ATP.[9] Ribose also may reduce or alleviate nocturnal leg discomfort.[6]*

Supplement Facts	
Serving Size 2 Level Teaspoons (5 g)	
	Amount Per Serving
Calories	20
Total Carbohydrate	5 g
D-Ribose Powder	**5 g (5,000 mg)**
(Bioenergy RIBOSE™)	

Other Ingredients: None.

Contains no: salt, starch, yeast, wheat, gluten, soy, milk, egg, shellfish or preservatives. Vegetarian/Vegan Product.

Suggested Usage: As a dietary supplement, take 2 level teaspoons daily, prior to exercise. Serious athletes may want to double the dosage during training. Consider taking this product in combination with CoQ10 and L-Carnitine.



Ribose Molecule

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Formulated by doctors and clinical scientists exclusively for licensed healthcare practitioners. Manufactured in an A-rated Good Manufacturing (GMP) Certified facility.

Complementary Products

Coenzyme Q10 (Product Code P3182) is offered as a separate product – CoQ 10 benefits cardiac function through energy production. **Acetyl-L-carnitine (Product Code P0076)** also often is recommended both for support of mitochondrial function and the maintenance of membrane structures.

PROTOCOL FOR LIFE BALANCE™

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