

Activated B6

With B12 and Folic Acid

A simple and effective combination of metabolically-active forms of vitamins, including Pyridoxal 5-phosphate, Folic acid and Vitamin B12.

Orthoplex White Activated B6 provides support for normal blood cell formation and healthy neurotransmitter synthesis, such as serotonin, GABA and dopamine. Additional benefits include supporting the remethylation of homocysteine to methionine in healthy individuals.



- Gluten Free
- Lactose Free
- Sugar Free
- Glucose Free
- Vegan
- Vegetarian

AUST L 297446

Pack Size: 60 capsules

Recommended Dose: Take 1 capsule daily, or as recommended by your registered healthcare practitioner.

Storage: Store below 25°C in a cool, dry place, away from direct sunlight.



Full disclosure of excipients in every formulation

Indications

- Aids, assists or helps in the maintenance of general well-being
- Helps maintain normal blood/blood tonic
- May assist in the management of healthy homocysteine levels in healthy individuals
- Contains Pyridoxine which is required for the production of histamine
- Contains Pyridoxal 5-phosphate which is the active form of Vitamin B6

Excipients

Calcium hydrogen phosphate dihydrate, microcrystalline cellulose, magnesium stearate, croscarmellose sodium, colloidal anhydrous silica, vegetarian capsule (Vcaps®).

Warnings

Vitamin supplements should not replace a balanced diet.

Each Capsule Contains

Pyridoxal 5-phosphate monohydrate equiv. Pyridoxine	21.5mg 13.7mg
Calcium folinate equiv. Folic acid	400µg 370µg
Cyanocobalamin	500µg

Technical Information

Conversion of Folic Acid to its metabolically active coenzyme form Folinic Acid is a complex process that requires a number of enzymes and nutrient cofactors, as well as healthy liver and intestinal function. Enzyme defects and enzyme polymorphisms may also adversely affect this conversion. Furthermore, Folic Acid is not only poorly transported into the brain tissue, but is also rapidly cleared from the central nervous system. Folinic Acid, in contrast, bypasses the deconjugation and reduction steps normally required during conversion, and is directly transported across the blood-brain barrier.¹⁻³

Pyridoxal 5-Phosphate (P5P/PLP) is the coenzymatically active form of vitamin B6, and the only form that can be utilised by enzymes associated with protein metabolism and haeme synthesis.⁴⁻⁶

May Assist In The Management of Healthy Homocysteine Levels

Homocysteine (Hcy) metabolism involves two pathways: the Folate and Vitamin B12-dependent re-methylation pathway (folate cycle), which generates methionine, and the Vitamin B6-dependent transsulfuration pathway (methionine cycle), which degrades Hcy into cysteine and consequently taurine.⁶

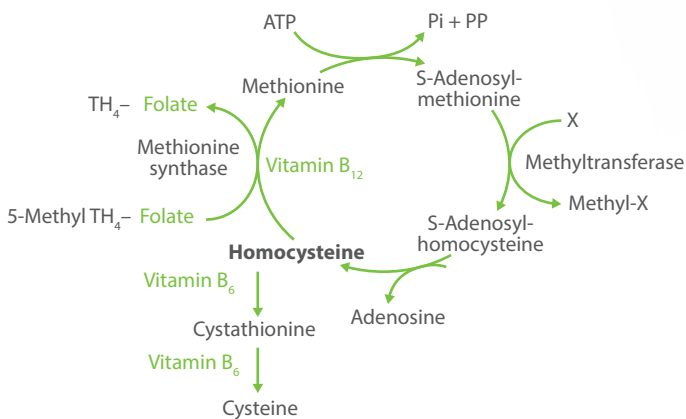


Figure 1: Remethylation and Transsulfuration of Homocysteine

Due to their direct involvement in Hcy metabolism, Folic Acid, Vitamin B12 and Vitamin B6 are considered the main nutritional determinants of plasma total homocysteine (tHcy).⁷ While plasma tHcy is very responsive to Folic Acid in particular, all three vitamins have been shown to work together in supporting healthy homocysteine levels.^{8,9} Conversely, deficiency in these nutrients and decreased enzyme activity inhibit the breakdown of Hcy.¹⁰

Folates act as methyl donors and are themselves metabolised with the help of Vitamin B6 and Vitamin B12 as cofactors.¹¹ The conversion of 5,10-methylenetetrahydrofolate to tetrahydrofolate provides the methyl group required for the conversion of Hcy to methionine. Cobalamin acts as a cofactor for methionine synthase, which catalyses this reaction.^{2,12}

P5P is involved in the transsulfuration pathway of homocysteine, specifically as a cofactor for the enzymes cystathionine synthase and cystathioninase.⁶

Biological determinants of plasma tHcy that potentially alter the function or blood concentrations of B Vitamins, especially Folate and Vitamin B12, include genetic, physiological, and lifestyle factors, as well as clinical conditions, malabsorption, and certain medications.^{8,11,13,14} As it is difficult to maintain an adequate intake of at least 400mcg of Folate per day even on a balanced diet, supplementation is warranted.¹³

Genetic	MTHFR and other polymorphisms
Physiological	Increased age, male sex, post-menopause
Lifestyle	Smoking, coffee, alcohol
Clinical Conditions	Deficiencies of Folate, B12, B6

Table 1: Some Adverse Determinants of Plasma Hcy Concentrations¹³

Helps Maintain Normal Blood / Blood Tonic

Vitamin B12 is needed for the formation, replication, and normal function of all cells, including red blood cells (erythrocytes).⁹ However, production of red blood cells (erythropoiesis) also requires Folate. Deficiency of either nutrient impairs DNA synthesis, causing ineffective proliferation and differentiation and apoptosis of erythroblasts.^{14,15}

Orally administered Folinic Acid has been shown to result in a statistically significant increase in the number of red cells, as well as Folic Acid concentrations in both serum and erythrocytes.¹⁶

Relief of Menstrual Symptoms and Pre-Menstrual Symptoms / Syndrome

Vitamin B6 significantly impacts the synthesis of neurotransmitters that control pain, such as serotonin and gamma amino butyric acid (GABA).⁵ The effectiveness of up to 100mg/day of this vitamin in relieving premenstrual symptoms has been demonstrated in reviews of randomized placebo-controlled trials involving over 940 patients.¹⁷

May Provide Relief from Morning Sickness

Systematic reviews of randomised controlled trials involving over 780 women demonstrated the effectiveness and safety of Pyridoxine (Vitamin B6) in the treatment of nausea in pregnancy, when compared to placebo.^{18,19} Similarly, two independent randomised placebo-controlled studies showed that administration of 10-40mg of Vitamin B6 per day significantly reduced the severity of nausea and vomiting in pregnancy.^{20,21}

Randomised Controlled Trial: This study aimed to determine the effectiveness of pyridoxine for nausea and vomiting in pregnancy. 342 women attending an antenatal clinic at 17-weeks' gestation were randomised to receive 30mg of Pyridoxine Hydrochloride or placebo. Study subjects recorded the number of vomiting episodes 24 hours prior to treatment and during five consecutive days of treatment. A significant decrease in average nausea scores was observed post-therapy in the treatment group. Pyridoxine was found to effectively relieve the severity of nausea in early pregnancy.²¹

References available upon request.