



# Cardiovascular & Heart Health

Natural treatment options to support Cardiovascular & Heart Health.



# Treatment Strategies for Cardiovascular Health

Research reveals that chronic inflammation plays a pivotal role in the development of cardiovascular disease (CVD).<sup>1</sup> Clinically, a prolonged inflammatory response in CVD is associated with several factors, including unresolved infections, low physical activity, visceral obesity, dysbiosis, poor diet, stress, disturbed sleep, and pollutant exposure.<sup>2</sup> For this reason, Healthcare Practitioners are expertly placed and well-equipped to support patient recovery.

CVD affects the overall health and function of the heart and blood vessels. Following prolonged inflammation within these tissues, heightened immune activation and oxidative stress can lead to a build-up of vascular plaque,<sup>3</sup> which increases the risk of stroke and myocardial infarction (e.g. heart attacks).

Additionally, these vascular changes are often compounded by the presence of metabolic dysfunction. Observed in 20% to 25% of patients worldwide,<sup>4</sup> abnormally elevated blood lipids, insulin and glucose strongly increases CVD risk.<sup>5</sup>

In these individuals, conventional care seeks to address the signs and symptoms of CVD – namely hypertension, dyslipidaemia, hyperinsulinaemia, and hyperglycaemia. While this approach provides necessary measures to help manage CVD, underlying inflammatory drivers must also be addressed to achieve best results.

When treating CVD and metabolic dysfunction, there are three key treatment aspects: an initial core prescription, a thorough patient assessment and a specialised treatment plan.

## 1. Core Prescription

**CVD patients:** There are three nutrients that all cardiovascular patients will benefit from – bioavailable magnesium, high-strength, pure fish oil and enhanced absorption coenzyme Q10.

**Metabolic dysfunction patients:** A highly bioavailable magnesium formula teamed with a comprehensive metabolic-balancing formula form the ideal core prescription.

These therapeutic tools can address underlying pathology and improve cardiovascular and metabolic health, while more specific requirements are being determined.



## 2. Assess Patient Status

Taking a thorough patient history including:

- Diet and lifestyle,
- Reviewing pathology results, and
- Utilising simple in-clinic testing, such as blood pressure.

These components can help to build a complete picture and determine treatment goals and priorities.

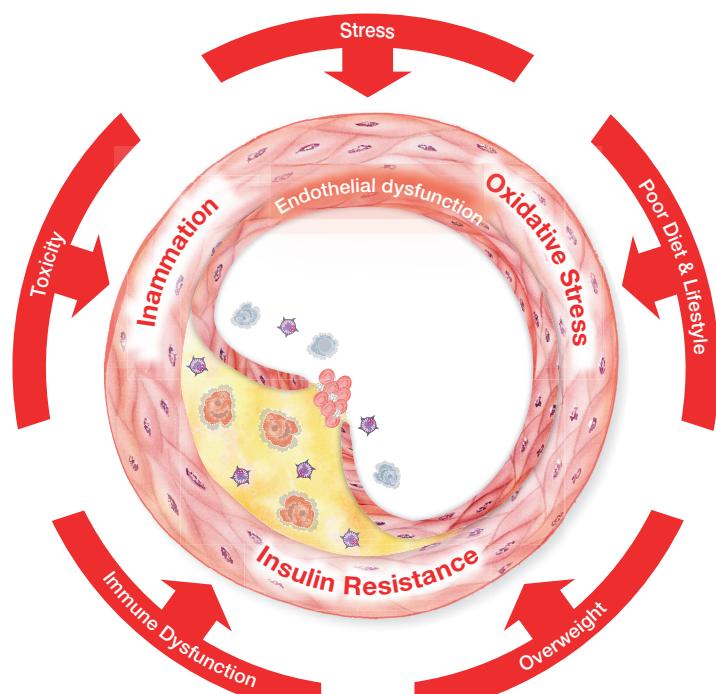
## 3. Patient Specific Prescribing

Once the patient has been assessed, an individual treatment plan can be compiled to target specific symptoms and the drivers that are causing them.

**Symptomatic relief:** Provide support specific to each patient and their symptoms including high blood pressure, and elevated blood sugars, cholesterol and triglycerides. These issues are often what drives patients to see a Healthcare Practitioner, and improvement in these areas will motivate patients to continue to make positive changes.

**Target drivers:** Healthcare Practitioners are well placed to support patients in managing contributing factors that are associated with CVD and metabolic dysfunction. Underlying drivers such as obesity, poor diet, and unhealthy lifestyle can be improved by supporting patients to modify their habits and providing them with tools to make more healthful choices.

Outside of these factors, infection, toxicity and stress may require additional treatment. The Metagenics Shake It Practitioner Weight Management Program, Clinical Detoxification Program and the Clinically Effective Stress, Anxiety and Mood Range provide a straightforward, structured approach to support these areas.



# Patient Specific Treatment Options for Cardiovascular & Heart Health



CARDIOVASCULAR



METABOLIC



CHOLESTEROL &  
TRIGLYCERIDES



BLOOD PRESSURE



BLOOD SUGAR



CardioX



ToccoCare



CardioX



Resist-X Advanced



NUTRITIONAL SUPPORT



Metagen  
Activated B's &  
Folate



Resist-X Advanced



Resist-X Advanced



Bio Q-Absorb 150



Lipoic Acid



# Bio Q-Absorb 150

Maximum Strength Coenzyme Q10 With Exclusive VESIsorb® Technology For Enhanced Absorption.



# Bio Q-Absorb Ubiquinol

Activated Form Of Coenzyme Q10 With Exclusive VESIsorb® Technology For Enhanced Absorption.

**Contents:** 30 soft capsules (30 days), 60 soft capsules (60 days)

**Order code:** BIQ150, BIQ150L

**Storage:** Store below 30°C

- Provide enhanced absorption technology versus oil-based CoQ10 via an exclusive VESIsorb® delivery system.
- Support cellular energy production and heart health.

#### Each capsule contains:

Ubidecarenone (Coenzyme Q10) 150mg

#### Directions for use:

**Adults:** Take 1 soft capsule daily.

**Excipients:** \*VESIsorb®, gelatin, glycerol, purified water, nature identical colours. Contains sulfites.

Free from corn, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, soy protein and starches. Free from artificial sweeteners and flavours.

**Contents:** 30 soft capsules (30 days)

**Order Code:** BQU150

**Storage:** Store below 30°C

- Provides enhanced absorption technology, VESIsorb®\* with ubiquinol, the active form of CoQ10, for superior bioavailability.
- Supports cellular energy production and cardiovascular health.

#### Each capsule contains:

Ubiquinol-10 150 mg

#### Directions for use:

**Adults:** Take 1 soft capsule daily.

**Excipients:** \*VESIsorb®, gelatin, glycerol, purified water, nature identical colours. Contains sulfites.

Free from corn, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, soy protein and starches. Free from artificial flavours.

## Clinical Benefits:

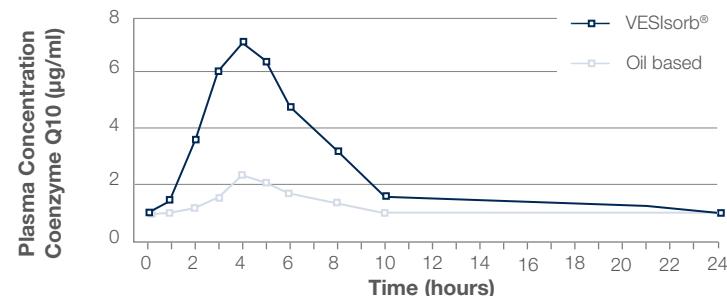
### Innovative and exclusive VESIsorb® colloidal delivery system, for enhanced absorption and efficiency of orally administered CoQ10:

Pharmacokinetic studies in humans have measured the relative bioavailability of Coenzyme Q10 with the VESIsorb® delivery system compared to standard oil-based CoQ10 products. VESIsorb® improved CoQ10 absorption by 622% compared to an oil-based formulation (Figure 1).<sup>2</sup> Bioavailability of CoQ10 is low due to its poor solubility in water. VESIsorb® improves absorption by imitating the naturally occurring mixed micellar transport system in the human body. The CoQ10 is microscopically and evenly dispersed throughout the VESIsorb® delivery system allowing the transport of CoQ10 through the GI lumen to the absorptive epithelium (Figure 2).

**Energy production:** CoQ10 supports healthy mitochondrial function by assisting with energy production and protecting mitochondrial membranes from free radical damage.<sup>3</sup>

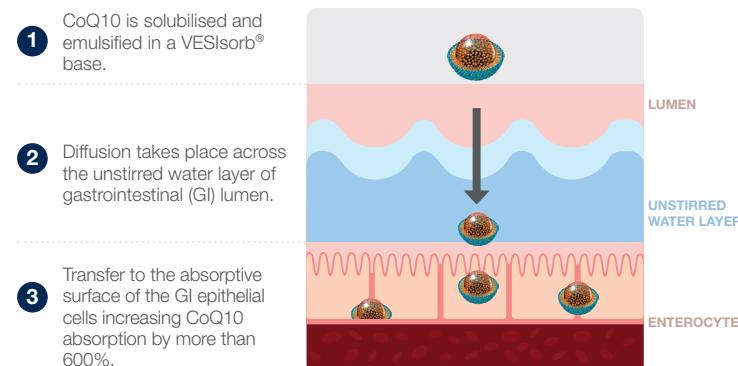
**Cardiovascular health:** Mitochondria are abundant in cardiomyocytes providing adequate ATP production for healthy cardiovascular function. CoQ10 exerts potent free radical scavenging activity in lipid and mitochondrial membranes, several clinical trials have shown CoQ10 to reduce the oxidation of LDL cholesterol. CoQ10 may also help to support healthy blood pressure in healthy people, by improving endothelium-dependant vasodilation and  $\beta$ -adrenoceptor-mediated arterial relaxation. Individuals on statin medications may benefit from CoQ10 supplementation as they deplete the body of CoQ10 by interfering with the production of mevalonic acid, a precursor in the synthesis of CoQ10.

**Certain groups benefit from supplementing with the active (reduced) form of CoQ10, ubiquinol, over ubiquinone due to impaired endogenous conversion.<sup>8</sup>** Ubiquinone is converted to ubiquinol by NADH dehydrogenase, which passes electrons from NADH to ubidecarenone to form ubiquinol.<sup>9</sup> This process can be hindered by high levels of oxidative stress and some medications.<sup>10, 11, 12</sup>



Liu, Z. and Artmann, C. Relative bioavailability comparison of different coenzyme Q10 formulations with a novel delivery system. Alternative Therapies. Mar/Apr 2009, Vol. 15, No. 2.

**Figure 1: VESIsorb® Increases Absorption of CoQ10.**



**Figure 2: VESIsorb® Delivery System Imitates the Naturally Occurring Mixed Micellar Transport System in the Body.**



# CardioX

Magnesium and Active Bs for Cardiovascular Health.

**Contents:** 200 g (12.5 days) and 400 g (25 days) oral powder

**Order Code:** Banana Berry: CDXBB (200 g), CDXBBL (400 g)

Tropical: CDX (200 g), CDX400 (400 g)

**Storage:** Store below 30°C

- Supports heart and cardiovascular system health.
- Reduces homocysteine levels, a biomarker negatively associated with heart health.
- Contains clinically trialled levels of magnesium (Meta Mag®) and taurine.
- Chromium is a cofactor of the biochemical pathway assisting the transport of glucose into cells.

#### One level scoop (8.1 g) contains:

Magnesium glycinate dihydrate (Meta Mag® - Magnesium bisglycinate)	3 g
Equivalent Magnesium	300 mg
Taurine	3 g
Calcium amino acid chelate	300 mg
Equivalent Calcium	60 mg
Pyridoxal 5-phosphate (Vitamin B6)	25 mg
Riboflavin sodium phosphate	2.7 mg
Equivalent Riboflavin (Vitamin B2)	2 mg
Chromic chloride hexahydrate	513 micrograms
Equivalent Chromium	100 micrograms
Mecobalamin (Co-methylcobalamin) (Vitamin B12)	200 micrograms
Levomefolic acid	163 micrograms
Equivalent Levomefolic acid (5-Methyltetrahydrofolate)	150 micrograms
Selenomethionine	125 micrograms
Equivalent Selenium	50 micrograms

#### Directions for use:

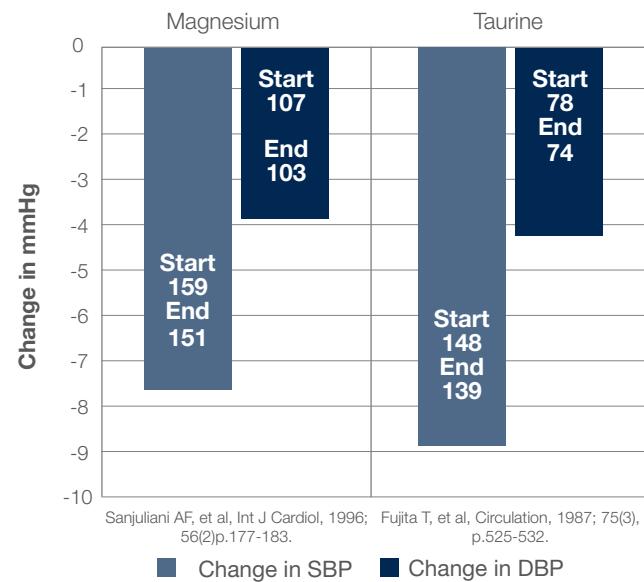
**Adults:** Add 1 level scoop (8.1 g) to 200 mL of water or juice twice daily.

#### Clinical Benefits:

**Studies on 600 mg magnesium and 6 g taurine have been shown to decrease mean blood pressure by 4.77% and 5.63% respectively after supplementation (Figure 1).<sup>5,6</sup>** Taurine may assist in the maintenance of normal blood pressure in healthy people by normalisation of the increased sympathetic adrenal tone and inhibiting the stress-induced release of epinephrine from adrenal chromaffin granules.<sup>6</sup>

**In healthy people, riboflavin, folate and vitamin B12 may help support healthy homocysteine levels,<sup>7,8,9</sup> a biomarker associated with cardiovascular health.<sup>10</sup>** A randomised placebo-controlled study in healthy women aged 18 to 40, examined the effect of low-dose folic acid administration on total plasma homocysteine concentrations. Results showed a significant change in homocysteine in just four weeks.<sup>2</sup> Folinic acid has advantages over folic acid as it bypasses a number of steps in the conversion of folic acid to 5-methyltetrahydrofolate, the active form required for the remethylation of homocysteine.<sup>11,12</sup>

**Mechanisms for blood glucose support<sup>13</sup> in healthy people** may include the synthesis of chromodulin, by chromium, which stimulates phosphorylating cytosolic proteins. These are involved in signalling within the pancreas, thereby assisting healthy blood glucose levels.<sup>14</sup>



**Figure 1: Magnesium and Taurine Supplementation in Systolic (SBP) and Diastolic\* (DBP) Blood Pressure.**

**Banana Berry:** Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, sweeteners and flavours. Sweetened with steviol glycosides.

**Tropical:** Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts and soy protein. Free from artificial colours, sweeteners and flavours. Sweetened with steviol glycosides.

Meta Mag® is a registered trademark of Balchem Corp.



# Glutathione

Bioavailable Antioxidant Support.

**Contents:** 30 capsules (VegeCaps) (30 days)

**Order Code:** GLU30C

**Storage:** Store below 30°C

- A major intracellular antioxidant to protect body cells from oxidative damage.<sup>1</sup>
- Metagenics glutathione is bioavailable; supplementation with oral glutathione increases circulating levels.<sup>1</sup>
- One-a-day dosing for improved compliance.

#### Each capsule contains:

Glutathione 250mg

#### Directions for use:

**Adults only:** Take 1 capsule daily with food.

Free from animal products, corn, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, soy protein, starches and salt. Free from artificial colours, flavours and preservatives.

**Contents:** 75 g oral powder (30 days) Pineapple flavour

**Order Code:** GLUP

**Storage:** Store below 30°C

- A major intracellular antioxidant to protect body cell components from oxidative damage.<sup>1</sup>
- Metagenics glutathione is bioavailable; supplementation with oral glutathione increases circulating levels.<sup>1</sup>
- Great tasting powder and one-a-day dose for improved compliance.

#### Each dose (2.5 g) contains:

Glutathione 500mg

#### Directions for use:

**Adults only:** Add 1 metric teaspoon (2.5 g) to 200 mL of water daily with food.

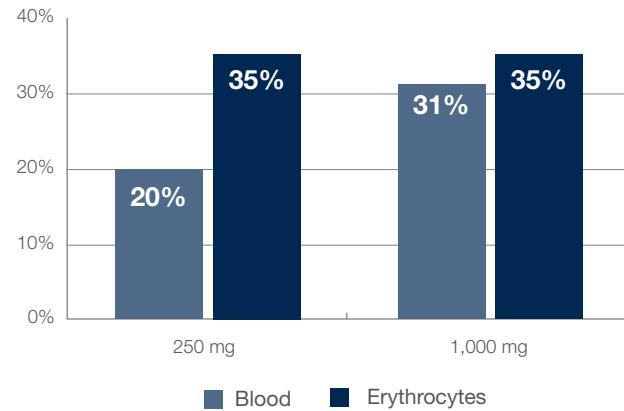
Free from animal products, dairy protein, lactose, eggs, wheat, nuts, yeast, soy protein and salt. Free from artificial colours and flavours. Contains steviol glycosides.

## Clinical Benefits:

Glutathione (GSH) is a major intracellular antioxidant.<sup>2</sup> It has been shown to protect the cells and their components from oxidative damage via the glutathione oxidation cycles. These cycles include the oxidation and reduction of glutathione which enables glutathione to react with free radicals before they cause damage.<sup>2,3</sup>

Studies have shown oral glutathione supplementation to be bioavailable and to increase circulating glutathione levels.<sup>4</sup> A randomised, double blind placebo controlled trial on 54 healthy adults assessed glutathione levels at one, three and six months. Doses of 250 mg or 1,000 mg of oral glutathione demonstrated increases in both blood and erythrocyte concentrations of GSH at each time point, including six months (Figure 1).<sup>1</sup> Levels of GSH returned to baseline after a one month washout period demonstrating that cessation of GSH supplementation causes levels to decrease.<sup>1</sup> A separate clinical trial showed an oral dose of 15 mg/kg body weight of GSH to increase plasma levels by 1.5 to 10 times compared to baseline.<sup>4</sup>

Stores of glutathione are dependent upon nutrient concentrations, exercise, oxidative stress and ageing.<sup>2</sup>



Richie JP Jr, Nichenametla S, Neidig W, Calcagnotto A, Haley JS, Schell TD and Muscat JE. Randomised controlled trial of oral glutathione supplementation on body stores of glutathione. European Journal of Nutrition; May 5; [Epub ahead of print]. 2014.

**Figure 1: Oral Supplementation Increases Circulating Glutathione Levels.**



# Lipoic Acid 600

High Strength, Convenient Dose for Healthy Antioxidant Function.



# Metagen Activated B's & Folate

Active B Vitamins Plus Serine for Healthy Methylation. Formerly Metagen Methyl-Active.

**Contents:** 60 tablets (60 days)

**Order Code:** LIPA

**Storage:** Store below 30°C

- Promotes healthy carbohydrate metabolism and glucose transport, and maintains healthy capillaries.<sup>1,2,3</sup>
- Protects mitochondria against free radical damage, supporting cellular energy production.<sup>1,4</sup>
- Supports glutathione production and liver phase II (conjugation) detoxification.<sup>5</sup>
- High strength, researched 600 mg per tablet; convenient once per day dose.

#### Each tablet contains:

Alpha lipoic acid 600 mg

#### Directions for use:

**Adults:** Take 1 tablet daily with food.

#### Clinical Benefits:

**Lipoic acid is an essential component in the conversion of pyruvate to acetyl CoA.** It is vital to the correct functioning of the Krebs Cycle and for normal, healthy carbohydrate metabolism.<sup>6</sup>

**Glucose maintenance:** Lipoic acid is required for the regulation of glucose transport and cellular glucose uptake.<sup>2,1</sup> It also regulates the impact glucose has upon blood vessels and maintains healthy capillaries by supporting nitric oxide-mediated vasodilation.<sup>2,1,3</sup>

**Potent antioxidant:** A hydrophilic and lipophilic antioxidant, lipoic acid is also able to regenerate other antioxidants.<sup>1</sup> It provides potent intracellular antioxidant protection to key tissues, including liver cells, as well as protecting the mitochondria against free radical damage.<sup>1,7</sup>

**Heavy metal chelation and liver detoxification:** Lipoic acid supports healthy liver detoxification by supporting glutathione production through transcription factor Nrf2, and via its antioxidant activity in chelating heavy metals.<sup>8,3</sup> Lipoic acid contributes its thiol group to detoxify metals, including cadmium, copper and mercury, which subsequently improves the cell membrane integrity.<sup>3</sup> In addition, lipoic acid induces several phase II detoxification enzymes.<sup>3</sup>

Real time stability studies have been conducted to ensure labelled potency through to expiry.

Free from animal products, corn, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, soy protein, starches and salt. Free from artificial colours, flavours and preservatives.

**Contents:** 60 capsules (VegeCaps) (60 days)

**Order code:** MABF0

**Storage:** Store below 30°C

- Supports healthy homocysteine levels, red blood cell maturation and cardiovascular health.<sup>1,2</sup>
- Plays a vital role in neurotransmitter metabolism for normal cognitive function and healthy mood.<sup>3,4</sup>
- Bio active B2, B6, B12 and folate, in a once daily dose.<sup>5</sup>

#### Each capsule contains:

Serine	100mg
Pyridoxal 5-phosphate monohydrate (Vitamin B6)	40mg
Riboflavin sodium phosphate (Riboflavin 5-phosphate sodium)	27mg
Equivalent Riboflavin (Vitamin B2)	20mg
Mecobalamin (Co-methylcobalamin) (Vitamin B12)	1000 micrograms
Levomefolate calcium	541 micrograms
Equivalent Levomefolic acid (5-Methyltetrahydrofolate)	500 micrograms

#### Directions for use:

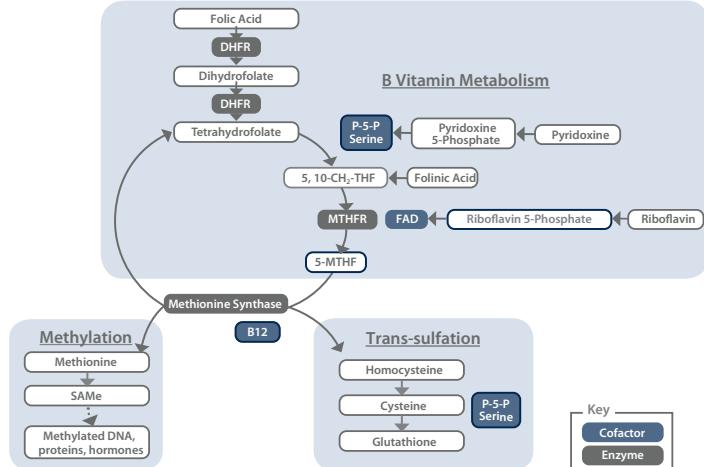
**Adults:** Take 1 capsule daily with food.

#### Clinical Benefits:

**Maintain cardiovascular health by supporting normal homocysteine levels.**<sup>8</sup> A meta-analysis of 25 randomised, controlled trials encompassing 2,596 patients found that supplementation with folic acid and vitamin B12 resulted in a significant reduction of plasma homocysteine levels.<sup>7</sup> These nutrients are also essential for normal red blood cell maturation and DNA synthesis.<sup>8,9</sup>

**Support healthy cognition and mood.** Folate and vitamin B6 are precursors to the neurotransmitters serotonin, epinephrine and dopamine.<sup>4,10,11</sup> Pyridoxal 5-phosphate is also useful in maintaining normal stress levels due to its role in the formation and conversion of neurotransmitters associated with stress.<sup>12</sup>

#### Treatment of vitamin B2, B6 and B12 deficiencies.



#### Bio Active Ingredients in Metagen Activated B's & Folate are Essential for Homocysteine Metabolism.

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, soy protein and salt. Free from artificial colours, flavours and preservatives.



# Resist-X Advanced

Supports Healthy Blood Glucose, Carbohydrate Metabolism and Liver Function.

**Contents:** 60 tablets (30 days)

**Order Code:** RSXA60

**Storage:** Store below 30°C

- Innovative formula containing berberine and milk thistle which exert a synergistic effect to target insulin resistance and liver dysfunction simultaneously.
- Supports healthy blood sugar balance and carbohydrate metabolism.
- Supports the liver and modulates lipid metabolism.

#### Each tablet contains:

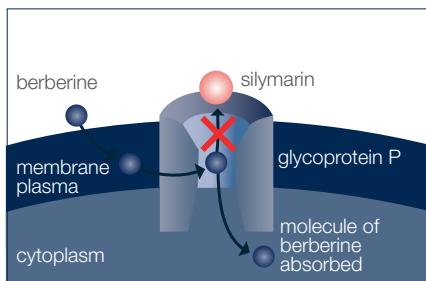
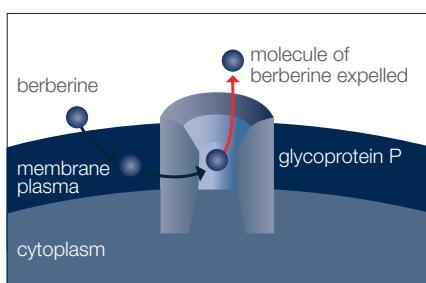
Chromic chloride hexahydrate	705 micrograms
Equivalent chromium	138 micrograms
Chromium picolinate	101 micrograms
Equivalent chromium	13 micrograms
Dry Herbal Extracts:	
<i>Berberis aristata</i> (Indian Barberry), root	1g
Derived from dry root	5g
Equivalent to berberine chloride	500mg
<i>Silybum marianum</i> (Milk Thistle), seed	125mg
Derived from dry seed	8.8g
Equivalent to Flavanolignans calculated as Silybin	105mg

#### Directions for use:

**Adults:** Take 1 tablet twice daily with food.

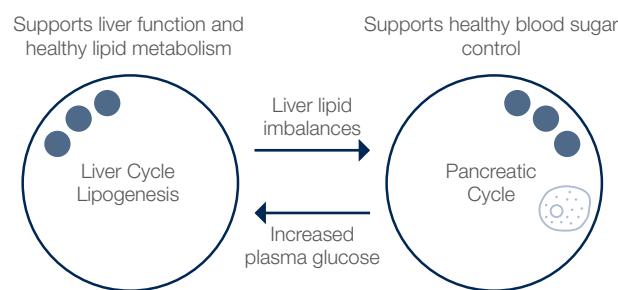
#### Clinical Benefits:

**Berberine from Indian barberry and milk thistle exert a synergistic effect.**<sup>1</sup> Milk thistle supports healthy liver function and reduces free radicals formed in the body.<sup>2</sup> Berberine typically has low oral bioavailability, and its cellular uptake is limited by the P-glycoprotein efflux pump located on cell membranes. Milk thistle's flavanolignans act as inhibitors of this pump,<sup>3</sup> supporting berberine's cellular uptake (Figure 1).<sup>4</sup> In a single-blind, randomised placebo-controlled trial, patients with elevated blood sugar given the combination of 210 mg per day of milk thistle flavanolignans with Indian barberry, equating to 1 g per day of berberine, was shown to synergistically increase berberine's therapeutic effects on glycosylated haemoglobin (HbA1c) compared to the same dose of Indian barberry given alone ( $p<0.05$ ).<sup>5</sup> The two ingredients in a randomised double-blind placebo-controlled trial led to significant reductions in biomarkers: body mass index (BMI), waist circumference and visceral fat compared to placebo after 12 months of supplementation ( $p<0.01$ ).<sup>6</sup>



**Figure 1: Milk Thistle's Flavanolignans Support Berberine's Cellular Uptake.<sup>7</sup>**

**Poor blood sugar control is associated with low-grade systemic inflammation (meta inflammation) caused by nutrient excess.<sup>8</sup>** The twin-cycle hypothesis presents the interconnecting pathways following overnutrition and inflammation, leading to fat accumulation in the liver and insulin resistance. The result of higher very low density lipoprotein (VLDL) in the circulation leads to fat accumulation in the pancreas and subsequently, beta cells ( $\beta$ -cells) dysfunction.<sup>9</sup> To improve insulin resistance, both pancreatic  $\beta$  islet cell dysfunction and liver lipid metabolism must be addressed (Figure 2).<sup>10,11</sup>



**Figure 2: The Twin Cycle Hypothesis – Addressing the Pancreas and the Liver.<sup>12</sup>**

**Chromium assists carbohydrate metabolism, supports healthy blood sugar, and is an essential element in glucose homeostasis.<sup>13</sup>** It achieves this by promoting insulin signalling.<sup>14</sup> A meta-analysis of human clinical trials showed combining milk thistle and Indian barberry presented a significant reduction in fasting blood glucose, total cholesterol, triglycerides, low density lipoproteins, and a significant increase in high density lipoproteins.<sup>15</sup>

**Metabolic stress, such as lipodysfunction and meta inflammation may predispose to pancreatic impairment.<sup>16</sup>** Metabolic imbalances (e.g. fatty liver, insulin resistance, weight gain and hormonal imbalances) all involve liver function alterations, fatty acid abnormalities and changes in blood sugar control.<sup>17</sup> Berberine aids the breakdown of dietary fat and protects the liver. In an animal study, berberine improves pancreatic  $\beta$  islet cell function under metabolic stress.<sup>18</sup> In another animal study, berberine has been shown to reduce hypercaloric induced liver lipid infiltration,<sup>19</sup> and was also shown to inhibit pancreatic inflammation and pancreatic  $\beta$  islet cell damage associated with insulin resistance.<sup>20</sup>

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast and soy protein. Free from artificial colours, flavours and preservatives.



# Resveratrol Healthy Ageing Complex

Support Healthy Ageing of Cardiovascular Function.

**Contents:** 30 tablets (30 days)

**Order Code:** RHAC

**Storage:** Store below 30°C



# Quercetin Protect

Anti-inflammatory, Antioxidant and Immune Support.

**Contents:** 60 tablets (30 days)

**Order Code:** OG1

**Storage:** Store below 30°C

- To support healthy ageing.<sup>1</sup>
- Standardised to 300 mg of resveratrol.
- Contains BCM-95™ Turmeric.<sup>2</sup>

**Each tablet contains:**

Dry herbal extracts:	
Quercetin	200mg
<i>Reynoutria japonica</i> (Polygonum), root	600mg
Derived from min. dry root	60g
Standardised to Resveratrol	300mg
<i>Curcuma longa</i> (BCM-95™ Turmeric), rhizome	152mg
Derived from dry rhizome	3.8g

#### Directions for use:

**Adults:** Take 1 tablet daily.

#### Clinical Benefits:

**Healthy ageing:** As antioxidants, Polygonum and quercetin may support a healthy cardiovascular system, healthy immune function and normal blood sugar levels as a part of healthy ageing in healthy people.<sup>1</sup> Resveratrol has been shown in an animal study, to activate sirtuins which may assist in healthy ageing by leading to an overall increased defence status and enhanced neuronal cell survival.<sup>3</sup> Quercetin is a potent inhibitor of sulphotransferase activity, inhibiting resveratrol sulphation in the liver and duodenum.<sup>4</sup> The inhibition of resveratrol sulphation may increase its bioavailability.<sup>5</sup>

#### A randomised, placebo controlled trial investigated the effect of Polygonum extract containing resveratrol on oxidative stress.

Resveratrol induced a significant reduction in reactive oxygen species generation, via antioxidant effects. By reducing reactive oxygen species, Polygonum may help protect cellular DNA against free radical damage.<sup>6</sup>

Free from animal products, corn, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast and soy protein. Free from artificial colours, sweeteners, flavours and preservatives.

**Each tablet contains:**

Quercetin	500mg
Calcium ascorbate dihydrate	243mg
Equivalent Ascorbic acid	200mg
d-alpha-Tocopheryl acetate	41mg
Dry herbal extracts:	
<i>Silybum marianum</i> (Milk Thistle), seed	76mg
Derived from dry seed	1.9g
<i>Vitis vinifera</i> (Grape), seed	30mg
Derived from dry seed	1.2g
<i>Camellia sinensis</i> (Green tea), leaf	25mg
Derived from dry leaf	225mg
Soft extract:	
<i>Dunaliella salina</i> , cell	40mg
Derived from min. fresh cell	75mg
Std. to carotenoids calculated as betacarotene	3.0mg

#### Directions for use:

**Adults:** Take 1 tablet twice daily with food.

#### Clinical Benefits:

**Anti-inflammatory support:** Quercetin reduces the risk of free radical induced inflammation and damage via several mechanisms. Grape seed contains constituents that down regulate NF  $\kappa$ -B and MAPK pathway promoters of inflammation and cyclooxygenase activity.<sup>2</sup> Milk thistle has been shown to contain anti-inflammatory and antioxidant properties.<sup>3</sup>

**Allergy management:** Quercetin may assist in the management of allergies through inhibition of leukotriene synthesis and histamine release.<sup>4</sup> Quercetin also has strong anti-inflammatory effects and has shown to inhibit LPS induced TNF- $\alpha$  production in macrophages and LPS-induced IL-8 production in lung cells.<sup>5</sup>

**Antioxidant support:** Quercetin contains a combination of ingredients to provide antioxidant protection during times of excessive free radical exposure such as inflammation. Constituents found in grape seed provide very effective scavengers of both hydrophilic and lipophilic radicals, shown *in vitro*.<sup>6</sup> These include super oxide, hydroxyl, peroxyl and peroxy nitrite radicals thus reducing potential oxidative cellular damage.<sup>4</sup> Vitamin C is an important water-soluble antioxidant that directly scavenges free radical oxygen and nitrogen species.<sup>7</sup> As an antioxidant, vitamin E has been shown to inhibit reactions involving free radicals by destroying singlet molecular oxygen.<sup>2</sup>

Free from dairy protein, lactose, eggs, wheat, nuts, yeast and soy protein. Free from artificial colours, flavours and preservatives.

The recommended dose of this medicine provides small amounts of caffeine.



# TocoCare

Citrus Bioflavonoids and Tocotrienols Complex.

**Contents:** 30 soft capsules (30 days)

**Order Code:** CLCR

**Storage:** Store below 30°C

- Contains a combination of citrus bioflavonoids and sustainably sourced palm oil tocotrienols.
- Assists in the maintenance of general health and well being.

#### Each soft capsule contains:

Citrus bioflavonoids extract	270mg
Palm tocotrienols complex*	18mg

\*From sustainably sourced palm.

#### Directions for use:

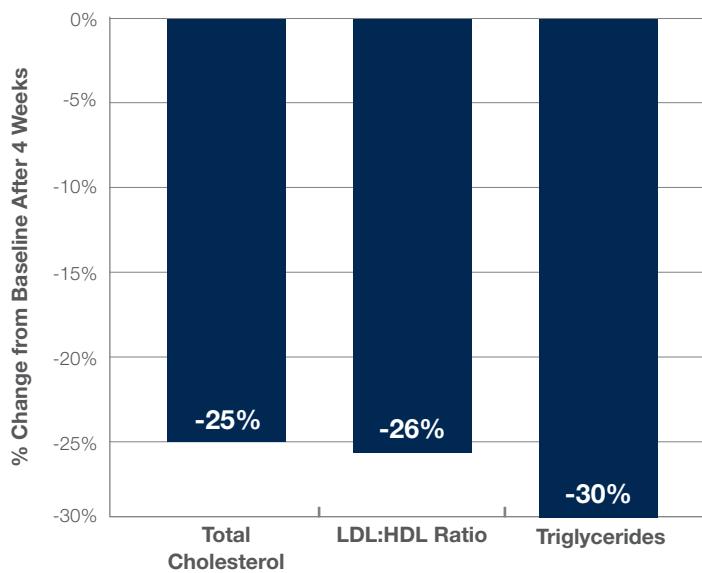
**Adults:** Take 1 soft capsule at night.

#### Clinical Benefits:

The combination of 270 mg of citrus bioflavonoids and 18 mg of tocotrienols, has been shown to impact total cholesterol by an average of 25% over four weeks and 27% over 12 weeks<sup>1</sup>: Three studies including a double blind, randomised clinical trial plus two open-label trials demonstrated significant reductions in total cholesterol, triglycerides and LDL:HDL ratio (Figure 1).<sup>1</sup>

Key mechanisms include HMG-CoA reductase inhibition, reduction of apolipoprotein-B100 secretion and modulation of hepatic LDL receptors.<sup>2,3</sup> Specifically, the polymethoxyflavones tangeretin and nobiletin, suppress the hepatic secretion of ApoB and increase LDL receptor synthesis.<sup>4,2</sup>

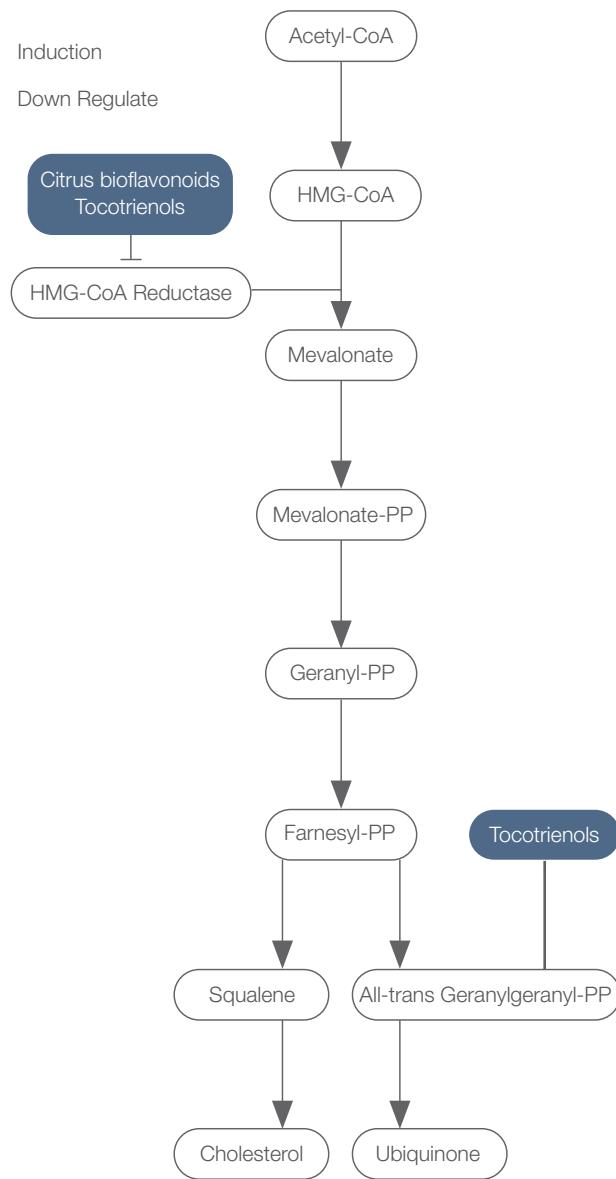
**Tocotrienols inhibit the production of HMG-CoA reductase but support endogenous CoQ10 production via induction of the enzyme geranylgeranyl pyrophosphate (GGPP)<sup>2</sup>.** *In vitro* research shows an 80% inhibition of HMG-CoA reductase by decreasing transcription efficiency and enhancing degradation (Figure 2), unlike most HMG-CoA reductase inhibitors which block the mevalonate pathway by up to 99%.<sup>5</sup>



Roza JM, et al. Alternative Therapies. Nov/Dec 2007. Vol.13, No. 6.

#### KEY:

- Induction
- Down Regulate



**Figure 2: Ingredients in TocoCare Act Upon Multiple Points Within the Mevalonate Pathway.**

Free from corn, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, starches and salt. Free from artificial colours and flavours. Contains soya bean products and sulfites.

**Figure 1: Citrus Bioflavonoids and Tocotrienol Combination Impact Cholesterol in a Clinical Trial With 120 Subjects.**



## Vitamin E8

Mixed Tocopherols and Tocotrienols for Broader Therapeutic Activity.

**Contents:** 30 soft capsules (30 days)

**Order Code:** MVE8

**Storage:** Store below 30°C



## Vitamin K2 180

Vegan Vitamin K2.

**Contents:** 60 capsules (VegeCaps) (60 days)

**Order Code:** VITK2

**Storage:** Store below 30°C

- All eight isomers of vitamin E for broader activity.<sup>1</sup>
- Vitamin E is an antioxidant to help reduce free radical damage formation in the body, support cardiovascular system function and maintain capillary health.<sup>1,2,3</sup>
- Convenient capsules, once per day dose.

### Each soft capsule contains:

Mixed (low-alpha type) tocopherols concentrate	450mg
Palm tocotrienols complex*	70mg

### Directions for use:

**Adults:** Take 1 soft capsule daily.

### Clinical Benefits:

**Vitamin E is the main antioxidant in various cell membranes.<sup>5</sup>**

Multiple randomised, double-blinded placebo-controlled trials have shown tocotrienols to reduce DNA damage, sister chromatid exchange (SCE) frequency (the exchange of genetic material between two sister chromatids of a chromosome)<sup>6</sup> and urinary 8-hydroxydeoxyguanosine (8-OHdG) (an indicator of DNA oxidation).<sup>7,8</sup> Tocotrienols exert their antioxidant activity by decreasing super oxide dismutase (SOD) and increasing glutathione peroxidase.<sup>9</sup>

### Tocopherols demonstrate multiple protective mechanisms:

γ-tocopherol has potent antioxidant effects and may protect lipids, DNA and proteins from peroxynitrite dependent damage by removing its nitrating ability.<sup>10</sup> Tocopherols are more effective in combination at inhibiting platelet aggregation.<sup>11</sup>

**Complete vitamin E consists of eight isomers known as alpha, beta, gamma and delta tocopherols plus alpha, beta, gamma and delta tocotrienols.<sup>12</sup>** The synergy of mixed tocopherols and tocotrienols produce a broader therapeutic activity than a single tocopherol concentrate.<sup>13</sup>

### Vitamin E8 contains a minimum of the following levels of natural isomers of vitamin E:

Tocopherols concentrate – mixed (low alpha type):

Equivalent to:	
d-α-tocopherol	64.3mg
d-β-tocopherol	9.6mg
d-γ-tocopherol	270.0mg
d-δ-tocopherol	106.1mg

Tocotrienols complex – palm\*:

Equivalent to:	
d-α-tocopherol	10.4mg
d-α-tocotrienol	9.5mg
d-β-tocotrienol	1.0mg
d-γ-tocotrienol	12.2mg
d-δ-tocotrienol	4.2mg

\*From sustainably sourced palm.

### Stability studies have been conducted to ensure labelled potency through to expiry.

Free from corn, dairy protein, lactose, eggs, gluten, wheat, nuts, soy protein and starches. Free from artificial sweeteners and flavours. Contains sulfites.

**Contents:** 60 capsules (VegeCaps) (60 days)

**Order Code:** VITK2

**Storage:** Store below 30°C

- Supports cardiovascular health.
- Maintains bone health and helps prevent dietary K2 deficiency.
- Provides a low excipient, vegan option for flexible prescribing in a bioavailable form.

### Each capsule contains:

Menaquinone 7 (K2 Vital® DELTA)

Vitamin K2

180 micrograms

### Directions for use:

**Adults:** Take 1 capsule daily with food.

### Clinical Benefits:

**Vitamin K2 deficiency can be influenced by factors such as inadequate dietary intake, certain medications and ageing.<sup>1,2</sup>**

Vitamin K encompasses phylloquinone, Vitamin K1, and the menaquinones (including bioavailable MK-7), known as Vitamin K2. The typical Western diet lacks adequate sources of vitamin K2 (i.e. natto and cheese being the main sources), posing a risk for vitamin K deficiency.<sup>3,4</sup> While conversion is also a factor with humans only converting between 5% and 25% of ingested and absorbed dietary K1 to K2.<sup>5</sup> Further to this, some medications, i.e. statins, can inhibit the synthesis of vitamin K2 (potentially accelerating coronary artery calcification and affecting blood glucose health).<sup>6,7,8</sup> K2 may also provide protection against anticoagulant-coumarin-induced side effects and diet-induced fluctuations in international normalised ratio (INR) values.<sup>9,10,11</sup> Additionally, the percentage and risk of K2 deficiency increases with age, a factor relevant in ageing patients, who may be more likely to use cardiovascular medication and experience bone health issues.<sup>12,13</sup>

**Vitamin K is a key cofactor for carboxylation reactions in vitamin K-dependent proteins (VKDPs) involved in blood coagulation (clotting), bone metabolism, vessel health, and regulation of various cellular functions.<sup>14</sup>** Vitamin K2 activates the VKDP, Matrix Gla Protein (MGP), a protein found in bone, blood vessels, lungs, heart, and kidney, which prevents calcification in the bone, cartilage, vessel walls, skin elastic fibers, and even the human eye.<sup>15,16</sup> Given that certain medications can inhibit K2 synthesis, activating MGP is important for protecting arteries from calcification, implicating a role in the area of atherosclerosis and protection against vascular disease.<sup>17,18</sup> When it comes to bone health, vitamin K2 regulates bone remodelling, conferring a protective action against bone loss, supporting bone density, mass and integrity, while also directing calcium from arteries back into bone, which is especially important for higher risk groups such as postmenopausal women.<sup>19,20</sup> Research into MK-7, using DXA measurements, showed significant improvement to vitamin K status and decreased the age-related decline in bone mineral, content, density and bone strength.<sup>21</sup>

Free from animal products, dairy protein, lactose, eggs, gluten, wheat, nuts, yeast, soy protein and salt. Free from artificial colours, flavours and preservatives.

**K2VITAL® DELTA**

is the registered trademark of Kappa Bioscience AS.

# Cardiovascular & Heart Health Range

Product Highlights	Pg	Product Highlights	Pg
 <p><b>Bio Q-Absorb 150</b> Maximum Strength Coenzyme Q10 with Exclusive VESIsorb® Technology for Enhanced Absorption.</p> <ul style="list-style-type: none"> <li>• Coenzyme Q10</li> <li>• VESIsorb® enhanced delivery system</li> </ul>	4	 <p><b>Resist-X Advanced</b> Supports Healthy Blood Glucose, Carbohydrate Metabolism and Liver Function.</p> <ul style="list-style-type: none"> <li>• Indian Barberry</li> <li>• Milk Thistle</li> <li>• Chromium Chloride Hexahydrate</li> <li>• Chromium Picolinate</li> </ul>	8
 <p><b>Bio Q-Absorb Ubiquinol</b> Activated Form Of Coenzyme Q10 With Exclusive VESIsorb® Technology For Enhanced Absorption.</p>	4	 <p><b>Resveratrol Healthy Ageing Complex</b> Support Healthy Ageing of Cardiovascular Function</p>	9
 <p><b>CardioX</b> Magnesium and Active Bs for Cardiovascular Health</p> <ul style="list-style-type: none"> <li>• Meta Mag® Magnesium</li> <li>• Taurine</li> <li>• Tropical or Banana Berry flavour</li> </ul>	5	 <p><b>Quercetin Protect</b> Anti-inflammatory, Antioxidant and Immune Support.</p> <ul style="list-style-type: none"> <li>• Quercetin</li> <li>• Vitamin C</li> <li>• Milk thistle</li> <li>• Green tea</li> </ul>	9
 <p><b>Glutathione Capsules</b> Bioavailable Antioxidant Support.</p> <ul style="list-style-type: none"> <li>• Glutathione</li> </ul>	6	 <p><b>TocoCare</b> Citrus Bioflavonoids and Tocotrienols Complex.</p> <ul style="list-style-type: none"> <li>• Citrus Bioflavonoids extract</li> </ul>	10
 <p><b>Glutathione Powder</b> Bioavailable Antioxidant Support.</p> <ul style="list-style-type: none"> <li>• Glutathione</li> <li>• Pineapple flavour</li> </ul>	6	 <p><b>Vitamin E8</b> Mixed Tocopherols and Tocotrienols for Broader Therapeutic Activity.</p> <ul style="list-style-type: none"> <li>• Mixed (low-alpha type) tocopherols concentrate</li> <li>• Palm tocotrienols complex*</li> </ul>	11
 <p><b>Lipoic Acid 600</b> One-A-Day High Strength Antioxidant.</p> <ul style="list-style-type: none"> <li>• Alpha lipoic acid</li> </ul>	7	 <p><b>Vitamin K2</b> Vegan Vitamin K2.</p> <ul style="list-style-type: none"> <li>• Menaquinone 7 (K2 Vital® DELTA)</li> <li>• Vitamin K2</li> </ul>	11
 <p><b>Metagen Activated Bs &amp; Folate</b> Active B Vitamins Plus Serine for Healthy Methylation. Formerly Metagen Methyl Active.</p> <ul style="list-style-type: none"> <li>• Vitamin B12</li> <li>• 5-MTHF</li> </ul>	7		

References available on request.



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