

# TolerAid™

## Natural Support for Food & Chemical Sensitivities

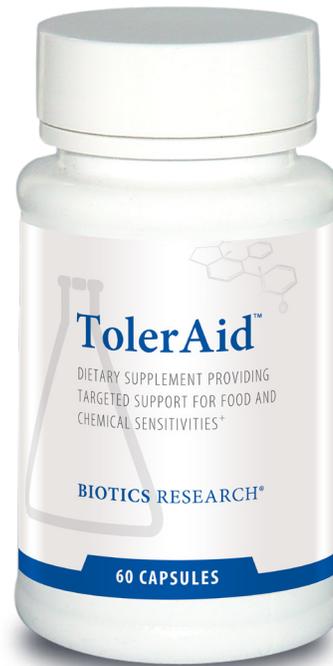
**TolerAid™** is a novel formulation providing nutrients the body needs to meet the onslaught of compounds including sulfites, tannins, aldehydes, histamines, tyramines and congeners that may trigger chemical intolerance.

It has been designed to support a healthy, functioning liver detoxification pathway, urea cycle, mitochondrial function, and methylation. Downregulation of these metabolic pathways, through genetic polymorphism or dietary pattern may result in numerous unwanted challenges.

Compounds that trigger chemical intolerance include sulfite, phenolic compounds (tannins), mold or yeast (aldehydes), prostaglandins, histamines, tyramines, and congener (chemical residues from fermentation). Metabolism of these compounds takes place in the liver,<sup>1</sup> and is supported by the ingredients supplied by **TolerAid™**. Nutrigenomics related to genetic polymorphisms of methylation and detoxification dramatically influence liver metabolism of these compounds, and providing key nutrients can up-regulate clearance.

**Sulfites:** "Sulfites" is considered to be an inclusive term for sulfur dioxide (SO<sub>2</sub>) and related compounds. The salts formed from sulfurous acid, including sodium sulfite or potassium metabisulfite (also known as potassium pyrosulfite) are used for a variety of preservative properties such as controlling microbial growth, preventing browning, and for bleaching some foods. They are also concentrated in wine. It is estimated that in the US, a half million people are sulfite sensitive. This includes about 8% of asthmatics.<sup>2</sup>

There are two categories of sulfites, natural and added. Natural sulfite compounds are produced during fermentation and cannot be avoided. For this reason, sulfite-free wines do not exist. However, sulfites are often added to wines to protect them from oxidation, yeast and mold.



**TolerAid™** available in a 60 capsule bottle (#7858)

**Sulfite and Sulfite Oxidase:** Sulfite oxidase (SO) converts sulfite to sulfate. Inadequate SO levels can be due to genetic predisposition and/or cofactor deficiency.<sup>3</sup>

Molybdenum oxotransferases includes SO, aldehyde oxidase, DMSO reductase, xanthine oxidase, and nitrite reductase. Production of SO requires molybdenum and riboflavin, both of which are supplied by **TolerAid™**.

**Histamines:** Those with histamine tolerance challenges often feel over-stimulated or anxious, suffer from occasional sleeplessness, sometimes have trouble regulating body temperature, or may feel nauseous. Vitamin B6 (pyridoxal-5-phosphate) has been shown to promote diamine oxidase (histaminase).<sup>4</sup> Folate antagonists promote histamine, and quercetin inhibits release of histamine from mast cells.<sup>5</sup> **TolerAid™** supplies both folate (5-methyltetrahydrofolic acid) and quercetin to support histamine metabolism.

**Tyramine (biogenic amine):** Many foods, especially fermented foods, are a source of tyramine, a biogenic amine. Tyramine intolerance may result in similar challenges as histamine intolerance. Tyramine and the other biogenic amines are metabolized by monoamine oxidase (MAO). Riboflavin is an essential cofactor for MAO production, and is supplied by **TolerAid™**.



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**Tannins (polyphenols):** Tannin is a naturally occurring phenolic compound found in plant seeds, leaves, bark, pulp, and fruit skins. Interestingly, even though grape skins contain tannins which are in contact with wood (also containing tannins) during the wine making process, red wine has been shown to contain a potent inhibitor of phenolsulfotransferase (PST), an enzyme that breaks down, or sulfates phenolic compounds, including tannins. Certain food additives such as artificial colors and flavors can inhibit PST. Dietary sulfur is required for PST production. Cruciferous vegetables in general, and broccoli specifically, are effective sources of sulfur. Sulfation of PST is supported by vitamins B12, folate (5-methyltetrahydrofolic acid), and B6 (P-5-P). All of these nutrients are provided by **TolerAid™**.

**Aldehydes:** Fermentation of wine produces aldehydes. It is normally metabolized into harmless acetic acid (vinegar) in the liver by the enzyme acetaldehyde dehydrogenase. Individuals with general aldehyde sensitivity will also be sensitive to perfumes, smoke, molds, many industrial chemicals, and volatile organic chemicals (VOCs). Exposure is widespread. The breakdown of aldehydes via aldehyde dehydrogenases is supported by upregulating their production with the cofactors molybdenum selenium, riboflavin, niacinamide, and vitamin E, all of which are supplied by **TolerAid™**.

**Congeners:** These are substances other than ethanol that are produced from fermentation. They include fusel oils, methanol, acetaldehyde, and biogenic amines such as histamine and tyramine. Some congeners are normal to the body, such as acetone (a class 3 residual solvent), which is broken down in the liver by the P450 detoxification pathway. Metabolism of this pathway is supported by riboflavin, niacin, B6, folate, vitamin E, quercetin, selenium, magnesium and indoles from cruciferous vegetables, all of which are contained in **TolerAid™**. Methanol, on the other hand, can be quite toxic. It is metabolized in the liver into formaldehyde by acetaldehyde dehydrogenase. The formaldehyde is then further broken down by glutathione peroxidase dependent formaldehyde dehydrogenase to formic acid, which is then metabolized by catalase. Denaturation of formic acid depends on folate sufficiency. Production of glutathione depends on the nutrients selenium, folate, magnesium, and B6. All of the above mentioned compounds are supplied by **TolerAid™**.

**TolerAid™** provides nutritional support for healthy, functioning:

- Detoxification pathways\*
- Mitochondrial function\*
- Methylation processes\*

## References

1. Romilly E. Hodges and Deanna M. Minich, Modulation of Metabolic Detoxification Pathways Using Foods and Food-Derived Components: A Scientific Review with Clinical Application. J Nutr Metab. 2015; 2015: 760689.
2. Lester, M.R. 1995. Sulfite sensitivity: Significance in human health. J. Am. Coll. Nutr. 14(3): 229–232.
3. Reena Jethva, MD, Sulfite Oxidase Deficiency and Molybdenum Cofactor Deficiency, emedicine.com, 19 Feb 2019.
4. Laura Maintz, Natalija Novak. Histamine and histamine intolerance. The American Journal of Clinical Nutrition, Volume 85, Issue 5, May 2007, Pages 1185–1196.
5. Yasdani Shaik, Alessandro Caraffa, Gianpaolo Ronconi, Gianfranco Lessiani and Pio Conti. Impact of polyphenols on mast cells with special emphasis on the effect of quercetin and luteolin. Cent Eur J Immunol. 2018; 43(4):476-481.

## Supplement Facts

Serving Size: 2 Capsules  
Servings Per Container: 30

	Amount Per Serving	% Daily Value
Vitamin E (as d-alpha tocopheryl acetate and mixed tocopherols)	67 mg	447%
Thiamine (as cocarboxylase chloride)	2 mg	167%
Riboflavin (as riboflavin-5-phosphate)	4 mg	308%
Niacin (as niacinamide)	20 mg	125%
Vitamin B6 (as pyridoxal-5-phosphate)	12 mg	706%
Folate (as 5-MTHF glucosamine salt)	200 mcg DFE	50%
Selenium (from vegetable culture† and selenomethionine)	100 mcg	182%
Molybdenum (from vegetable culture† and molybdenum glycinate)	300 mcg	667%

Quercetin	100 mg	*
Proprietary blend	20 mg	
Raw organic grass juices (barley, wheat, oat, alfalfa, kamut)*, raw organic vegetable sprout concentrates (broccoli, cauliflower, kale)*, raw organic vegetable juices (beet, carrot)*, organic acerola berry extract*, organic peppermint leaf*, Stevia rebaudiana leaf extract*		

\*Daily Value not established

**Other ingredients:** Capsule shell (gelatin and water) and silica.

**This product is gluten and dairy free.**

**RECOMMENDATION:** One (1) to two (2) capsules each day as a dietary supplement or as otherwise directed by a healthcare professional.

**KEEP OUT OF REACH OF CHILDREN**

Store in a cool, dry area.  
Sealed with an imprinted safety seal for your protection.

To place your order for **TolerAid™** or for additional information please contact us below.



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