

## NATURAL HEALTH PRODUCT

### TAURINE

This monograph is intended to serve as a guide to industry for the preparation of Product Licence Applications (PLAs) and labels for natural health product market authorization. It is not intended to be a comprehensive review of the medicinal ingredient.

#### Notes

- ▶ Text in parentheses is additional optional information which can be included on the PLA and product label at the applicant's discretion.
- ▶ The solidus (/) indicates that the terms and/or statements are synonymous. Either term or statement may be selected by the applicant.

#### Date

June 3, 2019

#### Proper name(s), Common name(s), Source material(s)

Table 1. Proper name(s), Common name(s), Source material(s)

Proper name(s)	Common name(s)	Source ingredient(s)
		Common name(s)
2-Aminoethanesulfonic acid	Taurine	<ul style="list-style-type: none"> <li>▶ L-Arginine taurinate</li> <li>▶ Taurine</li> <li>▶ Taurine ethyl ester</li> </ul>

References: Proper name: NIH 2015, O'Neil et al. 2006; Common name: USP 35 2012, O'Neil et al. 2006; Source ingredients: Zajac et al. 2003, Gennaro 2000.

#### Route of administration

Oral

#### Dosage form(s)

This monograph excludes foods or food-like dosage forms as indicated in the Compendium of Monographs Guidance Document.

Acceptable dosage forms for the age category listed in this monograph and specified route of administration are indicated in the Compendium of Monographs Guidance Document.

### **Use(s) or Purpose(s)**

Helps to support cardiovascular function (Allard et al. 2006; Zhang et al. 2004; Baum and Weiss 2001; Azuma 1994; Azuma et al. 1992; Fujita et al. 1987; Azuma et al. 1983a).

### **Dose(s)**

#### **Subpopulation(s)**

Adults 18 years and older

#### **Quantity(ies)**

1.5 - 3 grams of Taurine, per day (Baum and Weiss 2001; Azuma 1994; Azuma et al. 1992).

#### **Direction(s) for use**

No statement required.

### **Duration(s) of use**

No statement required.

### **Risk information**

#### **Caution(s) and warning(s)**

Consult a health care practitioner/health care provider/health care professional/doctor/physician prior to use if you are pregnant or breastfeeding (Lopez Ramon et al. 2007; Seghieri et al. 2007).

#### **Contraindication(s)**

No statement required.

#### **Known adverse reaction(s)**

No statement required.

### **Non-medicinal ingredients**

Must be chosen from the current Natural Health Products Ingredients Database (NHPID) and must meet the limitations outlined in the database.

## Storage conditions

No statement required.

## Specifications

- ▶ The finished product specifications must be established in accordance with the requirements described in the Natural and Non-prescription Health Products Directorate (NNHPD) Quality of Natural Health Products Guide.
- ▶ The medicinal ingredient must comply with the requirements outlined in the NHPID.

## References cited

Allard ML, Jeejeebhoy KN, Sole MJ. 2006. The management of conditioned nutritional requirements in heart failure. *Heart Failure Reviews* 11(1):75-82.

Azuma J, Hasegawa H, Sawamura A, Awata N, Ogura K, Harada H, Yamamura Y, Kishimoto S. 1983a. Therapy of congestive heart failure with orally administered taurine. *Clinical Therapeutics* 5(4):398-408.

Azuma J, Hasegawa H, Sawamura A. 1982. Taurine for treatment of congestive heart failure. *International Journal of Cardiology* 2:303-309.

Azuma J, Sawamura A, Awata N, et al. 1983b. Double-blind randomized crossover trial of taurine in congestive heart failure. *Current Therapeutic Research, Clinical and Experimental* 34(4):543-557.

Azuma J, Sawamura A, Awata N. 1992. Usefulness of taurine in chronic congestive heart failure and its prospective application. *Japanese Circulation Journal* 56(1):95-99.

Azuma J. 1994. Long-term effect of taurine in congestive heart failure: preliminary report. *Heart Failure Research with Taurine Group. Advances in Experimental Medicine and Biology* 359:425-433.

Baum M, Weiss M. 2001. The influence of a taurine containing drink on cardiac parameters before and after exercise measured by echocardiography. *Amino Acids* 20(1):75-82.

Fujita T, Ando K, Noda H, Ito Y, Sato Y. 1987. Effects of increased adrenomedullary activity and taurine in young patients with borderline hypertension. *Circulation* 75(3):525-532.

López Ramón Y Cajal C, Ocampo Martínez R, Couceiro Naveira E, Martínez M. 2007. Amino acids in amniotic fluid in the 15th-16th weeks of gestation and preterm labor. *The Journal of Maternal-Fetal & Neonatal Medicine: the Official Journal of the European Association of*

Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians. 20(3):225-231.

NIH 2015: National Institute of Health. [Internet]. [Accessed 2019 May 15]. Available from: <http://chem.sis.nlm.nih.gov/chemidplus/rn/1077-28-7>

O'Neil MJ, Smith A, Heckelman PE, Budavari S, editors. 2006. The Merck Index: An Encyclopedia of Chemicals, Drugs, and Biologicals, 14th edition. Whitehouse Station (NJ): Merck & Co., Inc.

Seghieri G, Tesi F, Bianchi L, Loizzo A, Saccomanni G, Ghirlanda G, Anichini R, Franconi F. 2007. Taurine in women with a history of gestational diabetes. *Diabetes Research and Clinical Practice* 76(2):187-192.

USP 35 2012: United States Pharmacopeial Convention. 2009. United States Pharmacopeia and the National Formulary (USP 35 - NF 30). Rockville (MD): The United States Pharmacopeial Convention.

Zhang M, Bi LF, Fang JH, Su XL, Da GL, Kuwamori T, Kagamimori S. 2004. Beneficial effects of taurine on serum lipids in overweight or obese non-diabetic subjects. *Amino Acids* 26(3):267-271.

### References reviewed

Azuma J, Sawamura A, Awata N, Ohta H, Hamaguchi T, Harada H, Takihara K, Hasegawa H, Yamagami T, Ishiyama T, et al. 1985. Therapeutic effect of taurine in congestive heart failure: a double-blind crossover trial. *Clinical Cardiology* 8(5):276-282.

Bichler A, Swenson A, Harris MA. 2006. A combination of caffeine and taurine has no effect on short term memory but induces changes in heart rate and mean arterial pressure. *Amino Acids* 31:471-476.

Fennessy FM, Moneley DS, Wang JH, Kelly CJ, Bouchier-Hayes DJ. 2003. Taurine and vitamin C modify monocyte and endothelial dysfunction in young smokers. *Circulation* 107(3):410-415.

Jeejeebhoy F, Keith M, Freeman M, Barr A, McCall M, Kurian R, Mazer D, Erret L. 2002. Nutritional supplementation with MyoVive repletes essential cardiac myocyte nutrients and reduces left ventricular size in patients with left ventricular dysfunction. *American Heart Journal* 143(6):1092-1100.

Kohashi N, Okabayashi T, Hama J, Katori R. 1983. Decreased urinary taurine in essential hypertension. *Progress in Clinical Biological Research* 125:73-87.

Shao A, Hathcock JN. Risk assessment for the amino acids taurine, L-glutamine and L-arginine. *Regul Toxicol Pharmacol*. 2008 Apr;50(3):376-99. Epub 2008 Jan 26.

Xu YJ, Arneja AS, Tappia PS, Dhalla NS. 2008. The potential health benefits of taurine in cardiovascular disease. *Experimental Clinical Cardiology* 13(2):57-65.

Yamori Y, Liu L, Ikeda K, Miura M, Mizushima S, Miki T, Nara Y. 2001. Distribution of twenty-four hour urinary taurine excretion and association with ischemic heart disease: disease mortality in 24 populations of 16 countries: results from the WHO-CARDIAC study. *Hypertension Research* 24(4):453-457.

Yamori Y, Liu L, Mizushima S, Ikeda K, Nara Y. 2006. Male cardiovascular mortality and dietary markers in 25 population samples of 16 countries. *Journal of Hypertension* 24(8):1499-1505.

Yamori Y, Nara Y, Ikeda K, Mizushima S. 1996. Is taurine a preventive nutritional factor of cardiovascular diseases or just a biological marker of nutrition? *Advances in Experimental Medicine and Biology* 403:623-9.