



NEW PRODUCT

ThorneVet Peaceful Pet

Provides calming botanicals and calming nutrients that support the healthy functioning of a companion animal's nervous system

ThorneVet's Peaceful Pet combines six well-researched botanical extracts – plus a well-known amino acid and two bioactive forms of vitamin B6 – that provide synergistic support for reducing nervous tension, alleviating stress, and providing balanced responses throughout the nervous system.

Key Calming Support Features

- | Combines the highly effective nerve-calming extracts from skullcap, valerian, passionflower, and lemon balm to gently calm and balance the nervous system.
- | Contains RELORA® – a proprietary blend of two botanical extracts – from the barks of the Magnolia tree and the Phellodendron tree – that have been shown to reduce stress, moderate anxiousness, and improve mood.
- | Reduces stress and overactivity by promoting an overall balance of the nervous system's primary neurotransmitters – dopamine, serotonin, GABA, glutamate, norepinephrine, and acetylcholine.
- | Includes L-theanine, an amino acid found to be effective at alleviating anxiety-like symptoms in both humans and animals.
- | Supports healthy nervous system function by including two forms of vitamin B6 that can reduce anxiousness and stress.

Synergistic Support for Balanced Nervous System Response

Botanical Ingredients

Skullcap (*Scutellaria lateriflora*)

Scutellaria lateriflora, also called **American Skullcap**, is a perennial herb of the mint family that is native to North America, although it is also found in Asia and Europe. **Skullcap** was used by Native Americans for generations to treat nervous system disorders. The pioneering holistic veterinary herbalist, England's Juliette de Bairacli Levy, recommended in 1985 that **Skullcap** be used for the treatment of all veterinary patients with nervous complaints.¹ Likewise, human studies have shown **Skullcap's** efficacy in providing relief to individuals with anxiety, as well as seizures.² It is **Skullcap's** above-ground parts, principally its leaves and flowers, that are used medicinally. Two important flavonoids are naturally present in **Scutellaria** – **baicalin** and **wogonin**. These two potent constituents are thought to be GABAergic, meaning they bind to the benzodiazepine sites of the brain's γ -aminobutyric (**GABA**) receptors, thereby exerting a sedating and anxiety-reducing effect.³ It is also thought that **Scutellaria's** effects on one of the brain's serotonin receptors – **5-HT7** – is partially responsible for this botanical's well-known and widely reported sedative-like and relaxing effects.⁴

RELORA® – Extracts from the barks of *Magnolia officinalis* and *Phellodendron amurense*

The barks of the trees *Magnolia officinalis* and *Phellodendron amurense* have a long history of usage in traditional medicine systems for a wide variety of health conditions. When combined in the proprietary formulation called **RELORA®**, there is significant evidence to suggest this synergistic combination has a positive effect on anxiety and mood. Extracts of *Magnolia officinalis* bark and its active constituent, **honokiol**, have been found in animal models as having anxiety-reducing activity comparable to traditional pharmaceutical but without the associated side effects, such as fatigue, nausea, and confusion.^{5,6} **Berberine**, an alkaloid constituent of **Phellodendron extract**, has demonstrated a significant anxiety-reducing effect in rodent stress studies.⁷ And the combination of **Magnolia** and **Phellodendron** extracts appears to have a greater efficacy in controlling stress and anxiety than when either herb is used alone.⁷ When compared to pharmaceutical agents used to treat anxiety, **honokiol** and **berberine** appear to be as effective in their anti-anxiety activity yet not nearly as powerful in sedative-like activity.^{8,9} These results have been demonstrated in numerous animal studies, suggesting that **RELORA®**, which has a standardized content of both **honokiol** (from **Magnolia bark**) and **berberine** (from **Phellodendron bark**), is an effective natural approach for controlling the detrimental effects of everyday stressors that can affect companion animals, without exhibiting the tranquilizing side effects of pharmaceutical agents.⁷

Passionflower (*Passiflora incarnata*)

Passionflower is indigenous to the southeastern United States, Argentina, and Brazil. A substantial amount of historical evidence shows the medicinal use of **Passionflower** by the native tribes of North America – it was used as a natural remedy for general nervous agitation and multiple nervous complaints. Like **Magnolia** and **Phellodendron**, studies in humans and animals show **Passionflower** as having anxiety-reducing properties comparable to pharmaceutical therapies but without the adverse side effects.^{10,11} It is believed that **Passionflower** exhibits its natural calming effect by increasing the brain's level of **gamma amino butyric acid** or **GABA**. **GABA** is a well-known "inhibitory" neurotransmitter that – when there is an optimal level of **GABA** in the nervous system – promotes relaxation and reduces nervous system tension.¹²

Valerian Root (*Valeriana officinalis*)

Historical evidence shows **Valerian root's** medicinal use in Europe dates back to the Middle Ages, as well as similar evidence showing its use by Native American tribes. Although the plant's root was used to treat a variety of disorders, the focus of **Valerian root's** historical use has been for nervous disorders.¹² **Valerian root extracts** were recognized as being effective remedies for insomnia and for alleviating stress.¹³ Although the mechanisms of action by which **Valerian root extract** promotes restful sleep and reduces stress are not completely understood, several of its constituents appear to be involved; for example, it is thought that the constituents **valepotriate** and **valeric acid** and also the plant's **volatile oils** up-regulate the production of **GABA**. Several of the natural constituents of **Valerian root** are believed to exert their beneficial activity in the amygdaloid portion of the brain, where they down-regulate the release of stress hormones, while other of the plant's natural substances are believed to up-regulate the brain's production of **GABA**, thus manifesting in various ways the plant's calming and sedative-like properties.¹⁴

Lemon Balm (*Melissa officinalis L.*) – RELISSA® from Indena S.p.A

Lemon Balm has traditionally been used as a natural remedy for digestive disorders and as a sedative for individuals who have nervous disturbances of their sleep.² Studies have shown the beneficial effects of **Lemon Balm** extracts on individuals who have cognitive dysfunction by improving their mood and memory.¹⁵ Current evidence also suggests that **Lemon Balm** might be effective in improving anxiety-like and depressive-like symptoms.¹⁶ **Lemon Balm** contains **phenolic acid derivatives**, such as **rosmarinic acid** and the related **lithospermic** and **chlorogenic acids**.¹⁷ **Rosmarinic acid** and the **triterpenoids oleanolic acid** and **ursolic acid** apparently down-regulate the activity of a specific enzyme – **GABA transaminase** – which would otherwise break down **GABA**, thus helping to maintain an optimal level of **GABA** in the brain. For example, in animal studies, the **rosmarinic acid** found in **Lemon Balm** has been shown to inhibit the activity of **GABA transaminase**. This beneficial mechanism of action contributes to **Lemon Balm's** anxiety-reducing benefits.¹⁸ Whole **Lemon Balm** extracts contain not only **rosmarinic acid** but also additional natural constituents that are believed to offer synergistic effects in helping to maintain an optimal level of **GABA** in the animal's brain and nervous system.¹⁹

ThorneVet's Peaceful Pet uses **Indena S.p.A.'s phytosome complex – RELISSA®** – to ensure optimal bioavailability of **rosmarinic acid**, as well as **hydroxycinnamic acid**, in standardized quantities to best achieve **Lemon Balm's** peak therapeutic effect. **Indena S.p.A.**, headquartered in Milan, Italy, is the world's leading company dedicated to the identification, development, and production of high-quality active constituents derived from plants.

Special Ingredients

L-Theanine

L-theanine, an amino acid first discovered in green tea, has been shown to beneficially affect brain functions by relieving stress disorders, improving mood, and maintaining normal sleep patterns.²⁰ In animal studies, **L-theanine** has been shown to have both anxiety-reducing and depressive-reducing effects.²¹ These beneficial effects are associated with an increase in the expression of **brain-derived neurotrophic factor (BDNF)** in the hippocampus area of the brain. **BDNF** is a protein that promotes the survival of nerve cells (neurons) by exerting a beneficial role in the growth, maturation, and maintenance of these nerve cells.²² Animal neurochemistry studies also suggest that **L-theanine** increases the levels of the beneficial brain neurotransmitters **serotonin**, **dopamine**, and **GABA**, in addition to up-regulating the activity of various **glutamate** receptors (**AMPA**, **kainate**, and **NMDA**), thus increasing **glutamate's** natural propensity to support positive emotions and mood.²³

Vitamin B6

Vitamin B6, as **pyridoxine**, is one of the water-soluble vitamins of the B vitamin complex. **Vitamin B6** plays an important role in the body's production of the brain's neurotransmitters, including **dopamine**, **serotonin**, and **GABA**.²⁴ Thus, a deficiency of **vitamin B6** can cause a down-regulation of the production of **dopamine**, **serotonin**, and **GABA**, resulting in the loss of the beneficial activities of these chemical messengers, which includes helping nerve cells communicate with each other, regulating appetite, moderating the sleep-wake cycle, and promoting positive mood.²⁵ Thus, a disruption of balanced neurotransmitter synthesis can lead to a variety of behavioral disturbances in a companion animal. **ThorneVet's Peaceful Pet** also includes **vitamin B6** in its most bioactive form – **pyridoxal 5'-phosphate** – which provides additional solid support for achieving balanced neurotransmitter production in the brain.

*Discover the tranquility of **ThorneVet's Peaceful Pet**, where nature's calming botanicals harmonize with science-backed L-theanine and Vitamin B6 to help your pet achieve balance amidst the stress of life's daily demands.*

Peaceful Pet

Provides calming botanicals and calming nutrients that support the healthy functioning of a companion animal's nervous system



Cats: 1/2 soft chew daily



1 soft chew per 25 pounds body weight daily



PRODUCT FACTS

Active Ingredients per 2-gram Soft Chew:	
American Skullcap extract (<i>Scutellaria lateriflora</i>)	200 mg
Proprietary Blend (RELISSA®)	125 mg
Magnolia Officinalis (bark) extract	
Phellodendron amurense (bark) extract	
Passionflower extract (<i>Passiflora incarnata</i>)	100 mg
Valerian Root extract (<i>Valeriana officinalis</i>)	75 mg
Lemon Balm Phytosome (RELISSA®)	
(<i>Melissa officinalis</i> (leaf) / Phospholipid complex from Sunflower)	50 mg
L-Theanine	50 mg
Pyridoxine (Vitamin B6)	10 mg
Pyridoxal 5'-Phosphate (Vitamin B6)	2.5 mg

Inactive Ingredients (Soft Chew Matrix):

Arabic gum, buffered white distilled vinegar, chick pea flour, citric acid, coconut glycerin, coconut oil, guar gum, inulin, bacon flavor (vegan), roasted chicory root, rosemary extract, sunflower lecithin, sunflower oil, tapioca starch, water.

LORA® is a registered trademark of Lonza Greenwood, LLC.

RELISSA® is a registered trademark of Indena S.p.

V980-SC / 90 Soft Chews



References

1. De Bairacli Levy J. The Complete Herbal Handbook for the Dog and Cat. London: Faber and Faber; 1985.
2. Wynn S, Fougere B. Veterinary Herbal Medicine. St. Louis, MO: Mosby; 2007 p. 641.
3. Wolfson P, Hoffmann DL. An investigation into the efficacy of *Scutellaria lateriflora* in healthy volunteers. *Altern Ther Health Med* 2003;9:74-78.
4. Brock C, Whitehouse J, Tewfik I, Towell T. Inhibitor of [3H]-LSD binding to 5-HT₇ receptors by flavonoids from *Scutellaria lateriflora*. *J Nat Prod* 2003;66:535-537.
5. Kuribara H, Stavinoha WB, Maruyama Y. Behavioural pharmacological characteristics of honokiol, an anxiolytic agent present in extracts of *Magnolia* bark, evaluated by an elevated plus-maze test in mice. *J Pharm Pharmacol* 1998;50:819-826. doi: 10.1111/j.2042-7158.1998.tb07146.x.
6. Kuribara H, Stavinoha WB, Maruyama Y. Honokiol, a putative anxiolytic agent extracted from *magnolia* bark, has no diazepam-like side-effects in mice. *J Pharm Pharmacol* 1999;51:97-103.
7. Talbott SM, Talbott JA, Pugh M. Effect of *Magnolia officinalis* and *Phellodendron amurense* (Relora®) on cortisol and psychological mood state in moderately stressed subjects. *J Int Soc Sports Nutr* 2013 Aug 7;10(1):37. doi: 10.1186/1550-2783-10-37. PMID: 23924268; PMCID: PMC3750820.
8. Xu Q, Yi LT, Pan Y, et al. Antidepressant-like effects of the mixture of honokiol and magnolol from the barks of *Magnolia officinalis* in stressed rodents. *Prog Neuropsychopharmacol Biol Psychiatry* 2008;32(3):715-725. doi: 10.1016/j.pnpbp.2007.11.020.
9. Peng WH, Wu CR, Chen CS, et al. Anxiolytic effect of berberine on exploratory activity of the mouse in two experimental anxiety models: interaction with drugs acting at 5-HT receptors. *Life Sci* 2004;75(20):2451-2462. doi: 10.1016/j.lfs.2004.04.032.
10. Akhondzadeh S, Naghavi HR, et al. Passionflower in the treatment of generalized anxiety: a pilot double-blind randomized controlled trial with oxazepam. *J Clin Pharm Ther* 2001a;26:363-367.
11. Dhawan K, Sharma A. Anxiolytic activity of aerial and underground parts of *Passiflora incarnata*. *Fitoterapia* 2001;72:922-926.
12. Elsas SM, Rossi DJ, Raber J, et al. *Passiflora incarnata* L. (Passionflower) extracts elicit GABA currents in hippocampal neurons in vitro, and show anxiogenic and anticonvulsant effects in vivo, varying with extraction method. *Phytomedicine* 2010 Oct;17(12):940-949. doi: 10.1016/j.phymed.2010.03.002. Epub 2010 Apr 10. PMID: 20382514; PMCID: PMC2941540.
13. Leathwood PD, Chauffard F, et al. Aqueous extract of valerian root improves sleep quality in man. *Pharmacol Biochem Behav* 1982;17:65-71.
14. Houghton PJ. The scientific basis for the reputed activity of Valerian. *J Pharm Pharmacol* 1999; 51:505-512.
15. Kennedy DO, Wake G, et al. Modulation of mood and cognitive performance following acute administration of single doses of *Melissa officinalis* with human CNS nicotinic and muscarinic receptor-binding properties. *Neuropsychopharmacology* 2003;28:1871-1881.
16. Ghazizadeh J, Sadigh-Eteghad S, et al. The effects of lemon balm (*Melissa officinalis* L.) on depression and anxiety in clinical trials: A systematic review and meta-analysis. *Phytother Res* 2021 Dec;35(12):6690-6705. doi: 10.1002/ptr.7252. Epub 2021 Aug 27. PMID: 34449930.
17. Shakeri A, Sahebkar A, et al. *Melissa officinalis* L. – A review of its traditional uses, phytochemistry and pharmacology. *J Ethnopharmacol* 2016;188:204-228.
18. Ibarra A, Feuillere N, et al. Effects of chronic administration of *Melissa officinalis* L. extract on anxiety-like reactivity and on circadian and exploratory activities in mice. *Phytomedicine* 2010;17(6):397-403.
19. Awad R, Muhammad A, et al. Bioassay-guided fractionation of lemon balm (*Melissa officinalis* L.) using an in vitro measure of GABA transaminase activity. *Phytother Res*. 2009;23(8):1075-1081.
20. Baba Y, Inagaki S, et al. Effects of L-theanine on cognitive function in middle-aged and older subjects: A randomized placebo-controlled study. *J Med Food* 2021 Apr;24(4):333-341. doi: 10.1089/jmf.2020.4803. Epub 2021 Mar 22. PMID: 33751906; PMCID: PMC8080935.
21. Hidese S, Ogawa S, et al. Effects of L-theanine administration on stress-related symptoms and cognitive functions in healthy adults: A randomized controlled trial. *Nutrients* 2019 Oct 3;11(10):2362. doi: 10.3390/nu11102362. PMID: 31623400; PMCID: PMC6836118.
22. Wakabayashi C, Numakawa T, et al. Behavioral and molecular evidence for psychotropic effects in L-theanine. *Psychopharmacology*. 2012;219:1099-1109. doi: 10.1007/s00213-011-2440-z.
23. Prajdeep N, Lu K, et al. The neuropharmacology of L-theanine. *The Journal of Herbal Pharmacotherapy* 2006;6(2):21-30.
24. Stover PJ, Field MS. Vitamin B6. *Adv Nutr* 2015 Jan 15;6(1):132-133. doi: 10.3945/an.113.005207. PMID: 25593152; PMCID: PMC4288272.
25. Kennedy DO. B vitamins and the brain: Mechanisms, dose and efficacy – A review. *Nutrients* 2016 Feb;8(2):68.