AlphaVet Science™

Adapt-VM™

Adaptogenic Formula **NN.J207**

Adapt-VM™ is formulated with adaptogenic herbs to support adrenal gland function, counteract the adverse effects of chronic stress, and help maintain physical and mental well-being.

INDICATIONS

- Contains adaptogenic sources for the maintenance of good health.
- Supports adrenal gland function.
- Promotes normal hormone production by the adrenal glands.
- Helps maintain a healthy immune system.

INGREDIENTS ACTIONS

- Adaptogen
- Alterative
- Ergogenic
- Immunomodulator
- Nutritive
- Tonic

PACKAGING 500 mL/bottle

ADMINISTRATION Syringe directly into the mouth for best results. Can be added to animal's food. Shake well before use. For use in cats & dogs only.

DIRECTIONS

ADMINISTER ORALLY PER DAY			
LBS	**KG**	**DOSAGE**	
		mL	**Teaspoon(s)**
1-10	0.5-4.5	2.5	0.5
10.1-20	4.6-9	5	1
20.1-50	9.1-22.6	7.5	1.5
50.1-100	22.7-45.4	10	2
>100	45.4	15	3 (1 Tablespoon)

STORAGE Refrigerate after opening. Consume within six (6) months after opening. Keep bottle cap tightly closed when not in use.

Adapt-VM™ FORMULA

MEDICINAL INGREDIENTS PER 1 TEASPOON (5 mL)

Panax quinquefolius (North American Ginseng Root/Radix Panacis Quinquefolii)..... 200 mg

Codonopsis pilosula (Bellflower Root/Radix Codonopsis)..... 125 mg

Withania somnifera (Ashwagandha Root/Radix Withaniae)..... 125 mg

Eleutherococcus senticosus (Eleuthero Root/Radix Eleutherococci)..... 100 mg

Astragalus membranaceus (Astragalus Root/Radix Astragali)..... 75 mg

Rhodiola rosea (Rose Root/Radix Rhodiola)..... 75 mg

NON-MEDICINAL INGREDIENTS

Purified water, Apple flavour, Citric acid, Potassium sorbate, Sodium benzoate

Adapt-VM™ is manufactured under strict GMP standards and contains no corn, dairy, gluten, soy, wheat or yeast. Does not contain animal by-products.

Panax quinquefolius (American Ginseng) [Root]

Radix Panacis Quinquefolii is the preferred ginseng for dogs and is used to enhance vitality in older dogs (Winston & Maimes, 2007). Radix Panacis Quinquefolii is an adaptogen or a regulating herb that helps to balance the system. As an adaptogen, Radix Panacis Quinquefolii boosts the immune system, improves stamina and endurance and reduces stress. It also demonstrates anxiolytic activity, neuroprotective effects, and anti-diabetic and anti-obesity potential (Szczuka et al., 2019).

Canine Studies of Ginseng and combinations

Studies-Canine	Study Title	Study Summary
Hess et al., 1983	Effects of subchronic feeding of ginseng extract G115 in beagle dogs.	The study reported no adverse effect of ginseng G115 extract (15 mg/kg body weight/day) on body weight or blood chemistry in canine subjects.
Yoon et al., 2020	Metabolic Changes in Serum Metabolome of Beagle Dogs Fed Black Ginseng.	Ginseng administration to dogs for eight weeks enhances immunity and energy metabolism. No adverse effects were reported.

TOXICOLOGY

Toxicity for Radix Panacis Quinquefolii has not been documented in dogs and cats when administered orally in therapeutic doses.

Oral LD50 for Radix Panacis Quinquefolii water extract is 1,400 mg/kg in mice (Gold & Sloan, 1999).

The equivalent toxic dose in a 20 kg dog: 28,000 mg PO of Radix Panacis Quinquefolii.
The equivalent toxic dose in a 5 kg cat: 7,000 mg of Radix Panacis Quinquefolii.

DRUG INTERACTIONS

Radix Panacis Quinquefolii preparations reduce the anticoagulant effects of warfarin in human subjects (Yuan et al., 2004).

Theoretically, Radix Panacis Quinquefolii may cause manic-like symptoms when combined with monoamine oxidase inhibitors (Brinker, 2001).

Radix Panacis Quinquefolii may increase the hypoglycemic effect of insulin and sulfonylureas (Brinker, 2001).

Codonopsis pilosula (Bellflower) [Root]

Radix Codonopsis is a popular and extensively used Chinese herb sometimes referred to as poor man's ginseng. Radix Codonopsis enhances the body's tolerability to stress, reduces the level of adrenalin, increases endurance, and increases tolerance to anoxia. It also dilates peripheral blood vessels, thus lowering high blood pressure. In experimental animal studies, Radix Codonopsis prolonged the swimming time, which was proportional to the dose administered (Bensky & Gamble, 1993).

TOXICOLOGY

Toxicity for Radix Codonopsis has not been documented in dogs and cats when administered orally in therapeutic doses.

Intraperitoneal LD50 for Radix Codonopsis is 79.21±3.60 g/kg in mice (Wang, 1983).

The equivalent toxic dose in a 20 kg dog: 1,600 g IP of Radix Codonopsis.
The equivalent toxic dose in a 5 kg cat: 400 g IP of Radix Codonopsis.

DRUG INTERACTIONS

Validated interaction studies do not exist for Radix Codonopsis preparations. Clinical interactions with other drugs have not been reported.

However, concurrent administration of Radix Codonopsis with digoxin may elevate serum digoxin concentration (Chen & Chen, 2004)

Withania somnifera (Ashwagandha) [Root]

Radix Withaniae, known as Ashwagandha in Ayurvedic medicine, is an adaptogen facilitating the ability to withstand stressors and has antioxidant properties (AMR, 2004). Alkaloids and steroidal lactones of Radix Withaniae are known for their anti-stress activity against a battery of tests such as hypoxia time, anti-fatigue effect, swimming performance time, swimming induced gastric ulceration and hypothermia; immobilization induced gastric ulceration, and biochemical changes in the adrenal glands. These bioactive constituents exhibited significant anti-stress activity in a dose-related manner in all the parameters studied (Singh et al., 2001). Radix Withaniae may also be effective in the treatment of urine spraying cats, given its impact on sexual behaviour, anxiety, and restlessness (Schwartz, 2005).

Canine studies of Radix Withaniae and combinations

Studies-Canine	Study Title	Study Summary
Nabi et al., 2014	Therapeutic effect of ashwagandha (Withania somnifera L.) in liver dysfunction of old dogs.	Administration of Radix Withaniae extracts to geriatric canine subjects with hepatic dysfunction improved serum ALT, AST, albumin, cholesterol, and protein levels. The study concluded that Radix Withaniae extracts demonstrate hepatoprotective and antioxidant activities.

Gopinath et al., 2021	The Anti-oxidant and the Anti-diabetic Effects of Terminalia chebula and Withania somnifera in Subclinically Diabetic Dogs.	In subclinical diabetic dogs, supplementation of N- acetylcysteine, *Terminalia chebula*, and *Withania somnifera* effectively curbed the oxidative impairments and further progression of diabetes.
Kaur et al., 2022	Efficacy and safety of standardized Ashwagandha (Withania somnifera) root extract on reducing stress and anxiety in domestic dogs: A randomized controlled trial.	In this randomized, double-blind, placebo-controlled study of 24 dogs experiencing stress and anxiety, administration of Radix Withaniae extracts for four weeks was associated with significant reductions in urine cortisol to creatine ratio and signs of fear and anxiety and pain interference. Radix Withaniae extract was well tolerated in all the dogs with no reported adverse events.

TOXICOLOGY

Toxicity for Radix Withaniae has not been documented in dogs and cats when administered orally in therapeutic doses.

Oral LD50 for Radix Withaniae 50% ethanol extract is 1,000 mg/kg in rats (Williamson, 2002).

The equivalent toxic dose in a 20 kg dog: 20,000 mg PO of Radix Withaniae 50% ethanol extract.
The equivalent toxic dose in a 5 kg cat: 5,000 mg PO of Radix Withaniae ethanol 50% extract.

DRUG INTERACTIONS

Validated interaction studies do not exist for Radix Withaniae preparations. Clinical interactions with other drugs have not been reported.

Theoretically, Radix Withaniae extract may potentiate the sedative effects of barbiturates (Brinker, 2001).

Eleutherococcus senticosus (Eleuthero) [Root]

In Asian countries, Eleuthero root (Radix Eleutherococci) is commonly used as a dietary supplement by veterinarians to promote animal health (Lau et al., 2019). Radix Eleutherococci is an ergogenic and adaptogen. It increases the resistance to physical, chemical, and psychological stress, enhances stamina, increases resistance to infection, and accelerates recovery (Huang et al., 2011). In a human clinical study, extracts of Radix Eleutherococci increased physical working capacity due to oxygen uptake and metabolism (Asano et al., 1986).

TOXICOLOGY

Toxicity for Radix Eleutherococci has not been documented in dogs and cats when administered orally in therapeutic doses.

Oral LD50 of Radix Eleutherococci is 31 g/kg in mice (Mills & Bone, 2000).

The equivalent toxic dose in a 20 kg dog: 620 g PO of Radix Eleutherococci.
The equivalent toxic dose in a 5 kg cat: 155 g PO of Radix Eleutherococci.

DRUG INTERACTIONS

Radix Eleutherococci elevates serum digoxin levels (McRae, 1996).

Radix Eleutherococci inhibits the metabolism of barbiturates, possibly by inhibition of cytochrome P450 2C19 (Brinker, 2001).

Radix Eleutherococci enhances T-lymphocyte activity, thus potentiating the antibiotics monomycin and kanamycin (Brinker, 2001).

Astragalus membranaceus (Astragalus) [Root]

Radix Astragali is a well-known tonic that can improve the functioning of the lungs, adrenal glands and gastrointestinal tract, increase metabolism, promote healing, and reduce fatigue (Balch, 2006). Decoction of Radix Astragali improved endurance in animals and increased weight gain. A mixture of ginseng and Radix Astragali demonstrated anti-fatigue activity, and this activity was due to improved energy metabolism (Mills & Bone, 2000).

Canine studies of Radix Astragali and combinations

Studies-Canine	Study Title	Study Summary
Qui et al., 2010	Effects of Astragalus Polysaccharides on Associated Immune Cells and Cytokines in Immunosuppressive Dogs.	In the study of DEX-induced immunosuppressive dogs, administration of 200 mg/kg of Radix Astragali polysaccharides for seven days significantly enhanced the cellular immune levels.

TOXICOLOGY

Toxicity for Radix Astragali has not been documented in dogs and cats when administered orally in therapeutic doses. In canine subjects, Radix Astragali was found to be safe and without any side effects in a subchronic toxicity study.

The safety dosage range was 2.85-19.95 g/kg (Yu et al., 2007). Intraperitoneal LD50 of Radix Astragali was 40 g/kg in mice (Chang & But, 1987).

The equivalent toxic dose in 20 kg dog: 800 g IP of Radix Astragali.
The equivalent toxic dose in a 5 kg cat: 200 g IP of Radix Astragali

DRUG INTERACTIONS

Validated interaction studies do not exist for Radix Astragali preparations. Currently, there is no evidence of drug interactions resulting from the effects of Radix Astragali on drug-metabolizing systems (Stargrove et al., 2008).

Rhodiola rosea (Rose Root)

Radix Rhodiola possesses adaptogenic and ergogenic properties (Walker & Robergs, 2006). It improves endurance exercise capacity (De Bock et al., 2004), enhances antioxidant function, and promotes the utilization of fatty acids (Parisi et al., 2010). In human studies, Radix Rhodiola supplementation reduces both lactate levels and skeletal muscle damage (Parisi et al., 2010), increases the efficiency of the cardiovascular and respiration systems, and prevents fatigue after exhaustive exercise (Evdokimov, 2009). Radix Rhodiola extract activates the synthesis of ATP in mitochondria and stimulates reparative energy processes after intense exercise in experimental studies (Abidov et al., 2003).

Canine studies of Radix Rhodiola and combinations

Studies-Canine	Study Title	Study Summary
Eaton et al., 2021	A randomised, double-blind, placebo-controlled trial, assessing the effect of a nutraceutical tablet in the management of stress in pet dogs.	The study concluded that the nutraceutical product containing Radix Rhodiola help manage stress-related behaviour in pet dogs, such as those commonly associated with noise sensitivity and may be beneficial in fearful and anxious pets.

TOXICOLOGY

Toxicity for Radix Rhodiola has not been documented in dogs and cats when administered orally in therapeutic doses.

Oral LD50 of Radix Rhodiola is 3,360 mg/kg in rats (Kurkin & Zapesochnaya, 1985).

The equivalent toxic dose in a 20 kg dog: 67,200 mg PO of Radix Rhodiola.
The equivalent toxic dose in a 5 kg cat: 16,800 mg PO of Radix Rhodiola.

DRUG INTERACTIONS

Validated interaction studies do not exist for Radix Rhodiola preparations. Clinical interactions with other drugs have not been reported.

However, Radix Rhodiola inhibits cytochrome P450 3A4 and can affect the intracellular concentration of drugs metabolized by this enzyme. Radix Rhodiola inhibits P-glycoprotein activity and can interfere with the metabolism of some medications (Hellum et al., 2010).

PRECAUTIONS

- An examination from a veterinarian is recommended prior to using this product.
- Do not use in breeding, immature, pregnant or lactating animals.
- Do not use in animals with bleeding disorders, diabetes, autoimmune, cardiovascular, kidney, liver or thyroid disease or receiving other drugs, unless directed by a veterinarian.
- Consult your veterinarian before using in puppies and kittens.
- Absorption of drugs taken simultaneously may be delayed.
- Not to be used one week prior to surgery.
- Administer during or after the animal has eaten to reduce incidence of gastrointestinal upset.
- Do not exceed recommended dose.
- If animal's condition worsens or does not improve, stop product administration and consult your veterinarian.
- Off-label use of this product in ruminants is not recommended.
- Oral use only.
- Shake well before use.
- Do not use if security seal is broken.

WARNINGS

- To be used in dogs and cats only.
- Keep out of the reach of children and animals.

ADVERSE REACTIONS

- Mild gastrointestinal discomfort may occur which is dose-dependent.

CONTRAINDICATIONS

- Contraindicated in pregnant and nursing dogs and cats.

DURATION OF USE

- Not for long term use.

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