

S-Adenosylmethionine (S-AdoMet, Denosyl, Novifit, Vetri-S-AdoMet, Zentonil, Denamarin)

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(For veterinary information only)

WARNING

The size of the tablet/medication is NOT an indication of a proper dose. Never administer any drug without your veterinarian's input. Serious side effects or death can occur if you use drugs on your pet without your veterinarian's advice.

It is our policy not to give dosing information over the Internet.

Brand Name: Denosyl, Novifit, Vetri-S-AdoMet, Zentonil, and Denamarin (a combination of S-AdoMet and [milk thistle](#))

Available in 90 mg Tablets, 100 mg, 200 mg, 225 mg, 400 mg, 425 mg tablets, 225 mg chewable tablets, and assorted sizes and doses for human consumption

Background

S-AdoMet is a natural biochemical produced in the body from the amino acid methionine. It is involved in several biochemical processes.

- **Transmethylation**

We will attempt to keep to simple terms. Our cells possess an outer skin called a cell membrane. Cell membranes perform an assortment of functions as they are the interface between the cell and the cell's environment. Cell membranes are made of special fats called phospholipids. S-AdoMet biochemically donates its methyl group to these phospholipids, thereby enhancing the abilities and functions of the phospholipids. One specific phospholipid is called phosphatidylcholine, and it makes up the cell membranes of liver cells. Phosphatidylcholine is made using a process involving S-AdoMet such that the more S-AdoMet is available, the more phosphatidylcholine is produced, and the more fluid the liver cell membranes become, leading to better bile flow.

- **Transsulfuration**

After S-AdoMet has donated its methyl group as above, it is gradually converted into a compound called glutathione, which is an antioxidant. Antioxidants serve to protect cells from harmful biochemicals that might cause cancer development or cell death. Since liver cells are directly involved in detoxification of the body, they are

especially at risk for accumulating harmful biochemicals. Antioxidants help protect cells, especially in the liver; further, it has been shown that most canine and feline liver patients are deficient in glutathione.

- ***Aminopropylation***

SAMe can be converted to a compound called methylthioadenosine via a process called aminopropylation the details of which we will not review.

Methylthioadenosine has direct anti-inflammatory and analgesic properties plus it is supportive of cartilage matrix production.

Use of this Medication

In veterinary medicine, this product is chiefly used in liver disease, in senility/cognitive dysfunction, and in detoxification in several types of poisonings (such as toxicity of acetaminophen, xylitol, and amanita mushroom). In humans it is frequently recommended for joint pain and mood elevation. Antioxidants are an important treatment in preserving mental acuity in old age, and Novifit is primarily marketed for this purpose, while Denosyl and Denamarin are mostly marketed for liver support.

Side Effects

Occasionally, an animal experiences vomiting after SAMe administration, though other than this there are no known side effects of SAMe.

Interactions with Other Drugs

The following concern has not actually been reported but could happen in theory:

The combination of SAMe with certain medications may be able to create [serotonin syndrome](#). Serotonin syndrome is a dangerous condition that occurs when brain levels of serotonin get too high. This situation arises when medications that each increase serotonin levels are combined. Elevated heart rate, tremors/shivering, hyperactivity, dilated pupils, difficulty breathing, elevated body temperature, or high blood pressure can all be signs of serotonin syndrome. Serotonin syndrome has not been demonstrated with SAMe but in theory, could occur when SAMe is combined with [tramadol](#) (a pain reliever/cough suppressant), monoamine oxidase inhibitors (such as [selegiline](#) for cognitive dysfunction), with anti-anxiety medications such as [fluoxetine](#), [clomipramine](#) or [amitriptyline](#), or with an amitraz-containing [tick control product](#).

Concerns and Cautions

SAMe is best absorbed on an empty stomach.

SAMe comes in a blister pack (single pill packets with a foil wrapper). SAMe is sensitive to air and moisture, and broken tablets should be discarded. Only recently has a chewable product become available.

SAMe is considered by the FDA to be a nutritional supplement rather than a drug, which means it does not have to undergo the same rigid testing for efficacy as a licensed drug. There is a definite problem with lack of quality control in regard to nutritional supplements for human consumption; thus, products for human consumption do not undergo standardized production and may not be of the same quality as the name-brand veterinary products.

SAMe must be formulated in a way that it is protected from the enzymes of the stomach. Tablets must be enteric-coated. Liquid or chewable forms must employ lysosomes or similar protective technology.

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