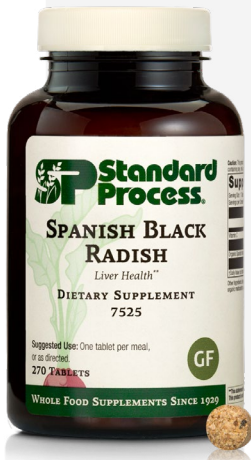


Spanish Black Radish

Available Sizes:
80 Capsules
270 Capsules

DETOXIFICATION



- Provides support for the body's organs*
- Our research shows that Spanish black radish induces the body's detoxification enzymes in cell and animal models*
- Supports healthy liver and gallbladder function*
- Encourages healthy digestion*
- Supports the body's normal toxin elimination function*
- Contains organically grown Spanish black radish



Caution: This product is processed in a facility that manufactures other products containing soy, milk, egg, wheat, peanut, tree nuts, fish, and shellfish.

Supplement Facts

Serving Size: 1 Tablet
Servings per Container: 80

	Amount per Serving	%Daily Value
Vitamin C	5 mg	6%
Organic Spanish black radish (root)	370 mg	†

†Daily Value not established.

Other Ingredients: Honey, organic acerola (berry), organic camu camu (berry), organic maltodextrin, organic manioc (root), and calcium stearate.

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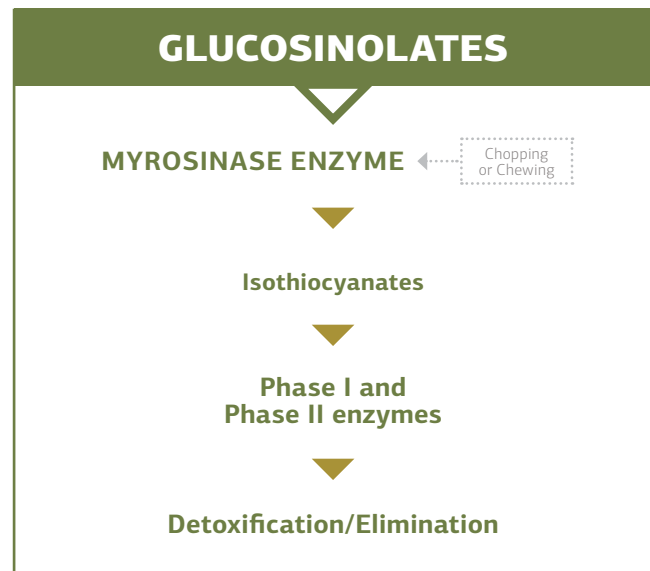
The Benefits of Glucosinolates

Radishes (*Raphanus sativus* L.) are a member of the cruciferous vegetable family that contains broccoli, cauliflower, cabbage, and kale. Radishes are available in varieties that differ in terms of size, shape, and color. Spanish Black Radishes (SBR) (*Raphanus sativus* L. var. *niger*) are particularly rich in a class of phytonutrients called glucosinolates, which have been associated with several beneficial health outcomes attributed to consumption of cruciferous vegetables.^{1,2}

Standard Process products labeled as **Vegan** are devoid of animal-based tissue, animal-based gelatin, or fish oils. Standard Process products labeled as **Vegetarian** are considered lacto-ovo vegetarian, which means they are devoid of animal-based tissue, animal-based gelatin, or fish oil. Standard Process products labeled as **Gluten-Free** have been tested to verify they meet the regulations associated with the United States Food and Drug Administration's gluten-free labeling. Standard Process products labeled as **Non-Dairy** or Non-Dairy Formula have been formulated to not contain milk or milk-derived ingredients. Standard Process products labeled as **Non-Grain** have been formulated to not contain any true cereal grain or grain-derived ingredients such as those from wheat, rice, oats, cornmeal, barley, or another cereal grain.

The main mechanism of action through which metabolites of glucosinolates mediate their beneficial effects may be via the induction of metabolic detoxification Phase I and II enzymes, as well as induction of antioxidant enzymes.¹⁻⁵ The glucosinolates in SBR are unique in both content and concentration in comparison to other cruciferous vegetables.² For example, the glucosinolates in SBR make up over 4% in sprout of their total dry weight; glucosinolates in more common crucifers, such as broccoli, only constitute 1% of the broccoli sprout.²⁻⁴ In contrast to more common crucifers, >65% of the glucosinolates present in SBR is glucoraphasatin.² The metabolite of glucoraphasatin, 4-methylthio-3-butenyl isothiocyanate (raphasatin), carries similar potency as sulforaphane (the metabolite of glucoraphanin that is particularly abundant in broccoli) on Phase II gene expression.^{2,4}

FIGURE 1: Conversion of glucosinolates to the active isothiocyanates compounds



Myrosinase enzyme found in cruciferous vegetables or produced by intestinal bacteria converts glucosinolates to the active compounds (isothiocyanates). Raphasatin is an isothiocyanate derived from the glucosinolate glucoraphasatin found in Spanish Black Radish that activates phase one and two detoxification enzymes.

Spanish Black Radish

DETOXIFICATION

Metabolism of Toxins

Phase I and phase II detoxification enzymes work together to help the body break down and manage compounds that need to be removed. Mice fed a diet containing 20% SBR for two weeks showed significant enhancement of the metabolism of toxins as demonstrated by significantly increased expression of Phase I and II detoxification enzymes.⁵

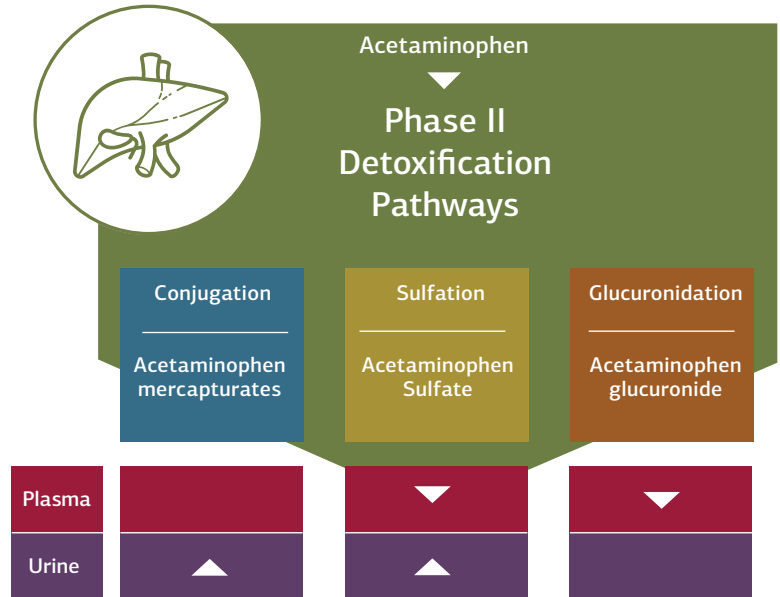
Liver Detoxification

Standard Process conducted an open-label pilot study to evaluate the efficacy of SBR in inducing Phase I and II enzymes in healthy male subjects (n=20). Acetaminophen is metabolized in the liver through pathways that involve Phase II enzymes, including conjugation, sulfation, and glucuronidation, that produce measurable metabolites in blood and urine. Consumption of SBR increased liver detoxification capacity and positively altered the metabolism of acetaminophen via increased urinary excretion.⁶

Additional Product Support

- Livaplex®
- Garlic
- Cruciferous Complete™

FIGURE 2: Liver detoxification capacity with SBR supplement⁶



The data shows the effects of taking SBR supplement for four weeks on the detoxification of acetaminophen of the male subjects. The data shows a change (increase or decrease) from baseline (the beginning of the study) of the amount of acetaminophen metabolites in plasma and urine.

The **great majority** of the raw plant ingredients used in our products are grown on our organic and sustainable farm

Freshly picked crops are often processed within a day to maintain vital nutrients

We harvest more than **6.5 million** pounds of ingredients on our certified organic and sustainable farm

Healthy Soil. Healthy Plants. Healthy Lives.

Standard Process is a family-owned company dedicated to making high-quality and nutrient-dense therapeutic supplements for three generations.

We apply a holistic approach to how we farm, manufacture and protect the quality of our products. This comprehensive strategy ensures that our clinical solutions deliver complex nutrients as nature intended. It's how we define the whole food health advantage.

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*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

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