Black Cumin Seed Oil

The beneficial effects of black cumin seed are attributed to the active ingredient thymoquinone (TQ).

Antioxidant. Increases intracellular glutathione (direct precursor), protects against oxidative stress, and maintains redox balance (reacts with highly oxidizing radicals); reduces total serum nitric oxide; increases endogenous antioxidant enzymes superoxide dismutase (SOD), catalase, and glutathione-*S*-transferase; attenuates levels of lipid peroxidation markers such as malondialdehyde (MDA).[1][2]

Antimicrobial. Active compounds thymoquinone and melanin have been shown to have antimicrobial properties in vitro;[3] and to prevent biofilm formation.[4]

Antiasthmatic. Inhibitory effect on the release of histamine and leukotrienes while increasing prostaglandin PGE_2 from mast cells.[5][6]

Anti-inflammatory. Inhibits oxidative products of arachidonic acid formation, such as thromboxane B2 and leukotriene, by blocking both cyclooxygenase and lipoxygenase enzymes.[1][2]

Antidiabetic. Modulates oxidative status (either through upregulation of endogenous antioxidants or reduction of oxidative species), attenuates inflammation, improves lipid profiles and body weight; may activate peroxisome proliferator-activated receptor *gamma* (PPARγ) and induce fat-cell glucose uptake and proliferation, a pro-obesogenic yet insulin-sensitizing mechanism common to the thiazolidinedione drug class; appears to activate adenosine monophosphate kinase (AMPK), which positively modulates glucose and lipid uptake into skeletal muscle and liver cells, but not adipocytes.[1][3][7]

Antihypertensive. Effect appears to be mediated by a reduction in cardiac oxidative stress and angiotensin-converting enzyme activity, an increase in cardiac heme oxygenase-1 activity, and a prevention of plasma nitric oxide loss;[8] reduces oxidative stress via calcium channel blockade, and increases urine output activity, leading to reduction in blood pressure.[6][9][10]

Opioid Withdrawal. Calcium channel–blocking ability, inhibits action potential in neuronal as well as peripheral tissues. Calcium channel blockers have been shown to be effective in opioid withdrawal syndrome.[6][11]

Table 1. Clinical Studies of Black Cumin Seed

Indication	Design	Outcomes	Ref.
Meta-analyses and Systemic Review			
Hyperlipidemia	Meta-analysis and systematic review of 17 randomized, controlled trials.	Significant association between black cumin (*Nigella sativa*) supplementation and a reduction in total cholesterol (TC; −15.65 mg/dL; $p = 0.001$), low-density lipoproteins (LDL; −14.10 mg/dL; $p < 0.001$), and triglycerides (TG; −20.64 mg/dL; $p < 0.001$) levels. No significant effects were seen on high-density lipoproteins (HDL) levels. The oil performed better than powder in lowering TC and LDL, but only the powder was found to increase HDL.	[12]
Type 2 diabetes	Systematic review and meta-analysis of seven trials, total of 255 type 2 diabetic participants.	Statistically significant improvement in fasting blood sugar (−17.84 mg/dL, $p < 0.001$), hemoglobin A1c (HbA_{1c}; −0.71%, $p < 0.001$), TC (−22.99 mg/dL, $p < 0.001$), and LDL (−22.38 mg/dL, $p < 0.001$). Effects for TG and HDL were insignificant. The overall effects for triglyceride (TG) and HDL-cholesterol (HDL-c) were insignificant.	[13]

Hypertension	Systematic review and meta-analysis of 11 RCTs, total of 860 hyper- and normotensive individuals. Ten (10) studies compared to placebo, and one to standard treatment.	In the short term, about 8.5 weeks, black cumin seed has been demonstrated to help reduce systolic blood pressure by 7 mmHg and diastolic blood pressure by 4 mmHg compared to placebo.	[14]
Clinical Trials			
Hyperlipidemia	Randomized placebo-controlled trial, $n = 88$ subjects with TC > 200 mg/dL. **Dose:** 2 g crushed black cumin seeds or placebo (in 500 mg caps). **Duration:** 4 weeks.	A significant decrease in TC (4.78%), LDL (7.6%), and TG (16.65%). No change in fasting glucose or HDL.	[15]
Hyperlipidemia in postmenopausal women	Randomized, placebo-controlled trial. Intervention group $n = 19$, placebo $n = 18$. **Dose:** 500 mg powder of *N. sativa* in capsule form, 2 capsules taken after breakfast daily. **Duration:** 2 months.	Mean total cholesterol improved by 16.09% ($p < 0.05$) compared to placebo. Reduction in triglyceride levels (22.16%) ($p < 0.05$) compared to placebo. Reduction of LDL-c was 26.67% ($p < 0.05$) compared to placebo.	[16]
Type 2 diabetes	Randomized controlled trial of three black cumin doses, no placebo. $n = 94$ participants on medication with insufficiently controlled glucose. **Intervention:** Black cumin seeds at 1, 2, or 3 g daily. **Duration:** 3 months.	The 2 g–dose group had significant reductions in fasting glucose, 2 h postprandial glucose, and HbA_{1c}, without significant change in body weight. The 1 g–dose group showed nonsignificant trends toward improvement, while the 3 g–dose group had no advantage over 2 g.	[17]
	Randomized double blind placebo-controlled trial. Treatment $n = 36$, placebo $n = 36$. **Intervention:** 1 g TID of black cumin seed oil or sunflower soft gel capsules. **Duration:** 3 months.	Statistically significant improvement in fasting blood sugar, HbA_{1c}, TG, and LDL in the intervention compared to placebo ($p < 0.05$). Insulin level and insulin resistance decreased, and HDL increased, but this was not statistically significant.	[18]
Hypertension	Randomized, double-blind, placebo-controlled trial. n not reported; patients with "mild hypertension" (systolic BP 140–159 mmHg). **Dose:** 100 or 200 mg black cumin extract twice daily or placebo. **Duration:** 8 weeks.	Reduction in systolic and diastolic blood pressure (1–2 mmHg) in both black-cumin groups, in a dose-dependent manner, that was significant compared to placebo ($p < 0.05$–0.01 for systolic and $p < 0.01$ for diastolic). There was also a significant reduction in total and LDL cholesterol compared to baseline in the black cumin group (p value not reported).	[19]
Nonalcoholic fatty liver disease (NAFLD)	Randomized, double-blind, placebo-controlled trial. Treatment $n = 60$, placebo $n = 60$. **Dose:** 2.5 mL fully standardized *N. sativa* seed oil every 12 h, control group received placebo **Duration:** 3 months.	Statistically significant reduction in grade of hepatic steatosis ($p = 0.004$). Improved liver steatosis and injury and blood levels of TG, LDL-C, and HDL-C. However, oil did not significantly affect outcome variables compared to placebo. No adverse effect observed.	[20]
Nonalcoholic fatty liver disease (NAFLD) (continued)	Randomized, double-blind, placebo-controlled trial. Treatment $n = 50$. **Dose:** 2 g black cumin seed supplementation daily. **Duration:** 3 months.	Compared with the placebo, black cumin seed supplementation reduced serum glucose (−7.95 v. −1.22; $p = 0.041$), serum insulin (−3.87 v. −1.07; $p = 0.027$), and homeostatic model of assessment for insulin resistance (−1.02 v. −0.28; $p = 0.021$); and increased insulin sensitivity (0.03 v. 0.006; $p = 0.002$). No significant difference in lipid-profile changes between the two groups ($p = 0.05$). Black cumin seed supplementation significantly decreased hepatic steatosis percentage compared with placebo ($p = 0.005$).	[21]

Allergic rhinitis	Double-blind, placebo-controlled trial. *n* = 66 adults with allergic rhinitis. **Intervention:** black cumin seed oil or placebo. Dose not reported. **Duration:** 30 days.	Black cumin reduced the presence of nasal mucosal congestion, nasal itching, runny nose, sneezing attacks, turbinate hypertrophy, and mucosal pallor within the first two weeks of treatment.	[22]
	Randomized, controlled trial. *n* = 24 adults sensitive to house dust mites with allergic rhinitis, *n* = 7 placebo; *n* = 8 healthy controls. After a month of immunotherapy, half of the treatment group (*n* = 12) and healthy controls (*n* = 8) received 2 g of black cumin seed oral supplementation. The remaining half (*n* = 12) of the adults with allergic rhinitis stayed on immunotherapy. The placebo group (*n* = 7) received saline solution subcutaneously. **Duration of black cumin seed intervention:** 30 days.	There was a statistically significant increase in the phagocytic and intracellular killing activities of peripheral blood polymorphonuclear leukocytes of patients receiving specific immunotherapy, especially after the addition of *N. sativa* seed. The CD8 counts of patients receiving specific immunotherapy plus *N. sativa* seed supplementation significantly increased compared to patients receiving only specific immunotherapy. Polymorphonuclear leukocyte functions of healthy volunteers significantly increased after *N. sativa* seed supplementation compared to baseline.	[23]
Asthma Prophylaxis	Randomized placebo-controlled trial. *n* = 29 adult asthmatics; *n* = 15 treatment group; *n* = 14 control group. **Intervention:** 15 mL/kg of 0.1% boiled aqueous extract daily or placebo solution. **Duration:** 3 months.	In the black-cumin group, the following improved significantly at three months compared against baseline and placebo: asthma symptoms, frequency of asthma symptoms per week, wheezing, and pulmonary function tests. Antiasthmatic medication requirements decreased in the black cumin group, but not in the control group.	[24]
Asthma	Randomized, double-blind, placebo-controlled trial. *n* = 80 asthmatics; *n* = 40 treatment group; *n* = 40 placebo group. Black cumin seed oil capsules 500 mg twice daily. **Duration:** 4 weeks.	Black cumin seed oil showed improvement in mean Asthma Control Test score (21.1 v. 19.6 in placebo; $p = 0.044$) and a reduction in blood eosinophils by −50 versus 15 cells/μL in placebo ($p = 0.013$). No change in serum IgE.	[25]
Hashimoto's thyroiditis	Randomized, double-blinded, placebo-controlled trial. *n* = 47. Participants with Hashimoto's thyroiditis and on thyroid hormone–replacement therapy at a dose of 1.7 mcg/kg/d (e.g. 100–125 mcg/d for a 70 kg adult). **Dose:** Black cumin seed powder 2 g daily (1 g before lunch and 1 g before dinner). **Duration:** 8 weeks.	Body mass index (BMI) decreased 27.1 to 26.2 ($p < 0.05$), statistically significant decrease in IL-23 levels, antithyroid peroxidase antibodies, and TSH levels; and increase in serum triiodothyronine T_3 ($p < 0.05$). While there was no change in the concentration of nesfatin-1 (a neuropeptide involved in the regulation of hunger and fat storage) during the study, the authors noted that changes in anthropometric variables (weight, BMI, and hip and waist circumference) and thyroid hormones (TSH, anti-TPO, and T_3) are often significant predictors of changes in nesfatin-1 concentrations.	[26]
Helicobacter pylori and dyspepsia	Randomized controlled trial. *n* = 88 patients with dyspepsia and positive *H. pylori* test. Four groups: triple therapy or 1, 2, or 3 g black cumin ground seeds with omeprazole (OM). **Duration:** 4 weeks.	*H. pylori* eradication was 82.6%, 47.6%, 66.7%, and 47.8% with triple therapy, 1 g, 2 g, and 3 g *Nigella* with OM, respectively. Eradication rates with 2 g black cumin and OM versus triple therapy were not statistically different. Dyspepsia symptoms improved in all groups to a similar extent.	[27]
Rheumatoid arthritis (RA)	Randomized, double blind, placebo-controlled trial. *n* = 40 overweight female RA participants (30–64 years old). 1 g black cumin seed oil or placebo as adjunct to conventional therapy. **Duration:** 1 month.	Black cumin seed oil decreased symptoms of arthritis by 9% on the Disease Activity Score 28 (DAS-28; a system validated by the European League Against Rheumatism [EULAR] to measure progress and improvement of rheumatoid arthritis) scale, which was statistically better than placebo ($p = 0.017$). Morning stiffness, joint pain, and joint swelling were significantly reduced with the black cumin seed oil.	[28]
Pediatric seizure	Double-blind, placebo-controlled, crossover trial. *n* = 22 children with refractory epilepsy. **Dose:** 1 mg/kg thymoquinone from black cumin seed or placebo. **Duration:** 4 weeks.	Thymoquinone treatment resulted in a significant reduction in seizure frequency compared to placebo ($p = 0.04$).	[29]
Male infertility	Randomized, double-blind, placebo-controlled trial. *n* = 34 treatment group; *n* = 34 placebo group. **Population:** infertile men. **Intervention:** 5 mL daily black cumin seed oil. **Duration:** 2 months.	Sperm count, motility, morphology, semen volume, pH, and round cells improved significantly in *N. sativa* oil–treated group compared with placebo group, with no adverse effects.	[30]

Opioid withdrawal and dependence	Randomized, single-blind, placebo-controlled trial. n = 35; males between 21 and 45 years of age seeking treatment for opioid dependence. Black cumin seed powder 500 mg 3× daily. **Duration:** 3 months.	Black cumin seed supplementation decreased withdrawal effects and increased appetite. Effects were attributed to black cumin seed's potential calcium channel–blocking action.	[11]
Renal stones	Preclinical. Randomized, triple-blind, placebo-controlled trial. n = 60. **Dose:** 500 mg black cumin seed capsules twice daily or placebo. **Duration:** 10 weeks.	In the trial group, 44.4% of patients excreted their stones completely. In the placebo group, 15.3% of the patients excreted their stones completely. Mean size of renal stones decreased significantly ($p < 0.05$) in study group compared to placebo group.	[31]

References

1. Yimer, E.M., et al. "*Nigella sativa* L. (black cumin): A promising natural remedy for wide range of illnesses." *Evidence-Based Complementary and Alternative Medicine,* Vol. 2019 (2019): 1528635.
2. Amin, B., and H. Hosseinzadeh. "Black cumin (*Nigella sativa*) and its active constituent, thymoquinone: An overview on the analgesic and anti-inflammatory effects." *Planta Medica,* Vol. 82, No. 1–2 (2016): 8–16.
3. Kooti, W., et al. "Phytochemistry, pharmacology, and therapeutic uses of black seed (*Nigella sativa*)." *Chinese Journal of Natural Medicines,* Vol. 14, No. 10 (2016): 732–745.
4. Chaieb, K., et al. "Antibacterial activity of thymoquinone, an active principle of *Nigella sativa* and its potency to prevent bacterial biofilm formation." *BMC Complementary and Alternative Medicine,* Vol. 11 (2011): 29.
5. Koshak, A., E. Koshak, and M. Heinrich. "Medicinal benefits of *Nigella sativa* in bronchial asthma: A literature review." *Saudi Pharmaceutical Journal,* Vol. 25, No. 8 (2017): 1130–1136.
6. Gilani, A.H., et al. "Bronchodilator, spasmolytic and calcium antagonist activities of *Nigella sativa* seeds (kalonji): A traditional herbal product with multiple medicinal uses." *The Journal of the Pakistan Medical Association,* Vol. 51, No. 3 (2001): 115–120.
7. Benhaddou-Andaloussi, A., et al. "Multiple molecular targets underlie the antidiabetic effect of *Nigella sativa* seed extract in skeletal muscle, adipocyte and liver cells." *Diabetes, Obesity & Metabolism,* Vol. 12, No. 2 (2010): 148–157.
8. Jaarin, K., et al. "Mechanisms of the antihypertensive effects of *Nigella sativa* oil in L-NAME-induced hypertensive rats." *Clinics (Sao Paulo, Brazil),* Vol. 70, No. 11 (2015): 751–757.
9. Leong, X.-F., M.R" Mustafa, and K. Jaarin. "*Nigella sativa* and its protective role in oxidative stress and hypertension." *Evidence-Based Complementary and Alternative Medicine,* Vol. 2013 (2013): 120732.
10. Cherkaoui-Tangi, K., Z.H. Israili, and B. Lyoussi. "Vasorelaxant effect of essential oil isolated from *Nigella sativa* L. seeds in rat aorta: Proposed mechanism." *Pakistan Journal of Pharmaceutical Sciences,* Vol. 29, No. 1 (2016): 1–8.
11. Sangi, S., et al. "A new and novel treatment of opioid dependence: *Nigella sativa* 500 mg." *Journal of Ayub Medical College, Abbottabad,* Vol. 20, No. 2 (2008): 118–124.
12. Sahebkar, A., et al. "*Nigella sativa* (black seed) effects on plasma lipid concentrations in humans: A systematic review and meta-analysis of randomized placebo-controlled trials." *Pharmacological Research,* Vol. 106 (2016): 37–50.
13. Daryabeygi-Khotbehsara, R., et al. "*Nigella sativa* improves glucose homeostasis and serum lipids in type 2 diabetes: A systematic review and meta-analysis." *Complementary Therapies in Medicine,* Vol. 35 (2017): 6–13.
14. Sahebkar, A., et al. "A systematic review and meta-analysis of randomized controlled trials investigating the effects of supplementation with *Nigella sativa* (black seed) on blood pressure." *Journal of Hypertension,* Vol. 34, No. 11 (2016): 2127–2135.
15. Sabzghabaee, A.M., et al. "Clinical evaluation of *Nigella sativa* seeds for the treatment of hyperlipidemia: A randomized, placebo controlled clinical trial." *Medical Archives (Sarajevo, Bosnia and Herzegovina),* Vol. 66, No. 3 (2012): 198–200.
16. Ibrahim, R.M., et al. "A randomised controlled trial on hypolipidemic effects of *Nigella sativa* seeds powder in menopausal women." *Journal of Translational Medicine,* Vol. 12 (2014): 82.
17. Bamosa, A.O., et al. "Effect of *Nigella sativa* seeds on the glycemic control of patients with type 2 diabetes mellitus." *Indian Journal of Physiology and Pharmacology,* Vol. 54, No. 4 (2010): 344–354.
18. Heshmati, J., et al. "*Nigella sativa* oil affects glucose metabolism and lipid concentrations in patients with type 2 diabetes: A randomized, double-blind, placebo-controlled trial." *Food Research International,* Vol. 70 (2015): 87–93.
19. Dehkordi, F.R., and A.F. Kamkhah. "Antihypertensive effect of *Nigella sativa* seed extract in patients with mild hypertension." *Fundamental & Clinical Pharmacology,* Vol. 22, No. 4 (2008): 447–452.
20. Khonche, A., et al. "Standardized *Nigella sativa* seed oil ameliorates hepatic steatosis, aminotransferase and lipid levels in non-alcoholic fatty liver disease: A randomized, double-blind and placebo-controlled clinical trial." *Journal of Ethnopharmacology,* Vol. 234 (2019): 106–111.
21. Darand, M., et al. "The effects of black seed supplementation on cardiovascular risk factors in patients with nonalcoholic fatty liver disease: A randomized, double-blind, placebo-controlled clinical trial." *Phytotherapy Research,* Vol. 33, No. 9 (2019): 2369–2377.
22. Nikakhlagh, S., et al. "Herbal treatment of allergic rhinitis: The use of *Nigella sativa*." *American Journal of Otolaryngology,* Vol. 32, No. 5 (2011): 402–407.
23. Işik, H., et al. "Potential adjuvant effects of *Nigella sativa* seeds to improve specific immunotherapy in allergic rhinitis patients." *Medical Principles and Practice,* Vol. 19, No. 3 (2010): 206–211.
24. Boskabady, M.H., et al. "The possible prophylactic effect of *Nigella sativa* seed extract in asthmatic patients." *Fundamental & Clinical Pharmacology,* Vol. 21, No. 5 (2007): 559–566.
25. Koshak, A., et al. "*Nigella sativa* supplementation improves asthma control and biomarkers: A randomized, double-blind, placebo-controlled trial." *Phytotherapy Research,* Vol. 31, No. 3 (2017): 403–409.
26. Farhangi, M.A., et al. "The effects of *Nigella sativa* on thyroid function, serum vascular endothelial growth factor (VEGF)-1, nesfatin-1 and anthropometric features in patients with Hashimoto's thyroiditis: A randomized controlled trial." *BMC Complementary and Alternative Medicine,* Vol. 16, No. 1 (2016): 471.
27. Salem, E.M., et al. "Comparative study of *Nigella Sativa* and triple therapy in eradication of *Helicobacter pylori* in patients with non-ulcer dyspepsia." *Saudi Journal of Gastroenterology,* Vol. 16, No. 3 (2010): 207–214.
28. Gheita, T.A., and S.A. Kenawy. "Effectiveness of *Nigella sativa* oil in the management of rheumatoid arthritis patients: A placebo controlled study." *Phytotherapy Research,* Vol. 26, No. 8 (2012): 1246–1248.
29. Akhondian, J., et al. "The effect of thymoquinone on intractable pediatric seizures (pilot study)." *Epilepsy Research,* Vol. 93, No. 1 (2011): 39–43.
30. Kolahdooz, M., et al. "Effects of *Nigella sativa* L. seed oil on abnormal semen quality in infertile men: A randomized, double-blind, placebo-controlled clinical trial." *Phytomedicine,* Vol. 21, No. 6 (2014): 901–905.
31. Ardakani Movaghati, M.R., et al. "Efficacy of black seed (*Nigella sativa* L.) on kidney stone dissolution: A randomized, double-blind, placebo-controlled, clinical trial." *Phytotherapy Research,* Vol. 33, No. 5 (2019): 1404–1412.

500 mg

Each softgel contains:
Organic black cumin (*Nigella sativa*) seed oil. . . . . 500 mg
50% linoleic acid, 20% oleic acid

Nonmedicinal ingredients: Mixed tocopherol concentrate (from sunflower) in a softgel of bovine gelatin, glycerin, and purified water.

Directions of use: **Adults:** Take 2 softgels three times daily before a meal or as directed by your health-care practitioner. Take with food. If you are taking supplements containing iron, zinc, calcium, or copper, take this product a few hours before or after them.

Duration of use: Consult a health-care practitioner for use beyond 4 weeks.

Cautions and warnings: Consult a health-care practitioner prior to use if you have a known immune disorder, if you have hypertension or hypotension, or if you are taking antihypertensive agents. Discontinue use if you experience gastrointestinal upset. Discontinue use and consult a health-care practitioner if symptoms persist or worsen.

Contraindications: Do not take if you are pregnant, breast-feeding, or trying to conceive.

Known adverse reactions: May cause gastrointestinal upset when taken on an empty stomach.

Product #0326 · 60 softgels • Product #3088 · 120 softgels
NPN 80041774 · V0163-R5

1,000 mg

Each softgel contains:
Organic black cumin (*Nigella sativa*) seed oil. . . . . 1,000 mg
50% linoleic acid, 20% oleic acid

Nonmedicinal ingredients: Mixed tocopherol concentrate (from sunflower) in a softgel of bovine gelatin, glycerin, and purified water.

Directions of use: **Adults:** Take 1 softgel three times daily before a meal or as directed by your health-care practitioner. Take with food. If you are taking supplements containing iron, zinc, calcium, or copper, take this product a few hours before or after them.

Duration of use: Consult a health-care practitioner for use beyond 4 weeks.

Cautions and warnings: Consult a health-care practitioner prior to use if you have a known immune disorder, if you have hypertension or hypotension, or if you are taking antihypertensive agents. Discontinue use if you experience gastrointestinal upset. Discontinue use and consult a health-care practitioner if symptoms persist or worsen.

Contraindications: Do not take if you are pregnant, breast-feeding, or trying to conceive.

Known adverse reactions: May cause gastrointestinal upset when taken on an empty stomach.

Product #3140 · 120 softgels · NPN 80095309 · V0761-R1

3405, F.-X.-Tessier street, Vaudreuil-Dorion (Québec), J7V 5V5 · 1 888 863 9274 · vitazan.com