

Clinical Studies on Eleuthero (*Eleutherococcus senticosus* [Rupr & Maxim.] Maxim.)

Immunology

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Szolomicki et al., 2000	Immunology	R, Cm n=50 healthy male volunteers	30 days	25 drops eleuthero 3x/day vs. 40 drops echinacea 3x/day	Taigutan® Eleuthero root fluid-ex- tract 1:1 (w/v) vs. Echinacin® echinacea herb fresh juice preparation	In cellular defense mechanism assays, the phagocytic activity of neutrocytes in the eleuthero group rose significantly, and the number of neutrocytes actively participating in phagocytosis increased. Authors conclude that eleuthero extractives affect cellular defense, physical fitness, and lipid metabolism.
Williams, 1995	Immune protection against herpes simplex type II infection	DB, R, PC (2 parallel groups) n=93 volunteers of the Herpes Association	6 months	375 mg 4x/day	Elagen® eleuthero standardized extract (eleuthero- sides B and E)	Effects on frequency, duration, and severity of recurrent episodes of herpes simplex type II infections were observed. Statistically significant results (p = 0.0002 to 0.0007) in the eleuthero group where 75% reported improvements in severity, duration, or frequency of attacks vs. 34% in the placebo group.
Shadrin et al., 1986	Immunology	PC n=1,376 students	Fall of 1981 during influen- za epidemic	2 ml extract diluted into a sweetened tea/day	Eleuthero root fluid extract	Occurrence of typical influenza complications (pneumonia, bronchitis, maxillary sinusitis, otitis) in eleuthero group were lower (1.5 cases per 100 persons) vs. control group (3.2 cases per 100), a statistically significant difference (p<0.05).
Bohn et al., 1987	Immunology	DB, PC n=36 healthy volunteers	1 month (followed by a 6-month observation period)	10 ml fluid- extract dilut- ed in wine and sorbitol water 3x/day vs. dry wine with same ethanol content	Eleukokk® fluidextract (0.2% eleutheroside B w/v) vs. dry wine	Eleuthero improved non-specific immune reactivities as determined by quantitative flow-cytometry. Significant increase in the absolute numbers of immunocompetent cells, particularly T-cells, predominantly of the helper/inducer type, but also on cytotoxic and natural killer cells. A general enhancement of the activation state of T-lymphocytes was also observed.

Adaptogenic

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Dowling et al., 1996	Adaptogen, stress, fatigue during submaximal and maximal aerobic exercise	DB, R, PC (2 parallel groups) n=20 male & female athletes (mean age 37 years)	2 months	3.4 ml/day, (6-week treatment, 2-week withdrawal)	Maxim-L® eleuthero fluidextract, 30–34% ethanol (eleuthero- sides B and E present)	No significant differences were observed between test and control groups in heart rate, oxygen consumption, expired-minute volume, respiratory exchange ratio, perceived exertion, and serum lactate. The authors concluded that ergogenic claims cannot be supported based on their results.
Kolomisvsky, 1986	Adaptive response to stress in cardiac patients, which activates protective forces to maintain homeostasis.	Cm n=147 cardiologic patients in 3 groups Group 1: n=42 (ages 23–72); Group 2: n=39 (ages 28–67); Group 3: n=66 (ages 23–56)	7–10 days	Group 1: Received con- ventional therapy (not defined). Group 2: 30 drops/day extract on empty stomach. Group 3: 15–35 drops/day	Eleuthero root fluid- extract (brand not stated) vs. usual treatment (not defined)	Group 1: Adaptive reaction background in non-eleuthero group did not improve. Group 2: Eleuthero extract showed an anti-stress effect and helped to normalize adaptive reactions. Group 3: When used to control adaptive reactions with activation therapy, eleuthero helped patients recover from stress state, resulting in significant increase in normal adaptive reactions.
Asano et al., 1986	Adaptogen, stress, fatigue	SB, PC, CO n=6 healthy male athletes (mean age 21.5 years)	8 days	2 ml extract or placebo 2x/day (morning and evening) 0.5 hours before meal	Medexport (eleuthero root fluid extract) or placebo	Significant increase in all parameters tested for eleuthero treatment period including maximal oxygen uptake (p<0.01), oxygen pulse (p<0.025), total work (p<0.005), and exhaustion time. Athletes in the eleuthero group showed a 23.3% (p<0.005) increase in total exercise duration and stamina compared to 7.5% in placebo group. Increase in total work appeared to be attributable to improvement of bodily oxygen metabolism reflected in the increase in maximal oxygen uptake and maximal oxygen pulse.

KEY: C – controlled, CC – case-control, CH – cohort, CI – confidence interval, Cm – comparison, CO – crossover, CS – cross-sectional, DB – double-blind, E – epidemiological, LC – longitudinal cohort, MA – meta-analysis, MC – multi-center, n – number of patients, O – open, OB – observational, OL – open label, OR – odds ratio, P – prospective, PB – patient-blind, PC – placebo-controlled, PG – parallel group, PS – pilot study, R – randomized, RC – reference-controlled, RCS – retrospective cross-sectional, RS – retrospective, S – surveillance, SB – single-blind, SC – single-center, U – uncontrolled, UP – unpublished, VC – vehicle-controlled.

Clinical Studies on Eleuthero (*Eleutherococcus senticosus* [Rupr & Maxim.] Maxim.) (cont.)

Other						
Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Winther et al., 1997	Neurology, psychiatry	DB, PC, R, C (4-armed) n=24 healthy volunteers	9 months (3 months eleuthero, 3 months ginkgo, 3 months placebo)	62.5 mg eleuthero root 2x/day or 28.2 mg <i>Ginkgo biloba</i> flavone glycosides 2x/day or placebo	Eleuthero root vs. ginkgo leaf extract (containing 28.2 mg ginkgo flavone glycosides and 7.2 mg ter-pene lactones) vs. placebo	At end of each 3-month dose period, concentration, selective memory, cognitive function, and well-being were measured. Significant improvements in selective memory of eleuthero group vs. placebo group (p<0.02) were demonstrated. No change in concentration was discovered in any group. Significant effects from eleuthero were also noted in feelings of well-being and levels of activity.
Sosuova, 1986	Ophthalmology	PC n=232 healthy locomotive engineers (ages 24–45 years)	100 days	2 ml with 30 ml water, 1x/day (40 days treatment, 60 days no treatment)	Eleuthero root fluidextract (brand not stated)	Eleuthero increased color perception level, induced a one-and-a-half to two-fold increase in functional stability level, 30–50% rise in spectral and contrast sensitivity, 2.5–4.5% rise in range of signal light visibility and 10–15% increase in speed of color discrimination. The effects remained at this level throughout administration and 2–2.5 months after end of treatment period. The placebo group did not experience these changes in perception.

KEY: C – controlled, CC – case-control, CH – cohort, CI – confidence interval, Cm – comparison, CO – crossover, CS – cross-sectional, DB – double-blind, E – epidemiological, LC – longitudinal cohort, MA – meta-analysis, MC – multi-center, n – number of patients, O – open, OB – observational, OL – open label, OR – odds ratio, P – prospective, PB – patient-blind, PC – placebo-controlled, PG – parallel group, PS – pilot study, R – randomized, RC – reference-controlled, RCS – retrospective cross-sectional, RS – retrospective, S – surveillance, SB – single-blind, SC – single-center, U – uncontrolled, UP – unpublished, VC – vehicle-controlled.