

Aller-Aid™ L-92®

with *L. acidophilus* L-92®

Aller-Aid™ L-92® contains *Lactobacillus acidophilus* L-92®, a specific well studied strain, isolated from the human mouth, vagina, and GI tract, which has been shown to help balance Th1/Th2 and other immune cytokines.* L-92® is a sterilized immunobiotic dry cell powder. The term 'immunobiotic' is defined as a microbe which promotes the immune system through activation of gut immunity.*¹ Unlike probiotics, immunobiotic bacteria are not live organisms in a dormant state and will not directly support the gut microbiome. The formula is enhanced with Boswellia, Luteolin, and non-GMO vitamin C.*



#76910
60 vegetarian capsules

Key Features

- L-92® helps balance Th1/Th2 and other immune cytokines*
- Supports nasal and ocular health during pollen season*
- Consistently shown to support quality of life*
- L-92® is a sterilized immunobiotic dry cell powder*
- With Boswellia, Luteolin, and non-GMO vitamin C

L-92® *Lactobacillus acidophilus* L-92®: In two studies from 2002 and 2003, volunteers ingested L-92® twice a day for 6 weeks and 10 weeks, during Japanese cedar pollen season. Support for ocular health and quality of life was observed.*² In a 2005 study, orally administered L-92® supported normal nasal and ocular function.* Support for normal color and volume of the nasal mucosa was observed in the L-92® intervention group at 6 and 8 weeks.* There were no significant differences in serum anti-house dust mite immunoglobulin E levels or in the T helper type 1/T helper type 2 ratio.*³

In a preliminary, double-blind, placebo-controlled study, oral L-92® given to children affected the serum concentrations of thymus and activation-regulated chemokine in a time-dependent manner, enhancing the Th1/Th2 balance.*⁴ Another double-blind, placebo-controlled study with 49 adult humans showed that L-92® contributes to the suppression of Th2-dominant inflammation.*⁵

The oral administration of L-92® stimulates various cytokines and chemokines leading to the enhancement of natural killer (NK) activity in the lungs.* Among the measured cytokines and chemokines, eotaxin, macrophage colony-stimulating factor, IL-1b, RANTES (regulated on activation, normal T cell expressed and secreted), and interferon-a were significantly increased in the lungs.*⁶

In BALB/c mice given L-92® daily for 5 weeks, the percentage of CD4(+)CD25(+)Foxp3(+) T cells, which play important roles in the normal response to allergens, were significantly increased in spleen and cervical lymph nodes.* L-92® produced higher levels of Foxp3.*⁷ Foxp3 is a protein which can up-regulate the number of regulatory T (Treg) cells, which can then turn down excessive immune response.*

In another BALB/c mice study, L-92® was found to regulate Th1 and Th2 cytokine responses, suppress serum ovalbumin OVA-specific IgE, and induce TGF-beta production.* Cytokines such as interferon (IFN)-gamma, interleukin (IL)-4 and IL-10 and Igs such as total IgE and OVA-specific IgE were produced at significantly lower levels by splenocytes of L-92-treated mice, compared with those of control mice.*⁸

In a study using four experimental mouse models, L-92® exhibited a variety of potentially beneficial characteristics.* Sensitized and allergen-exposed mice were given L-92®, which significantly inhibited vascular permeability increase and the elevation of ovalbumin-specific IgE titer.* L-92® treated mice exhibited lower levels of mast cells, eosinophil infiltration, total serum IgE, and Th1/Th2 cytokine expression.*⁹

In antigen-stimulated T cells in vitro, L-92® decreased the proliferation of CD4(+) T cells, and induced apoptosis of antigen-stimulated T cells.* L-92® increased interferon (IFN)-gamma secretion from naïve T cells and decreased interleukin (IL)-4 secretion.* It induced apoptosis of differentiated Th1 and Th2 cells, more so in Th2 cells, and induced apoptosis of OVA-specific TCR Tg T cells.*¹⁰

Supplement Facts

Serving Size 1 Capsule
Servings Per Container 60

Amount Per Serving	% Daily Value*
Vitamin C (as Ascorbic Acid)	250 mg 417%
Indian Frankincense Gum (<i>Boswellia serrata</i>) Extract (Standardized to 65% Boswellic Acid)	265 mg †
Luteolin	100 mg †
<i>Lactobacillus acidophilus</i> L-92®	11 mg †

*Percent Daily Values are based on a 2,000 calorie diet
† Daily value not established.

Other ingredients: Hydroxypropyl methylcellulose, L-leucine.

Suggested Use: As a dietary supplement, 1 capsule two times daily, or as directed by a healthcare professional.

Store in a cool, dry place, tightly capped.

L-92® is a trademark of Asahi Calpis Wellness Co., Ltd., Tokyo, Japan.



Luteolin is a flavone which occurs in foods such as spinach, celery, artichokes, some kinds of pepper and lettuce, and in certain herbs and spices. It is a natural antioxidant with superior radical scavenging and cytoprotective properties, especially in complex biological systems where it can interact with antioxidant vitamins.* Luteolin can play a role in the activation of anti-oxidative enzymes, suppression of the NF-kappaB pathway, and inhibition of pro-inflammatory substances.* Luteolin may help reduce increased vascular permeability.*¹¹

Luteolin blocks lipopolysaccharide LPS-induced NF-kappaB signaling and pro-inflammatory gene expression in intestinal epithelial cells and dendritic cells, allowing it to beneficially modulate innate immunity.*¹² Luteolin may mitigate microglial-associated inflammation in the hippocampus.*¹³

Flavonoids can inhibit histamine release, as well as synthesis of IL-4, IL-13 and CD40 ligand expression by basophils. Luteolin is among the strongest inhibitors of IL-4 production, possibly mediated by inhibiting activation of nuclear factors of activated T cells and AP-1.*¹⁴

In an *in vitro* study, luteolin inhibited IgE-mediated histamine release from bone marrow-derived cultured murine mast cells (BMMC) and rat peritoneal mast cells, and IgE-mediated TNF-alpha and IL-6 production from BMMC.* Luteolin also inhibited the IgE antibody-mediated biphasic cutaneous reaction (immediate phase reaction and late phase reaction) in mice.*¹⁵

Luteolin may inhibit pro-inflammatory cytokine expression in microglia.* Transcriptomic data suggest that luteolin triggered changes in the microglial transcriptome with more than 50 differentially expressed transcripts, effectively blocking pro-inflammatory and pro-apoptotic gene expression.* It induced mRNA levels of genes related to antioxidant metabolism, phagocytic uptake, ramification, and chemotaxis.*¹⁶



Boswellia: Frankincense, or Boswellia, has been used in Africa and India for hundreds of years. The *Boswellia serrata* tree produces a gummy oleoresin under the bark, which contains pentacyclic triterpene acids and other boswellic acids, as well as other active components, including limonene and lauric acid.

Animal studies show that the action of boswellic acids differs from that of NSAID and is related to components of the immune system.* Besides the inhibition of 5-lipoxygenase, factors such as cytokines (interleukins and TNF-alpha) and the complement system are involved.*¹⁷ In mice, Boswellia activated macrophages, expressing phagocytosis and nitrite production by the enhancement of TNF-alpha and IFN-gamma production.* It increased the concentration of cytokines (IL-4, IFN-gamma and TNF-alpha) in serum.*¹⁸

In a dysregulated CD4+ T-cell immune response, the T-helper 2 (Th2) cells enlist humoral immunity, and produce the cytokines IL-4, IL-5, IL-6, IL-9, IL-10, and IL-13, which promote mast cells, basophils, eosinophils, and B-cells.* Boswellia can help balance Th1/Th2, especially when Th2 is overactive and Th1 activity is dampened.*¹⁹

Boswellic acids can inhibit leukotriene biosynthesis, and has demonstrated capacity to increase force expiratory volume (FEV1), forced vital capacity (FVC), and peak expiratory flow rates (PEFR), as well as decrease eosinophilic count and ESR (inflammatory marker).²⁰ Boswellia extract demonstrated in rats a potential for anti-anaphylactic and mast cell stabilizing activity.*²¹ Boswellia, along with curcumin and licorice, showed a statistically significant decrease in the plasma levels of plasma leukotriene C(4), nitric oxide, and malondialdehyde levels.*²²



Vitamin C has a strong track record in research literature for enhancing immune function, particularly in children and athletes.*

References:

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