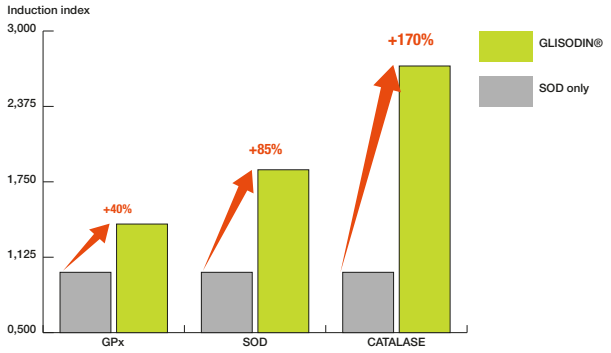
GliSODin® & Immune Health

Now more than ever, strengthening our immune health is a priority – for those most at risk of a viral or a bacterial infection – the elderly and people with inflammatory conditions such as asthma. As we age, or come under physical or emotional stress, the body's capacity to fight off infection is reduced. We have created a summary of research below regarding GliSODin®'s reported efficacy in supporting the body's immune system. Our patented formula helps to promote antioxidant defences, stimulates the anti-inflammatory response, attenuates fibrosis and improves the breathing capacity of the lungs.

GliSODin® helps to promote antioxidant defences

GliSODin® supplementation significantly **increases the antioxidant status** of the organism by promoting endogenous antioxidant levels SOD, CAT and GPx. These results were observed in animal models [2] and in human clinical studies [6].

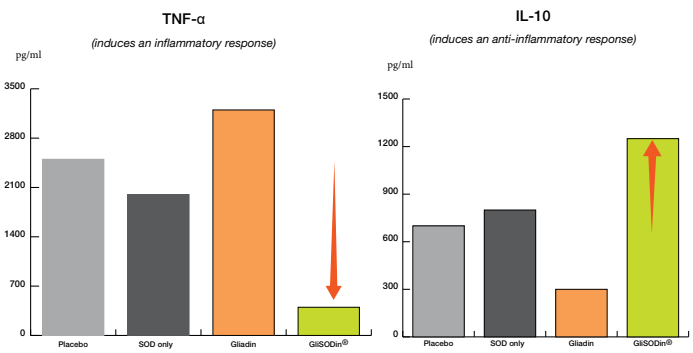
GliSODin® promotes the circulating antioxidant enzymes SOD, catalase and Gpx.



GliSODin® stimulates the immune system

GliSODin® reduces not only free radicals but **regulates the activation state of macrophages** as shown by the decreased production of pro-inflammatory cytokines TNF-alpha and by the promoted production of anti-inflammatory cytokines IL-10 [3].

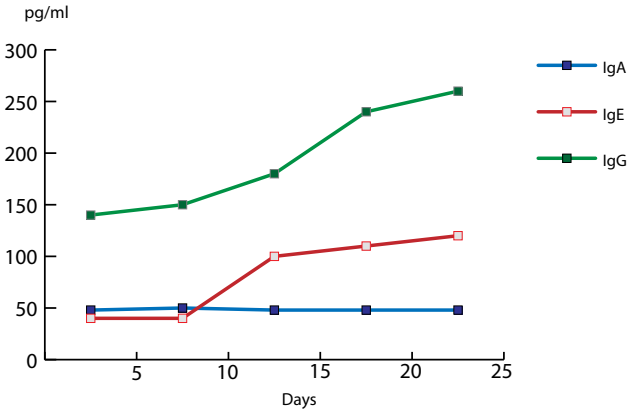
The SOD-gliadin combination has been shown to stimulate endogenous antioxidant defenses and the inflammatory response modulation, whereas SOD and gliadin alone are ineffective.



Immunomodulating properties of GliSODin®

GliSODin® increases specifically the production of type 1 helper T lymphocytes (Th1) as well as the expression of INF-gamma and IL-4 and stimulates the immunoglobulin G response [1]. However, the production of IgE (allergic) remained marginal and the production of IgA did not change, thereby reinforcing the hypothesis of the immunomodulatory action of GliSODin®.

GliSODin® elicited expression of IFN-alpha and a burly IgG production

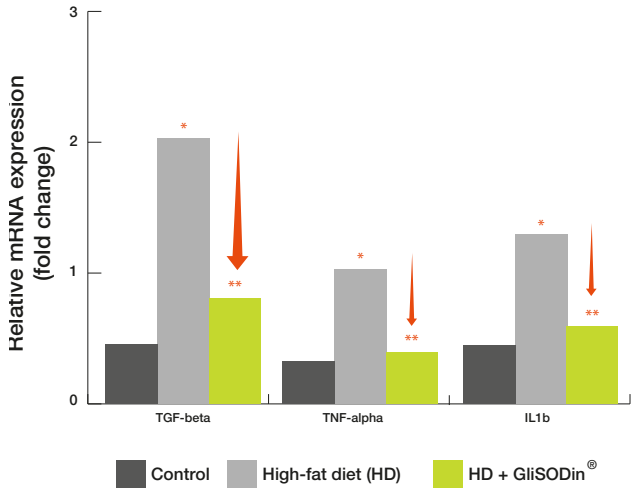


Management of fibrosis with GliSODin®

SOD is an enzyme that plays a pivotal role in controlling or preventing pulmonary diseases related to oxidative stress. Changes in the lungs can be diverse with overlapping features, characterized by varying degrees of inflammation and fibrosis. In other fibrosis models (such as NASH [4] or radiated skin fibrosis [7]), GliSODin has shown remarkable properties to prevent fibrosis progression.

GliSODin® downregulates inflammatory marker genes including **tumor necrosis factor-alpha (TNF-alpha), interleukin 1-beta (IL-1-beta) and growth factor beta (TGF-beta)**. These changes at the level of gene expression may help to manage the prevention of fibrosis.

GliSODin® prevents fibrosis progression at the level of inflammation gene expression [4]



Improves allergy breathing capacity

Asthma is a chronic inflammatory disease related to oxidative stress. The intake of GliSODin® has a **beneficial impact on human lung function** (FEV1 reversibility) and respiratory symptoms in asthmatic and house dust mite allergic children receiving house dust mite immunotherapy [5].

In summary, GliSODin® has been reported to:

- **Induce endogenous antioxidants**
- **Stimulate the anti-inflammatory response**
- **Help to attenuate fibrosis**
- **Improve breathing capacity**

Bibliography :

[1] Vouldoukis I, Conti M, Kolb JP, *et al.* (2003) Induction of Th1-dependent immunity by an orally effective melon superoxide dismutase extract. Curr Trends Immunol

[2] Vouldoukis I, Conti M, Krauss P, *et al.* (2004) Supplementation with gliadin-combined plant superoxide dismutase extract promotes antioxidant defenses and protects against oxidative stress. Phytother Res

[3] Vouldoukis I, Lacan D, Kamate C, *et al.* (2004) Antioxidant and antiinflammatory properties of a Cucumis melo LC. extract rich in superoxidedismutase activity. J Ethnopharmacol

[4] Anna Nakamura *et al.* (2019), Melon GliSODin® prevents diet-induced NASH onset by reducing fat synthesis and improving liver function, Nutrients

[5] Anang Endaryanto *et al.* (2015), Use of Superoxide Dismutase in Accelerating Symptom Relief in Asthmatic and House Dust Mite Allergic Children Receiving House Dust Mite Immunotherapy, International journal of integrated Health Sciences

[6] Claus Muth *et al.* (2004), Influence of an orally effective SOD on hyperbaric oxygen-related cell damage., Free radical research

[7] Serap Yücel, *et al.* (2016) Impact of Superoxide Dismutase-Gliadin on Radiation-induced Fibrosis : An Experimental Study, In vivo

For more clinical and scientific evidence with GliSODin® , please visit our research website at : **www.glisodin.org .**

ISOCELL NUTRA
contact@glisodin.com