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**INTRODUCING ORAL
GLUTATHIONE FOR
VIRAL INFECTIONS**

Role of glutathione in infection as an antioxidant

- Glutathione is a known natural antioxidant and it removes free radicals from the body
- During any infection (including viral infections) there is an increased innate immune system response which removes infection and thereby produces inflammation
- Acute phase reactants like CRP and IL6 are made by liver to increase inflammation and hence production of glutathione is reduced.
- When a person is deficient in glutathione, their neutrophils are also less efficient in killing infections
- An exaggerated inflammatory response is involved in the pathogenesis or complications of pulmonary infections such as tuberculosis, severe acute respiratory syndrome, influenza, and acute respiratory distress syndrome (ARDS).
- Thus glutathione is used to protect the body from infection driven inflammatory damage and helps immune system in fighting infections

Role of glutathione in immunity and inflammation in the lung

- Various animal studies have shown protective role of glutathione against inflammatory lung pathologies
- Mouse model of influenza infection has shown pulmonary damage associated with a dramatic decrease in pulmonary glutathione levels as well as an increase of oxidative stress markers
- Oxidative stress (with low glutathione levels) increases protease activity; viruses require these proteases for replication. Thus, intake of glutathione can reduce viral load.
- It is postulated that endogenous glutathione is not just an inhibitor of inflammation, but it is required to allow a proper response to infection, and “direct” the migration of inflammatory PMN away from the lung, where they cause ARDS, and towards the site of infection, where they kill infection.
- Ref : Ghezzi P. Role of glutathione in immunity and inflammation in the lung. *Int J Gen Med.* 2011;4:105– 113.

Glutathione Fine-Tunes the Innate Immune Response toward Antiviral Pathways

- Glutathione regulates host's gene expression of immune response via NRF2. It increases expression of TLR4 gene and thereby increases antiviral response mechanism
- Lipopolysaccharides from infectious agents triggers TLR4 to induce gene expression of inflammatory cytokines, antioxidant genes, and antiviral/immunity pathways.
- Glutathione orients these TLR4-mediated changes in gene expression profile toward activation of host defense to viral infections.
- Ref : Diotallevi M, Checconi P, Palamara AT, et al. Glutathione Fine-Tunes the Innate Immune Response toward Antiviral Pathways in a Macrophage Cell Line Independently of Its Antioxidant Properties. *Front. Immunol.* 2017;8:1239

Glothione – oral glutathione

- Glothione is a oral glutathione with a proved efficacy of increasing glutathione levels.
- In a published paper on diabetes it shows a significant reduction in blood glucose levels by reduction in free radicals.
- It is the only published paper of a oral glutathione formulation in India.
- Ref : Sreevallabhan S, Mohanan R, Sukumaran S, Sobha A P, Jose S P, Sukumarpillai A, Jagmag T, Tilwani J. Ameliorating effect of glutathione- enriched herbal formulation (glothione) on alloxan-induced experimental diabetic model by modulating oxidative stress and pathogenesis. J Food Biochem. 2020; 00: e13153



Contact us

- To understand if Glothione is advised for you or if you wish to purchase please contact us.
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