

Lelimmune-T

Patent Application Nos.: IN202021012876, IN202021013384, IN 202021018202



There are two types of Immune Systems in our body: Innate Immunity, which does not need prior vaccination to save us from pathogens; and Adaptive Immunity, which requires vaccination against that specific pathogenic microorganism against which we desire protection. Without vaccination one can get Adaptive Immunity only if he gets infected with that pathogen and recovers from the infection.

Lelimmune-T

Supported by significant scientific agreement

Natural Killer cells (NK Cells) are the cells which mediate Innate Immunity. They are known for killing virally infected cells alongwith the nucleic acid content of the infected cells without any priming or prior activation (in contrast to cytotoxic T cells, which need priming by antigen presenting cells) and are also capable of detecting and controlling early signs of cancer. They are named so after this 'natural' killing ability. Additionally, NK cells secrete cytokines such as IFN γ and TNF α , which act on other immune cells like Macrophage and Dendritic cells to enhance the immune response. The NK cell releases cytotoxic granules containing perforin and granzymes, which leads to lysis of the target cell¹.

LelImmune-T

NK cells distinguish between normal and abnormal cells (such as virus-infected or tumor cells)².

Natural Killer Cell mediated Innate Immunity, which is primarily and most relevant type of immunity for control of COVID-19 and may also mediate Adaptive Immunity without the need of vaccination. Its activity is reduced in diabetics, hypertensive persons, age 60, children below 10 years age or those who are making stressful duties such as Corona Warriors.

It is only the **β -carotene** which is known to improve the depressed activity of Natural Killer Cells. Hence, only bioavailable β -carotene-containing food supplement can be an **Innate Immunity Booster**. Other products described simply as "Immunity Boosters" would improve **Adaptive** Immunity only i.e. that immunity which is generated by a vaccine or an antigen, which is not useful to combat new pathogen such as Novel Coronavirus.

NK cells also play a role in the adaptive immune response³: numerous experiments have demonstrated their ability to readily adjust to the immediate environment and formulate **antigen-specific immunological memory**, which is fundamental for responding to secondary infections with the same antigen⁴. **The role of NK cells in both the innate and adaptive immune responses is becoming increasingly important in research using NK cell activity** as a potential cancer therapy⁵.

LelImmune – T: β -Carotene Enriched Oil Extract of Tomato-containing 100% bio-available β carotene and other healthy ingredients:

This is a patent pending oil enriched in anti-oxidants of Tomato and has been prepared to contain at least 80 μ g/4 ml of 100% bio-available form of β -Carotene in the per day dose. There is a "Significant Scientific Agreement" that the β -Carotene improves activity of Natural Killer Cells that mediate "Innate/Non-Specific Immunity" i.e. an immunity against cells infected by pathogenic viruses; that may be already known as well as Novel. Virus infected cells are recognized as "non-self", are promptly injected with lethal granules by Natural Killer Cells which brings out total destruction of the content of that cell including the nucleic acid of the virus (apoptosis) or if it is a newly formed cancer cell. Perhaps Natural Killer Cells are the ONLY cancer-cell-specific destructor agents that would not harm healthy cells. It has a potential to revolutionize strategies on infectious viral disease control like COVID 19 as well as cancer, may facilitate process of "Natural vaccination" also which is very convenient and most safe means for reducing the risk of cancer.

Synthetic or isolated purified crystalline β -carotene has limitations of bioavailability due to its insolubility: Crystalline isolate is insoluble in most edible liquid media. When consumed as part of green vegetable or through fruits, only 3-10% of its content gets released from plant cells. When the same is extracted in edible oil, it becomes 100% bioavailable.

Dosage form : Liquid

Ingredient details : Rice bran oil extract of the Tomato, Glycerine, Sucralose and excipients

Dosage : 5 ml/day (At least 418 μ g 100% bio-available β -carotene/5ml.)

References: 1. <https://www.immunology.org/public-information/bitesizedimmunology/cells/natural-killer-cells>: 2. Alessandra Zingoni, Cristina Cerboni, Michele Ardolino, and Angela Santoni. Modulation of T Cell-Mediated Immune Responses by Natural Killer Cells. J. Zimmer (ed.), Natural Killer Cells, DOI 10.1007/978-3-642-02309-5_17, # Springer-Verlag Berlin Heidelberg 2010. Pp315-327 3. Arina A, Murillo O, Dubrot J, Azpilikueta A, Alfaro C, Pérez-Gracia JL, Bendandi M, Palencia B, Hervás-Stubbs S, Melero I (May 2007). "Cellular liaisons of natural killer lymphocytes in immunology and immunotherapy of cancer". Expert Opinion on Biological Therapy, 7 (5): 599–615. doi:10.1517/14712598.7.5.599. PMID 17477799. 4. Watzl C (2014). How to trigger a killer: modulation of natural killer cell reactivity on many levels. Advances in Immunology. 124. pp. 137–70. doi:10.1016/B978-012-800147-9.00005-4. ISBN 9780128001479. PMID 2517577 5. https://en.wikipedia.org/wiki/Natural_killer_cell



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