CLAIMS

~~1. A composition comprising at least a carotenoid and at least a terpenoid in therapeutically effective amounts for metabolically elevating activity of large granular lymphocytes (LGL), including natural killer (NK) cells.~~

~~2. A composition according to Claim 1 comprising lycopene and resveratrol in therapeutically effective amounts for elevating activity of large granular lymphocytes (LGL), including natural killer (NK) cells.~~

~~3~~1. A composition comprising a carotenoid ~~lycopene~~ and a terpenoid~~resveratrol according to Claim 2~~

wherein the composition comprises at least a carotenoid and at least a terpenoid in a therapeutically effective amount for metabolically elevating activity of a large granular lymphocyte (LGL) and a natural killer (NK) cells,

and the carotenoid comprises a lycopene and the terpenoid comprises a resveratrol in a molar ratio of between about 1:3 to 3:1, and

wherein the elevated NK cell activity includes increased proportion of NK cells among total lymphocytes.

~~4~~2. ~~A~~ The composition of claim 1, ~~comprising lycopene and resveratrol according to Claim 2~~ wherein the elevated NK cell activity includes providing biochemical signal triggering NK cells into cytotoxic or cytolytic response.

~~5~~3. ~~A~~ The composition of claim 1, ~~comprising lycopene and resveratrol according to Claim 2~~ wherein the elevated NK cell activity includes increasing the response potential of individual NK cells.

~~6~~4. ~~A~~ The composition of ~~comprising lycopene and resveratrol according to~~ Claim ~~4~~2, wherein the biochemical signal triggering includes any one or

combination of double-stranded RNA, cytokines, Fc receptor and other applicable ligand receptors.

~~7~~5. ~~A~~ The composition of claim 1, ~~comprising lycopene and resveratrol according to Claim 2~~ wherein the elevated NK cell activity includes prolonged cytoxicity.

~~8~~6. ~~A~~ The composition of claim 1, ~~comprising lycopene and resveratrol according to Claim 2~~ wherein the ratio of lycopene:resveratrol is ~~preferably in the range of 1:10 to 10:1~~about 1:3 by molar.

~~9~~7. ~~A~~ The composition of claim 1, ~~comprising lycopene and resveratrol according to Claim 8~~ wherein the ratio is ~~more preferably~~ between about 1:1 to 3:1 by molar~~, and best at 3:1 by molar~~.

~~10. A composition comprising lycopene and resveratrol according to Claim 2 wherein the ratio of lycopene:resveratrol is in the range of 1:4 to 25:1 by weight.~~

~~11. A composition comprising lycopene and resveratrol according to Claim 10 wherein the ratio is more preferably 2½:1 to 7½:1 by weight, and best at 7½:1.~~

~~12~~8. ~~A~~ The composition of claim 1, ~~comprising lycopene and resveratrol according to Claim 2~~ formulated as a pharmaceutical, a capsule, a dietary supplement or food product.

~~13~~9. ~~A~~ The composition of claim 8, ~~comprising lycopene and resveratrol according to Claim 12~~ formulated to provided ~~in~~ a therapeutically effective amounts to a mammal.

~~14~~10. ~~A~~ The composition of Claim 9, ~~comprising lycopene and resveratrol~~

~~according to Claim 13~~ provided in a dosage of between about 3.5 mg per day per 20 g of a mammalian body mass.

~~15~~11. ~~A~~ The composition of Claim 8, ~~comprising lycopene and resveratrol according to Claim 12~~ provided in a dosage of between about 400 mg to 1000 mg per day ~~for a typical human in need of elevating NK cell activity~~.

~~16~~12. ~~A~~ The composition of Claim 8, ~~comprising lycopene and resveratrol according to Claim 12~~ formulated for oral intake.

~~17~~13. ~~A~~ The composition of Claim 8, ~~comprising lycopene and resveratrol according to Claim 12~~ formulated with each of said lycopene and resveratrol being delivered or provided for intake sequentially.

~~18~~14. ~~The use of a composition comprising~~A method for triggering NK cells into cytotoxic or cytolytic response comprising:

(a) providing a lycopene and a resveratrol according to Claim ~~2~~ 1.

(b) administering the lycopenene and a resveratrol of (a) to a pataient in need thereof, thereby ~~in metabolically producing agents, prodrugs, metabolites or intermediate compounds useful in~~ triggering NK cells into a cytotoxic or a cytolytic response.

~~19~~15. The method of claim 14, ~~use of a composition comprising lycopene and resveratrol according to Claim 18~~ wherein said lycopene and resveratrol is consumed in

~~any one of the following manner:~~

~~-~~ a single preparation containing both.

~~;~~

~~- a preparation for each of said lycopene and resveratrol which are consumed simultaneously; or~~

~~- a preparation for each of said lycopene and resveratrol which are~~

~~consumed sequentially in same or reverse order.~~

~~20. An agent, prodrug, metabolite or intermediate compound according to Claim 18 capable of triggering NK cells into cytotoxic or cytolytic response.~~

16. The composition of claim 1, wherein the ratio is at 3:1 by molar.

17. The method of claim 14, wherein said lycopene and resveratrol are consumed in as a single prepartion containing both.

18. The method of claim 14, wherein said lycopene and resveratrol are consumed simultaneously, and consumed in a preparation for each of said lycopene and resveratrol formulated for simultaneous consumption.

19. The method of claim 14, wherein said lycopene and resveratrol are consumed sequentially in same or reverse order, and are formulated or prepared for consumption sequentially in same or reverse order.

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