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## Prophylaxis for vital organs against SARS-CoV-2: an algal carotenoid nutraceutical perspective.

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## Abstract

Post-stationary red-celled Dunaliella has natural ani-oxidant β-carotene but overlooked as nutritionally-tunable green-celled protein. USFDA-classified on Generally-Regarded-as Safe (GRAS) status, green-colored, mid-log phase comprised 57– 80% protein (Becker, 2007; Sui and Vlaeminck, 2019). By FAO Essential Amino Acid Reference Index (EAAI), it bears human protein quality [Sui et al., 2019). Without rigid cell wall, it is well-digested [Herrero et al., 1993). It enhanced PUFAs with temperature drop (30 to 12 °C); (Salamaa et al., 2018). SARS-CoV-2 targets respiratory, gastrointestinal, central nervous systems and kidney, heart, liver causing multiple organ failures (Zhu et al., 2020). Incidence of bioactive fragments in RuBisCo sequences are related with glycine and proline contents (Selvaraj et al., 2017). High-frequency occurrence of ACE-inhibiting peptides among microalgal RuBisCo sequences confer resourceful ACE-inhibitory peptides-based anti-hypersensitive drugs from Dunaliella (Selvaraj et al., 2017). Angiotensin-converting enzyme-2 (ACE2)-expressing cells alongwith spike protein (S-protein) and non-structural proteins (nsp) are pin-pointed as target-cells for neutralizing antibody and antiviral peptides, proving therapeutic targets against SARS-CoV-2 (Lu et al., 2020). Ethanolic extract of green-celled, Dunaliella primolecta with pheophorbide-like compounds inhibited cytopathic effect of HSV-1 during adsorption and invasion into host cells (Ohta et al., 1998). RuBisCo protein in Dunaliella is precursor of bioactive peptides, released by selected proteolytic enzymes. Papain and Proteinase K, enzyme with wide specificity release biologically-active fragments than bromealin and chymotrypsin. Dunaliella is underutilized (as capsules, fortified-nutritional blends, natural pigments in beverages etc) as resourcive activities (Sami et al., 2020).

## **Biography**

Ansu Thomas pursued her Pharm.D. and is a passionate zoonoses analytical researcher eyeing hotspots and public health concern. She is a science communicator for laymen and an advocate for the evolution of citizen sciences in all walks of life. She vouches for a balanced clinical and pharmaceutical orientation of Pharm.D curricular sciences for better impact and outcome on Indian health care system. As a frequent columnist on biosecurity issues, she believes that husbandry measures triggered from the grassroots of community domain pays to a greater extent in an age of pandemics. Her research interests are drugs from the sea and exploitation of bioactivity for a safe and better world to live in for posterity.