

WATER SPECIFICALLY STRUCTURED WITH HYDRATED PRISTINE FULLERENES AS A UNIVERSAL REGULATOR OF BIOLOGICAL PROCESSES

(Hydrated fullerenes - the unique scientific tool for knowledge of water mysteries)

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In the present report the following positions will be considered:

1. Hydrated C₆₀ fullerene (HyFn) - C₆₀@{H₂O}_n- the unique symbiosis of the molecular form of pure carbon and water structures. About similarity of water structures of M. Chaplin's icosahedral clusters and HyFn. Cluster nanostructures of water of higher order (with the size approx 3.4, 7.1, 10.9, 14.5, 18.1, 21.8, 25.4, 28.8, 32.4, 36.0 nm).
2. What is the common between cluster organization of water at HyFn, at Coherence Domain of E. Del Giudice and G. Pollack's Exclusion Zone Water (EZ-water) .
3. Water nanoclusters "collisions" can generate on/in their diffusive surface redox reactions between water molecules (V. Voeikov) as well as produce the radical forms of oxygen (Probable explanations of reasons of the water sonoluminescence and strong absorption of EZ-water in UV-region at 270 nm).
4. Hydrated fullerenes create in water medium the ordered, heterogeneous environment in which chemical and biochemical processes go differently than in pure (unordered) water. Some facts about catalytic and antiradical properties of cluster water ordered by C₆₀ fullerene molecule.
5. HyFn reveal only positive biological activity in experiments *in vitro* and *in vivo* (brief review).
6. HyFn accelerate growth of plants and animals (on an example of two-day chickens).
7. The facts about antitumor, ant atherosclerotic, antineurodegenerative, radioprotective, antidiabetic activity of HyFn water solutions. About biological efficacy of super small concentrations and doses of HyFn.
8. About antioxidant properties of HyFn *in vitro* and *in vivo* systems. The mechanism of free radicals recombination (self-neutralization) caused by properties of specific structures of the water ordered by fullerenes. What is "wise" antioxidant activity of HyFn? (Aphorism: *THERE CAN NOT BE MORE UNIVERSAL ANTIOXIDANTS, NAMELY FREE-RADICAL PROCESSES REGULATORS, THAN THE WATER STRUCTURES ORDERED QUITE SPECIFICALLY*, which, at the first stage of the primary evolution of biological molecules, served them as "defenders" from free-radical cleavage at action of radioactive radiation, hard ultra-violet rays, oxygen radical forms, etc.).
9. About universalism of HyFn biological activity as the confirmation of hypothesis that "C₆₀-H₂O" systems might be the matrix for primary biological matter (substance) formation. (Aphorism: In the words of Nobel Laureate Albert Szent-Gyorgyi, "LIFE IS WATER DANCING TO THE TUNE OF SOLIDS", but studying the remarkable and versatile bio-activity of hydrated fullerenes I incline to believe that "LIFE IS THE CARBON-CONTAINED SOLIDS DANCING TO THE TUNE OF ORDERED STRUCTURES OF WATER").
10. Suggestion: *As for Life, we should not try to structure water by means of some speculative influences. In fact, we should purposefully increase and support in water an amount of quite specific cluster structures that water forms into itself naturally!*