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Water soluble nano-miceller formulation of Ubisol Q10 halts progression of neurodegenerative diseases and cellular aging

 \mathbf{R} isk of neurodegenerative diseases increases with age. There has been an exponential increase in the number patients diagnosed are very different, they ultimately bring about neuronal death which is most likely executed by a common mechanism. Currently, there are no effective treatments to halt the progression of these diseases and assist in their management. We have used cellular and animal models (both rat and transgenic mice) of PD and AD to evaluate neuro protective effects of water soluble Coq10. Recently we have reported unprecedented effectiveness of Ubisol-Q10 at a very low dose of 6 mg/kg/day as an inhibitor of progressive Parkinsonian neuro degeneration in rodent models of disease. Oral intake of Ubisol-Q10 blocked the neurodegenerative processes activated by either MPTP or Paraquat. The formulation contains CoQ10 and PEG- α -tocopherol forming jointly water-soluble nanomicelles. We have confirmed bio availability of this formulation in brain. A comprehensive behavioral analysis of transgenic animals fed with this formulation indicated significant improvement in motor activity in PD and long term memory and emotional reactivity in AD models compared to untreated animals. These results were complemented with histochemical analysis that indicated significant protection of neurons in substantia niagra region and lower amyloid beta burden in respective models. This treatment leads to the stabilization mitochondrial functions, decrease of oxidative stress in neuronal cells and triggers an increase in neurotrophic factors from surrounding supporting cells such as microglia and astroglial cells. Thus Ubisol Q10 could offer a treatment that could halt the progression of disease in AD and PD patients.

Biography

Siyaram Pandey is a Professor in the Department of Chemistry & Biochemistry at the University of Windsor. He is currently the President of the Natural Health Product Research Society of Canada, and the Founder Director and Chief Scientific Officer of the Windsor Botanical Therapeutics Inc. Toronto. He is member of Society of Toxicology, USA, academic editor for PLoS ONE, Editorial Board Member of ECAM. His work on neurodegenerative diseases is funded by Canadian Institute for Health research (CIHR) and Michael J Fox Foundation for Parkinson's disease, NY with more than a million dollars. He has published more than 70 research articles in prestigious journals including FASEB *J, Neurobiology of Diseases, Neurobiology of Aging, Mechanism of Aging and Development, Mitochondrion and BMC Neuroscience*.

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