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Amsterdam, NetherlandsAruna Sharma, Am J Ethnomed 2018, Volume 5
DOI: 10.21767/2348-9502-C1-004**NANODELIVERY OF CHINESE TRADITIONAL MEDICINE
EXTRACT OF GINKGO BILOBA (EGB-761) INDUCES
SUPERIOR NEUROPROTECTION IN HEAT STROKE****Aruna Sharma**

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Military personnel are often exposed to high summer heat resulting in heat stroke (HS) resulting in serious mental and physical consequences due to blood-brain barrier (BBB) breakdown, edema formation and brain pathologies. In this innovation, we used TiO₂ nanowired EGb-761 and BN-52021 to treat HS induced brain pathologies in model experiments. Rats were exposed to two hour HS daily for eight days in a biological oxygen demand (BOD) incubator that does not induce brain pathology. On the eighth day, the animals were subjected to a four hour additional HS, and brain pathology was examined. These animals exhibited profound BBB leakage to Evans blue and [131]-Iodine, brain edema 2–4-fold higher neuronal damages as compared sham treated naïve rats. Treatment with EGb-761 (50 mg/kg, p.o.) with BN-52021 (2 mg/kg, p.o.) daily, for five days reduced brain damage by 20 to 30% in HS. However, when TiO₂ nanowired EGb-761 or TiO₂ BN-52021 were administered in identical doses, more than 80% reduction in brain pathology was observed in HS. The functional outcome e.g., walking on a tilted mesh grid (45°C), staying on a Rota-Rod treadmill (16 r.p.m.) and finding placing of forepaw on a wire mesh were significantly improved by nanodelivery of EGb-761 and BN-52021. These observations suggest that nanodelivery of EGb-761 and BN-52021 in HS has a potential therapeutic value that requires further investigation.

**Biography**

Aruna Sharma is the Secretary of Research International Experimental Central Nervous System (CNS) Injury & Repair (IECNSIR), currently working at Uppsala University Hospital, Uppsala University, Sweden. She is a qualified Experimental Neuropathologist with training at Karl Marx University, Leipzig (1987-1988); Semmelweis University Medical School, Budapest (1988-1989), Free University Berlin, (1989-1991) and Neuropathology Institute Uppsala (1992-1995). She is focused on traditional Indian/Chinese medicinal drugs on the central nervous system function, toxicology, neurorepair and neuroprotection using nanotechnology. She earned the Top 15 Technology Award of 2016 at Global Innovation Summit & Showcase on her recent innovation on, "Neuroprotective effects of Nanowired delivery of cerebrolysin together with alpha melanocyte stimulating hormone (-MSH) in concussive head injury in sleep deprivation", US Government, Washington DC, May 22-25, 2016. She has published over 140 original research papers in reputed neuroscience journals with an H-index of 19 (ISI database, 143 citations) as of today.

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