Supporting Information

Carbon Nano Onions Cross Blood Brain Barrier

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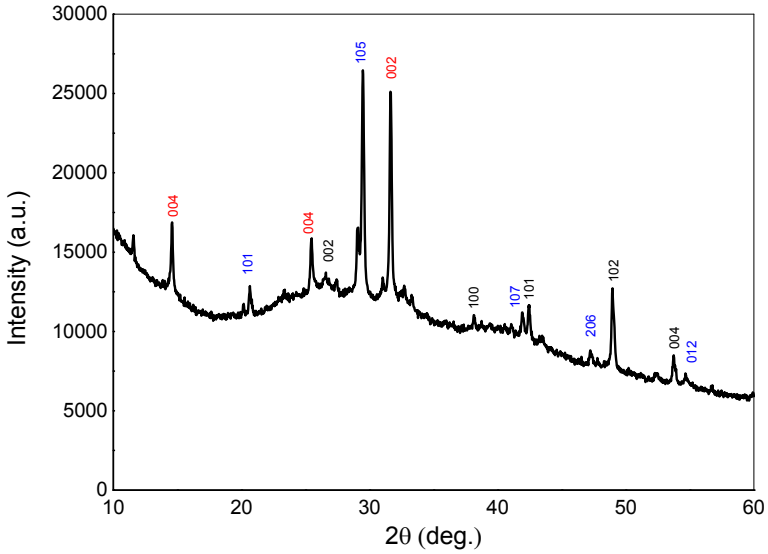

Figure SI 1: XRD of wsCNO

The XRD pattern is indexed with graphite [JCPDS file no 75-1621] and intercalated graphite [JCPDS file no 04-0221] phases. The peaks (black colour) at 26.60^0, 38.15^0, 42.44^0, 48.99^0 and 53.81^0 indicate 002, 100, 101, 102 and 004 planes respectively for the graphite phase. The peaks at 20.78^0, 29.46^0, 41.73^0, 47.46^0 and 54.57^0(blue colour) indicate 101, 105,107, 206 and 012 planes of intercalated graphite phase. The rest three XRD peaks at 14.52^0, 25.44^0 and 31.70^0(red colour) represent 004 plane of graphite [JCPDS file no 46-0870], 002 plane of graphitic carbon and of intercalated graphite respectively.

Fluorescence of wsCNO in saline water

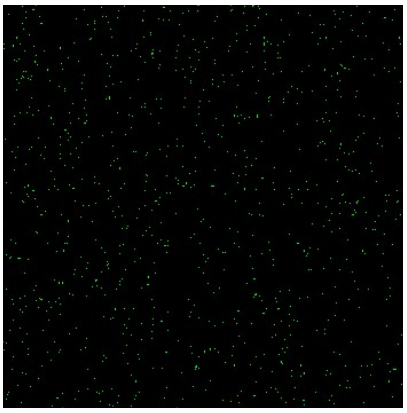

Figure SI 2: Fluorescence of wsCNO (488 nm excitation)

Stability of wsCNO in BS medium:

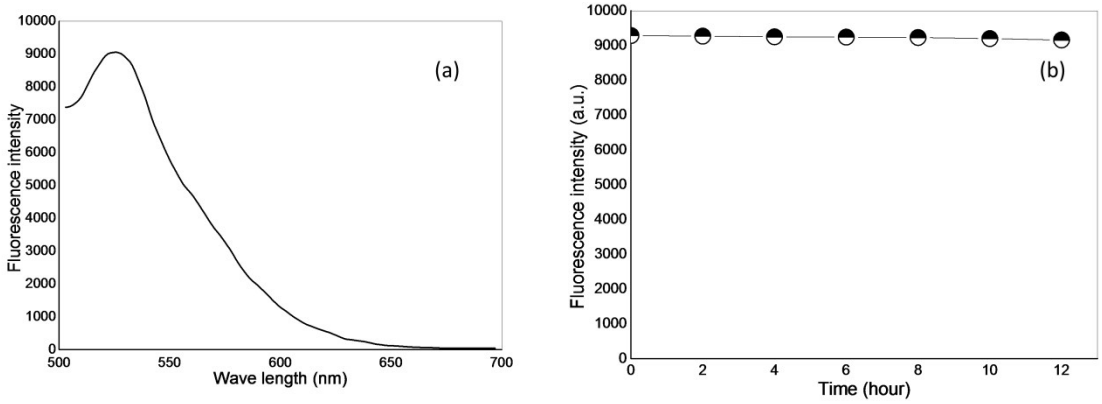

Figure SI 3: Stability of small wsCNO in BS medium for 12 hrs. , a) fluorescence spectrum (excitation at 488 nm) ; b) photo stability at 488 nm

Mice Excreta Study:

First mice(treated and control) excreta were dried under vacuum then finely grinded using mortar pastel, then 10 mg of finely powered excreta were taken in a 10 ml cultured tube containing 5 ml PBS buffer having pH 7.4.

Then it was mechanically shaken using SPINIX, then centrifuges for 10 min using 8000 rpm in a REMI Centrifuge, 1 ml of the clear solution taken in cleaned cell and 2 ml water added to it. Then the fluorescence spectra recorded in Photon Technology International (PTI) Quanta Master™ 300. It was repeated for three different mice excreta.

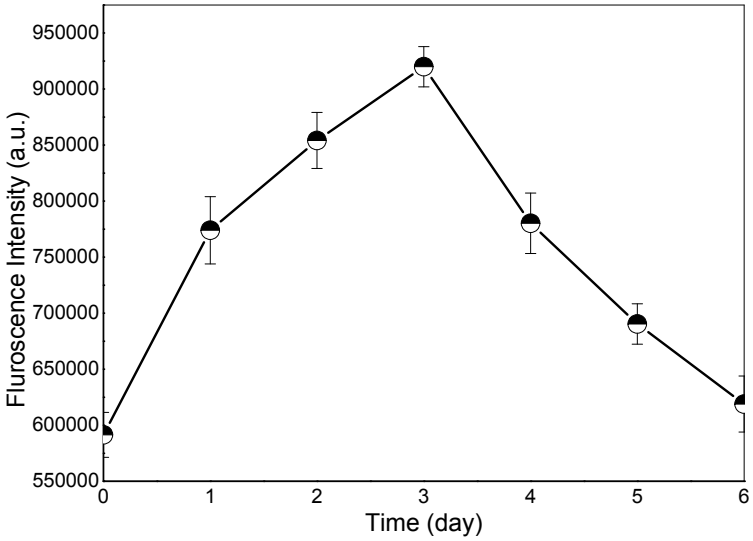

Figure SI 4: Mice excreta study: (excitation at 380 nm and emission at 435 nm)

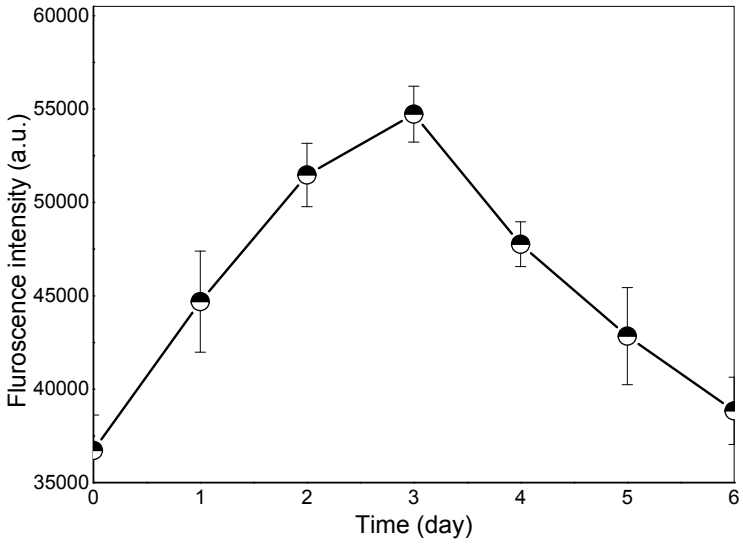

Figure SI 5: Mice excreta study: (excitation at 488 nm and emission 528 nm)

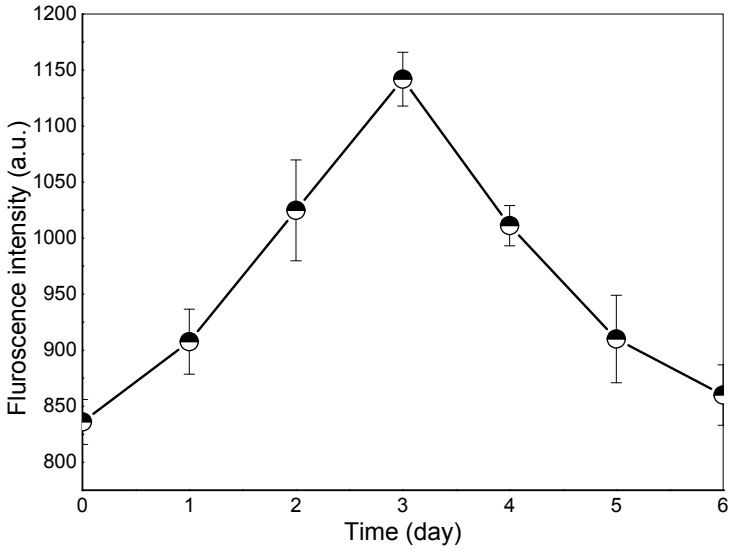

Figure SI 6: Mice excreta study: (excitation at 560 nm and emission maxima at 613 nm)

DLS and ZETA potential:

3 mg wsCNO was dissolved in a 30 ml PBS buffer and zeta potential was measured using Malvern NANO ZS 90 taking 3 ml solution.

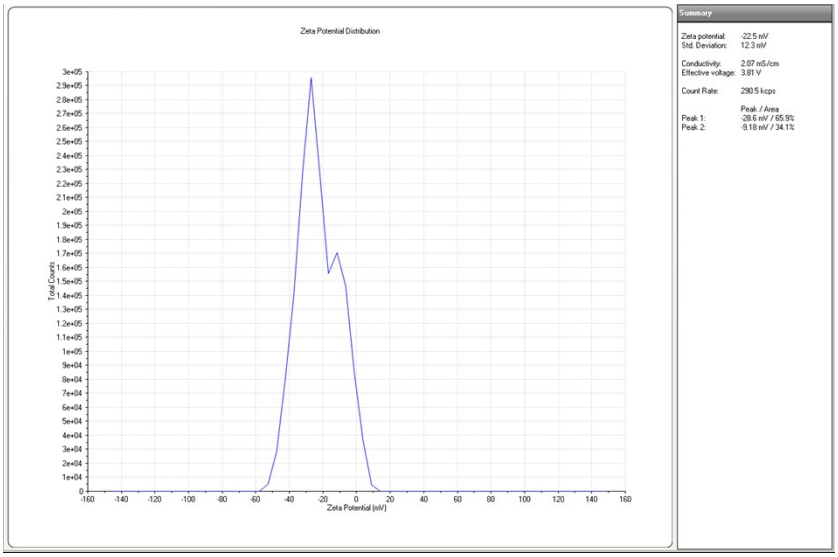

Figure SI 7: ZETA potential Graph of small wsCNO in PBS buffer

Along with this a movie files also available of vivo image of brain under intravenous (tail vein) injection of wsCNO.