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## Toxicokinetics and bio-distribution of PEGylated nanographene in mice

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Graphene, a new form of carbon with high scientific and technological impact belongs to 2D carbon based material. Graphene is going to revolutionize biomedical field in the forthcoming years. Increase in graphene production has created anxiety about their safety and toxicity towards human application. Present study focused on the bio-distribution and toxicokinetics of in house synthesized PEGylated reduced graphene oxide (PrGO), after intra-peritoneal and intravenous administration in mice. Bio-distribution analysis showed presence of PrGO in liver, brain, spleen and kidney even after 21 days of exposure. Blood was collected for biochemical and hematological analysis and no significant changes were observed in all the parameters. Excretion of PrGO was observed in urine. Presence of larger aggregates of PrGO inside the body suggested less clearance by kidney. Toxicokinetics study showed increased PrGO concentration in blood after 3 h of injection followed by time dependent decreases thereafter. Histopathological analysis revealed damage in liver cells after 7 days and 21 days of exposure. Immune response was evident by increased splenocytes proliferation during initial days of exposure and becomes normal.

### Biography

Syama S completed her PhD in Toxicology from Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum (Govt. of India). Her thesis title is "Interfacing of nanographene with mouse bone marrow mesenchymal stem cells and its allied molecular toxicity using *in vitro* and *in vivo* methods". She has published 17 research papers in National and International journals about nanomaterials toxicity. She is a recipient of Raman-Charpak fellowship from Indo French Centre for Promotion of Advanced Research (CEFIPRA). She has also participated in several national and international conferences.

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