



## Prof. Dr. Vinod Labhassetwar

Professor, Cleveland Clinic Lerner College of Medicine;  
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**Title:** Spinal Cord Injury: Mechanism of Progression of  
Secondary Injury and Treatment

**Abstract :** In spinal cord injury (SCI), the initial damage leads to a rapidly escalating cascade of degenerative events, known as secondary injury. In a rat contusion model of SCI, we demonstrated that the loss of mitochondrial homeostasis after the injury, mediated by oxidative stress, plays a critical role in the progression of secondary injury. The intravenous treatment with antioxidant enzymes formulated in nanoparticles protected mitochondria, and hence the injured spinal cord from neuronal cell apoptosis. The long-term study demonstrated regeneration of the injured spinal cord and functional recovery in treated animals.

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## **Professional Biography**

Vinod Labhassetwar, Ph.D. is an endowed chair of nanomedicine and professor of Biomedical Engineering at Cleveland Clinic. His laboratory's research focus is on exploring unique attributes of nanotechnology to find effective therapy for diseases that are difficult to treat, or for which there is no treatment. The lab investigates, design, develop, and evaluate potential new "nanomedicines," with the ultimate objective of translating research from bench to bedside.