

# Nanomedicine in brain repair: Alzheimer's, Parkinson's and the proteome

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Commensurate with our ever-increasing ability to explore and manipulate the microenvironment of biologic systems, so too does our understanding of biochemical processes that underly basic cellular or disease mechanisms also increase. As a corollary to these insights, there is also a broadening recognition of the biochemical basis of behaviors.

The emergence and availability of precision instruments, which are so small that they would strain the wildest fantasy of any lilliputian devotee of generations past, is upon us, creating a new field called nanomedicine.

From these microprobes and nanoprobes arises the ability not only to detect but to measure quantitatively the presence of simple bioactive molecules at cellular and even subcellular, i.e., cytoplasmic, nuclear, and synaptic sites.

It is anticipated that as we move forward, as we inevitably will, with newly gained knowledge and experience,

that we will reap the rewards—both in terms of understanding and treating a number of neurologic, metabolic, and genetic disorders that have thus far resisted therapeutic encroachment.

Thus, the aim of this Special Issue is to bring nanomedicine into the realm of the most prevalent debilitating brain and movement disorders. We have accomplished this task, humbly, by globally searching and finding expertise from leading researchers known to be deeply focused within the complexities of the brain and nanotechnology.

It is our hope that we have brought together, in this Special issue for the *Journal of Neural Transmission*, significant advances in Alzheimer's, Parkinson's and the proteopathies by embedding within them, the new world of stem cells and nanotechnology.

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