

In the news

DAMAGE LIMITATION

Nerve damage occurring as a result of injury or disease is generally irreversible, and the development of drugs with the capacity to prevent at least some of this damage could improve the quality of life for millions of people worldwide. Now, scientists in the United States and Japan have taken what could be an important step towards this goal.

Stuart Lipton, at the Burnham Institute, La Jolla, California, USA, and his colleagues showed that neurite outgrowth-promoting prostaglandin (NEPP) compounds, which are known to be neuroprotective, stimulate the production of natural antioxidants that protect against oxidative stress in a mouse model of stroke. The free radicals responsible for the excitotoxicity are also thought to play a part in the pathology of neurological disorders such as Alzheimer's disease and Parkinson's disease, so the potential utility of NEPPs could extend far beyond the treatment of stroke.

There are, of course, other compounds that can stimulate antioxidant production, but, says Professor Lipton, "...the very exciting finding here is that nerve cells are specifically targeted by the new drugs, avoiding other cell types" (*BBC News Online*, 9 January 2006).

Moreover, he adds, "These drugs may be much less toxic than prior drugs in this class because they are only low to moderately effective" (*The Guardian*, 10 January 2006). More effective drugs can actually be damaging to cells, because they disrupt their normal functions. The lower efficacy of NEPPs, combined with their preferential uptake by neurons, could contribute to a lower incidence of side effects.

The results so far are promising, but whether they can be replicated in humans in injury or disease, or used to develop safe and effective clinical treatments remains to be seen.

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