

*For immediate release/Press invitation*  
26 October 1999

## HKUST: EAST MEETS WEST IN FIGHT AGAINST ALZHEIMER'S

Dr Paul R. Carlier and Dr Yifan Han of the Departments of Chemistry and Biochemistry respectively of the Hong Kong University of Science & Technology (HKUST) have synthesized and studied a series of novel dimers which linked Tacrine to a simple and inexpensive portion of the Huperzine A molecule. Their work could lead to more effective treatment for Alzheimer's Disease (AD). Whereas Tacrine is a drug currently prescribed to treat AD in the US, Huperzine A is isolated from the Chinese herb Qian Ceng Ta (千層塔).

Although at present there is no cure for AD, pharmaceutical companies have developed drugs that can significantly improve memory and general intellectual function in patients. Such drugs could greatly improve the quality of life of AD victims and their care-givers in the first five to ten years after the onset of the disease. Unfortunately most of these drugs have serious side effects which elderly patients find intolerable, leading to discontinuation of drug therapy. One promising exception is Huperzine A, which has exhibited superior efficacy and tolerability in clinical trials on the Mainland. However, use of this drug to treat AD outside of China has been hampered by the high cost and scarcity of the herbal source, a complicated molecular structure, as well as by intellectual property issues.

Working with Dr Yuan-Ping Pang (a collaborator at the Mayo Clinic in the United States), Han and Carlier demonstrated that drugs which treat AD memory loss bind to one of two different locations on an enzyme called acetylcholinesterase. By constructing new molecules which contain two distinct drug units joined by a tether ("dimers"), it is possible to bind to both sites on the enzyme simultaneously ("dual-site binding"). Carlier and Han have synthesized and analyzed 10 separate classes of such "dimers", and all show enhanced potency as a consequence of dual-site binding. Pang originated this concept in 1996 by synthesizing a dimer of Tacrine. Dr Han showed that the Tacrine dimer can be administered at much lower doses than Tacrine, and achieves the same memory improvement (in rats) with greatly reduced toxicity and fewer side effects.

The new dimer of Tacrine and Huperzine A synthesized by Carlier and Han is the latest application of this concept. Dr Carlier says, the resulting hybrid drug is very easy and inexpensive to produce and expected to be much less toxic than Tacrine itself. Dr Han showed it is more potent than Huperzine A. This drug literally combines the best of "East" and "West", and signals a new direction in the modernization of traditional Chinese medicine in Hong Kong.

Dr Yifan Han and Dr Paul R. Carlier will present their recent research results in the coming media briefing at HKUST. You are invited to attend.

Details of the media briefing are as follows:

Title:	Novel Alzheimer's Disease Agent	
Date:	28 October 1999 (Thursday)	
Venue:	University Briefing Room, HKUST, Clear Water Bay, Kowloon. (Next to the Information Center at the main entrance)	
Program:	11am – 11:30am	presentation by researchers
	11:30am – 12 noon	Q & A session
	12 noon – 12:30pm	lab tour
	12:30pm	lunch
Languages:	Putonghua and English	

Note to Editors:

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