

September 17-18, 2018 Singapore

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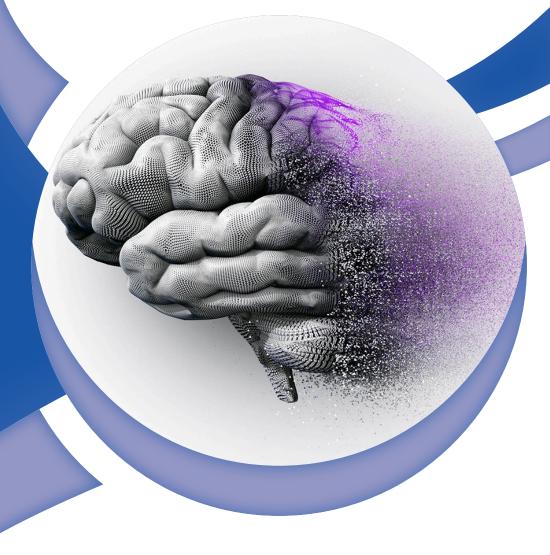
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12th World Congress on

# **Advances and Innovations in Dementia**

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# Keynote Forum Day 1

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## ADVANCES AND INNOVATIONS IN DEMENTIA

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Harry S Goldsmith
University of California, USA

#### Omental transposition to the brain for Alzheimer's disease

It has been commonly believed that a decrease in Cerebral Blood Flow (CBF) which routinely occurs in Alzheimer Disease (AD) results from the death of critical intra-cerebral neurons that no longer require the maintenance of an adequate blood supply. This belief is presently being challenged by the idea that it is not neuronal death that causes a decrease in CBF, but it is actually a decrease in the CBF which leads to the death of neurons seen in AD. In association with dead neurons located within the AD brain are varying numbers of deteriorating neurons. Increasing the CBF to still viable but deteriorating neurons in AD is believed to delay and even improve the clinical manifestations of AD. This increase in CBF has proven effective in treating a group of patients with AD. The increase in CBF was accomplished surgically by placing an intact, vascularized pedicled omentum directly on the AD brain. This surgical procedure should be evaluated by a carefully controlled study since finding a treatment for Alzheimer's disease is presently of extreme importance.

#### **Biography**

Harry S Goldsmith has been a Professor of Surgery for more than 40 years. He wrote the book A Conspiracy of Silence: Franklin D. Roosevelt-Impact on History. He also invented several surgical procedures including an operation to control Alzheimer's disease, a procedure to treat acute and chronic spinal cord injuries, as well as an operation to eliminate the need for a permanent colostomy. He is an author of 265 papers or book chapters, has edited four surgical texts and has received honorary degrees from two Chinese universities.

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## **Advances and Innovations in Dementia**

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# Keynote Forum Day 2

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## Advances and Innovations in Dementia

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Michael Entzeroth
Cennery Pharma (S) Pvt. Ltd., Singapore

#### Single voxel spectroscopy on two memory-enhancing drugs proposes glutamate modulation

Statement of the Problem: Alzheimer's disease is the most common form of dementia, affecting up to 70% of all people with dementia. A class of disease-non-modifying drugs, cholinesterase inhibitors is commonly used to treat Alzheimer's disease (AD). These drugs increase glutamatergic transmission and improve memory, however, they do not protect from disease progression and lose efficacy over time. Other approaches such as the inhibition of beta amyloid and tau protein formation have so far failed to improve the symptoms or modify the progression of this disease. We report here on a new class of molecules, choline analogs that improve memory in rodents and non-human primates as well as demonstrated neuro-protection in cellular models. We investigated the effects of these candidates on glutamate release in the hippocampus.

Methodology: Anaesthetized rats were either treated I.V. saline or CB8411 (50  $\mu$ g/kg) or CB2233 (100  $\mu$ g/kg). These subjects were then immediately scanned using a 9.4T ultra-high Bruker MRI, a 2.5x4x4 mm voxel in the hippocampus was scanned and glutamate levels were determined to determine baseline levels. After 30 min, the animals were treated with 1 mg/kg scopolamine. Scopolamine is an amnesiac agent that is known to diminish local glutamate levels.

**Findings:** After administration of scopolamine, hippocampal glutamate levels decreased to approximately 89% of the preinjection baseline levels. Both drug candidates, CB8411 and CB2233, attenuated the decrease in glutamate levels to about 94% of pre-injection baseline levels.

Conclusion & Significance: CB8411 and CB2233 have previously been shown to increase memory in non-human primates. We demonstrate that this effect may be caused via modulation of glutamate in the hippocampus and subsequent enhancement of working memory. These candidates are suggested a new class of compounds that are likely to be useful in the symptomatic treatment of AD.

#### **Biography**

Michael Entzeroth is currently Chief Scientific Officer/Chief Operating Officer of Cennerv Pharma (S) Pvt. Ltd in Singapore, a company focused on the development of novel drugs for the treatment of central nervous diseases. From 2007 to 2013, he was the Deputy Director and Vice President Research and Development and Deputy Director of the Experimental Therapeutic Centre, Biopolis, Singapore. Previously, he was Chief Scientific Officer of S\*BIO Pte Ltd in Singapore and between 1999 and 2002, as Vice President of CEREP SA in France, he was a member of the Executive Management Committee. From 1985 to 1999, with Boehringer Ingelheim, Germany, he was responsible for a variety of drug discovery programs. A number of drug candidates, he worked on during his career, are either on the market or in advanced clinical stage. Over the years, results from his work have been published in more than 50 publications in peer-reviewed scientific journals.

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