Nehru-era diplomat & IFS guru dies at 90

OUR SPECIAL CORRESPONDENT

New Delhi, Jan. 31: Ambadi K. Damodaran, the veteran diplomat and guru to a generation of foreign service officers, passed away in Delhi this afternoon after a brief illness.

Damodaran, 90, passed away in his sleep in a hospital.

Former external affairs minister K. Natwar Singh, who joined the IFS in 1953 like Damodaran, said: "He was an extremely erudite and a brilliant man but most of all, a person of refined and noble

Ayurveda plant raises Alzheimer's hope

Ashwagandha extracts reverse symptoms in mice, Indian scientists claim

G.S. MUDUR

New Delhi, Jan. 31: Ashwagandha, a plant used for centuries in Ayurvedic medicine, cleaned out abnormal protein deposits in the brain and reversed damage and behavioural changes observed in Alzheimer's disease when tested on mice, a team of Indian scientists announced today.

The scientists have shown through experiments on mice that extracts of Ashwagandha (*Withania somnifera*) can reverse within 30 days the abnormal accumulation of a protein, called beta-amyloid plaque, in the brain that is linked to Alzheimer's disease.

The researchers at the National Brain Research Centre (NBRC) at Manesar in Haryana fed genetically-engineered mice, which had symptoms similar to Alzheimer's disease, a daily oral dose of a cocktail of chemicals called withanosides and withanolides, extracted from Ashwagandha.

The extracts appeared to boost the synthesis of a special protein in the liver that acts as a chaperone and helps remove amyloid plaque from the brain. The scientists said a component of this protein slips into the bloodstream and draws the accumulated amyloid plaque out of the brain into the bloodstream for eventual disposal and excretion from the body. The findings appear today in the US journal *Proceedings of the National Academy of Sciences*.

"It's like vacuum cleaning the brain to get rid of unwanted amyloid plaque," said Vijayalakshmi Ravindranath, a senior neuroscientist at the Indian Institute of Science, Bangalore, who initiated the study eight years ago while she was director of the NBRC.

In their experiments, the scientists observed the elimination or reduction of amyloid plaque within the brain and an improvement or a complete reversal of behavioural deficiencies in the model mice, depending on the age of the animals.

Suvarna Alladi, a neurologist at the Nizam Institute of Medical Sciences in Hyderabad, who is not associated with the study, said all current therapy against Alzheimer's disease directly target the brain. "This is a novel strategy. They're targeting the liver to remove amyloid plaque from the brain. But this is also essentially an anti-amyloid therapy which currently appears to be a promising way ahead against Alzheimer's disease."

Neurologists estimate India has about four million people with dementia, the majority with Alzheimer's disease. Current treatment involves pharmaceutical compounds designed to prevent the accumulation or the synthesis of amyloid plaque. "But the best available therapy today does not cure Alzheimer's disease," Alladi said.

While the use of Ashwagandha has been advocated for centuries in traditional medicine, the NBRC study is the first to show that its extracts reverse Alzheimer's disease.

"The results appeared so stunning that we requested an independent laboratory in Canada to validate them," Ravindranath said. Neurologist Edith Hamel at McGill University in Montreal and fellow researcher Jessica Mills repeated the experiments with a different model mouse and obtained similar results.

The team, including Neha Sehgal, Alok Gupta, Rupanagudi Khader Valli, and Shanker Datt Joshi collaborated with Delhi University plant chemistry experts Subhash Jain and Pankaj Khanna who extracted the withanosides and withanolides from the plant.

The researchers caution that the Ashwagandha extract is not ready for human trials yet. Ravindranath points out that the dose given to mice was very high — about one gram per kilogram bodyweight of the animal.

"The evidence with mice looks good. If this holds up in future studies, we should go into human trials," said Manjari Tripathi, a neurologist at AIIMS, New Delhi.

"This is a desperate hunt for a devastating disease that robs its victims of memory and thinking capacity. There may also be other herbs waiting to be assessed through rigorous scientific research."

US Patent **Chinese Patent**

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Ravindranath et al.

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(54) ***WITHANIA SOMNIFERA* PLANT EXTRACT AND METHOD OF PREPARATION THEREOF**

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None
See application file for complete search history.

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(57) **ABSTRACT**

The present invention provides *Withania somnifera* plant extract and composition comprising the extract useful for the treatment of neurodegenerative disease and/or disorders such as Alzheimers disease (AD). The present invention further provides a process for preparation of the extract.

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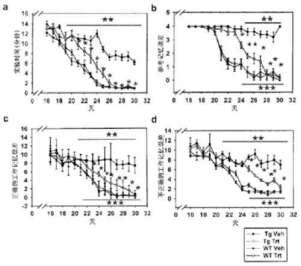
Title
(EN) Withania somnifera plant extract and method for manufacturing thereof
(ZH) 催眠睡茄植物提取物及其制备方法



Abstract
(EN)
The present invention provides Withania somnifera plant extract and composition comprising the extract useful for the treatment of neurodegenerative disease and/or disorders such as Alzheimers disease (AD). The present invention further provides a process for preparation of the extract.

(ZH)
本发明涉及催眠睡茄植物提取物和组合物，其包含用于治疗例如阿尔茨海默病(AD)的神经退行性疾病和/或失调的提取物。本发明进一步提供制备所述提取物的方法。

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