Natural Product Based Alzheimer Inhibitor

Scientists from Jawaharlal Nehru Centre For Advanced Scientific Research (JNCASR) have modified the structure of Berberine into Ber-D to use as an Alzheimer’s inhibitor.

- JNCASR is an autonomous institute under the Department of Science & Technology (DST), Govt. of India.
- Berberine is a chemical found in several plants. It is a natural and cheap product similar to curcumin (a substance in turmeric). It is found in India and China and used in traditional medicine and other applications.

Berberine is poorly soluble and toxic to cells. So scientists modified berberine to Ber-D, which is a soluble (aqueous), antioxidant. They found it to be a multifunctional inhibitor of multifaceted amyloid toxicity of Alzheimer’s disease.

- Amyloid is a protein that is deposited in the liver, kidneys, spleen, or other tissues in certain diseases.
- In case of Alzheimer’s disease, Amyloid beta (Aβ) accumulates in the brain.
- Ber-D inhibits aggregations of metal-dependent and -independent Amyloid beta (Aβ). Further, Ber-D treatment averts mitochondrial dysfunction and corresponding neuronal toxicity contributing to premature apoptosis (cell death).
- These multifunctional attributes make Ber-D a promising candidate for developing effective therapeutics to treat multifaceted toxicity of Alzheimer’s disease.

Alzheimer’s disease

- Alzheimer’s disease is a progressive disorder that causes brain cells to waste away (degenerate) and die.