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Targeting CNS protein kinase as therapeutics for neurodegenerative diseases

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The development of protein kinase inhibitors is becoming increasingly important in the development of drugs for peripheral diseases, while protein kinase targets in CNS diseases are rarely developed due to the difficulties of common CNS drug discovery. However, a number of protein kinases are being studied as targets for brain diseases. When developing them, the nature of low-molecular inhibitors - the molecular design that considers cytochrome P450-mediated metabolism, must be accompanied by blood-brain barrier permeability. Degenerative brain diseases and ischemic brain diseases, which are typical brain diseases, are directly caused by brain cell death, but they are recognized as a result of intracellular signal transduction. Therefore, protein kinase has begun to be studied. The c-Jun N-terminal kinase (JNK) pathway in the MAPK pathway, which is a representative cell signaling system that regulates cell death, has been verified as a target in relation to many diseases. In particular, JNK3 isoform is expressed in brain tissue. The distribution is concentrated, and the connection with neuronal death has been studied extensively. In this study, we have developed a low-molecular-weight inhibitor that can regulate its function by molecular targeting of JNK3 (c-Jun N-terminal kinase), which is considered to play a key role in the brain cell death mechanism of degenerative brain disease, and to conduct a study on structural optimization focusing on improvement of BBB permeation structure of existing lead material.

Biography

Jung-Mi Hah has completed her PhD at the age of 32 years from Northwestern University and postdoctoral studies from Albert Einstein College of Medicine. She is the director of graduate school of Pharmacy at Hanyang University. She has published more than 40 papers in reputed bioorganic and medicinal chemistry journals.

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