Docket #: S21-379

Development of Novel Chemical Entities for Inhibition of the Protein Kinases Involved in Cell Death, Neurodegeneration and Cancer

Stanford researchers have developed potent protein Kinase inhibitors for inhibition of pathological activity of protein kinases involved in cell death, inflammation and cancer.

Death-associated protein kinase 1 (DAPK1) is a kinase that has been validated as a novel therapeutic target in neurodegenerative diseases and cancer. Neurons lacking DAPK1 are reported to have reduced sensitivity to apoptotic stimuli both in vitro and in vivo. Additionally, depletion of DAPK1 inhibits tumor cell count and growth in vitro and in animal models of cancer. Keeping these finds in mind, Stanford researchers developed synthetic routes to successfully synthesize a novel set of DAPK1 chemical inhibitors. The compounds were further validated by data showing that the novel DAPK1 inhibitors significantly attenuate the engulfment of synaptosomes by human microglia, reduce cancer cell proliferation, and enhance the growth of axons in cultured neurons.

Stage of Development
In vitro and *in vivo* Alzheimer's Disease mouse model data

Applications

- Neurodegenerative diseases
- Cancer
- Psychiatry

Advantages

- Novel DAPK1 inhibitor compounds

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