

AMPK-Targeted Compound Library

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description

AMPK (Adenosine 5'-monophosphate (AMP)-activated protein kinase) plays a major role in regulating cellular energy balance by sensing and responding to increases in AMP/ADP concentration relative to ATP. Binding of AMP causes allosteric activation of the enzyme and binding of either AMP or ADP promotes and maintains the phosphorylation of threonine 172 within the activation loop of the kinase. AMP-activated protein kinase (AMPK) AMPK has attracted widespread interest as a potential therapeutic target for metabolic diseases including type 2 diabetes and, more recently, cancer.

AMPK activity is prominent in regulation of glucose, lipid, and proteins metabolism as well as mitochondrial biogenesis and autophagy. Activation of AMPK in the liver decrease blood glucose and in skeletal muscles stimulates glucose uptake independently of insulin through modulation of activity of several downstream substrates. Activation of AMPK inhibits synthesis and induces oxidation of fatty acids, which may reduce ectopic lipid accumulation and improve insulin action. The enzyme activation promotes cardiovascular homeostasis by ensuring optimum redox balance of heart and vascular tissue. In addition, AMPK signaling may link to cancer development via regulation of checkpoints of cell cycle.

TargetMol's AMPK-Targeted Compound Library containing xnum compounds targeting AMPK can be used for research in AMPK signaling pathway and its dysfunction-related diseases.

Reference

Cell Stem Cell. 2022 Apr 29(4) 545-558.
Blood. 2021, 137(11): 1478-1490.
Nucleic Acids Research. 2021.
Nature Communications. 2023, 14(1): 7574.
Advanced Science. 2020, 7(16): 2000925.
Angewandte

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