

PI3K-AKT-mTOR 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

The PI3K/AKT/mTOR pathway is an intracellular signaling pathway important in regulating the cell cycle. Therefore, it is directly related to cellular quiescence, proliferation, cancer, and longevity. Phosphatidylinositol 3-kinase (PI3K), AKT, a serine/threonine protein kinase also known as protein kinase B (PKB), and mammalian target of rapamycin (mTOR) are 3 major nodes in the pathway. PI3K activation phosphorylates and activates AKT, localizing it in the plasma membrane. AKT can have a number of downstream effects such as activating CREB, inhibiting p27, localizing FOXO in the cytoplasm, activating PtdIns-3ps, and activating mTOR which can affect transcription of p70 or 4EBP1. mTOR is a component of the PI3K/AKT cell survival pathway that monitors the availability of nutrients, mitogenic signals and cellular energy and oxygen levels, a major regulator of the autophagic process, and alterations in components of the mTOR pathway have a major role in tumor progression. Therefore, mTOR is an appealing therapeutic target in many tumors. Encouraging data from preclinical studies have offered new opportunities to fully exploit the therapeutic potential of mTOR targeting in cancer.

The PI3K/Akt/mTOR Compound Library by TargetMol, containing xnum compounds targeting PI3K/Akt/mTOR signaling, can be used for high throughput screening and high content screening for new drugs.

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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