

综述

糖原合成酶激酶-3及其抑制剂研究进展

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摘要 糖原合成酶激酶-3 (glycogen synthase kinase-3, GSK-3) 是一种多功能的丝氨酸/苏氨酸蛋白激酶, 是细胞内多种信号转导通路中的重要成分, 不仅参与细胞内糖代谢过程而且还参与细胞增殖、细胞分化和细胞凋亡等多种重要生理过程。GSK-3活性受多种机制调节, 其活性调节异常时可引起多种重大疾病如糖尿病、神经退行性疾病和肿瘤等。GSK-3已成为许多疾病治疗靶点, 目前针对GSK-3靶点开发的抑制剂主要是ATP竞争性的小分子GSK-3抑制剂。本文对GSK-3、它与多种重要疾病发生的关系, 以及目前开发的GSK-3抑制剂进行了综述。

关键词 [糖原合成酶激酶-3](#); [糖尿病](#); [阿尔茨海默病](#); [肿瘤](#); [GSK-3抑制剂](#)

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Glycogen synthase kinase-3 and its inhibitors: a research development

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Abstract

Glycogen synthase kinase-3 (GSK-3) is a multifunctional serine/threonine protein kinase, which plays an important role in many cell signaling pathways. GSK-3 takes part not only in glycogen metabolism, but also in cell differentiation, proliferation and apoptosis. The activity of GSK-3 is regulated by many mechanisms. The activity of GSK-3 may be linked to pathology in many diseases such as diabetes mellitus, Alzheimer's disease and tumors. Recent observation identifies GSK-3 as a potential therapeutic target in multiple human pathological processes. Many of GSK-3 inhibitors are small molecules which compete with ATP in the ATP-binding site of GSK-3. This review focuses on the functional properties of GSK-3 and its roles in human pathological process and the development of GSK-3 inhibitors.

Key words [glycogen synthase kinase-3](#); [diabetes mellitus](#); [Alzheimer's disease](#); [tumor](#); [GSK-3 inhibitors](#)

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