Treatment of obesity and diabetes through the inhibition of MAPKAPK2 and MAPKAPK3 (MK2/3)

Technology #cu12060

During nutrient deprivation, the liver produces glucose through a process known as hepatic glucose production (HGP). Excessive glucose production via HGP is thought to play a role in the high blood glucose levels observed in patients suffering from obesity and type II diabetes. The enzymes MK2/3 have been shown to play a role in the signaling pathway that causes HGP. This technology provides a method to treat obesity and related metabolic disorders by reducing the activity of MK2/3, and consequently, HGP and blood glucose levels.

Inhibition of MK2/3 enzymes lead to reduction in blood glucose and improves blood glucose management strategies

By inhibiting MK2/3 activity, this technology may lead to improvements in the health of those afflicted with obesity, metabolic syndrome, and type II diabetes. It has been shown that MK2/3 activity is elevated in obese patients, but not in those with a healthy body mass index. Similar MK2/3 activity trends have been observed in mice, and inhibition of MK2/3 in obese mice has been shown to lead to decreased blood glucose levels and plasma insulin. Thus, MK2/3 present promising targets for therapeutics to treat obesity and associated metabolic disorders.

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Applications:

- Development of drugs that inhibit MK2/3 to treat obesity and associated metabolic disorders (e.g. type II diabetes)
- Target for treatment of heart arrhythmias
- Weight loss supplement in addition to diet and exercise
Advantages:

- Unique therapeutic target that is distinct from currently marketed medications
- Can be used in addition to other obesity and diabetic treatments
- Well characterized animal models

Patent Information:

Patent Pending (US 20140314789)

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Related Publications:


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