

METHODS OF DELIVERING A NEUROPROTECTIVE POLYPEPTIDE TO THE CENTRAL NERVOUS SYSTEM

ABSTRACT

The present disclosure provides a method for delivering a neuroprotective polypeptide to at least a portion of a central nervous system (CNS) of a subject. The method includes administering to the systemic blood circulation of the subject a therapeutically effective amount of a neuroprotective polypeptide by a controlled-release formulation or a device providing a sustained release of the neuroprotective polypeptide including at least one neuroprotective polypeptide selected from the group consisting of GLP-1, exendin-4, or a therapeutically effective GLP-1 or exendin-4 analogue; the neuroprotective polypeptide binds to and activates a receptor that binds at least one of GLP-1, exendin-4, or a combination thereof; and the controlled-release neuroprotective formulation or the sustained release of the neuroprotective polypeptide enhances the delivery of the neuroprotective polypeptide across a blood-brain barrier (BBB) of the subject to at least a portion of the CNS relative to a rapid release formulation of the neuroprotective polypeptide. Also disclosed is a method of treating a subject with a CNS-related disease or reducing at least one symptom of a CNS-related disease in a subject in need thereof.

FIG. 1A