SUMMARY ~~OF THE INVENTION~~

[0005] Here, the inventors demonstrate the use of apoaequorin for providing ischemic protection to neurons. Accordingly, the ~~invention~~ disclosure encompasses in a first aspect a method of preconditioning neurons in a subject, preferably human, to reduce neuronal injury due to brain ischemia. Such a method includes the step of administering apoaequorin to neurons in a subject, wherein the apoaequorin initiates a change in cytokine expression levels in the neurons that results in a reduction in neuronal injury due to brain ischemia.

[0005a] In one aspect, there is provided a use of apoaequorin in the manufacture of a medicament for preconditioning neurons to reduce neuronal injury due to brain ischemia in a subject, wherein the medicament is to be administered to neurons, and wherein the medicament initiates a change in cytokine expression levels resulting in a reduction in neuronal injury due to brain ischemia in the subject, as compared to neurons not administered the medicament.

[0006] A preferred route of administration is by injection to the subject, preferably intra-hippocampal injection.

[0007] In certain embodiments, the reduction in neuronal injury effect lasts at least 24 hours from the time of apoaequorin administration. In other embodiments, the reduction in neuronal injury effect lasts at least 48 hours from the time of apoaequorin administration.

[0008] In other aspects, ~~the invention is directed to the~~ there is provided the use of apoaequorin for the manufacture of a medicament for preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia.

[0008a] In another aspect, there is provided apoaequorin for use in preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia

[0009] The ~~invention~~ disclosure further encompasses compositions for preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia. Such compositions include: (a) a therapeutically effective dosage of apoaequorin to precondition neurons in a subject to reduce neuronal injury due to brain ischemia; and (b) a pharmaceutically-acceptable carrier. Preferred compositions are formulated as injectable dosages.

[0009a] In one aspect, there is provided a composition for preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia, comprising:

(a) a therapeutically effective dosage of apoaequorin to precondition neurons in a subject to reduce neuronal injury due to brain ischemia; and

(b) a pharmaceutically-acceptable carrier.

[0010] In another ~~aspect~~embodiment, the ~~invention~~disclosure is directed to a kit for preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia. Such a kit includes: (a) a therapeutically effective dosage of apoaequorin to precondition neurons in a subject to reduce neuronal injury due to brain ischemia; and (b) a delivery device configured to administer the amount of apoaequorin to the subject.

[0010a] In one aspect, there is provided A kit for preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia, comprising:

(a) a therapeutically effective dosage of apoaequorin to precondition neurons in a subject to reduce neuronal injury due to brain ischemia; and

(b) a delivery device configured to administer said amount of apoaequorin to the subject.

[0011] Other objects, features and advantages of the present ~~invention~~ disclosure will become apparent after review of the specification, claims and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

CLAIMS

What is claimed is:

1. ~~A method of~~ Use of apoaequorin in the manufacture of a medicament for preconditioning neurons to reduce neuronal injury due to brain ischemia in a subject, ~~comprising administering apoaequorin~~ wherein the medicament is to be administered to neurons ~~in a subject~~, and wherein the ~~apoaequorin~~ medicament initiates a change in cytokine expression levels resulting in a reduction in neuronal injury due to brain ischemia in the subject, as compared to neurons not administered the ~~apoaequorin~~medicament.

2. The ~~method~~use of claim 1, wherein administration of the ~~apoaequorin~~ medicament is by injection.

3. The ~~method~~use of claim 2, wherein the injection is an intra-hippocampal injection.

4. The ~~method~~use of claim 1, wherein the subject is human.

5. The ~~method~~use of claim 1, wherein the reduction in neuronal injury effect lasts at least 24 hours from the time of ~~apoaequorin~~medicament administration.

6. The ~~method~~ use of claim 1, wherein the reduction in neuronal injury lasts at least 48 hours from the time of ~~apoaequorin~~ medicament administration.

7. Use of apoaequorin for the manufacture of a medicament for preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia.

8. Apoaequorin for use in preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia.

9. A composition for preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia, comprising: