CLAIMS

What is claimed is:

1. Use of apoaequorin in the manufacture of a medicament for ~~preventing~~reducing cell death due to ischemic injury in a subject, wherein the medicament is to be administered to the ~~by treating a~~ subject 48 hours before brain ischemia occurs in the subject.

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

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

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

SUMMARY

[0005] Here, the inventors demonstrate the use of apoaequorin for providing ischemic protection to neurons. Accordingly, the disclosure encompasses in a first embodiment 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 reducing cell death due to ischemic injury in a subject, wherein the medicament is to be administered to the subject 48 hours before brain ischemia occurs in the subject. Disclosed is a use of apoaequorin in the manufacture of a medicament for preventing ischemic injury by treating a subject 48 hours before brain ischemia occurs in the subject.

[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 embodiments, 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 embodiment, there is provided apoaequorin for use in preconditioning neurons in a subject to reduce neuronal injury due to brain ischemia

[0009] The 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 embodiment, 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