WHAT IS CLAIMED IS:

1. Use of a therapeutically effective amount of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for treating a traumatic brain injury in a subject in need thereof, or treating a symptom of a traumatic brain injury in a subject in need thereof.

2. The use of claim 1, wherein 1 g to 30 g of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, is to be administered to the subject per day.

3. The use of claim 2, wherein 2 g to 15 g of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, is to be administered to the subject per day.

4. The use of claim 3, wherein 3 g to 10 g of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, is to be administered to the subject per day.

5. The use of claim 4, wherein 4 g to 8 g of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, is to be administered to the subject per day.

6. The use of claim 5, wherein 4 g to 5 g of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, is to be administered to the subject per day.

7. The use of claim 6, wherein 5 g of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, is to be administered to the subject per day.

8. The use of any one of claims 1-7, wherein a therapeutically effective amount of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, is to be administered to the subject to treat the traumatic brain injury.

9. The use of any one of claims 1-7, wherein a therapeutically effective amount of acetyl-L-leucine, or a pharmaceutically acceptable salt thereof, is to be administered to the subject to treat the symptom of a traumatic brain injury.

10. The use of any one of claims 1-7, wherein the therapeutically effective amount of acetyl-L-leucine, or the pharmaceutically acceptable salt thereof modulates the expression of NOS2, IL-18, IFNb, IL-1β, TNFα, NOX2, NLRP3, ARG1, or IL-10 in the subject in need thereof.