

ABSTRACT

Provided in the present application is a phototherapy device for inhibiting or preventing Alzheimer's disease. The phototherapy device comprises a support mechanism and an array of near-infrared irradiation units. The support mechanism is configured to form an accommodating space for a subject's head and to support the array of near-infrared irradiation units. The array of near-infrared irradiation units is configured to emit near-infrared light into the accommodating space and form, when the subject's head is positioned in place, an irradiation spatial range that covers at least the anterosuperior cranial region, the cranial vertex region, together with the left lateral cranial region and the right lateral cranial region. The time-averaged total radiant power incident upon the surface of the calvarial region of the subject's head is at least 27.5 W, or at least 31 W, or at least 40 W, or at least 60 W, or at least 70 W, and the spatiotemporally averaged irradiance over each covered region does not exceed 230 mW/cm². The phototherapy device does not rely on nasal or ocular irradiation, achieves optimized therapeutic effects for AD patients from MCI to dementia during treatment courses, and maintains and even continuously enhances therapeutic effects during phototherapy interruptions.

FIG. 1