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PROBLEMS TO BE SOLVED BY THE INVENTION

[0007]

An object of the present invention is to identify a compound that is contained in Tongkat Ali and is involved in sleep, and to identify a mechanism by which the compound enables the improvement of sleep, thereby providing a novel composition for promoting sleep onset.

MEANS FOR SOLVING THE PROBLEMS

[0008]

As a result of intensive study, the present inventors discovered that an extract obtained from Tongkat Ali with an organic solvent contains three kinds of quassinoid

[7].

[9] A food or drink comprising the composition for enhancing expression of AANAT according to any one of [1] to [6], or the sleep-inducing agent according to [7].

EFFECT OF THE INVENTION

[0010]

Identification of compounds contained in Tongkat Ali led to the discovery that quassinoid compounds enhance expression of AANAT, which is a melatonin-synthesizing enzyme. By this, a composition for enhancing expression of AANAT, the composition comprising a quassinoid compound as an effective component, could be provided.

SUMMARY

[0010a] In one aspect, the disclosure provides a composition for enhancing expression of AANAT, the composition comprising a quassinoid compound or a pharmaceutically acceptable salt thereof.

[0010b] In one aspect, the disclosure provides a composition for enhancing expression of AANAT, the composition comprising an extract from root of Tongkat Ali.

[0010c] In one aspect, the disclosure provides a sleep-inducing agent comprising the composition for enhancing expression of AANAT as disclosed herein.

[0010d] In one aspect, the disclosure provides a pharmaceutical comprising the composition for enhancing expression of AANAT as disclosed herein, or the sleep-inducing agent as disclosed herein.

[0010e] In one aspect, the disclosure provides a food or drink comprising the composition for enhancing expression of AANAT as disclosed herein, or the sleep-inducing agent as disclosed herein.

[0010f] In one aspect, the disclosure provides use of a composition comprising a quassinoid compound or a pharmaceutically acceptable salt thereof, in the manufacture of a medicament for enhancing expression of AANAT.

[0010g] In one aspect, the disclosure provides use of a composition comprising an extract from root of Tongkat Ali, in the manufacture of a medicament for enhancing expression of AANAT.

[0010h] In one aspect, the disclosure provides use of a composition comprising a quassinoid compound or a pharmaceutically acceptable salt thereof, in the manufacture of a sleep-inducing agent for enhancing expression of AANAT.

[0010i] In one aspect, the disclosure provides use of a composition comprising a quassinoid compound or a pharmaceutically acceptable salt thereof, in the manufacture of a pharmaceutical composition for enhancing expression of AANAT.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011]

Fig. 1 shows (a) the results of HPLC analysis, and (b) the results of HRMS spectral analysis, of three kinds of quassinoid compounds (Compounds 1 to 3).

Fig. 2 shows (a) a ^{1}H NMR spectrum, and (b) a ^{13}C NMR spectrum, of Compound 1.

Fig. 3 shows ^{1}H NMR spectra and ^{13}C NMR spectra of Compounds 2 and 3.

Fig. 4 shows the result on enhancement of expression of the AANAT gene by a Tongkat Ali extract.

Fig. 5 shows the results on enhancement of expression of the AANAT gene by eurycomanone, eurycomanol, and 14,15β-dihydroxyklaineanone.

MODE FOR CARRYING OUT THE INVENTION

[0012]

<Composition for Enhancing Expression of AANAT>

A first mode of the present invention is a composition for enhancing expression of AANAT, the composition comprising a quassinoid compound or a