

Abstract

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[Problem]

5 A compound which is useful as an agent for treating breast cancer is provided.

[Means for Solution]

10 As a result of intensive studies on a compound having a Complex I inhibitory effect and an AMPK activation effect, the present inventors found that a bicyclic nitrogen-containing aromatic heterocyclic amide compounds of the present invention has an excellent Complex I inhibitory effect and the AMPK activation effect, furthermore, has a cell proliferation inhibitory effect with respect to not only human PIK3CA mutation-positive breast cancer cell lines in which MCT4 is not expressed but also human breast cancer cell lines which do not have mutation of PIK3CA in which MCT4 is not expressed, and exhibits an anti-tumor effect in a human PIK3CA mutation-positive breast cancer cell

15 line MDA-MB-453 cell in a cancer-bearing mouse in which the MCT4 is not expressed, thereby completing the present invention. A bicyclic nitrogen-containing aromatic heterocyclic amide compound of the present invention can be used as an agent for treating breast cancer, in particular, breast cancer in which the MCT4 is not expressed, and among others, PIK3CA mutation-positive breast cancer in which the MCT4 is not expressed.

20 [Selected Figure]

Nil