DESCRIPTION

COMPOUND OR SALT THEREOF, ANTI-INFLAMMATORY AGENT, ANTICANCER AGENT FOR LUNG CANCER, METHOD FOR PRODUCING COMPOUND OR SALT THEREOF, METHOD FOR TREATING INFLAMMATORY DISEASE AND METHOD FOR TREATING LUNG CANCER

TECHNICAL FIELD

[0001] The present invention relates to a compound or a salt thereof, an anti-inflammatory agent, an anti-cancer agent against lung cancer, a method of producing a compound or a salt thereof, a method of treating an inflammatory diseases, and a method of treating lung cancer.

BACKGROUND ART

[0002] Various anti-inflammatory agents and anti-cancer agents against lung cancer have been proposed (for example, see Non Patent Literatures 1 and 2).

Citation List

Non Patent Literature

[0003] Non Patent Literature 1: Koichiro Wada, Yoshinori Kamisaki, "Anti-inflammatory effect of PPARγ agonists: basic and elinical applications," Nippon Rinsho, 2010, Vol. 68, No. 2, p.278-283

Non Patent Literature 2: Vincent T.DeVita, Jr. and Edward Chu, "A History of Cancer Chemotherapy," Cancer Res, November 1, 2008, Vol. 68, issue. 21, p.8643-8653

SUMMARY OF INVENTION

Technical Problem

[0004] However, there is a need for a new compound having excellent safety which can be used as an anti-inflammatory agent, an anti-cancer agent against lung cancer, and the like, and a method for producing the same.

[0005] Therefore, it is an object of the present invention to provide a new compound having excellent safety, which can be used as an anti-inflammatory agent, an anti-cancer agent against lung cancer, or the like, and a method of producing the same.

Solution to Problem

[0006] In order to achieve the above object, the present invention provides a compound represented by Formula (A) or Formula (B) or a salt thereof:

[Formula A]

The culture medium was added to cells derived from human peripheral blood monocytes (THP-1, manufactured by DS Pharma Biomedical Co., Ltd.) to prepare solutions in which the concentrations of the cells were 4 x 10^5 cells/mL. The solutions were seeded in 24 well plates in 500 μL portions, i.e., 2.0 x 10^5 cells/500 μL/well. After seeding, 250 μL of the culture medium or 250 μL of the culture medium containing 40 μmol/L of GW9662 (manufactured by Wako Pure Chemical Industries, Ltd.) was added to the wells. The GW9662 is an inhibitor of PPARγ(Peroxisome proliferator-activated receptor γ) which is one type of nuclear receptor. After the addition, the mixture was incubated at 37°C in a 5% CO_2 for 1 hour. Thereafter, 250 μl of the test solution was added to each well, and the wells were incubated at 37°C in a 5% CO_2 for 22 hours. After culturing, the culture supernatant of each well was collected in a 2 mL tube. A new 0.5 mL of the culture medium was added to each well, spread over the whole well, and collected in the 2 mL tube. To each empty well was added 0.49 mL of fresh culture medium. The culture solution collected in the 2 mL tube was centrifuged at 1,000 rpm for 5 minutes, the supernatant was removed, and 1 mL of the fresh culture solution was added to suspend, and centrifuged again under the same conditions. After centrifugation, the supernatant was removed and 0.49 mL of culture medium in each well was added to the 2 mL tube, suspended and returned to each well. Then, 250 μL of the culture medium or 250 μL of the culture medium containing 40 μmol/L of the above GW9662 was added to the wells, and the wells were cultured at 37°C in a 5% CO_2 for 1 hour. After the incubation, 250 μL of the culture medium containing LPSp was added to the wells so that the final concentration of the LPSp was 100 ng/mL, and the wells were incubated at 37°C in a 5% CO_2 for 22 hours.

[0143] (3) Measurement of IL-6 concentration

After culturing, the culture supernatants of the wells were collected in tubes, centrifuged, and the supernatants were collected in 1.5-mL tubes. The absorbance was measured using Human IL-6 ELISA MAX Deluxe (Biolegend Corporation), and the concentrations of Interleukin-6 (IL-6) were calculated.

[0144] The measurement results are shown in the graph of FIG. 8. In FIG. 8, the vertical axis represents the concentration of IL-6, and the horizontal axis represents the concentration of the test solution. As shown in FIG. 8, in case of GW9662 −, i.e., when PPARγ was not inhibited, IL-6 concentration was lower as the concentration of the test solution was higher, indicating that IL-6 production was lower as the concentration of the test solution was higher. On the other hand, in case of GW9662 +, i.e., when PPARγ was inhibited, IL-6 levels decreased with increasing concentrations of the test solution, indicating that IL-6 production decreased with increasing concentrations of the test solution, but the degree of reduction was not as pronounced as when PPARγ was not inhibited. From this result, it was confirmed that the production of IL-