Description

~~5-MEMBERED RING HETEROAROMATIC DERIVATIVES HAVING NPY Y5 RECEPTOR ANTAGONISTIC ACTIVITY~~

5-MEMBERED RING AROMATIC HETEROCYCLIC DERIVATIVE HAVING NPY Y5 RECEPTOR ANTAGONISTIC ACTIVITY

Field of the Invention

[0001]

This invention relates to a novel 5-membered aromatic heterocycle compound having an NPY Y5 receptor antagonistic activity and relates to 5-membered aromatic heterocycle derivatives useful for a pharmaceutical composition, especially for an anti-obesity drug.

Background Art

[0002]

Obesity is defined as an excessively high amount of body fat or adipose tissue in relation to lean body mass and recognized as a major risk factor for health problems. Body mass index (BMI) is a simple index of weight-for-height that is commonly used in classifying overweight and obesity in adult (age 15 and over) populations and individuals. It is defined as the weight in kilograms divided by the square of the height in meters (kg/m^2). World Health Organization defines "overweight" as a BMI of 25 kg/m^2 or greater and "obesity" as a BMI of 30 kg/m^2 or greater. On the other hand, Japan Society for the Study of Obesity defines "obesity" as a BMI of 25 kg/m^2 or greater because the number of obesity-related disorders including diabetes and dislipidemia increases in accordance with BMI, and the mean number of obesity-related disorders is greater than 1.0 at a BMI of 25 kg/m^2. World Health Organization reported that about 1600 million and at least 400 million people were classified as overweight and obesity around the world in 2005, respectively. Obesity is mainly caused by taking in more calories than using up in physical activity and daily life. The number of obese people has been increasing by taking in more food including high fat and/or sugar, and it is estimated that 700 million people or more would be diagnosed as obesity around the world in 2015.

[0003]

Neuropeptide Y (hereinafter referred to as NPY) is a peptide which consists of 36 amino acid residues and was isolated from porcine brain in 1982. NPY is widely distributed in the central nervous system and peripheral tissues of humans and animals.

It has been reported that NPY possesses a stimulatory action on food intake,