1999:39502

AN

1999:39502 DISSABS Order Number: AAIC701050 (not available for sale by UMI)

TI

EFFECTS ON ENERGY UTILIZATION AND EXPRESSION OF THE OBESITY GENE AND UNCOUPLING PROTEINS (UCP1 AND UCP2) BY NEW BETA-3 ADRENERGIC AGONIST IN RATS FED A CAFETERIA DIET
EFECTOS EN LA UTILIZACION ENERGETICA Y EN LA EXPRESION DEL GEN DE LA OBESIDAD Y PROTEINAS DESACOPLANTES (UCP1 Y UCP3) DE UN NUEVO AGONISTA ADRENERGICO BETA3 EN UN MODELO DE OBESIDAD INDUCIDA CON UNA DIETA DE CAFETERIA

AU

BERRAONDO LOPEZ, BEATRIZ [DR.]

CS

UNIVERSIDAD DE NAVARRA (SPAIN) (5864)

SO

Dissertation Abstracts International, (1998) Vol. 60, No. 2C, p. 362. Order No.: AAIC701050 (not available for sale by UMI). 286 pages. FACULTY OF PHARMACY, UNIVERSITY OF NAVARRA, E-31080 PAMPLONA, SPAIN.

DT

Dissertation

FS

DAI

LA

Spanish

AB

The $\beta3$-adrenergic agonists demonstrate major lipolytic, thermogenic and hypoglucaemic effects, and are potentially applicable in the treatment of obesity and diabetes. In this paper, we study the effects on energy consumption and the expression of the obesity gene and uncoupling proteins (UCP1 and UCP2) when the new $\beta3$-adrenergic agonist, Trecadrine, was administered for 35 days in a model of obesity induced by a cafeteria diet in female Wistar rats. Trecadrine (1 mg/kg) was given to the obese animals, and was found to reduce significantly their body weight and fat deposits as a result of an increase in lipolysis in the white and brown fat, as Trecadrine increases the activity of hormone-sensitive lipase and the consumption of oxygen in vitro in white fat. At the same time, the administration of Trecadrine (1 mg/kg) to obese rats produced an increase in thermogenesis, mediated by a rise in UCP1 expression in brown fat and UCP2 in the gastrocnemius muscle, the principal modulators of which seem to be the fatty acids which are mobilized when lipolysis is stimulated. However, UCP2 expression in the gastrocnemius was reduced in control rats treated with Trecadrine (1 mg/kg), which suggests that the response was different in control animals from that in obese ones. Similarly, the administration of Trecadrine (1 mg/kg) to obese animals brought down the plasma leptin levels and the amount of obesity gene which was expressed. In conclusion, Trecadrine could be of great interest for the treatment of obesity.

CC

0570 HEALTH SCIENCES, NUTRITION; 0307 BIOLOGY, MOLECULAR; 0433 BIOLOGY, ANIMAL PHYSIOLOGY