

Título: PAPEL DE LA PROTEÍNA DLK1 EN LA REGULACIÓN HIPOFISARIA DE LAS CÉLULAS ADIPOSAS EN EL RATÓN ADULTO.

Nombre: Puertas Avendaño, Ricardo Alfonso

Universidad: Universidad de La Laguna

Departamento: Anatomía, anatomía patológica, histología y fisiología

Fecha de lectura: 29/01/2016

Programa de doctorado: CIENCIAS DE LA VIDA Y DEL MEDIO AMBIENTE

Dirección:

> **Director:** CARMEN DÍAZ DELGADO

> **Codirector:** MIRIAM GONZALEZ GOMEZ

Tribunal:

> **presidente:** MARIA PILAR MARCOS RABAL

> **secretario:** NICANOR MORALES DELGADO

> **vocal:** ibrahim gonzález marrero

Descriptor:

> BIOLOGIA CELULAR

El fichero de tesis ya ha sido incorporado al sistema

> 231687_808926.pdf

Localización: PAPEL DE LA PROTEÍNA DLK1 EN LA REGULACIÓN HIPOFISARIA DE LAS CÉLULAS ADIPOSAS EN EL RATÓN ADULTO.

Resumen: To better understand the role of the non-canonical Notch ligand delta-like protein 1 (DLK1), in hormone-producing cells, we studied the cell distribution and subcellular localisation of DLK1 in the pituitary of male adult 129/SvJ mice, and analysed the variations in the hormone-producing cells associated with the lack of this gene in Dlk1 knockout mice. The results obtained showed the presence of DLK1-immunoreactive (ir) cells in all hormone-producing cells of the anterior pituitary. Immunoelectron microscopy showed DLK1-ir in the rough endoplasmic reticulum and inside secretory vesicles, suggesting that DLK1 is released together with pituitary hormones. Moreover, we found that prolactin (PRL)-DLK1-ir cells are in intimate contact with follicle-stimulating hormone (FSH)-ir-DLK1-negative cells. In Dlk1 knockout mice, we detected a significantly lower number of growth hormone (GH)-ir cells, a reduction in the FSH and PRL immunostaining intensity, and a significant decrease in FSH mRNA expression compared to wild-type mice. An increase in pituitary GH mRNA expression and serum leptin levels was also found. These findings provide evidence supporting several regulatory functions of DLK1 in the pituitary gland. Furthermore, DLK1 showed a role in the adipose tissue like regulator of pituitary cells and inside adipocyte cells modulating the TSHR expression levels.

