AN ANORECTIC ROLE FOR NPW?

Neuropeptide W (NPW) may provide an anorectic function in situations of leptin deficiency or resistance, according to results published in *Endocrinology*.

The researchers had previously identified NPW as a novel hypothalamic peptide in rats. The role of biologically active neuropeptides in feeding behavior has been widely reported; however, the function of NPW was unclear, leading Date *et al.* to investigate further into its potential role in hypothalamic control of feeding behavior.

Combinations of *in vivo* and *in vitro* experiments were used to explore the complex interactions occurring between anorectic and orexigenic signals in hypothalamic control centers. In both leptin-deficient (*ob/ob*) and leptin-receptor-deficient (*db/db*) mice, a significant increase in NPW expression was observed; control levels of NPW were re-established in the *ob/ob* mice following leptin replacement. The fact that upregulation of NPW did not occur after leptin administration is unusual for an anorectic peptide, leading Date *et al.* to hypothesize that NPW acts to compensate for disrupted leptin signaling.

These findings indicate that NPW could play a vital role in energy metabolism and feeding under conditions of leptin insufficiency; however, further studies are required to investigate the molecular mechanisms involved.

The team plan to build on this research by investigating the physiological and pathophysiological significance of NPW in humans, potentially contributing to the development of novel therapeutic agents for leptin resistance. "NPW might be an important target molecule for drug development. Discoveries of feeding regulatory substances and the identification of their neuronal networks will pave the way for elucidating minute, complicated and redundant feeding regulatory system," concludes senior researcher Masamitsu Nakazato.

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