

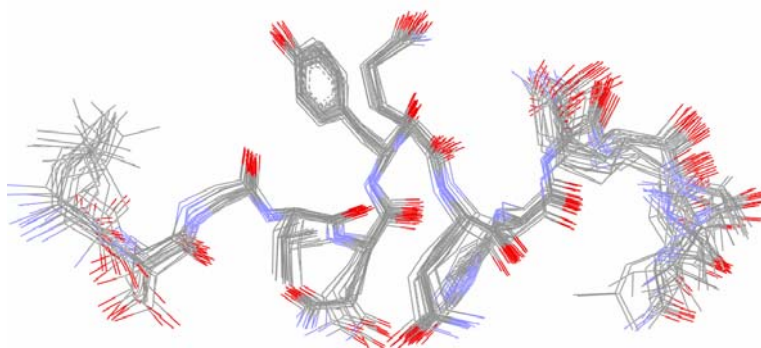
The conformational analysis of Obestatin and its truncated analogs by NMR spectroscopy

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Obestatin, a 23-amino acid peptide encoded by the ghrelin gene, is a natural peptide recently discovered in the stomach of some mammals. Obestatin and its isoform Ob (11-23) have been reported to have actions opposite to ghrelin, such as decreasing food intake, body weight and delaying gastric emptying in rodents. First reports appeared to demonstrate that this peptide requires an amidation for its biological activity and acts through the orphan receptor, GPR-39¹, but this remains controversial.

In this work, we report the NMR-based conformational analysis of Obestatin and its derivatives Ob (11-23) and Ob (16-23). NMR spectra were collected in the presence of SDS micelles². The chemical shift assignment and the collection of the NOE data was performed analyzing 2D TOCSY and NOESY spectra according to conventional procedures³. Three-dimensional structures of obestatin and derivatives were calculated by using the program CYANA 2.1⁴.



- [1] Zhang J.V.; Ren P.; Avsian-Kretchmer, O.; Luo C.; Rauch R.; Klein C.; Hsueh A. J. W., *Science*, **2005**, *310*, 996–999.
- [2] Scrima M.; Campiglia P.; Esposito C.; Gomez-Monterrey I.; Novellino E.; D’Ursi A. M., *Biochem. Biophys. Res. Commun.*, **2007**, *363*, 500-505.
- [3] Wüthrich K., in: *NMR of Proteins and Nucleic Acids*, Wiley, New York, **1986**.
- [4] Güntert, P., *Methods in Molecular Biology*, **2004**, *278*, 353-378

This work has been carried out with financial aid of the Spanish Ministry of Education and Science(MEC), Grant CTQ2006-10874-C02-01. Lidia Nieto thanks the FPI programme, grant number BES-2007-16429.