Crystal Structure of Mouse Carnosinase CN2 at 1.8 Å Resolution

Masami Kusunoki, Hideaki Unno, Tetsuo Yamashita, Sayuri Ujita, Nobuaki Okumura, Hiroto Otani, Akiko Okumura, Katsuya Nagai, *Institute for Protein Research, Osaka University, Osaka, Japan*. E-mail: kusunoki@protein.osaka-u.ac.jp

L-Carnosine, β-alanyl L-histidine, is found as a bioactive dipeptide which affects autonomic neurotransmission and blood pressure through histamenergic nerves and is present in mammalian tissues including the central nervous system. In mammals, two types of carnosinases, CN1 and CN2, both of which catalyse the hydrolysis of L-carnosine, with different properties are known. The mouse carnosinase CN2 was found to be highly concentrated in the parafascicular nucleus of the thalamus and so on in the brain, which suggests carnosine is degraded by CN2 to supply the substrate of histamine-synthesizing enzyme, histidine decarboxylase. We started crystallographic study of CN2 from mice to understand its enzyme mechanisms on a structural basis.

The MAD data were collected on beamline BL6A of the Photon Factory using an ADSC Quantum 4D CCD detector. The protein phases were determined with the program Sharp and improved with the program dm using non-crystallographic symmetry. The peptide model was built with the program ARP/wARP. The structure is now being refined with the program Refmac5.

[1] Otani H., Okumura N., Hashida-Okumura A., Nagai K., *J. Biochem.*, 2005, **137**, 167.

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