

## Construction and application of Peptidome, a fact database for endogenous peptides

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As the next stage of genome research, the fact data of proteins are rapidly being accumulated in the Proteome database in these years. Peptides are participating in many physiological events and play crucial roles as hormones and neuropeptides. Despite their physiological importance, construction of the database for endogenous peptides has not yet been undertaken. The main reasons for the difficulties in the analysis of endogenous peptides are I) peptides are easily degraded during extraction and purification, and II) their average tissue content is less than 0.1% that of the proteins. We solved most of these problems and prepared the peptide fraction, which was then separated by 2-dimensional HPLC and analyzed with mass spectrometers. During the separation and analysis, molecular masses and physicochemical properties of peptides can be obtained, and the peptide data are stored in the platform defined by the physicochemical properties and molecular masses. By accumulating the fact data of endogenous peptides in the common platform, along with the data of biological activity, natural abundance, and so on, we will be able to search this database, designated "Peptidome", from many different standing points. Peptidome database is expected to provide the solid intellectual infrastructure for developing drugs, diagnostic and therapeutic methods as well as for elucidating the peptide function in the biological systems.