SERINE PROTEASES AND THEIR CLASSIFICATION ACCORDING TO MEROPS SYSTEM

Summary

Proteolytic enzymes, known also as the proteases, proteinases or peptidases, belong to the class of hydrolases involved in hydrolytic degradation of peptide bonds. These enzymes have been identified in both prokaryotic and eukaryotic cells. Typical human genome contains about 2% of the genes that are responsible for encoding of proteolytic enzymes. Serine proteases represent almost one-third of all proteolytic enzymes. The name of these proteases is derived from the presence of the nucleophilic amino acid: serine located in the active site of the enzyme, which attacks the carbonyl group of the peptide bond forming thereby an intermediate called acyl-enzyme. Due to the fact that the reactions catalyzed by proteases are very complex Rawlings and Barrett proposed a high precision classification system for proteolytic enzymes called MEROPS. Under this system, proteases are divided into clans and families. The recent MEROPS database divided serine proteases into 15 clans containing a together 53 families. The aim of this paper is all short description of serine proteases and their division into different clans.