

Special Issue

Spotlights on Transglutaminase Genes and Functions

Message from the Guest Editor

Transglutaminases are a family of Ca^{2+} -dependent enzymes that catalyze post-translational modifications of proteins. The main activity of these enzymes is the cross-linking of glutamyl residues of a protein/peptide substrate to lysyl residues of a protein/peptide co-substrate. In addition to lysyl residues, other secondary nucleophilic co-substrates may include monoamines or polyamines (to form mono- or bi-substituted/crosslinked adducts) or $-\text{OH}$ groups (to form ester linkages).

Transglutaminase activity has been suggested to be involved in molecular mechanisms responsible for both physiological or pathological processes. In particular, transglutaminase activity has been shown to be responsible for human autoimmune diseases, and celiac disease is just one of them. More recently, several scientific reports have shown that neurodegenerative diseases are characterized in part by aberrant cerebral transglutaminase activity and by increased cross-linked proteins in affected brains. In this Special Issue we will focus on the discovery of new transglutaminase genes and functions.

Guest Editor

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