Special Issue

Cell Biology and Functions of the Multifunctional Lysyl Oxidase Family of Proteins 2.0

Message from the Guest Editor

The lysyl oxidase family of genes consists of five related paralogues, each possessing the active lysyl oxidase enzyme activity domain at the C-terminus of the corresponding proteins. All five enzymes participate in extracellular biosynthetic collagen and elastin cross-linking and maturation, critical for normal extracellular structure and function. The N-terminal propeptide regions are more variable between the five paralogues and exhibit their own functions. Some of these assist in coordinating cell signaling, in addition to other extracellular and cellular interactions and functions. Some examples include modulation of growth factor signaling, tumor suppression, basement membrane assembly, differentiation and functions of cells as diverse as endothelial cells, osteoblasts and megakaryocytes, macrophages, functional interactions with matricellular proteins, and coordination of elastin biosynthesis. Abnormal regulation, and lysyl oxidase mutations, can result in pathologies including cancer and vascular abnormalities.

Guest Editor

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