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BBA - Proteins and Proteomics

Special Issue: An Updated Secretome

Secreted proteins from all cells make up a rich, complex subset of molecules referred to as the 'secretome'. A major focus of research in this area is to identify the role of the secretome in human health and disease. Such an understanding of secreted signatures associated with the cell microenvironment will greatly enhance prospects of improved early diagnostic biomarkers and therapeutics. Although the term 'secretome' was introduced to define proteins released from cells grown in culture, the composition of this sub-proteome should be extended to include not only classically-secreted proteins (i.e., endoplasmic reticulum and Golgi-dependent) and non-classically secreted proteins, but also proteins released through secretion of membranous vesicles such as shed microvesicles (sMVs) and exosomes. This special issue is a collection of reviews and original research that highlight recent advances in investigating the cell secretome in various plant and animal models, and pathogen and disease states, including cancer. The reviews in this volume will provide concise information to the role of the secretome in the context of plant biology, blood/plasma research, extracellular microvesicles, cancer and the tissue interstitial fluid, stem cells, and the low-molecular weight constituent (i.e., secreto-peptidome). We will provide an update on associated technical challenges and bioinformatic issues in studying the secretome in a diverse group of organisms and tissues. Differences between these systems are important to understand when considering the functions of the secretome in normal metabolism and the potential for targeted therapeutics development.

Topics:

The Cell Secretome: Update

Biofluids and the Secretome – Discovery & Towards Validation

Contribution of other Omic Technologies to the Secretome

Secretome: Technology Development

Secretome: Quantitative Proteomics

Blood/Plasma Secretome

Secretome: Microvesicles

Secretome: Cancer & Tissue Interstitial Fluid

Secretome: Stem Cells

Secreto-peptidome

Secretome: Pathogens & Diseases

Plant Secretome

Senescent-associated Secretome

Secretome: Bioinformatics