

Special Issue "Proteomics in Cancer and Personalized Medicine"

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Special Issue Information

Dear Colleagues,

It is our pleasure to announce the launch of a new Special Issue of *Proteomes*, entitled "Proteomes in Cancer and Personalized Medicine". For decades, cancer has been one of the leading causes of human death worldwide. Numerous ongoing studies are focused on cancer, aiming to develop new approaches for cancer prevention, diagnosis, and treatment. Cancer, however, is still an incurable disease, which imposes an urgent need to find more effective and lasting cancer therapeutics. We hope that this Special Issue will contribute to this effort. It is known that the development and progression of cancer are dependent on many factors. These factors can be broadly divided into those related to genetics and others related to epigenetics. While genetics studies changes in gene expression as a result of changes in DNA sequences, epigenetics studies changes in gene expression through mechanisms independent of the change of DNA sequences. Both genetic and epigenetic factors can be very different in different patients, due to the different genetic makeup and exposure to the environment. This explains why patients can respond differently to standard cancer therapy. Therefore, a new concept, known as personalized medicine or precision medicine, has been proposed. The idea is to tailor the treatment for each patient according to their genetic and epigenetic conditions. Because proteins are the ultimate carriers of genes' functions, Proteomics, which is the study of proteins and their functions, can play an important role in guiding decisions around personalized medicine. In this regard, although many recent studies of cancer and personalized medicine have focused on mutations or other changes of DNA sequences of genes, these genomic changes should be ultimately revealed by the corresponding changes of the proteins. Furthermore, certain changes in proteins, such as those resulting from protein–protein interactions or post-translational modifications, may not be revealed by a change in the genome.