Special Issue

Protein Structure and Functions: Creation of New Protein Functions

Message from the Guest Editor

Diverse organisms inhabit on the present Earth using versatile proteins exhibiting various functions. However, only a quite tiny portion of the extraordinarily large amino acid sequence space (~10130) has been used in extant organisms. Inversely stating this, it means that an immensely vast amino acid sequence space remains unused and, therefore, protein has a large potential ability hidden to generate new functions still now. On the other hand, it is important to understand how entirely new proteins were and have been generated during evolution to efficiently use the ability. In connection with this, I have proposed GC-NSF(a) hypothesis assuming that entirely new proteins are created from a nonstop frame on antisense strand of a GC-rich gene under a protein 0th-order structure. I believe that it would become possible to generate a number of artificial proteins with new functions through the application of the knowledge to new protein technologies. I hope that many researchers will participate in and contribute to development of a novel protein engineering.

Guest Editor

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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