



Preface

Preface of Special Issue “Databases”

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A database has been an essential tool for scientific research. Nowadays, we cannot think of a research without consulting databases on the web. A database is now used for consulting facts, building hypotheses, finding relationship amongst different phenomena, and so forth. But when we want to conduct the action above, we always face the fundamental problems; which database is most appropriate to address the question and what is the usage of the database? These problems seem to be solved by using a sophisticated search engine on the web, but we often encounter difficulties in finding the appropriate key words for the search. A well edited guidebook for databases can still be a good pointer in such a situation.

In this special issue, we openly invited papers for the introduction of a database with the knowledge obtained through the database, related to the field of biophysics and physicobiology. A good guide for the databases in molecular biology has long been established in other journals, but databases in the field of biophysics and physicobiology are still unmapped.

We finally selected the following three papers in this special issue. The editors believed that the scope of the data treated in the databases well matched the scope of biophysics and physicobiology. The special issue starts with the literature by Maeda *et al.* [1] that introduces 3DMET, a manually curated collection of the three-dimensional structure of natural metabolites, at <http://www.3dmet.dna.affrc.go.jp>. The authors emphasized the importance of manual curation,

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especially on the three-dimensional configurations of the molecules. The databases of this type often encounter issues in chirality of the molecules and this database puts stress on resolving the issue. The second paper by Higuchi *et al.* [2] deals with the cross-reference amongst different types of databases for an integrated analysis of a specific protein family. The database at <http://cib.cf.ocha.ac.jp/slc/> can conduct computational analyses on solute carrier (SLC) proteins, one of the hot membrane protein families on the blood-brain barrier and the blood-cerebrospinal fluid barrier associated with brain diseases such as brain tumors, Alzheimer's disease, Parkinson's disease and so on. The last paper in this special issue is on the database of another important membrane protein family by Suwa *et al.* [3]. SEVENS, located at <http://sevens.chem.aoyama.ac.jp>, compiles all GPCR genes/proteins encoded in 68 eukaryotic genomes and compared their functional differences. The number of GPCRs with different functions were found to vary a great deal on different genomes.

It is fortunate that we could gather these nice manuscripts in this special issue, and I hope that these papers offer a next step for the research of the readers of *Biophysics and Physicobiology*.

References

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