

CALL FOR STRUCTURAL BIOLOGY

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Although I am a molecular biologist, my specific research field, while I was in Kyoto University, used to be far apart from structural biology. After I retired from the university in March of 1996 and subsequently moved to the present institute, structural biology has become very close to me. This is because we have a very strong group of structural biology in my institute, consisting of 3 subgroups, that is, X-ray, NMR, and cryoelectron microscope groups, and consequently I have had a lot of chances to contact with scientists of the field ever since.

Recently I do not feel I am an *etranger* who does not understand language at all, when I listen to structural biologists' talks. Rather I have become interested in their talks occasionally. What happened to me any way? First of all, it is quite possible that I have become familiar with their language. However, it is not likely that this is the only reason. Their talks (at least in front of me) are lined with biological considerations, envisaging functions of protein molecules on the basis of their structures. In other words, it seems that they analyze structures of proteins as a powerful tool to unravel significant subjects of biology. Therefore, we may say that they aim at biology. In all likelihood, this represents the reason why biologists like me feel an affinity to them.

Certainly their science represents structural biology. The structural analysis of the objects which have small biological impacts is a little bit dull and not that much interesting for biologists. It would be most reasonable for structural biologists to pursue subjects of biological importance to begin with, and then analyze structures of proteins which play important roles in the subjects. Furthermore, they should consider the functions of the proteins on the basis of their structures. In fact, a puzzling problem of DNA-replication termination in *E. coli* which had not been solved by molecular genetic approaches has been clearly clarified by structural analyses.

At present, genome projects are most popular (occasionally too much) topics in bioscience. However, it is evident now that the genome age will be over in the not too distant future, and therefore, we have to think about post-genome subjects in bioscience. The structures and functions of proteins which are of course the products of genes will undoubtedly represent the forthcoming big subjects. In that sense, I believe that structural biology will become more important than ever and its value will be critically examined in the future.