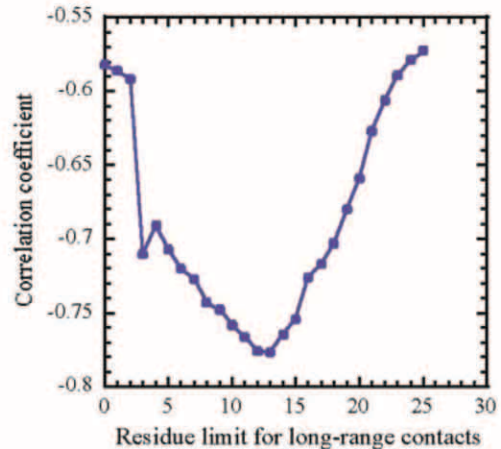


# Medium and Long-range Interactions in Protein Folding

## - Inter-residue Interactions in Protein Folding -

M. Michael  
GROMIHA  
*Computational Biology  
Research Center*  
e-mail: michael-  
gromiha@aist.go.jp  
*AIST Today* Vol. 2,  
No. 12 (2002) 18

Elucidating the mechanism of protein folding is an intriguing and challenging task. We have proposed a novel parameter, long-range order (LRO) for a protein from the knowledge of long-range contacts (contacts between two residues that are close in space and far in the sequence) in protein structure. A simple statistical method has been developed for predicting the folding rate of two-state proteins using LRO and we found an excellent agreement between the predicted and experimental protein folding rates. Further, we found that the conformational properties, short and medium-range energy and long-range contacts are the major determinants for transition state structures of two-state proteins.



Plot connecting the correlation coefficient obtained between long-range contacts and folding rate of proteins, and the minimum limit to define long-range contacts.