2 System and Methods

We linked our system to the genetic database such as PIR, Swiss Prot, PDB, GenBank, EMBL, GDB, etc... on the internet, as we want to use the updated database. Besides the information on these database, we collected the detail information on receptor, such as ligand binding site and DNA binding site, from the references [1] [2] . Three dimensional images are constructed by the 'rasmol', using PDB data on the internet. The secondary structure of the protein sequences are estimated by the separately developed program [3] .

(detail information)	(data base)
Amino acids sequence and references	PIR, Swiss Prot
Secondary structure [3]	PIR, Swiss Prot
DNA binding site on the sequence	(references)
Ligand binding site on the sequence (active site)	(references)
Ligand information	(references)
Three dimensional structure ($\leftarrow$ rasmol)	PDB
DNA sequence	GenBank, EMBL
Gene information	GDB
Map position	GDB
Disease information	OMIM
Homologous sequence	PIR, Swiss Prot
Signal transduction	(references)

3 Summary and Conclusions

We have developed a receptor database system on the internet environment. This system will be open on the internet by WWW-browser. We have devised an efficient way of collecting protein data from a distributed data sources on the internet.

Quick reference for ligands - membrane receptors and signal transduction which may be useful for drug design. Another interesting application is to compare receptor protein that belong to different families (super families).

References

[1] A. Burgen and E.A.Barnard (eds.) Receptor subunits and complexes. Cambridge University Press, 1992

[2] P. Sheterline (ed.), Protein Profile. Academic Press, vol 1-2, 1994-1995

[3] K.Nakata, Protein Secondary Structure Analysis Using Neural Network. Proceedings: Genome Informatics Workshop V, 166-167, 1994

Receptor Database Representation

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Abstract

A receptor database systems that gather data from information sources on the Internet has been developed. These sources include genetic database of PIR, Swiss Prot, PDB, GenBank, EMBL, GDB, etc... The system provides the detail information on receptor efficiently such as ligand binding site and DNA binding site, which were picked up from the references, and the three dimensional structure. The database search system operates on the unix workstations.

1 Introduction

Hormones and nerve stimulus transmitters are physically active and binding to the receptor on the cellular membrane, and they transmit the information to the cell interior. Each receptor recognise a unique ligand or class of ligand, and is realised as the site of action of endogenous regulators whether called transmitters, hormones, growth controllers. As the information regarding the site of action on the receptor are highly interesting in biologically, medically and pharmacologically, we collected such information as much as possible, and developed the search systems on World Wide Web.

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