

UNIVERSITI TEKNOLOGI MARA

**INTEGRATED HETEROGENEOUS DATABASE
OF MEMBRANE PROTEIN FOR PROTEIN-
PROTEIN INTERACTIONS (PPIs)
IDENTIFICATION**

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for the degree of

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STUDENT'S DECLARATION

I declare that the work in this report was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as reference work. This report has not been submitted to any other academic institution or non-academic institution for any other degree of qualification.

In the event that my report be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and degree to be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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ABSTRACT

More than 50% of currently market drug target are from membrane protein. As consequence, both academia and industry targeting membrane protein to be as subject of intense for drug discovery. In order to discover target from membrane protein effectively, researcher need to predict the membrane protein-protein interactions (PPIs). Knowledge of PPIs promising new approach to discover drug by targeting the undruggable fragment based. However, to facilitate this task is not easy as their estimation due to the biophysical properties of membrane protein. There are several study have been done to improve PPIs identification in membrane protein, among the solution is incorporating various biologically meaningful data such as network topological features, protein primary sequences and structures. Thus, the objectives of this study are to design an integrated heterogeneous database of membrane protein from Protein Data Bank (PDB), Protein Topology Graph Library (PTGL) and Universal Protein Resource (Uniprot) and to use data from an integrated heterogeneous database of membrane protein resources for membrane protein-protein interactions (PPIs) identification. Most of information gathered on this study obtained from interview and review to previous related study. This study aims to contribute to development and improvement of technology or tools to study membrane proteins as the important resource for drug target, in order to improve or develop novel pharmacological drug targets.

Keywords: Membrane Protein, Membrane Protein-Protein Interactions (PPIs), drug target, database integration, XML technology

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