TSMDA: Target and symptom-based computational model for miRNA-disease association prediction

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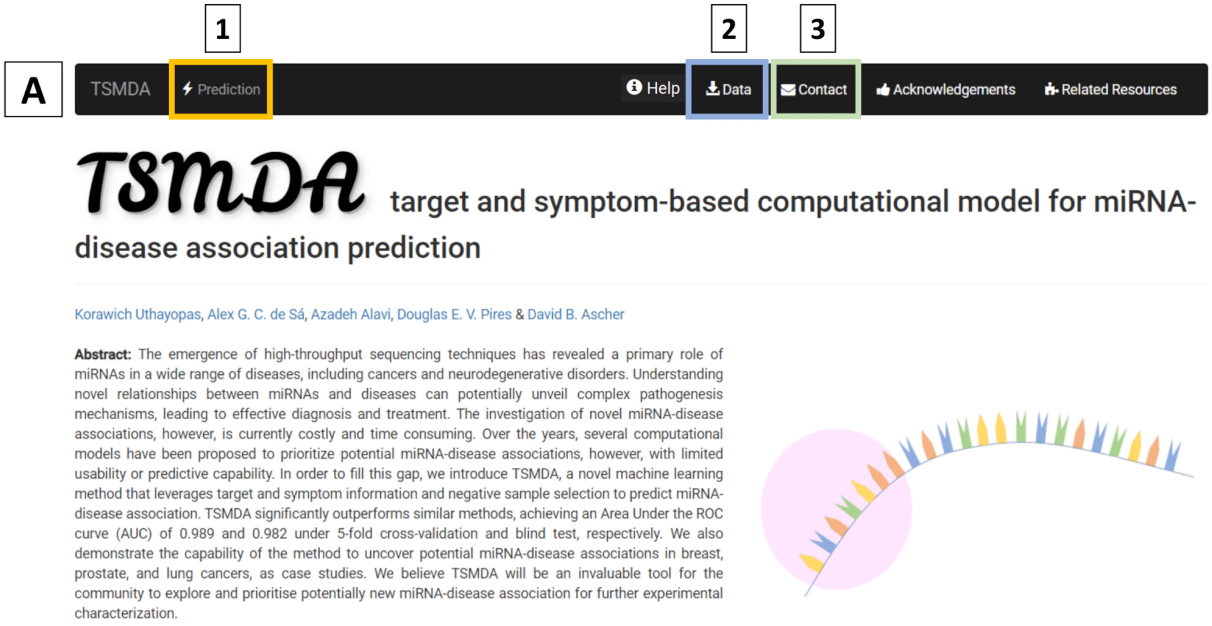
TSMDA Help Page

About TSMDA

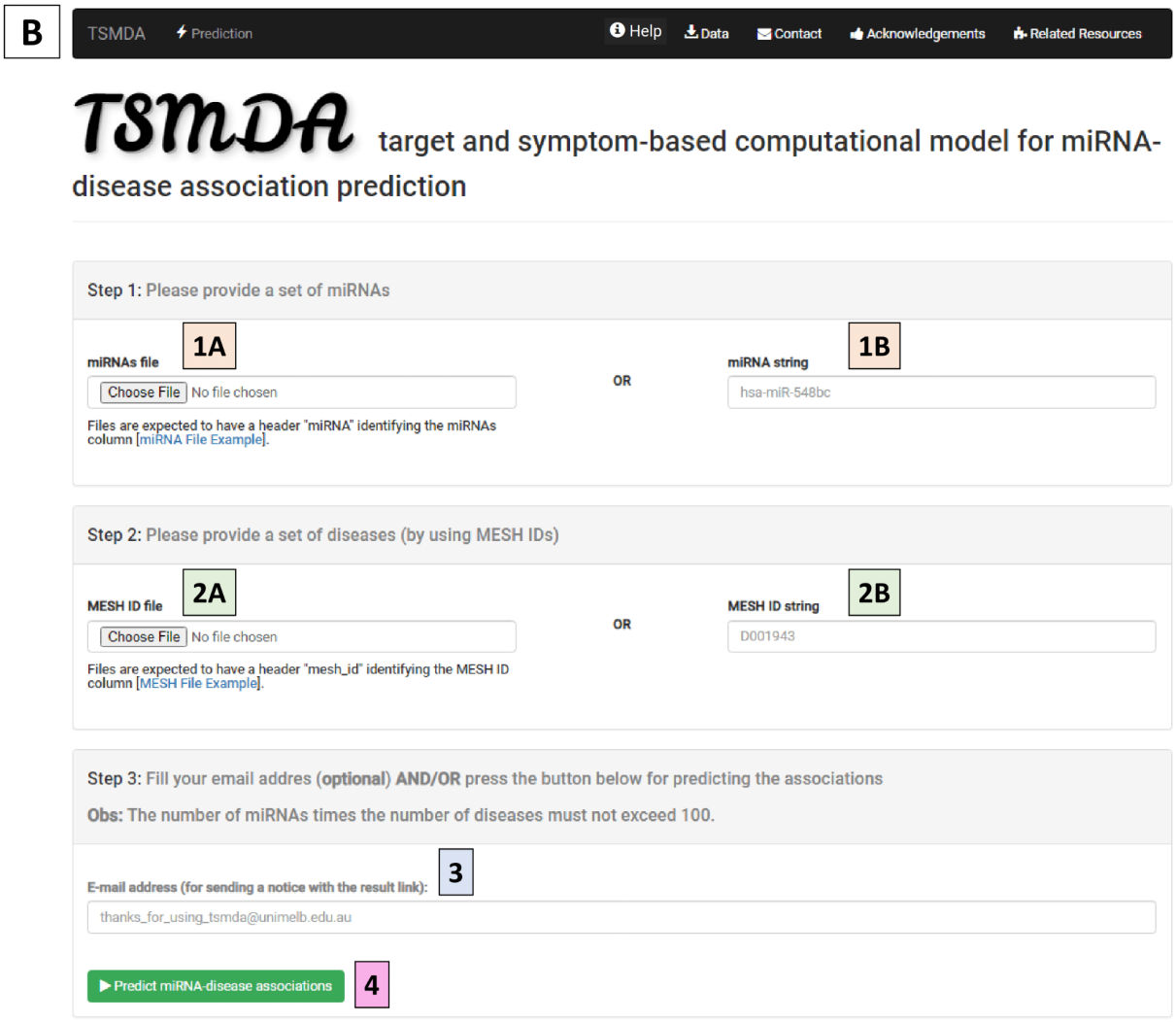


TSMDA is a machine learning-based model that leverages target and symptom information and two robust negative sample selection approaches to accurately predict potential miRNA-disease associations. This model was created based on available known associations in HMDD v2.0.

(A) represents the main page of TSMDA:

- Users are directed to the submission page when clicking on "**Prediction**" at the top menu **(1).**
- Data used to train and validate the model can be found on the "**Data**" tab **(2)**.
- In case you experience any trouble using TSMDA or if you have any suggestions or comments, please do not hesitate to contact us either via Biosig's webpage (Subject: TSMDA) by clicking on the "**Contact**" page **(3)** or by email**.**
    - If you are contacting us regarding a job submission, please include its details such as input information and the job identifier.

Submission Page



(B) depicts the submission page.

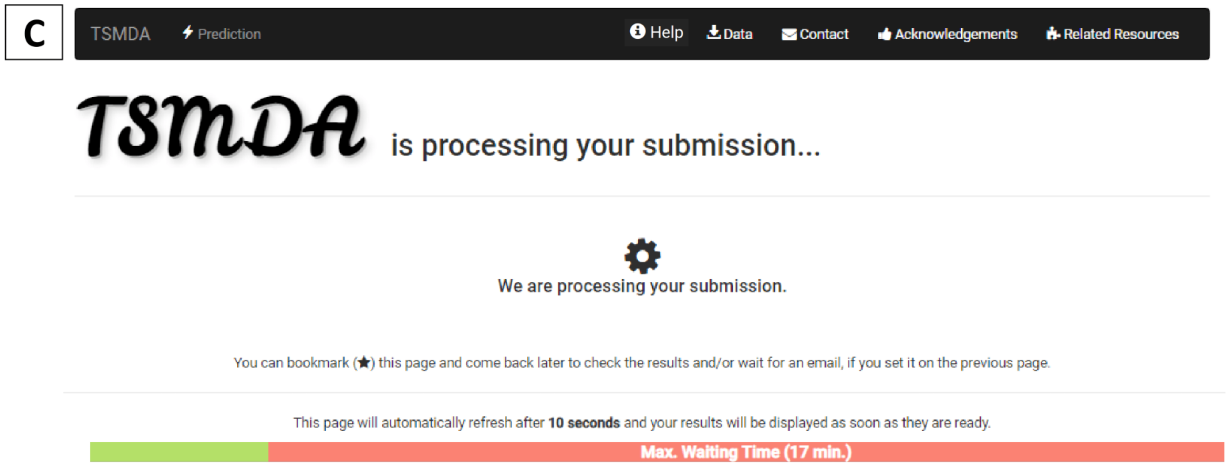
- Firstly, users need to provide a set of miRNAs as a file **(1A) OR** as a single string **(1B)**. Only miRNA IDs in [miRBase] are acceptable.

- Similarly, users must submit a set of diseases using the **Medical Subject Heading (MeSH)** format. This set can be defined using a file **(2A) OR** a single string **(2B)**. The MeSH IDs are available at [MeSH Browser (nih.gov)].

- Users can fill the **email addresses (3)** for sending a notice with the result link when TSMDA prediction is done.

- By clicking on "**Predict miRNA-disease associations" (4)**, the provided list of miRNA and disease will be submitted to TSMDA webserver for prediction.

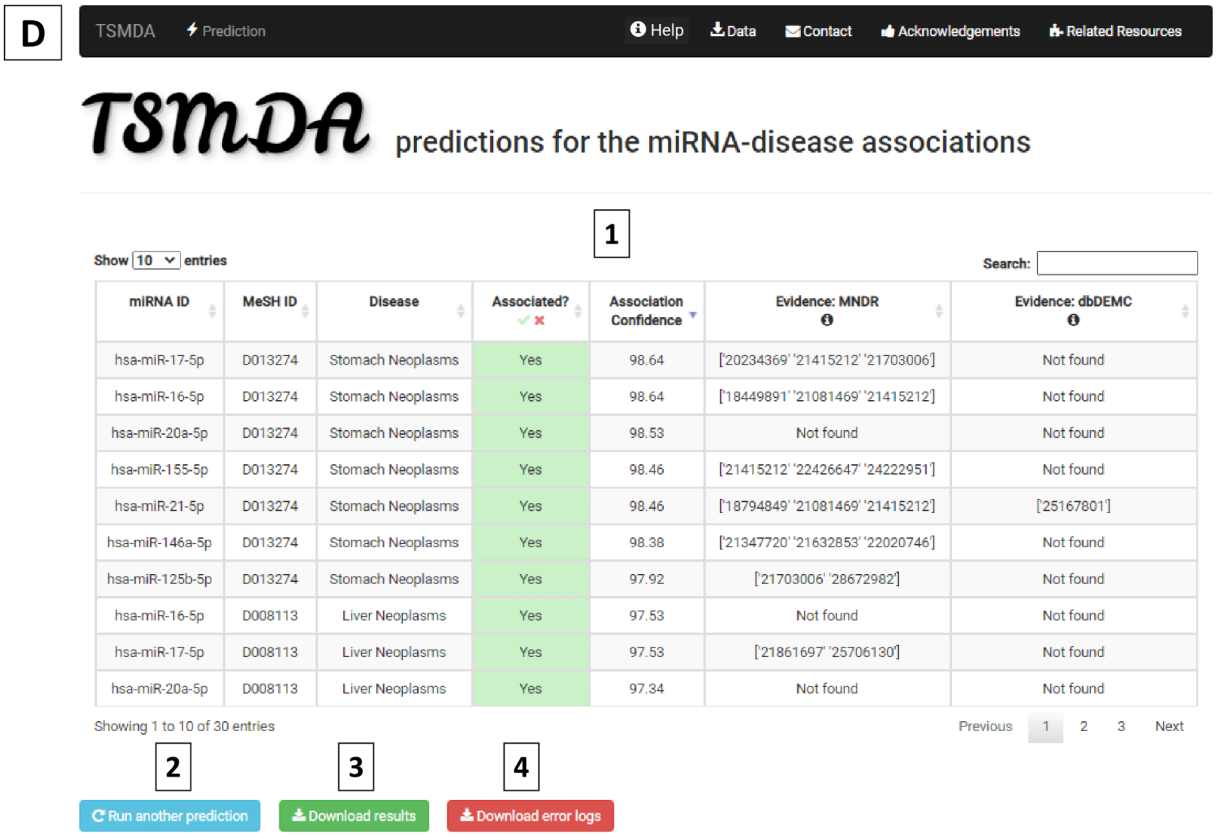
Waiting Page



(C) represents the waiting step:

- In this step, the disease-association query is being processed by TSMDA. The maximum waiting time is shown for each submission. Users can bookmark this page and come back later to check the results. If a valid email address was filled in on the submission page, a notice with the result link will be received through it.

Results Page



(D) presents the result page for TSMDA.

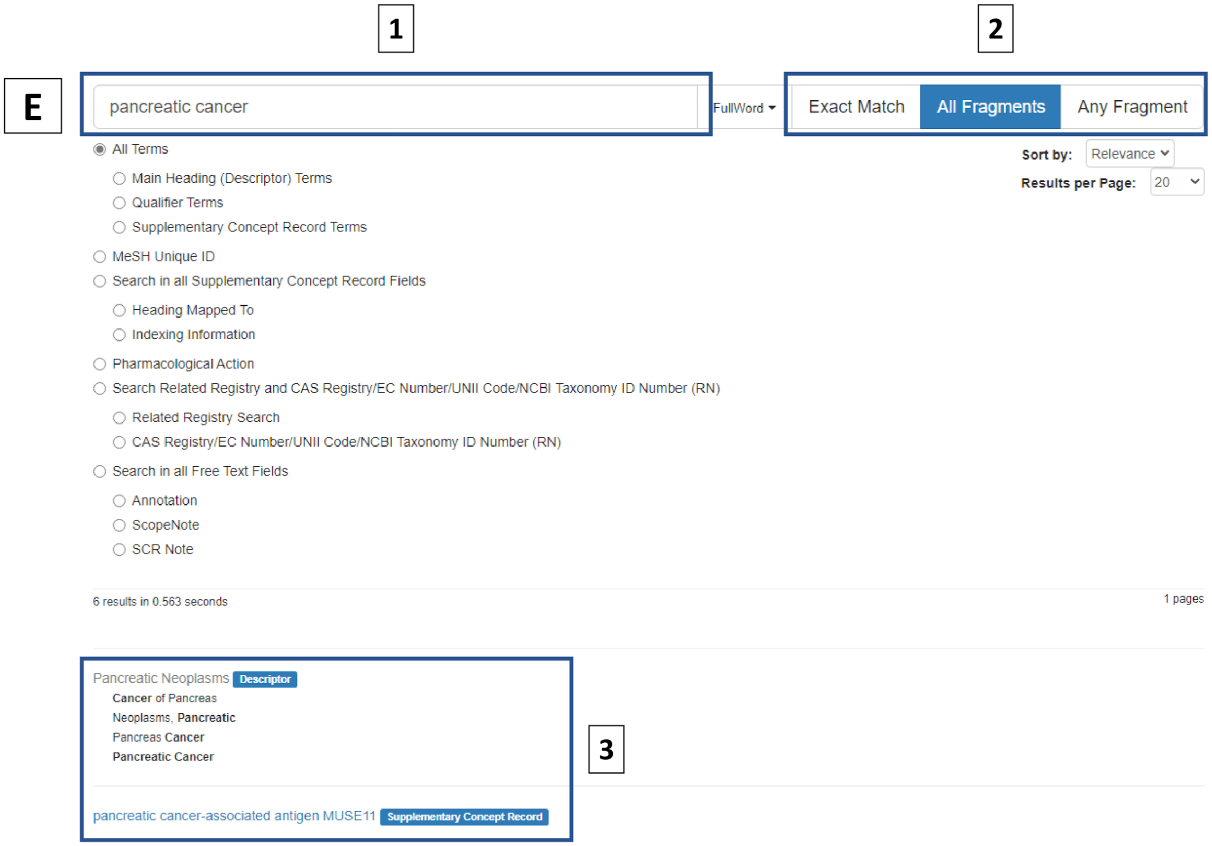
- The prediction results are shown as a table **(1)**. The information included miRNA ID, MeSH ID, Disease, Predicted Association, Association Confidence, and Evidence in MNDR and dbDEMC databases in terms of PubMed IDs (PMIDs).

- PMIDs are provided only if miRNA-disease pairs have been confirmed to be associated in MNDR and/or dbDEMC databases.

- Users have the options to run another prediction **(2)**, download the result in a comma-separated values (CSV) format **(3)**, and/or download the error logs **(4)**. Frequently errors are found in the format of miRNAs and diseases (i.e., in the respective miRNA and/or MeSH IDs).

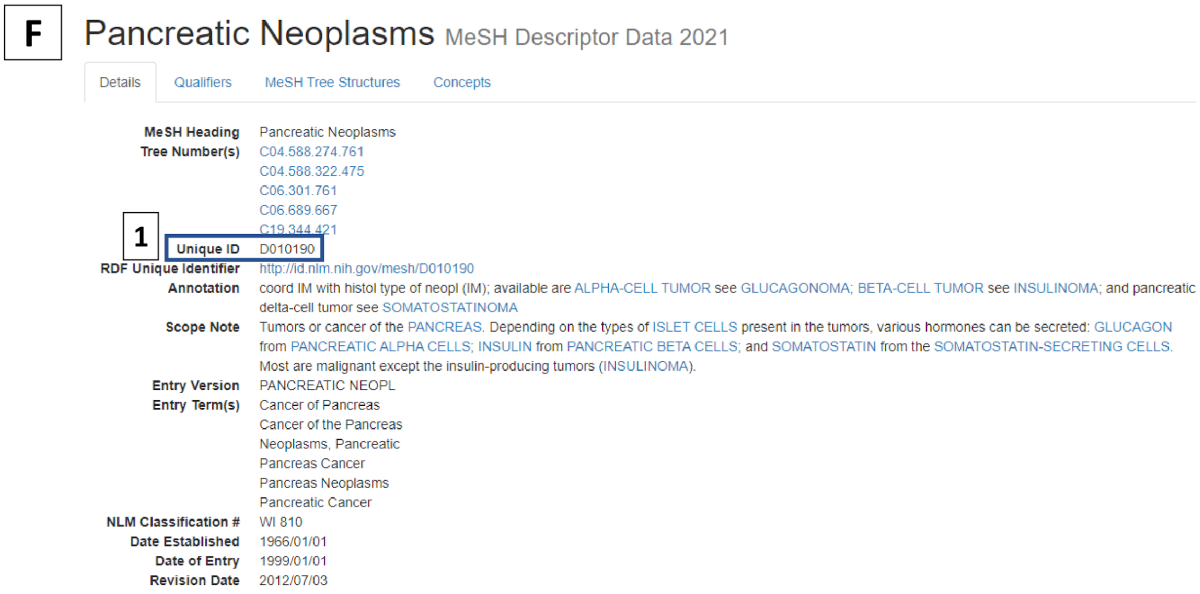
Supplementary Information

Medical Subject Headings (MeSH) ID Retrieval Tutorial



(E) illustrates the "**Search**" page in [MeSH Browser]:

- Users need to fill the box with the name of the disease of interest **(1)**. Next, by clicking on either **Exact Match**, **All Fragments**, OR **Any Fragment Boxes (2),** you will define the type of the search. As a result, the list of terms related to the query will be shown **(3)**. By clicking on the selected term, users are redirected to the detailed data of that particular disease term.



(F) shows the "**Details"** for the searched disease term on MeSH Browser:

- In this page, the detailed information of the specified disease term is provided. The respective MeSH ID of that particular disease can be found at **(1)**.