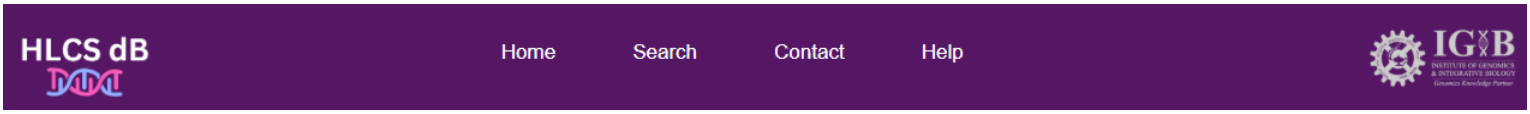

USER MANUAL

About HLCSdb

HLCSdb is a curated database of 1,131 genetic variants in the HLCS (holocarboxylase synthetase) gene. The variants have been systematically annotated based on the Genome Reference Consortium Human Build 38 (GRCh38) and classified using ACMG & AMP guidelines to ensure clinical relevance. HLCSdb supports clinicians, geneticists, and researchers by enabling accurate diagnosis, genotype-phenotype studies, and personalized treatment strategies.

The platform includes four main tabs—**'Home'**, **'Search'**, **'Contact'**, and **'Help'**—to support easy navigation, enhanced data accessibility, and an improved user experience.

Home page

The **Home** page provides a brief description of the HLCSdb, outlining its purpose, contents, and clinical significance. Below the description, a graphical abstract of the study is displayed to visually summarize the database structure, data sources, and key findings.

Search page

The **Search** page allows users to query the HLCSdb using a search bar. Results are displayed directly on the page and include detailed information about the location and classification of each genetic variant.

Users can search using the following formats:

- **Variant format**: chr-position-reference allele-alternate allele (e.g., 21-38123372-T-C or 21:38123925:C:T)
- **Amino acid change (AAChange)**: e.g., S658G, P656S, R565Q
- **ACMG classification**: e.g., Benign, Pathogenic, Likely Pathogenic, VUS
- **dbSNP ID**: e.g.,rs754770911, rs1160711086

If the variant or corresponding information exists in the database, matching results will appear under the Search Results section, below the "Example Search" window. Users can control the number of entries displayed using a dropdown menu.

Search results are presented in a table containing:

- **Gene name**

- **HGVS NM**
- **HGVS NP**
- **dbSNP ID**
- **Mutation Effect**
- **Population**
- **ACMG**

If multiple results are returned, users can refine their search using chromosomal position, dbSNP ID, or ACMG.The last column in each row is labeled **More Info**, which contains a button. When clicked, a popup window appears displaying detailed information about the selected variant. If the database does not have the variant, it will show “There are no matching data within the database”.

Contact page

The **Contact** page provides essential contact information for users seeking assistance or further details about HLCSdb. It includes the institutional address of CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB), Mall Road, New Delhi, India. Key contacts listed are Dr. Binukumar BK, Principal Scientist , and Mr. Mohammed Swalih KT, Database Developer. Users are encouraged to reach out for queries, feedback, or collaboration opportunities related to the database.

Help page

The **Help** page is designed to guide users in understanding and utilizing HLCSdb. It includes three informative sections:

- **About HCSD Disease** – A brief summary of Holocarboxylase Synthetase Deficiency with a link to an external resource for more information.
- **About Gene** – Details about the *HLCS* gene with a link to its OMIM page for in-depth genetic insights.
- **User Manual** – Access to the full user manual offering detailed instructions on navigating and using the database.

Additionally, a link button to the BK Lab website is provided at the bottom for users interested in learning more about the lab's research and other projects.

Additional Feature

On the left side of every page, the official CSIR-IGIB logo is prominently displayed. Clicking this symbol redirects users to the CSIR-IGIB official website for institutional information and additional resources.

HLCSdb is created and maintained by CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB).