User Guide for dbPEC

Query Options

Query dbPEC for a specific gene

Users can enter a single gene name (HGNC) in the search field entitled “Search Genes” and submit. If more than one gene matches query, user will be given the option to choose which gene name is of interest to them. If there are no results for your queried gene, curation of the relevant literature found no articles to support the relationship between Preeclampsia and that gene. Please check that you have a valid HGNC gene name (http://www.genenames.org/). If the gene appears in the database, information about the gene, as well as the curated articles which support the relationship between the gene and Preeclampsia will be reported as Query Results.

Ex. Search by Gene: VEGF
Query dbPEC for a Keyword

Users can search the database for a keyword or phrase by entering the query in the field entitled “Search Articles by Keyword”. The Keyword must be longer than two characters. A keyword query will return all curated articles which have the keyword or phrase in the abstract. Please be as specific as possible with your search. If the initial query results in more than 100 articles, the user will be prompted to add another term to the search.

Ex. Search by Keyword: IUGR

Query dbPEC for an article

Users can search the database for a specific article by entering the PMID in the search field entitled “Search Articles by PMID”. If the article was accepted by the curation team, information about the article along with genes reported as significantly associated to Preeclampsia will be reported as Query Results.

Ex. Search by PMID: 17037747
"Browse" dbPEC

Users may select from the list of Preeclampsia Phenotypes, Concurrent Conditions, and Tissue Source to query the curated genes associated to their phenotype(s) of interest. Users can not Browse AND Search by Gene, Keyword, or Article at the same time. Multiple options from the same category may be selected simultaneously; however the query will display only those genes for which there was a curated article that reported significant association between that gene and ALL selected criterion.

Note1: If you select Preeclampsia, IUGR and Fetal Tissue as your query criterion, you will receive back all genes that were significantly associated to Preeclampsia and IUGR in Fetal Tissue. Please note that these genes may also be associated to additional criterion such as Severe PEC or HELLP.

Note2: If you are interested in for example all genes that are associated to Preeclampsia OR Severe Preeclampsia you would need to perform TWO separate queries and analyze the results independently of the dbPEC.

Definitions of Browsing Criteria

• **Preeclampsia Phenotypes:**
  - Preeclampsia: GE ≥140 mmHg (systolic) or ≥90 mmHg (diastolic) or ≥0.3g/24 hours protein or 1/2+ dip
  - Severe Preeclampsia: GE ≥160 mmHg (systolic) or ≥110 mmHg (diastolic) or ≥5g/24 hours protein or 3+ dip
  - Eclampsia: Hypertension with seizures with or without proteinuria
  - Early Onset: as defined by individual article
  - Late Onset: as defined by individual article

• **Concurrent Conditions:**
  - IUGR: Intrauterine growth restriction
  - HELLP: Hemolysis, elevated liver enzymes and low platelet count
  - Gestational Hypertension: BP elevation after 20 weeks in absence of proteinuria and other severe features of preeclampsia

• **Tissue Source:**
  - Maternal: intervillous space, basal plate (excluding endothelial cells and decidua basalis), myometrium, serosa, peripheral maternal blood or chorio-decidual blood
  - Fetal: placenta (with decidua removed), amnion, chorion laeve, chorionic plate, placental bed, decidua parietalis, cotyledon, cord insertion site, umbilical arteries/veins, cross section of cord, umbilical vein endothelial cells, chorionic villi from beneath chorionic and basal plates and placental tissue from cotyledons excluding chorionic and basal plates.
Ex. Browse for *Preeclampsia & IUGR & Maternal Tissue Source*
Query Results

Results for Search Gene

If the gene appears in the database, information about the gene, including location and aliases, will appear in the left panel of the Results page. Below gene information are Canonical Pathways (MSigDB C2) and GO terms (MSigDB C5) which are related to the queried gene. The user can click on a pathway and be directed to the Broad Institute MSigDB Gene Set Card Website. On the right hand side, all the curated articles which support the relationship between the gene and Preeclampsia will be listed, along with a hyperlink to the PUBMED entry. In addition, each article will have colored tags indicating under which Preeclampsia Phenotypes, Concurrent Conditions, and Tissue Sources the gene was significantly associated to Preeclampsia (as identified by the curation team). Pie charts appear above the list of articles, showing the frequency of each condition, phenotype and tissue source amongst the list of curated articles. The user can click on a specific Phenotype, Concurrent Condition, or Tissue Source to filter the list of articles. Under each article is a link that brings up the articles Abstract as well as the information about the other genes identified in the article, if any exists. If user navigates away from query results, use GO BACK button to return to previous page.

Ex. Search by Gene: VEGFA

Results for Search Articles by Keyword

If a keyword or phrase is used for the query, a list of articles for which the keyword or phrase appears in the abstract will be displayed, along with author and journal information and a link to each article’s PUBMED entry. Only articles which have been accepted by the curation process will appear as output. The gene(s) found to be significant in each article will be listed under the article (blue tags), along with its respective criteria colored tags (phenotypes, concurrent conditions, tissue source). Users can click on a blue gene tag to find out more information (ie Search Genes result page). You can also choose to open
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results as plain text table by clicking GET OUTPUT. Results can be stored by Copy and Pasting table into an excel sheet or text document.

Ex Search by Keyword: IUGR

Results for Search Articles by PMID

If the article associated to the PMID of interest has been curated and accepted into dbPTB, the query results will display the article’s abstract, along with a link to its PUBMED entry. The Phenotype, Concurrent Condition, Tissue Source and Accepted Genes are displayed as tags under the abstract. The user may click on a gene to obtain more information (ie will be redirected to the Search Genes results for that specific gene).

Results for Browse dbPEC
If multiple criteria have been selected by the user, the query will return a list of genes for which there exists at least one curated article that reported significant association between that gene and ALL selected criterion. The user can click on the link below the gene info to view the article titles, PMIDs, and their associated criteria tags of all articles that met the queried criteria. The genes along with their HGNC ID numbers are listed as a table in the left hand panel and may be copy and pasted by user to store the gene set information.