

We need your input!

As we plan for the future of the AMP T2D Knowledge Portal, it would be extremely helpful to us to hear from all T2DKP users. Please help us to determine new directions for the T2DKP by filling out a brief survey at http://bit.ly/T2DKP_survey.

Upcoming webinars

Find details on our home page before each webinar. Upcoming dates:

Thursday, March 12

Thursday, May 14

Thursday, July 16

New videos available

We've released two new tutorial videos:

- an [overview of new aggregation tests](#) available in the T2DKP
- an [introduction to the Diabetes Epigenome Atlas \(DGA\)](#)

...and two new webinar recordings:

- our [September webinar](#), a tour of DGA from developer Parul Kudtarkar
- our [November webinar](#), an overview of the LocusZoom visualization and analysis tool from developers Andy Boughton and Ryan Welch

All videos are available from the T2DKP Resources page and the Broad Institute YouTube channel.

Programmatic access to genetic association and computational results

Knowledge Portal Knowledgebase API 1.0.0 OAS3

[/kpn-kb-openapi/kb-openapi.yaml](http://kpn-kb-openapi/kb-openapi.yaml)

This is the REST service maintained by the Broad Institute's Type 2 Diabetes Research group

[Terms of service](#)
[Dcc Team - Website](#)
[Send email to Dcc Team](#)
[Apache 2.0](#)

Servers

<http://public.type2diabeteskb.org/dccservices>

Variants by chromosome region and phenotype

GET `/getAggregatedDataSimple` retrieve variants based on chromosome region and phenotype

Depict

GET `/testcalls/depict/genepathway/array`

GET `/testcalls/depict/genepathway/object`

GET `/testcalls/depict/region/array`

GET `/testcalls/depict/region/object`

GET `/testcalls/depict/tissue/array`

GET `/testcalls/depict/tissue/object`

GET `/testcalls/depict/pathway/array`

GET `/testcalls/depict/pathway/object`

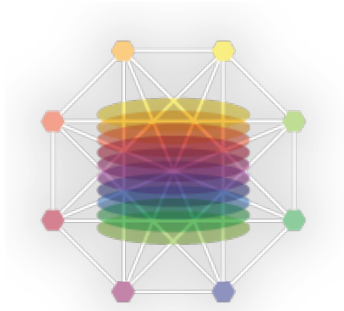
eCaviar

GET `/testcalls/ecaviar/{colocalization}/array`

GET `/testcalls/ecaviar/{colocalization}/object`

Swagger User Interface for APIs

The Type 2 Diabetes Knowledge Portal (T2DKP) has developed into a data and software platform that is now seen as a model for democratizing access to genetic data and facilitating worldwide research. To further this goal, in addition to presenting genetic association results to researchers via the T2DKP website, we are developing software (APIs) that allow T2DKP users to query summary statistics programmatically. We will work to ensure that these APIs are compliant with the [FAIR principles](#) (Findable, Accessible, Interoperable, and Reusable) and with the standards



84 datasets, 191 traits New datasets:

TOPMed HbA1c Meta-analysis

WGS: trans-ethnic meta-analysis of HbA1c associations in over 10,000 whole-genome sequence samples from the NHLBI Trans-Omics for Precision Medicine (TOPMed) consortium

HERMES Heart Failure GWAS:

genetic associations for heart failure, determined in nearly 1,000,000 individuals

Joint T2D-CHD GWAS: genetic associations for T2D risk followed by testing of significant T2D-associated variants for association with coronary artery disease, in over 526,000 subjects

UK Biobank Cardiometabolic

Consortium CHD GWAS: meta-analysis of coronary artery disease genetic associations in nearly 340,000 individuals

Updated CKDGen GWAS

datasets: CKDGen results in the T2DKP are now grouped into 4 datasets: "CKDGen GWAS", with blood urea nitrogen, chronic kidney disease, and eGFR (serum creatinine) associations from more than 765,000 samples; "CKDGen GWAS - microalbuminuria associations", with microalbuminuria associations from over 347,000 samples; "CKDGen

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of the [Global Alliance for Genomics and Health](#).

Currently available APIs are listed on our new "APIs" page, which may be accessed from the "Data" pull-down menu in the upper menu bar of the T2DKP website (type2diabetesgenetics.org).

APIs are available for query of:

- summary genetic associations in specific genomic regions;
- results from computational methods run across all of the T2DKP datasets ([DEPICT](#), [eCAVIAR](#), [LDSR](#), [MAGMA](#), [GREGOR](#), and [METAL](#));
- results that have been downloaded from [GTEx](#) and the [Mouse Genome Informatics \(MGI\)](#) database.

The APIs allow queries of all the genetic association summary statistics that are currently incorporated into the T2DKP (listed on the [Datasets](#) page) but do not access individual-level data. For datasets where the summary statistics were not already freely available for public download, we obtained permission from the authors for API access to the results. Programmatic access to the results poses no greater a privacy risk than displaying them on the T2DKP website, and we are confident that this risk is negligible, as detailed in our [white paper](#) on privacy risks in the Knowledge Portal platform (http://bit.ly/privacy_risk_assessment).

More custom aggregation test methods now available

Custom aggregation tests in the T2DKP allow you to securely access individual-level association data and generate gene-level genetic association scores for a range of phenotypes. Previously, the T2DKP offered only one method, the additive burden test. Now, in collaboration with our colleagues at the University of Michigan, we have added four methods: the Collapsing burden test, SKAT, SKAT-O, and the Variable threshold burden test. The tests are available on the "High-impact variants" tab of T2DKP Gene pages. See our [new tutorial video](#), available from the T2DKP [Resources](#) page, for an overview of the aggregation tests; complete details are included in our [Aggregation test documentation](#).

New datasets, continued

GWAS - stratified UACR associations", with urinary albumin-to-creatinine ratio associations from more than 564,000 samples, with sub-cohorts of African American and European ancestry and type 2 diabetics; and "CKDGen 1000G GWAS - eGFRcys associations, with associations from over 20,000 subjects for estimated glomerular filtration rate based on serum cystatin.

Singapore Studies GWAS: individual-level data from over 12,000 Singaporeans of East Asian and South Asian ancestry, analyzed for multiple phenotypes by the Accelerating Medicines Partnership Data Coordinating Center analysis team using Loamstream software and the AMP-DCC Data Analysis Pipeline

Hong Kong Diabetes Register GWAS: associations from over 6,700 East Asian individuals, for multiple glycemic, anthropometric, renal and other associations, including heart disease as a complication of T2D

All of these datasets are described in detail on the [T2DKP Datasets page](#).

Stay up to date with the T2DKP

Contact us:

help@type2diabetesgenetics.org

Follow us on Twitter:
@T2DKP



Watch our videos:

[Broad Institute Channel](#)



Join our LinkedIn group:



New look and new informational pages

We've updated the T2DKP home page, as well as the home pages of the other Knowledge Portals (Cardiovascular Disease, Cerebrovascular Disease, and Sleep Disorders) with a clean new look for faster page loading and more straightforward navigation. New pull-down menus from the upper menu bar now facilitate easy access to internal pages.

Several new pages now provide more information to T2DKP users:

- an [APIs](#) page (linked from the "Data" menu) lists and describes the available APIs (see above) and links to the Swagger user interface where they may be accessed
- a [Downloads](#) page (linked from the "Data" menu) lists and links to all of the datasets in the T2DKP for which summary statistic files are available for download
- a [Publications](#) page (linked from the "Information" menu) lists both 1) papers in which the T2DKP is cited and 2) references for the datasets that are incorporated into the T2DKP.

Diabetes Epigenome Atlas news

The Diabetes Epigenome Atlas (DGA; diabetesepiggenome.org) continues to grow, with many recent additions of genomic and epigenomic datasets relevant to type 2 diabetes:

- more than 90 annotations for accessible chromatin sites from GEO & ENCODE and chromatin states from ROADMAP
- experimental epigenomic data from 17 recent publications
- 6 ATAC-seq assays

The T2DKP and DGA teams collaborated to present a webinar on DGA and its connections with the T2DKP. The video recording of the webinar is linked from the T2DKP Resources page and is also available from the Broad Institute YouTube channel. Also available at those locations is a brief tutorial video giving an overview of DGA.