

GACT and QGG Installation, Database Download, and Overview

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```
# Install new version of gact and qgg
# Make sure you install in a new R session
# library(devtools)
# devtools::install_github("psoerensen/gact")
# devtools::install_github("psoerensen/qgg")

# Download and install gact database
library(gact)
dbdir <- "C:/Users/au223366/Dropbox/Projects/balder/gtdtb"
#GAlist <- gact(version="hsa.0.0.1", dbdir=dbdir, task="download")
#saveRDS(GAlist, file="C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/GAlist_hsa.0.0.1.rds")

# Overview of database content

GAlist <- readRDS(file="C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/GAlist_hsa.0.0.1.rds")

## GWAS Summary Statistics
GAlist$studies
```

##	id	file	trait	type	gender	n	ncase	ncontrol	neff	
##	GWAS1	GWAS1	GWAS1.txt	T2DM	binary	both	456236	55927	400309	49071.27
##	GWAS2	GWAS2	GWAS2.txt	CAD	binary	both	184305	60801	123504	40743.15
##	GWAS3	GWAS3	GWAS3.txt	T2DM	binary	both	933970	80154	853816	73275.12
##	GWAS4	GWAS4	GWAS4.txt	T2DM	binary	males	425662	41846	383816	37732.20
##	GWAS5	GWAS5	GWAS5.txt	T2DM	binary	females	464379	30053	434326	28108.07
##	GWAS6	GWAS6	GWAS6.txt	T2DM	binary	both	898130	74124	824006	68006.44
##	GWAS7	GWAS7	GWAS7.txt	T2DM	binary	both	283423	56268	227155	45097.11
##	GWAS8	GWAS8	GWAS8.txt	T2DM	binary	both	49492	16540	32952	11012.41
##		reference							source	
##	GWAS1	PMID:30297969	Mahajan.NatGenet2018b.T2D-noUKBB.European.txt							
##	GWAS2	PMID:26343387							CARDIoGRAMplusC4D.txt.gz	
##	GWAS3	PMID:35551307							DIAMANTE-EUR.sumstat.txt.gz	
##	GWAS4	PMID:30297969	Mahajan.NatGenet2018b.T2D.MALE.European.txt							
##	GWAS5	PMID:30297969	Mahajan.NatGenet2018b.T2D.FEMALE.European.txt							
##	GWAS6	PMID:30297969	Mahajan.NatGenet2018b.T2D.European.txt							
##	GWAS7	PMID:35551307							DIAMANTE-EAS.sumstat.txt.gz	
##	GWAS8	PMID:35551307							DIAMANTE-SAS.sumstat.txt.gz	

```
## Accessing the 'dirs' Slot
GAlist$dirs

##
```

glist

```

## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/glist"
##                                gstat
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gstat"
##                                gsets
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gsets"
##                                gsea
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gsea"
##                                gbayes
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gbayes"
##                                gtex
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gtex"
##                                gwas
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gwas"
##                                ldsc
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/ldsc"
##                                marker
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/marker"
##                                drugdb
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/drugdb"
##                                download
## "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/download"

## Listing Directories and Files
### All Directories Recursively
list.dirs(GAlist$dirs, recursive = TRUE)

## [1] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/download"
## [2] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/drugdb"
## [3] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gbayes"
## [4] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/glist"
## [5] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gsea"
## [6] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gsets"
## [7] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gstat"
## [8] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gtex"
## [9] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/gwas"
## [10] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/ldsc"
## [11] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/marker"
## [12] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/marker/1000G_EUR_Phase3_plink"
## [13] "C:/Users/au223366/Dropbox/Projects/balder/gtdtb/hsa.0.0.1/marker/ukb"

### Files under 'marker' Directory
list.files(GAlist$dirs["marker"])

## [1] "1000G_EUR_Phase3_plink"          "1000G_EUR_Phase3_plink.zip"
## [3] "g1000_afr.bed"                  "g1000_afr.bim"
## [5] "g1000_afr.fam"                  "g1000_afr.synonyms"
## [7] "g1000_afr.zip"                  "g1000_amr.bed"
## [9] "g1000_amr.bim"                  "g1000_amr.fam"
## [11] "g1000_amr.synonyms"             "g1000_amr.zip"
## [13] "g1000_eas.bed"                  "g1000_eas.bim"
## [15] "g1000_eas.fam"                  "g1000_eas.synonyms"
## [17] "g1000_eas.zip"                  "g1000_eas_filtered.bed"
## [19] "g1000_eas_filtered.bim"         "g1000_eas_filtered.fam"
## [21] "g1000_eur.bed"                  "g1000_eur.bim"
## [23] "g1000_eur.fam"                  "g1000_eur.synonyms"
## [25] "g1000_eur.zip"                  "g1000_eur_filtered.bed"

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## [27] "g1000_eur_filtered.bim"          "g1000_eur_filtered.fam"
## [29] "g1000_sas.bed"                   "g1000_sas.bim"
## [31] "g1000_sas.fam"                   "g1000_sas.synonyms"
## [33] "g1000_sas.zip"                   "g1000_sas_filtered.bed"
## [35] "g1000_sas_filtered.bim"          "g1000_sas_filtered.fam"
## [37] "Glist_1000G.rds"                 "Glist_1000G_eas_filtered.rds"
## [39] "Glist_1000G_eur_filtered.rds"    "Glist_1000G_sas_filtered.rds"
## [41] "markers.txt.gz"                  "markers_1000G.txt.gz"
## [43] "markers_1000G_eas_filtered.txt.gz" "markers_1000G_eur_filtered.txt.gz"
## [45] "markers_1000G_sas_filtered.txt.gz" "README"
## [47] "ukb"
```

Files under 'gstat' Directory

```
list.files(GAlist$dirs["gstat"])
```

```
## [1] "GWAS_information.csv" "GWAS1.txt.gz"      "GWAS2.txt.gz"
## [4] "GWAS3.txt.gz"        "GWAS4.txt.gz"      "GWAS5.txt.gz"
## [7] "GWAS6.txt.gz"        "GWAS7.txt.gz"      "GWAS8.txt.gz"
```

Files under 'gsea' Directory

```
list.files(GAlist$dirs["gsea"])
```

```
## [1] "P_vegas_filtered.rds"          "res_vegas_eas_filtered.rds"
## [3] "res_vegas_eur_filtered.rds"    "res_vegas_sas_filtered.rds"
## [5] "summary_vegas_filtered.csv"    "summary_vegas_filtered.txt.gz"
## [7] "Z_vegas_filtered.rds"
```