

APPIC

Atlas of Protein Protein Interactions in Cancer

User Guide

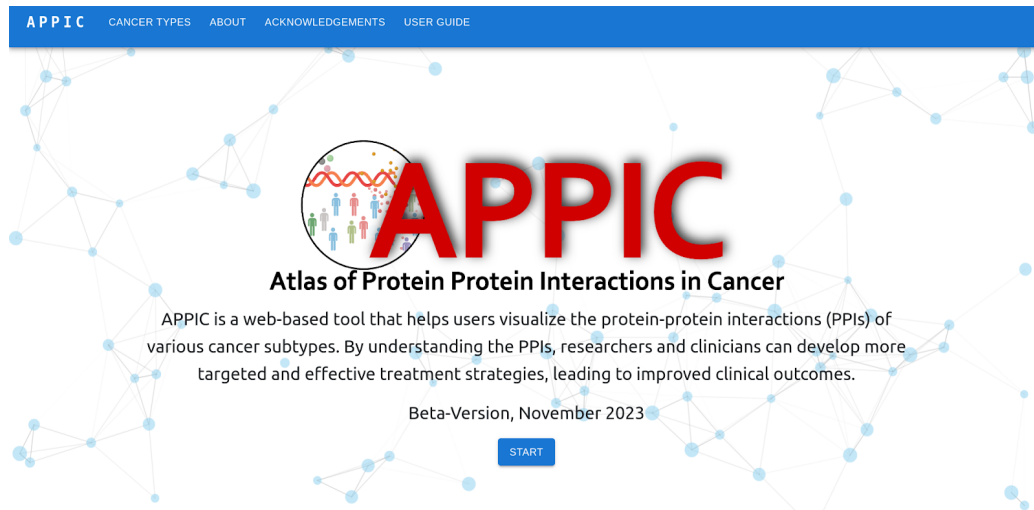
Version 1.2
December 2023

Contact: Benjamin Ahn, benjamin_ahn@brown.edu

Start

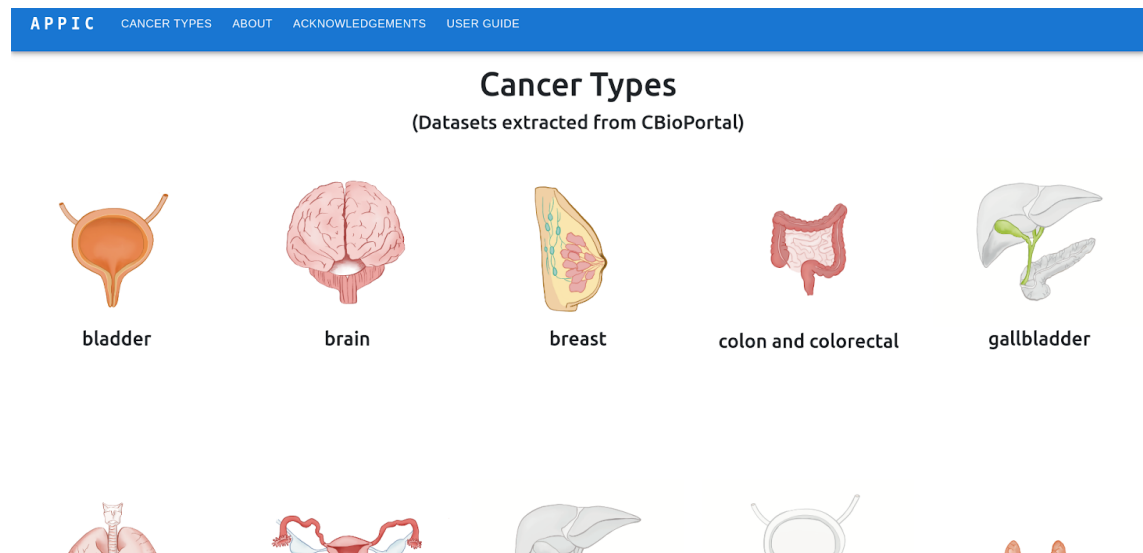
Navigate to <https://appic.brown.edu>

This is the landing page. Click on “START” to begin.

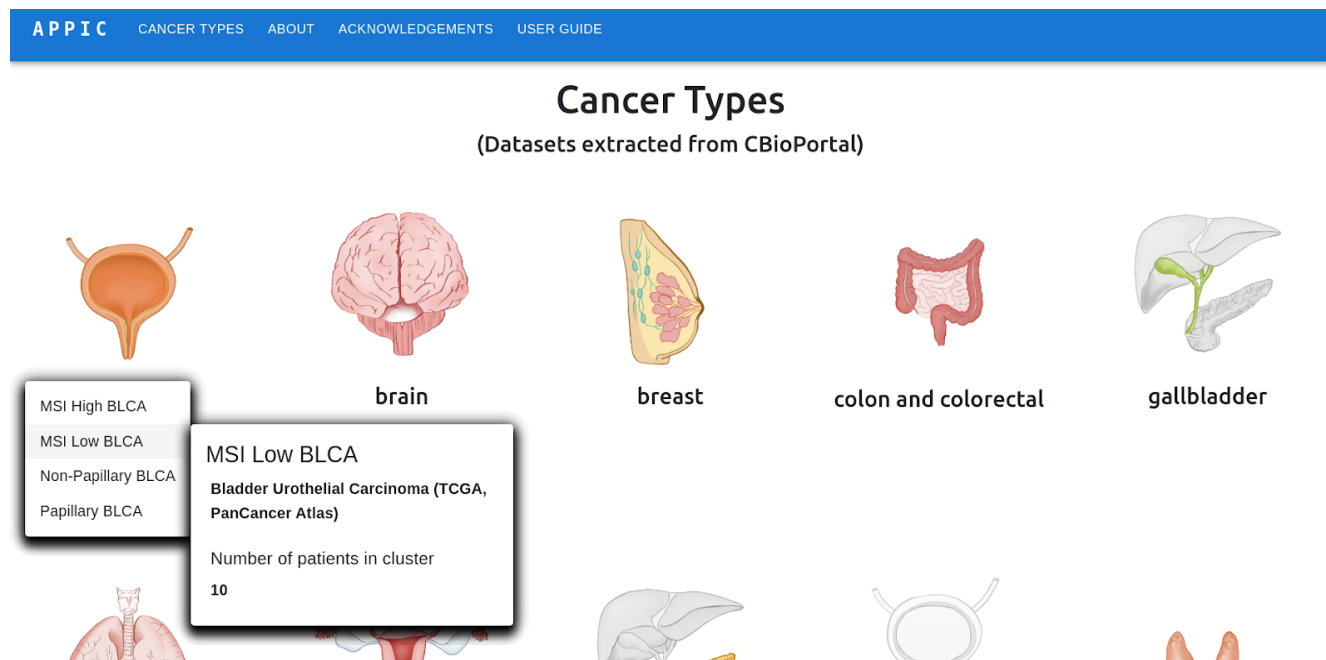


Body Diagram Page

After clicking “START”, the web tool will bring you to this page. Here, you can click on each organ which will drop down a list of different subtypes within that tissue.



Users can also hover their mouse over each subtype to generate a popup box which describes the dataset used to create the cancer subtype. Clicking on a cancer subtype will bring the user to the network diagram page.



Network Diagram Page

Here, the protein-protein interaction network for this cancer subtype is displayed on the left. Nodes colored in red indicate existing drug targets (see Clue.io database notes).

On the right hand side, info tiles represent the several databases connected to APPIC. Click on the tabs to browse different databases.

APPIC

CANCER TYPESABOUTACKNOWLEDGEMENTSUSER GUIDE

Bladder Urothelial Carcinoma (TCGA, PanCancer Atlas)
Subtype: Low Microsatellite Instability
Patient Count: 10
Toggled Gene:

2D3D

Gene Set DataGene Interaction DataToggle LabelsCapture Screenshot

Info

User tips

Default color is blue.

Scroll to zoom in and out.

HUMAN PROTEIN ATLASHGNCGPROFILERCLUECBIOPORTAL

Proteins in network are inputted into [Clue.io](#). Proteins with existing drugs are displayed and highlighted in red in the network diagram.

Drug Name	Gene Target
apigenin	AR
bisphenol-a	AR
carvedilol	VEGFA
clomifene	AR
danazol	AR
gedunin	HSP90AA1
dihydro-7-desacetyldeoxygedunin	HSP90AA1
eugenol	AR
fludrocortisone	AR
flutamide	AR
testosterone	AR
antibacterials	AD

Human Protein Atlas

Users can click on a node in the network diagram to create a response.

Bladder Urothelial Carcinoma (TCGA, PanCancer Atlas)
Subtype: Low Microsatellite Instability
Patient Count: 10
Toggled Gene: CWC25

2D 3D Gene Set Data Gene Interaction Data Toggle Labels Capture Screenshot

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HUMAN PROTEIN ATLAS HGNC GPROFILER CLUE CBIOPORTAL

Click on a protein node. Please wait for the iFrame to load

THE HUMAN PROTEIN ATLAS

SECTIONS ABOUT NEWS LEARN DATA

SUMMARY

TISSUE BRAIN SINGLE CELL TISSUE CELL PATHOLOGY DISEASE IMMUNE BLOOD

PROTEIN SUMMARY

SECTION OVERVIEW GENE INFORMATION RNA DATA ANTIBODY DATA

CWC25 INFORMATION

Protein ¹	CWC25 spliceosome associated protein homolog
Gene name ¹	CWC25 (CCDC49, FLJ20291)
Protein class ¹	
Protein evidence	Evidence at protein level (all genes)
Number of transcripts ¹	1
Protein interactions	Interacting with 2 proteins

PROTEIN EXPRESSION AND LOCALIZATION

Tissue profile ¹	Nuclear expression in several different tissue types
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HGNC

Users should click on a node in the network diagram to create a response.

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HUMAN PROTEIN ATLAS HGNC GPROFILER CLUE CBIOPORTAL

Click on a protein node. Please wait for the iFrame to load

HGNC

Menu

Search results

Items: 1 to 1 of 1

CWC25: CWC25 spliceosome associated protein homolog

Gene HGNC ID HGNC:25989 Locus type Gene with protein product Status Approved

Matches Previous gene name: CWC25 spliceosome-associated protein homolog (S. cerevisiae)

Gene name: CWC25 spliceosome associated protein homolog

Gene symbol: CWC25

Items: 1 to 1 of 1


The work of the HGNC is supported by National Human Genome Research Institute (NHGRI) grant U24HG003345 & Wellcome Trust grant 208349/Z/17/Z.

g:profiler

All proteins are passed into g:Profiler. The output is a table that represents biological pathways related to the protein-protein interaction network. Biological pathways are ordered by p-value.

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dihydro-7-desacetyldeoxygedunin	HSP90AA1
eugenol	AR
fludrocortisone	AR
flutamide	AR
testosterone	AR

Clue.io

All proteins in the protein-protein interaction network are searched in the Clue.io database to see if they are targets for any existing drugs. The drug name and gene target are included in the table. The gene targets are colored red in the network diagram.

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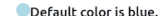
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flutamide	AR
testosterone	AR

The specific patient IDs that create the cancer subtype are displayed. The Kaplan-Meier survival plot of the specific patients in the cancer subtype is displayed. Users have the options to download the Patient ID list as well as full cBioPortal clinical data set.



3D network diagram

Users can visualize the network diagram in 3D. Clicking on “Toggle Labels” will add or remove the protein labels for the 3D model. Users can also click and drag around the network diagram to move the nodes. Users can also download the protein-protein interaction data files.

