

# TEACHING THE GENOME GENERATION

*Inquiry Project Exploring Hereditary Cancer  
on the cBioPortal*



*Application: Inquiry Project Exploring Hereditary Cancer on the cBioPortal*

Now it's your turn to investigate inherited genes variants using the cBioPortal. We learned inherited variants in *CDKN2A* are associated with hereditary melanoma. There are other genes that scientists and clinicians have identified to be associated with hereditary cancers (see **Table 1**).

**Table 1. Gene variants associated with inherited cancers of different types**

Gene Name	Cancer Type
<b>APC</b>	Stomach, Colon
<b>BRCA1</b>	Breast, Ovarian
<b>BRCA2</b>	Breast, Ovarian
<b>MLH1</b>	Colon
<b>MSH2</b>	Colon
<b>MSH6</b>	Colon
<b>NF2</b>	Brain
<b>PALB2</b>	Breast
<b>PMS2</b>	Colon
<b>PTEN</b>	Breast, Thyroid, Endometrial
<b>SMAD4</b>	Colon
<b>WT1</b>	Kidney

Select a gene and cancer type from this list to investigate. Then use the method you used in this activity to evaluate one or more cancer studies on the cBioPortal and your gene of interest.

- First, write a hypothesis for the study or group of studies you would like to explore regarding a selected gene.
- Use the cBioPortal to gather data to test your hypothesis. HINT: Think about age of diagnosis.
- Draw conclusions about the data you gathered and determine if the data supports your hypothesis or not.

Resources

- [cBioPortal Written Tutorials](#)
- [cBioPortal Video Tutorial YouTube Playlist](#)