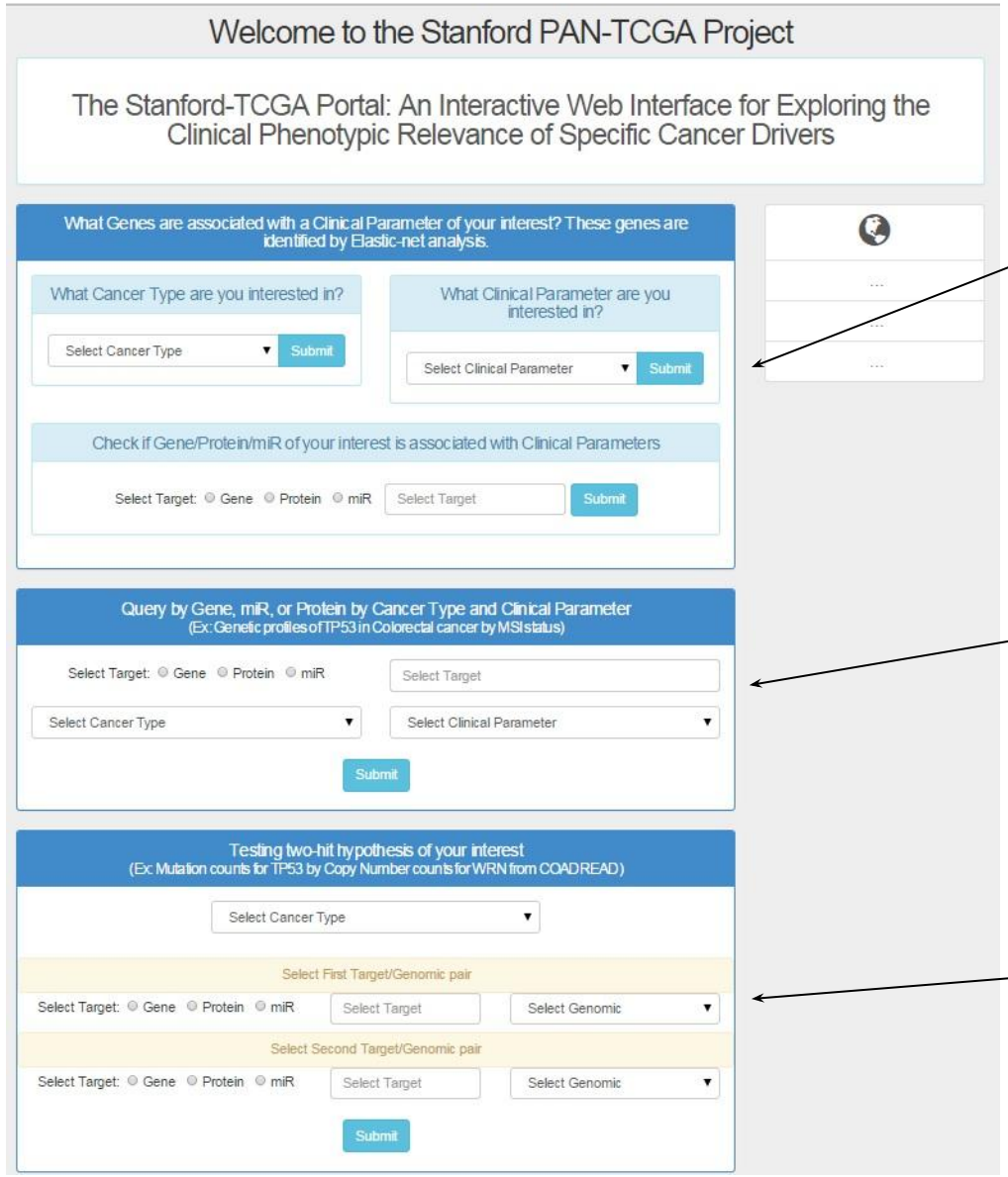
The Stanford-TCGA Portal:

An Interactive Web Interface for Exploring the Clinical Phenotypic Relevance of Specific Cancer Drivers

Tutorial: How to navigate web portal

STANFORD
UNIVERSITY

Three ways of looking TCGA data



What are the clinically relevant genes/miRs/proteins?

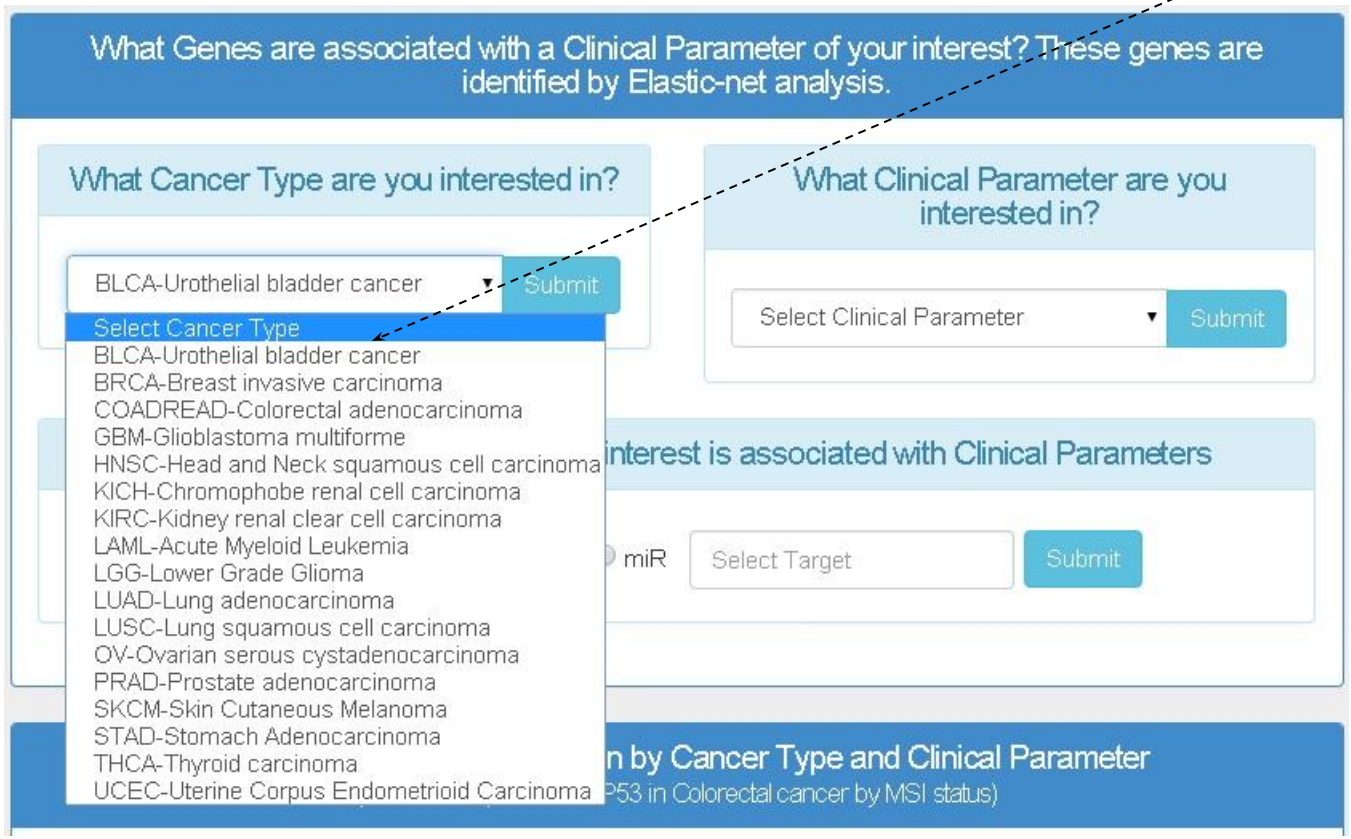
- By cancer type
- By clinical parameters
- By name of genes, miRs or proteins

Profiling by clinical parameters
: What is difference in genetic/proteomic changes between classes in a clinical parameter in a certain cancer?

Testing two hit hypothesis
: Do the changes of two genes occur together or not?

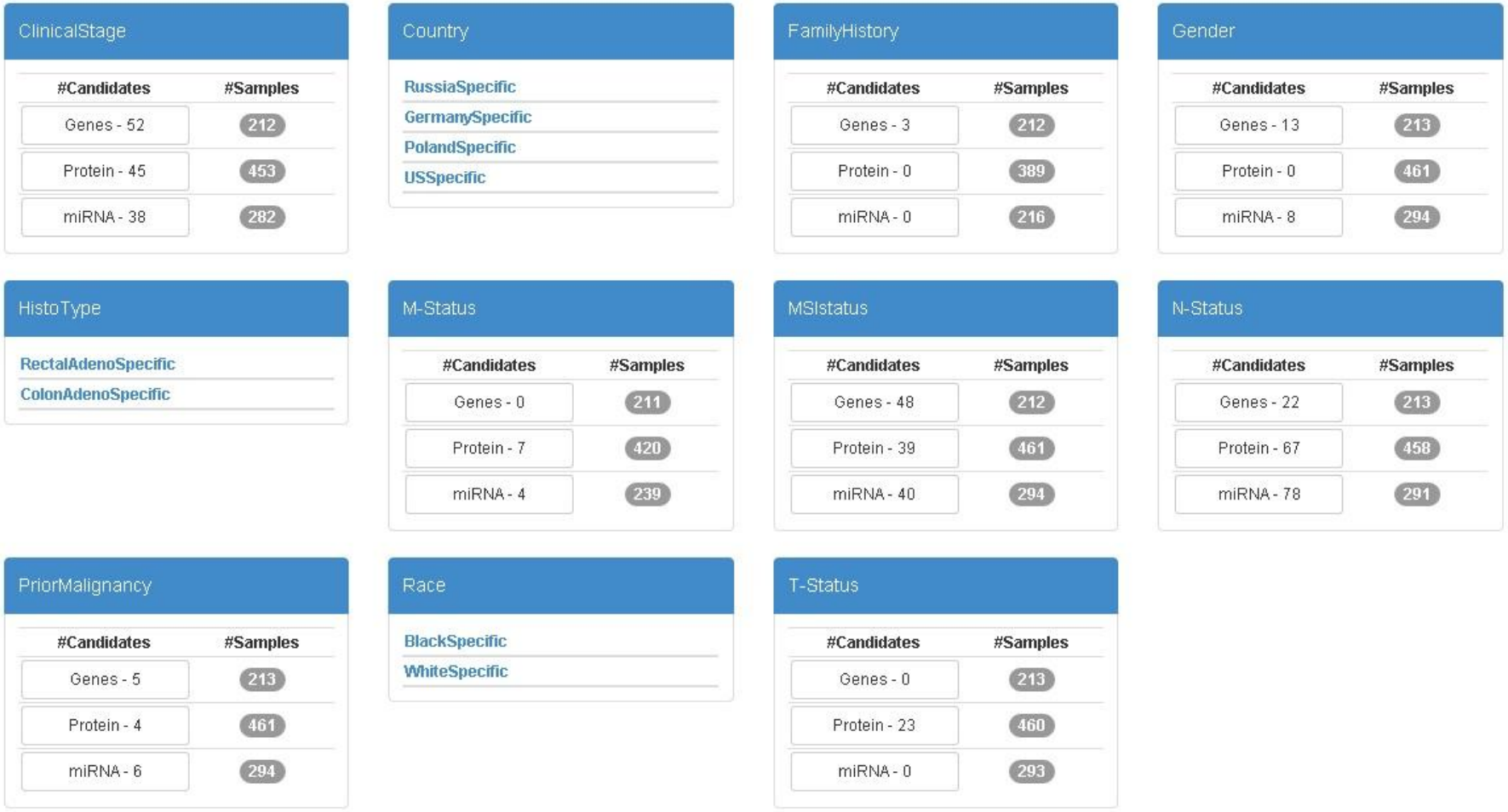
What are the clinically relevant genes/miRs/proteins?

When you are interested in a certain cancer type, click here and select a cancer type



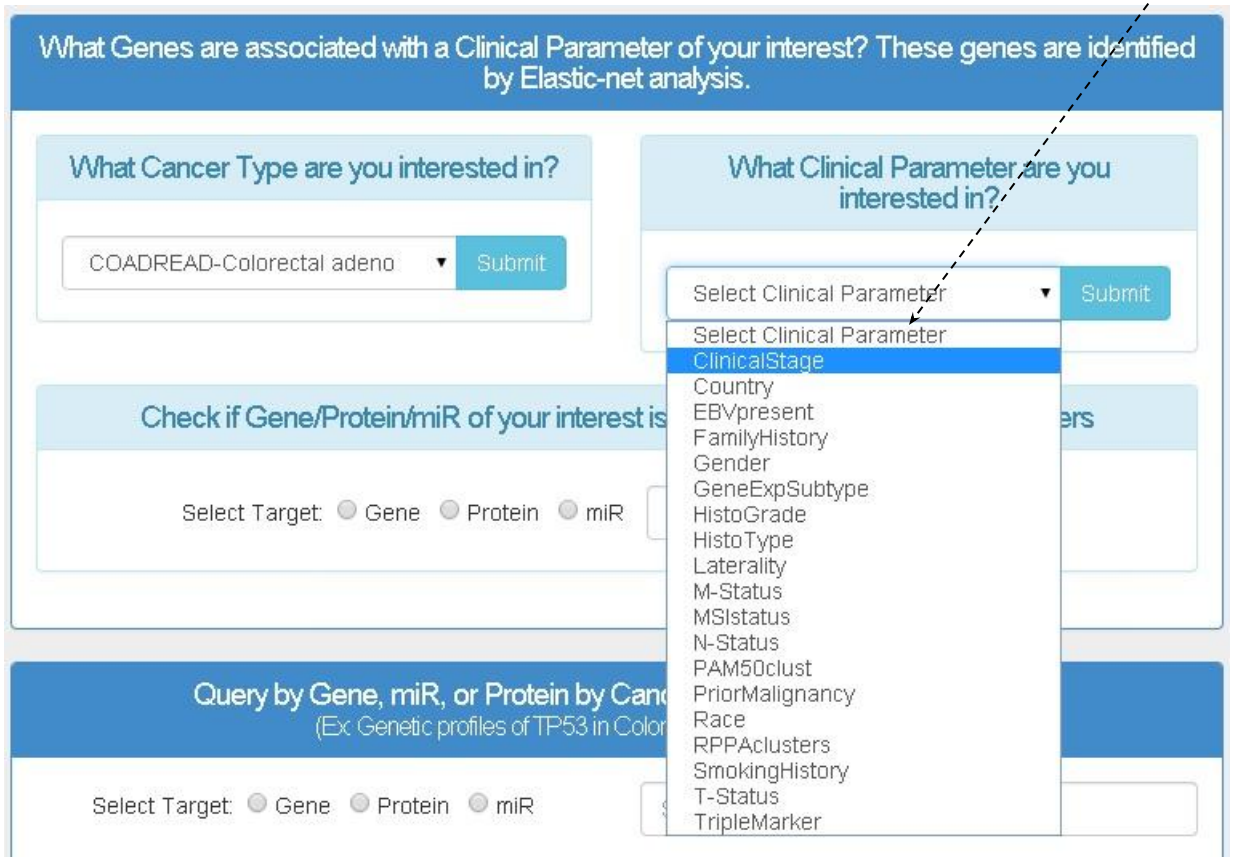
What are the clinically relevant genes/miRs/proteins?

If you select COADREAD, webpage shows the summary list with clinical parameters that are available in COADREAD



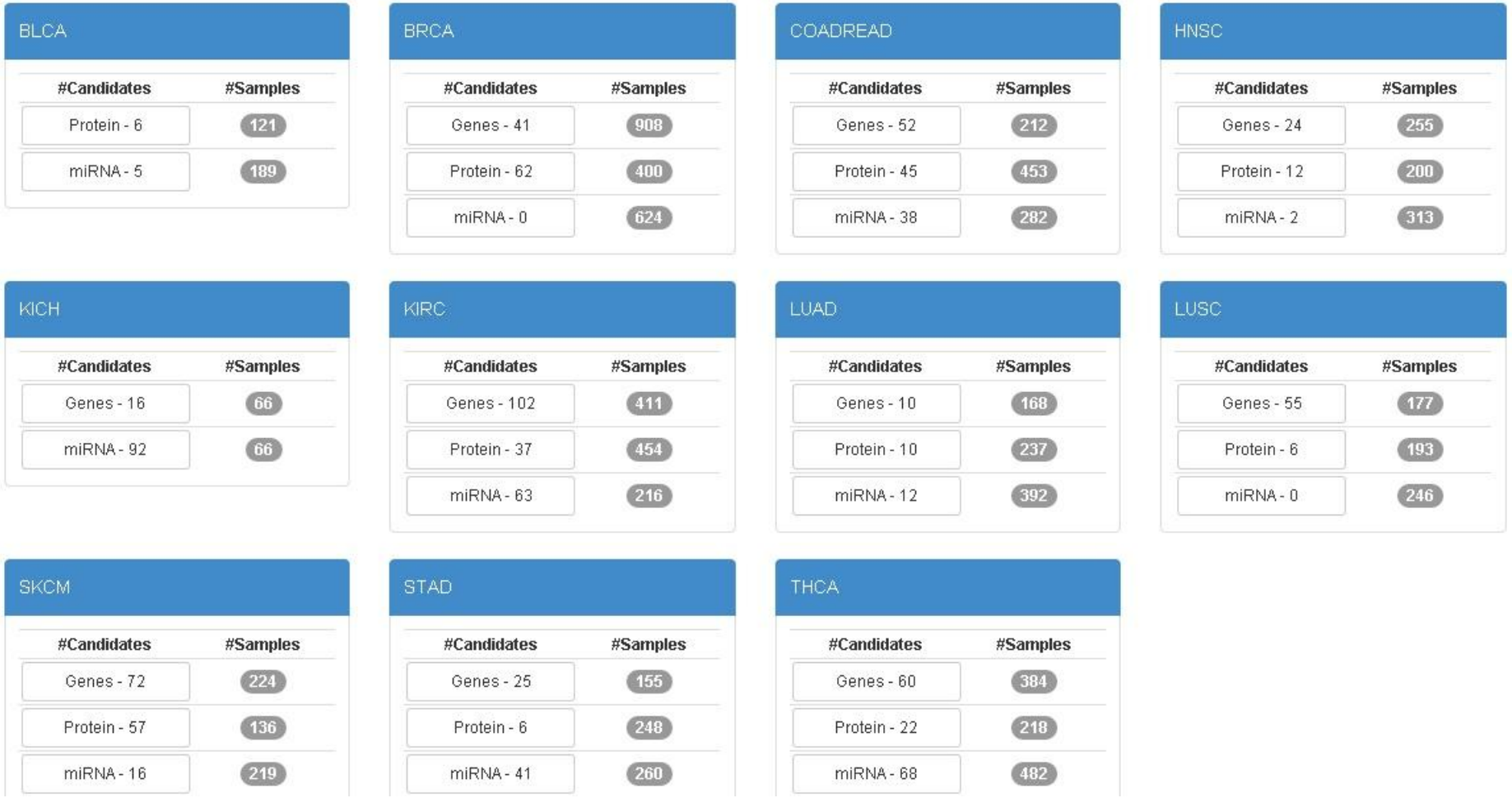
What are the clinically relevant genes/miRs/proteins?

When you are interested in a clinical parameter, click here and select a cancer type



What are the clinically relevant genes/miRs/proteins?

If you select clinical stage, webpage shows the summary list with from all the cancer types which clinical stage is available



BLCA

#Candidates	#Samples
Protein - 6	121
miRNA - 5	189

BRCA

#Candidates	#Samples
Genes - 41	908
Protein - 62	400
miRNA - 0	624

COADREAD

#Candidates	#Samples
Genes - 52	212
Protein - 45	453
miRNA - 38	282

HNSC

#Candidates	#Samples
Genes - 24	255
Protein - 12	200
miRNA - 2	313

KICH

#Candidates	#Samples
Genes - 16	66
miRNA - 92	66

KIRC

#Candidates	#Samples
Genes - 102	411
Protein - 37	454
miRNA - 63	216

LUAD

#Candidates	#Samples
Genes - 10	168
Protein - 10	237
miRNA - 12	392

LUSC

#Candidates	#Samples
Genes - 55	177
Protein - 6	193
miRNA - 0	246

SKCM

#Candidates	#Samples
Genes - 72	224
Protein - 57	136
miRNA - 16	219

STAD

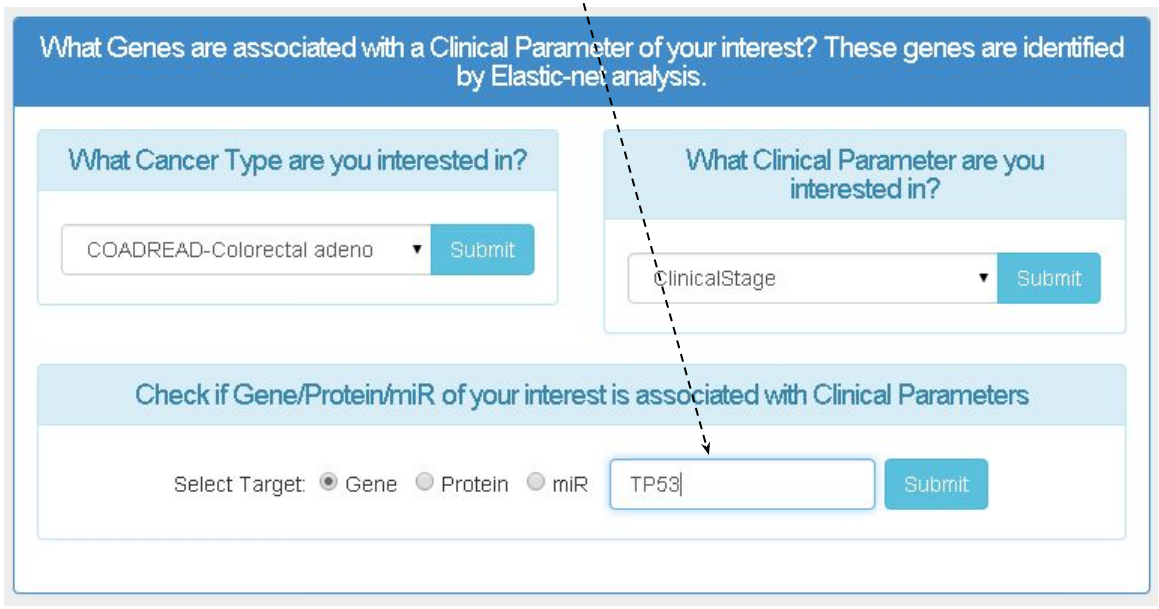
#Candidates	#Samples
Genes - 25	155
Protein - 6	248
miRNA - 41	260

THCA

#Candidates	#Samples
Genes - 60	384
Protein - 22	218
miRNA - 68	482

What are the clinically relevant genes/miRs/proteins?

When you are wondering whether a gene of your interest is associated with clinical parameters or not, click here and type your gene/miR/protein name



What are the clinically relevant genes/miRs/proteins?

If you type ***TP53***, webpage shows the summary list with all the clinical parameters in cancers that TP53 are associated with

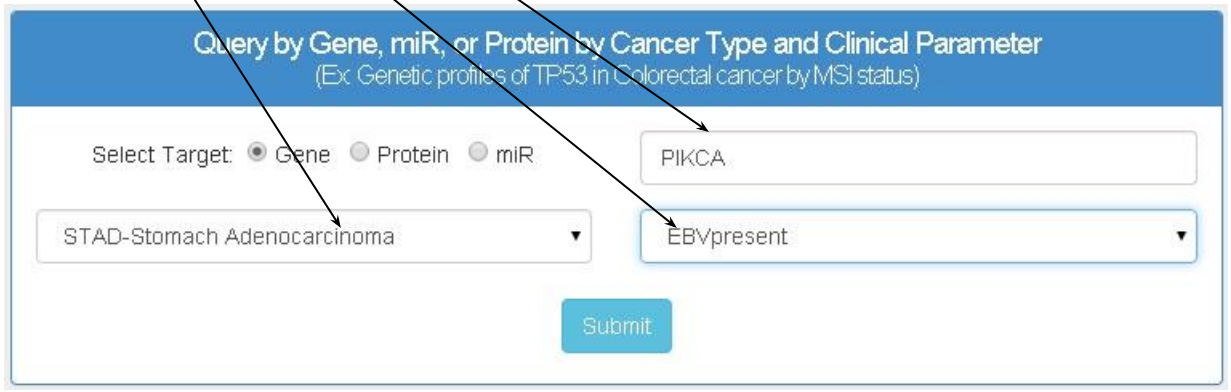
Cancer Type	Clinical Parameter	Rank	Gene	Copy Number	mRNA expression	Methylation	Mutation	#Supporting genomic features
BRCA	Race	283	TP53		283 ↑			1
BRCA	TripleMarker	12	TP53	13 ↑				1
THCA	N-Status	150	TP53			147 ↓		1
UCEC	HistoGrade	62	TP53				62 ↑	1

Profiling by Clinical Parameter

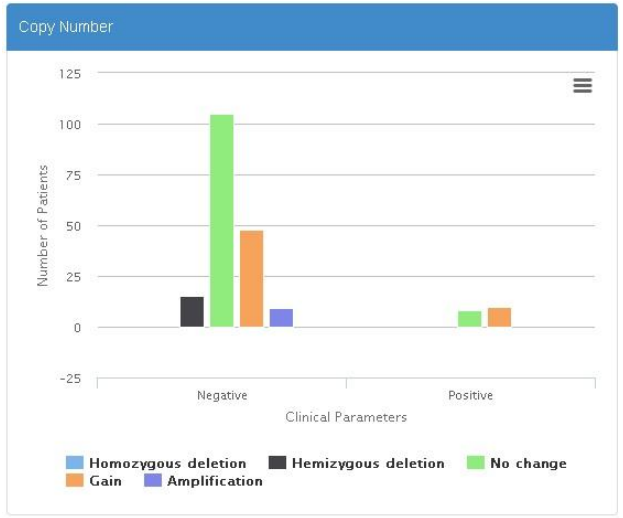
When do you want to know the difference of a gene between samples with different types in terms of genetic/proteomic profiling, use middle panel

How does PIK3CA behave differently between EBV infected and non-infected samples in stomach cancer?

1. Type PIK3CA
2. Select STAD
3. Select EBV present
4. Click Submit



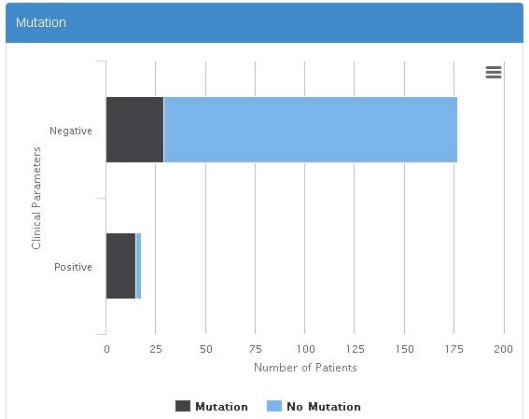
Profiling by Clinical Parameter



Genomic value category	Negative	Positive
Homozygous deletion	0%	0%
Hemizygous deletion	8.5%	0%
No change	59.3%	44.4%
Gain	27.1%	55.6%
Amplification	5.1%	0%
	100%	100%

View Sample Counts Table

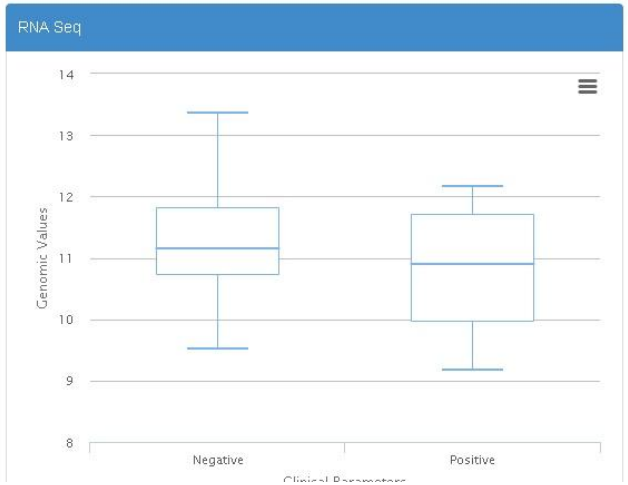
Genomic value category	Negative	Positive	#Samples
Homozygous deletion	-	-	0
Hemizygous deletion	15	-	15
No change	105	8	113
Gain	48	10	58
Amplification	9	-	9
#Samples	177	18	195



Genomic value category	Negative	Positive
No Mutation	83.6%	16.7%
Mutation	16.4%	83.3%
	100%	100%

View Sample Counts Table

Genomic value category	Negative	Positive	#Samples
No Mutation	148	3	151
Mutation	29	15	44
#Samples	177	18	195

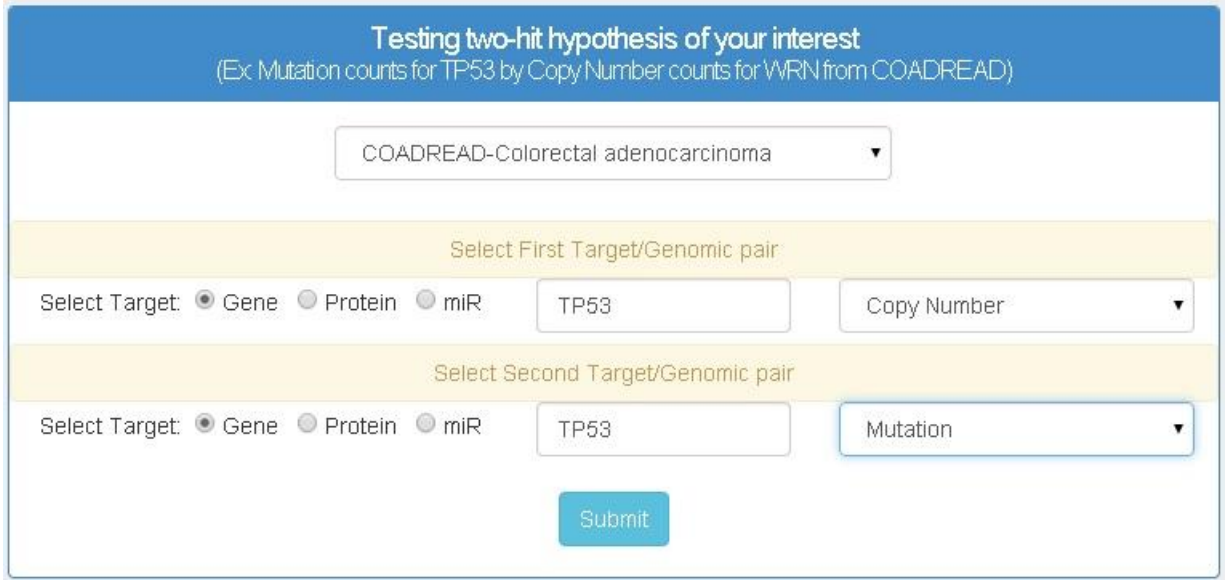


Genomic value category	Negative	Positive
Minimum	9.514	9.162
Lower Quartile	10.735	9.96
Median	11.155	10.892
Upper Quartile	11.807	11.714
Maximum	13.363	12.166

Summary of PIK3CA genetic profiles between EBV infected and non-infected samples in stomach cancer

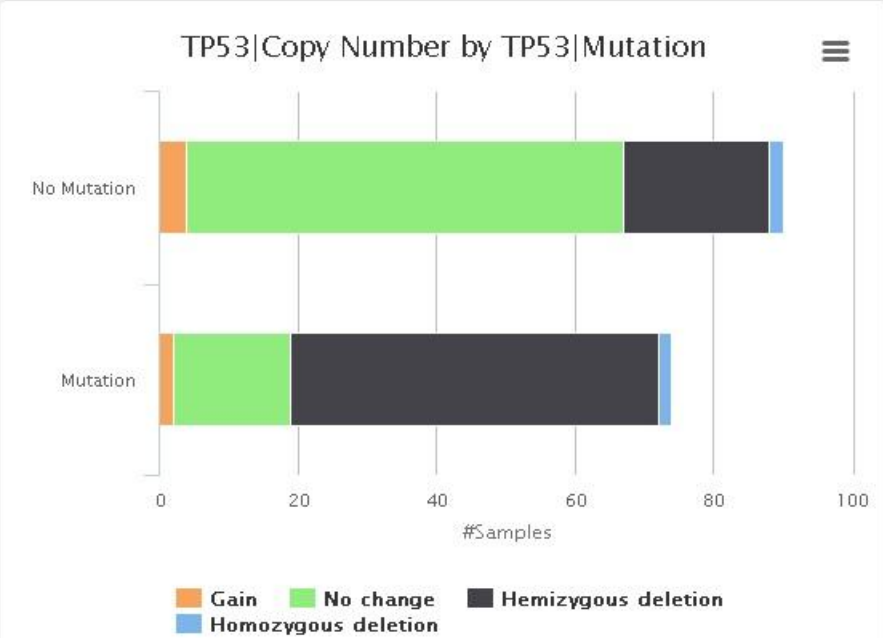
Testing two hit hypothesis

What is difference in copy number changes of TP53 between samples with and without TP53 mutation?
-> Use bottom panel



Testing two hit hypothesis

Summarize the copy number changes of ***TP53*** by samples with/without ***TP53*** mutations



	TP53-Copy Number				
TP53-Mutation	Homozygous deletion	Hemizygous deletion	No change	Gain	
No Mutation	2.2%	23.3%	70.0%	4.4%	100%
Mutation	2.7%	71.6%	23.0%	2.7%	100%

View Sample Counts Table

	TP53-Copy Number				
TP53-Mutation	Homozygous deletion	Hemizygous deletion	No change	Gain	#Samples
No Mutation	2	21	63	4	90
Mutation	2	53	17	2	74
#Samples	4	74	80	6	164