

A

Patients (NSCLC, n=350) receiving ICI treatment with clinical data and mutational data from Samstein et al. of Memorial Sloan Kettering Cancer Center

Exclusion:
 ■ Patients without genomic data
 ■ Remove gene mutations with no more than 5% mutant cases

■ Eligible patients with clinical data and filtered mutations data for univariate Cox regression analysis (NSCLC, n=350)

■ P-value<0.05

■ Multivariate Cox analysis according to univariate Cox regression analysis (NSCLC, n=350)

B

TCGA-LUAD
(collected within TCGA Biobank on R/Bioconductor and cBioPortal)

TCGA-LUSC
(collected within TCGA Biobank on R/Bioconductor and cBioPortal)

Merged

TCGA-NSCLC

Exclusion:
 ■ Genomic data was missing

Mutation data
 ■ DNA damage response and repair (DDR)-related gene sets downloaded from the MSigDB database of Broad Institute) for analysis
 ■ Tumor mutation burden data for anti-tumor immunity analysis

■ Neoantigen data for anti-tumor immunity analysis

Exclusion:
 ■ Genomic data not attached gene expression data

Matched RNA-seq data for
 ■ Gene Set Enrichment Analysis (GSEA)
 ■ CIBERSORT algorithm
 ■ Immune gene sets (collected from Thorsson et.al)

Exclusion:
 ■ Neoantigen data was missing
 ■ Genomic data was missing