

## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Information of our lung cancer cohort

File Name: Supplementary Data 2

Description: 109 important genes and their partners for prediction in lung cancer

File Name: Supplementary Data 3

Description: 161 important genes and their partners for prediction in melanoma

File Name: Supplementary Data 4

Description: SNV/indel calling results for our cohort

File Name: Supplementary Data 5

Description: CNV calling results for our cohort

File Name: Supplementary Data 6

Description: Neoantigen calling results for our cohort