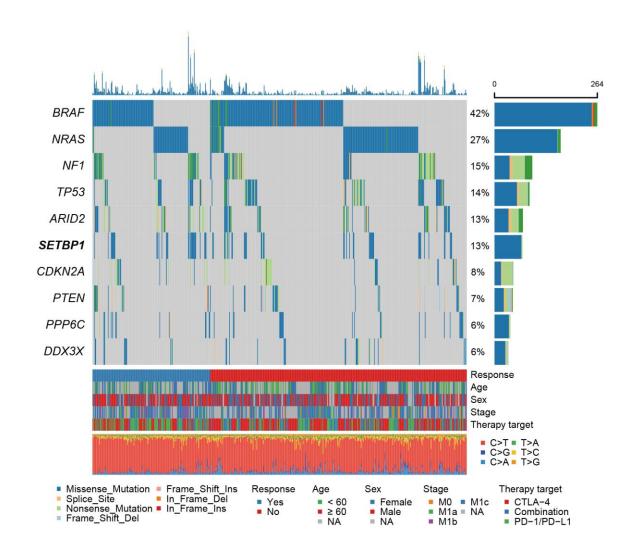
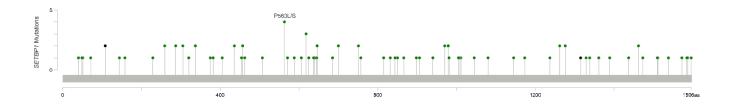
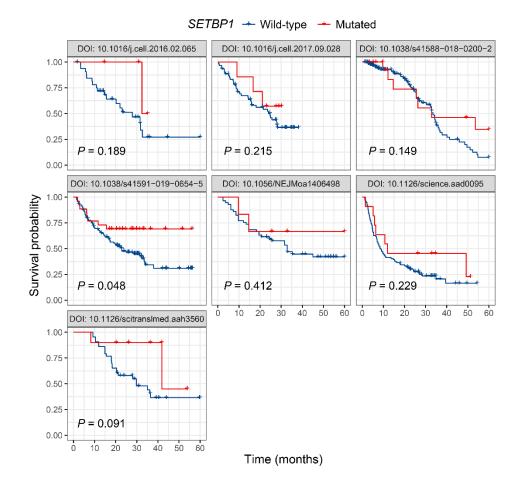
SUPPLEMENTARY FIGURES



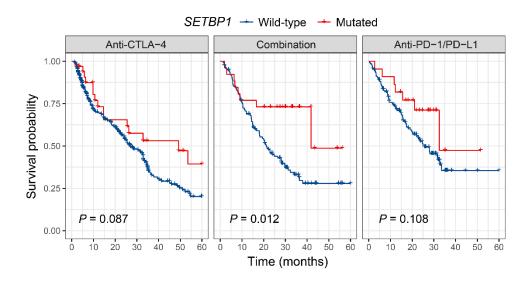
Supplementary Figure 1. Mutational patterns of SETBP1 and common melanoma driver genes illustrated with waterfall plot.



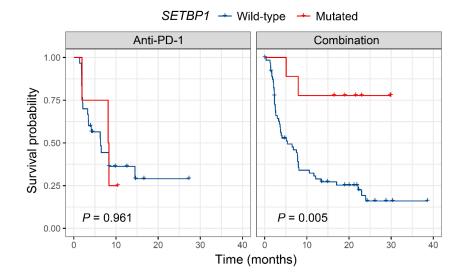
Supplementary Figure 2. Detailed amino acid changes induced by SETBP1 mutations in the integrated melanoma cohort.



Supplementary Figure 3. Kaplan-Meier survival analyses of SETBP1 mutations in individual ICI-treated melanoma cohorts.



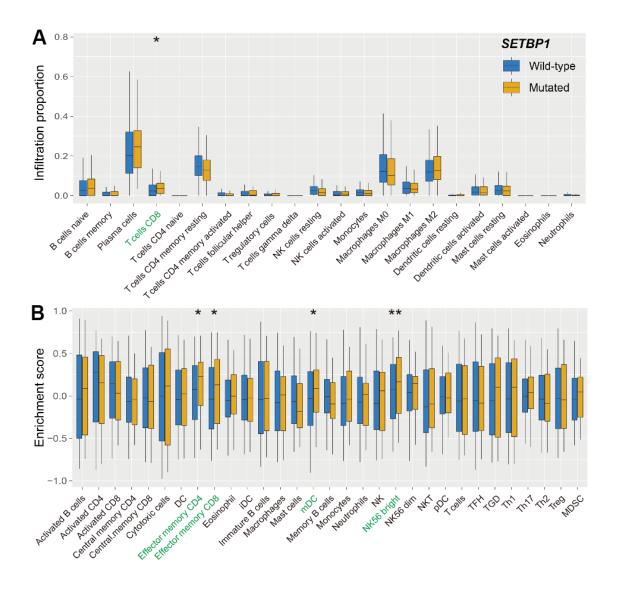
Supplementary Figure 4. Kaplan-Meier survival analyses of SETBP1 mutations in distinct ICI treatment types in melanoma.



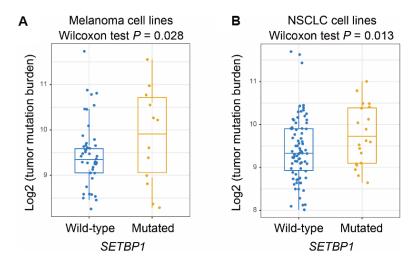
Supplementary Figure 5. Kaplan-Meier survival analyses of SETBP1 mutations in individual ICI-treated NSCLC cohorts.

SETBP1 mutated pathways	Gene ranks	NES	FDR
KEGG_FOCAL_ADHESION	**************************************	1.82	6.5e-03
KEGG_CHEMOKINE_SIGNALING_PATHWAY		1.70	6.5e-03
KEGG_ECM_RECEPTOR_INTERACTION	Transmir and one was a court p	1.92	6.5e-03
KEGG_N_GLYCAN_BIOSYNTHESIS	1 II III II I	1.81	1.4e-02
KEGG_GAP_JUNCTION	II I I II I I I I I I I I I I I I I I	1.77	1.4e-02
KEGG_PATHWAYS_IN_CANCER	THE RESIDENCE IN COLUMN TO A SECOND STREET	1.47	1.4e-02
KEGG_B_CELL_RECEPTOR_SIGNALING_PATHWAY	Manufacture and account of the second of the	1.76	1.4e-02
KEGG_INSULIN_SIGNALING_PATHWAY	In their more and the control of the	1.61	1.5e-02
KEGG_LONG_TERM_POTENTIATION	In manufacture and a second property	1.71	1.5e-02
KEGG_CALCIUM_SIGNALING_PATHWAY	Million manner of the second s	1.54	1.5e-02
KEGG_CELL_ADHESION_MOLECULES_CAMS		1.62	1.6e-02
KEGG_T_CELL_RECEPTOR_SIGNALING_PATHWAY	In the common of the second se	1.62	1.6e-02
KEGG_NATURAL_KILLER_CELL_MEDIATED_CYTOTOXICITY	It comes the management and the second secon	1.61	1.6e-02
KEGG_ERBB_SIGNALING_PATHWAY	In the continue of the contract of the contrac	1.65	1.6e-02
KEGG_AXON_GUIDANCE	Maria arramana na manasa se a a amari 1	1.58	1.6e-02
KEGG_NEUROTROPHIN_SIGNALING_PATHWAY	II III II	1.59	1.6e-02
KEGG_LYSOSOME	In the second se	1.58	1.6e-02
KEGG_ADHERENS_JUNCTION	I II I	1.65	1.6e-02
KEGG_ACUTE_MYELOID_LEUKEMIA	1 III minimum market sourcement	1.69	1.6e-02
KEGG_WNT_SIGNALING_PATHWAY	himmonomonomonomonomonomonomonomonomonomo	1.53	1.6e-02
	0 5000 10000 15000 20000		

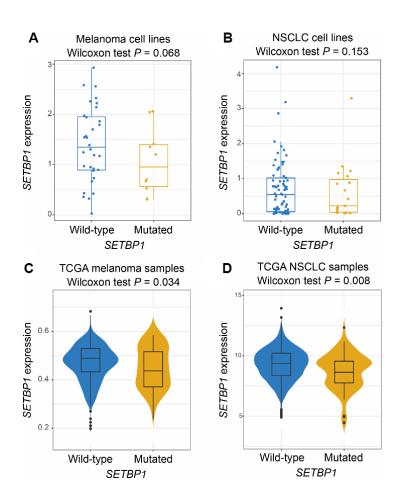
Supplementary Figure 6. Significantly enriched signaling pathways in SETBP1 mutated subgroups in melanoma. Immune response pathways were highlighted with green.



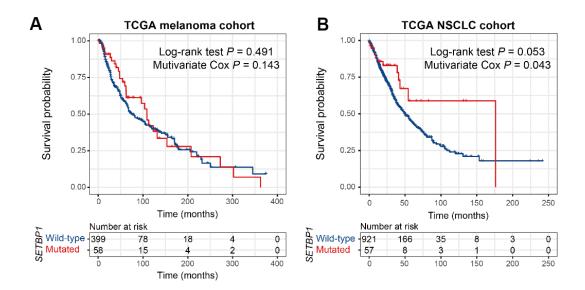
Supplementary Figure 7. Immune infiltration associated with SETBP1 mutations in NSCLC. (A) Distinct infiltration of 22 immunocytes of SETBP1 mutated and wild-type groups evaluated with CIBERSORT algorithm. Immunocytes highlighted with green are significantly differentially infiltrated. (B) Distinct infiltration of 31 immunocytes of SETBP1 two groups evaluated with Angelova et al. method.



Supplementary Figure 8. Associations between SETBP1 mutations and TMB in CCLE-derived cell lines for melanoma and NSCLC. (A) Distinct TMB distribution in SETBP1 mutated and wild-type subgroups based on 57 melanoma cell lines. (B) Distinct TMB distribution in SETBP1 mutated and wild-type subgroups based on 98 NSCLC cell lines.



Supplementary Figure 9. Associations between SETBP1 mutations and its own expression. (A) Distinct SETBP1 expression in SETBP1 mutated and wild-type subgroups based on 42 melanoma cell lines. (B) Distinct SETBP1 expression in SETBP1 mutated and wild-type subgroups based on 92 NSCLC cell lines. (C) Distinct SETBP1 expression in SETBP1 mutated and wild-type subgroups based on TCGA melanoma samples. (D) Distinct SETBP1 expression in SETBP1 mutated and wild-type subgroups based on TCGA NSCLC samples.



Supplementary Figure 10. Prognostic capacities of SETBP1 mutations in (A) melanoma and (B) NSCLC patients derived from the TCGA project.