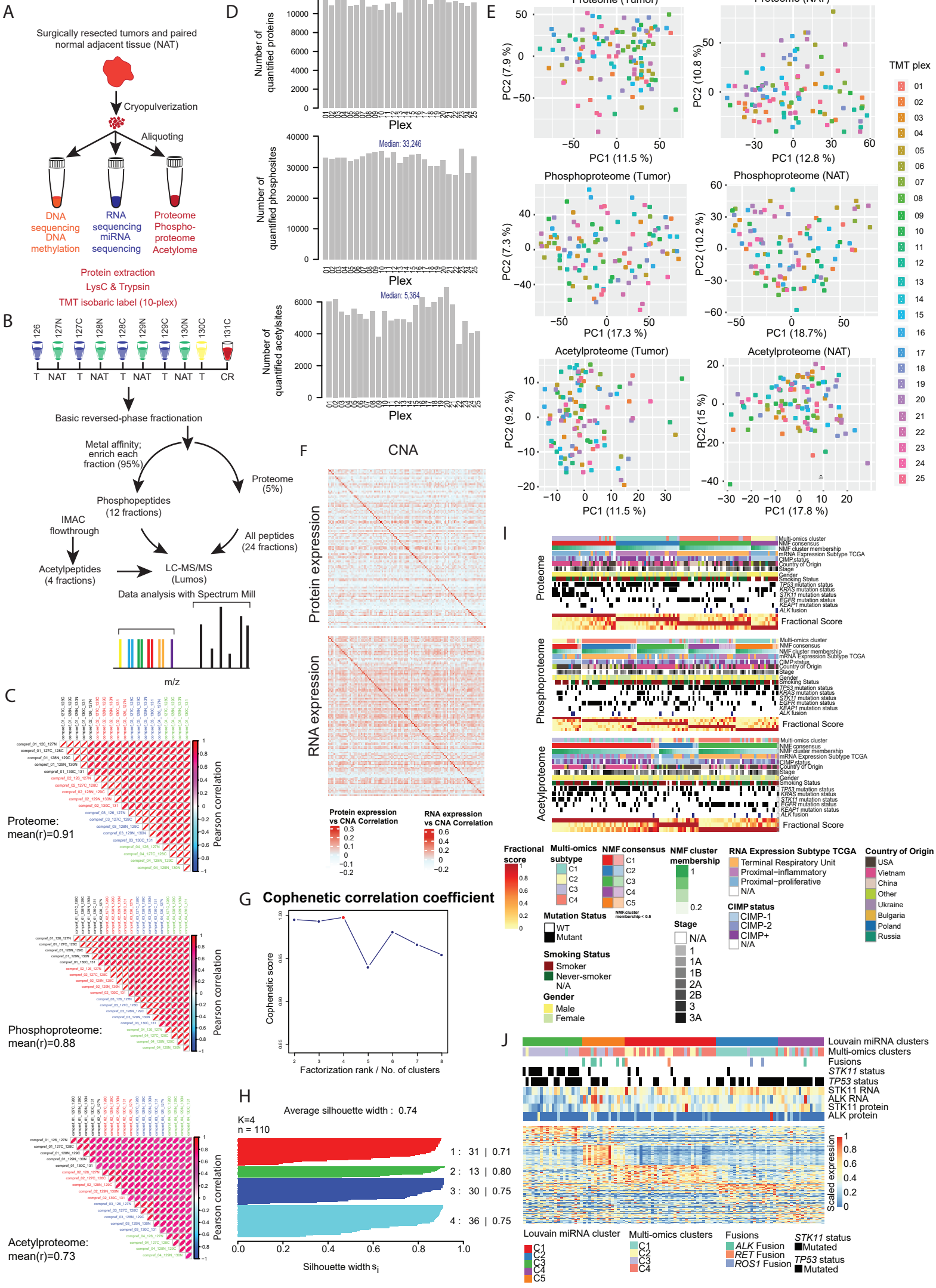
Figure S1


A
Surgically resected tumors and paired normal adjacent tissue (NAT)
Cryopulverization
Aliquoting
DNA sequencing DNA methylation
RNA sequencing miRNA sequencing
Proteome Phospho-proteome Acetylome
Protein extraction
LysC & Trypsin
TMT isobaric label (10-plex)
B
126 127N 127C 128N 128C 129N 129C 130N 130C 131C
T NAT T NAT T NAT T NAT T CR
Basic reversed-phase fractionation
Metal affinity; enrich each fraction (95%)
Proteome (5%)
Phosphopeptides (12 fractions)
IMAC flowthrough
All peptides (24 fractions)
Acetylpeptides (4 fractions)
LC-MS/MS (Lumos)
Data analysis with Spectrum Mill
m/z
C
Proteome: mean(r)=0.91
Phosphoproteome: mean(r)=0.88
Acetylproteome: mean(r)=0.73
Pearson correlation
D
Median: 11,180
Number of quantified proteins
Median: 33,246
Number of quantified phosphosites
Median: 5,364
Number of quantified acetylsites
Plex
E
Proteome (Tumor)
Proteome (NAT)
Phosphoproteome (Tumor)
Phosphoproteome (NAT)
Acetylproteome (Tumor)
Acetylproteome (NAT)
PC1 (11.5 %)
PC2 (7.9 %)
PC1 (12.8 %)
PC2 (10.8 %)
PC1 (17.3 %)
PC2 (7.3 %)
PC1 (18.7%)
PC2 (10.2 %)
PC1 (11.5 %)
PC2 (9.2 %)
PC1 (17.8 %)
RC2 (15 %)
TMT plex
F
CNA
Protein expression
RNA expression
Protein expression vs CNA Correlation
RNA expression vs CNA Correlation
G
Cophenetic correlation coefficient
Cophenetic score
Factorization rank / No. of clusters
H
Average silhouette width : 0.74
K=4
n = 110
1 : 31 | 0.71
2 : 13 | 0.80
3 : 30 | 0.75
4 : 36 | 0.75
Silhouette width s_i
I
Proteome
Phosphoproteome
Acetylproteome
Multi-omics cluster
NMF consensus
NMF cluster membership
mRNA Expression Subtype TCGA
CIMP status
Country of Origin
Stage
Gender
Smoking Status
TP53 mutation status
KRAS mutation status
STK11 mutation status
EGFR mutation status
KEAP1 mutation status
ALK fusion
Fractional Score
Fractional score
Multi-omics subtype
NMF consensus
NMF cluster membership
RNA Expression Subtype TCGA
Terminal Respiratory Unit
Proximal−inflammatory
Proximal−proliferative
Country of Origin
USA
Vietnam
China
Other
Ukraine
Bulgaria
Poland
Russia
Mutation Status
WT
Mutant
CIMP status
CIMP-1
CIMP-2
CIMP+
Smoking Status
Smoker
Never-smoker
Stage
Gender
Male
Female
J
Louvain miRNA clusters
Multi-omics clusters
Fusions
STK11 status
TP53 status
STK11 RNA
ALK RNA
STK11 protein
ALK protein
Scaled expression
Louvain miRNA cluster
Multi-omics clusters
Fusions
ALK Fusion
RET Fusion
ROS1 Fusion
STK11 status
Mutated
TP53 status
Mutated