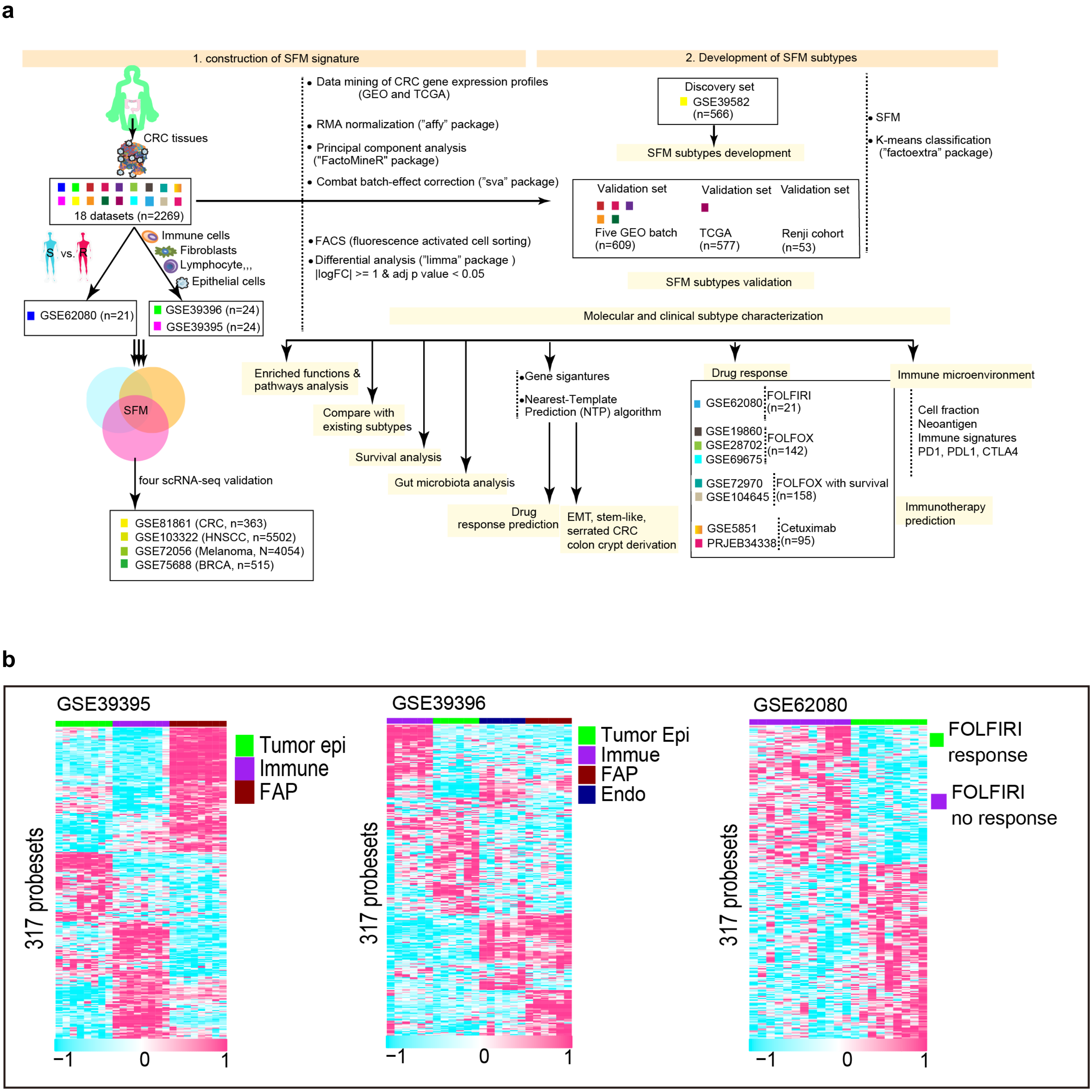
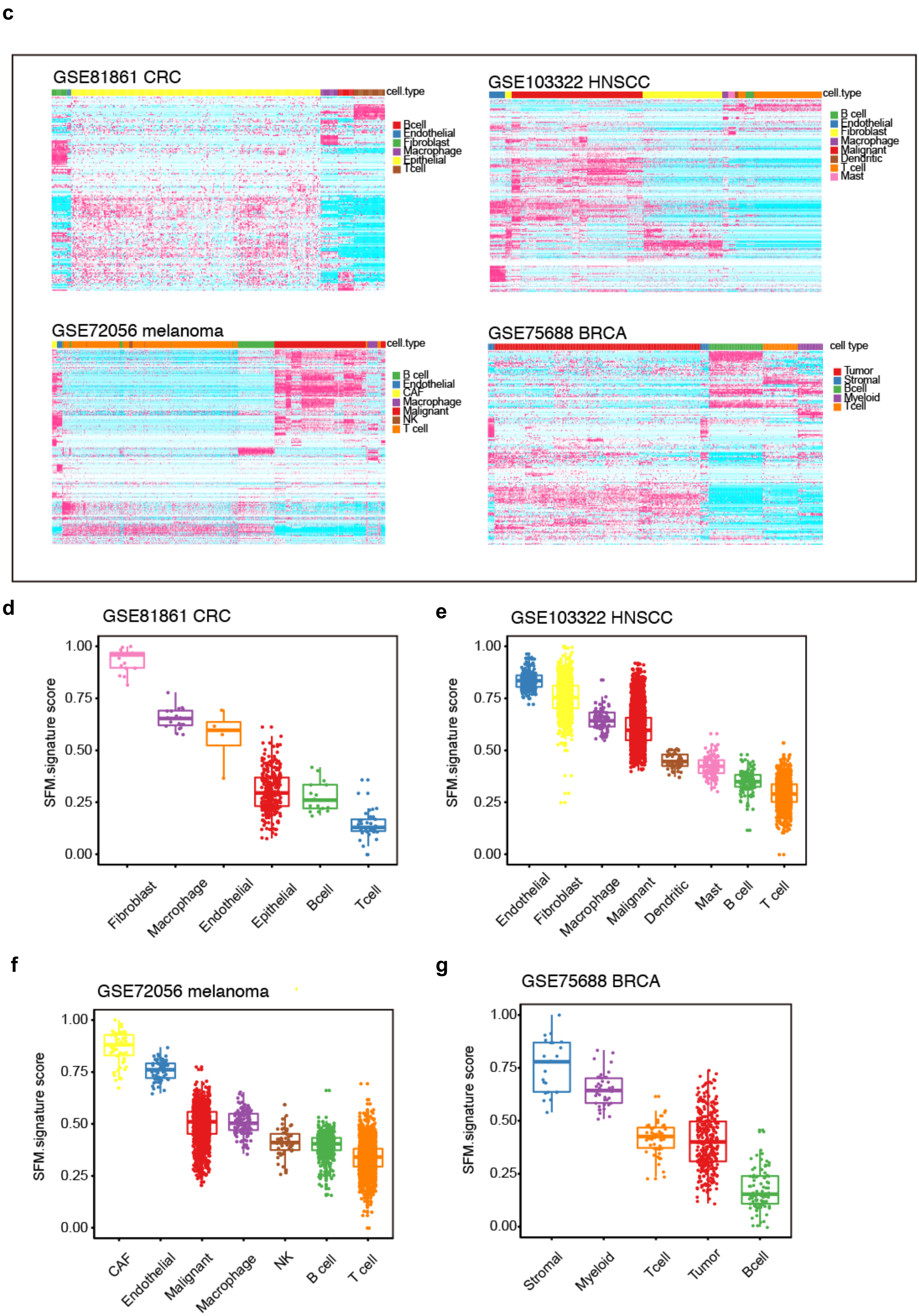
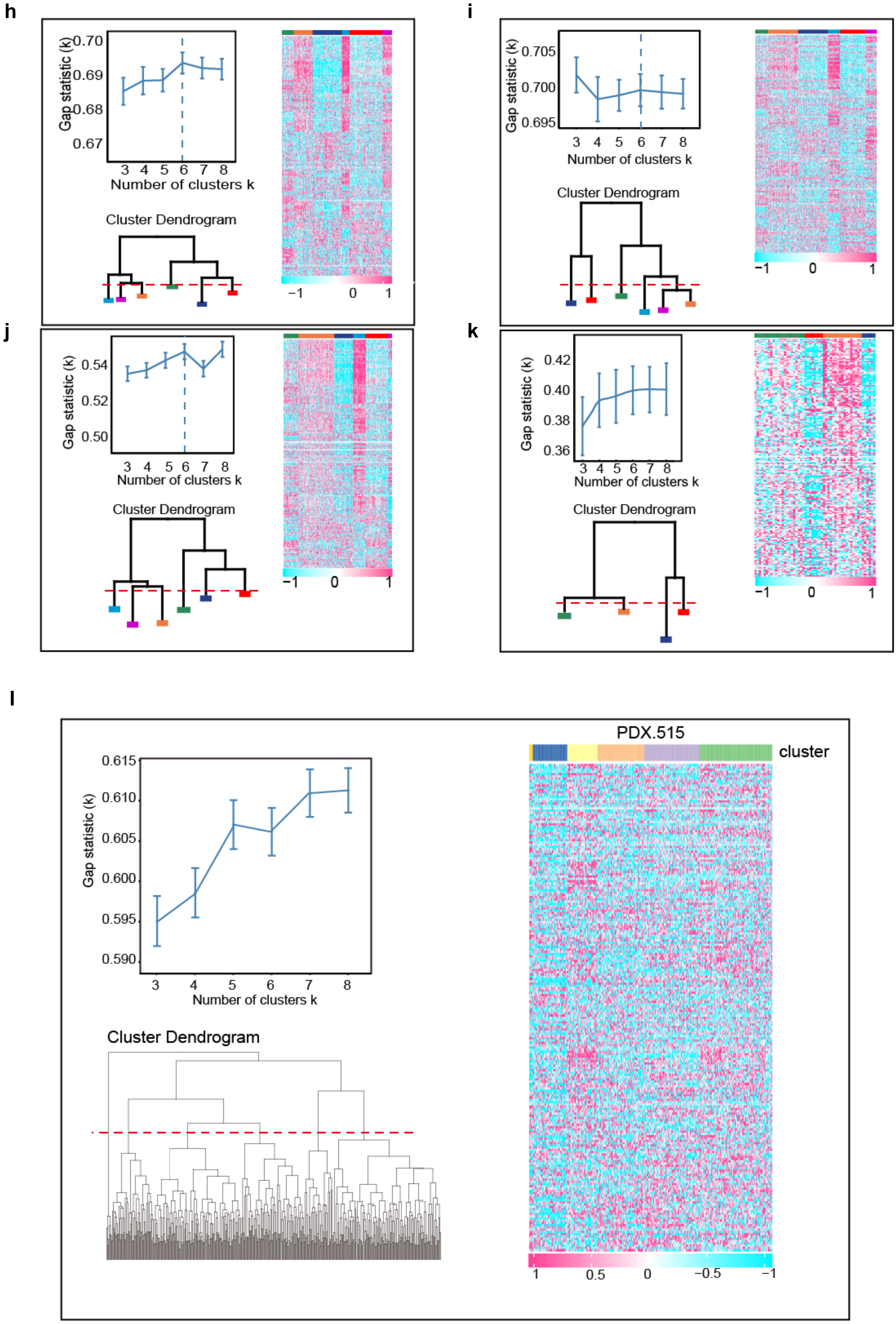
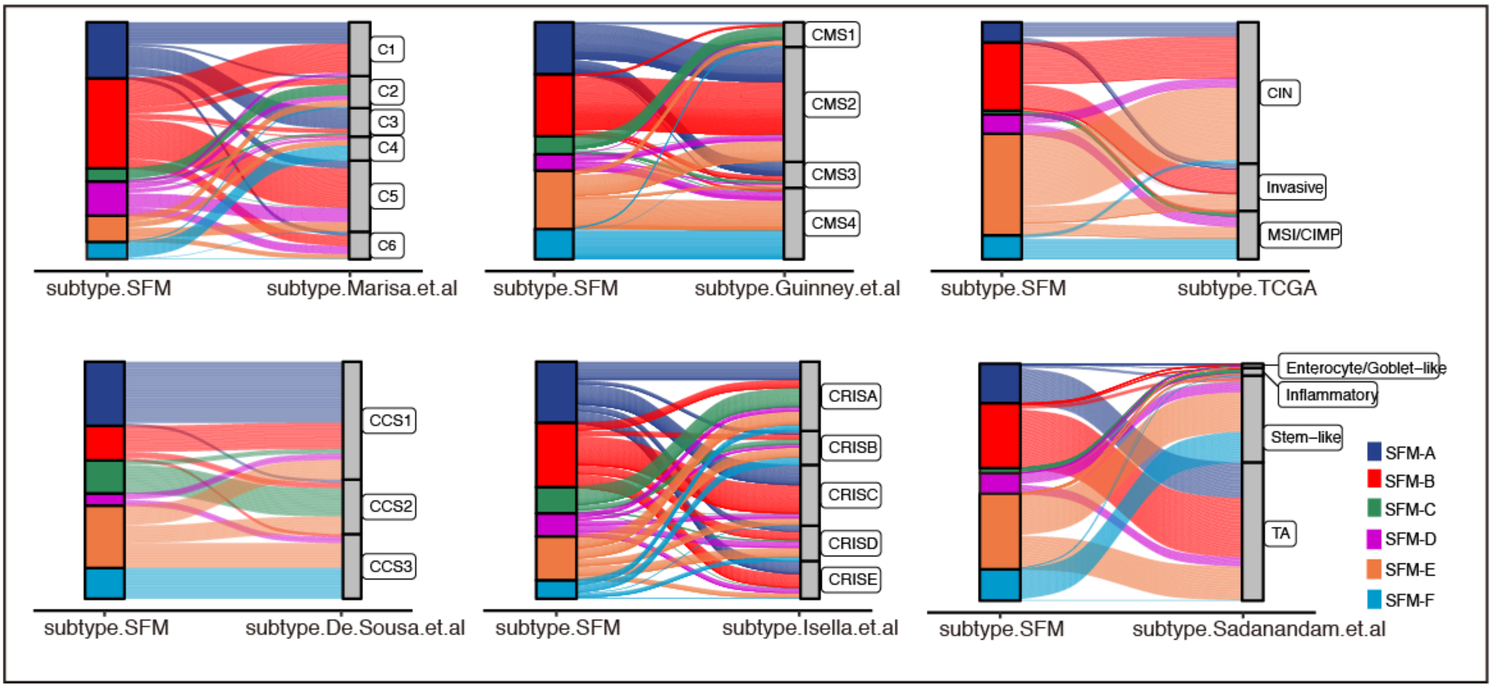

a
1. construction of SFM signature
2. Development of SFM subtypes
CRC tissues
18 datasets (n=2269)
Data mining of CRC gene expression profiles (GEO and TCGA)
RMA normalization ("affy" package)
Principal component analysis ("FactoMineR" package)
Combat batch-effect correction ("sva" package)
Discovery set
GSE39582 (n=566)
SFM subtypes development
SFM
K-means classification ("factoextra" package)
Validation set
Five GEO batch (n=609)
TCGA (n=577)
Renji cohort (n=53)
SFM subtypes validation
Immune cells
Fibroblasts
Lymphocyte,,,
Epithelial cells
FACS (fluorescence activated cell sorting)
Differential analysis ("limma" package) |logFC| >= 1 & adj p value < 0.05
GSE62080 (n=21)
GSE39396 (n=24)
GSE39395 (n=24)
Molecular and clinical subtype characterization
SFM
four scRNA-seq validation
GSE81861 (CRC, n=363)
GSE103322 (HNSCC, n=5502)
GSE72056 (Melanoma, N=4054)
GSE75688 (BRCA, n=515)
Enriched functions & pathways analysis
Compare with existing subtypes
Survival analysis
Gut microbiota analysis
Gene signatures
Nearest-Template Prediction (NTP) algorithm
Drug response prediction
EMT, stem-like, serrated CRC colon crypt derivation
Drug response
GSE62080 FOLFIRI (n=21)
GSE19860 GSE28702 GSE69675 FOLFOX (n=142)
GSE72970 GSE104645 FOLFOX with survival (n=158)
GSE5851 PRJEB34338 Cetuximab (n=95)
Immune microenvironment
Cell fraction
Neoantigen
Immune signatures
PD1, PDL1, CTLA4
Immunotherapy prediction
b
GSE39395
Tumor epi
Immune
FAP
GSE39396
Tumor Epi
Immue
FAP
Endo
GSE62080
FOLFIRI response
FOLFIRI no response
317 probesets
−1 0 1


c
GSE81861 CRC
cell.type
Bcell
Endothelial
Fibroblast
Macrophage
Epithelial
Tcell
GSE103322 HNSCC
cell.type
B cell
Endothelial
Fibroblast
Macrophage
Malignant
Dendritic
T cell
Mast
GSE72056 melanoma
cell.type
B cell
Endothelial
CAF
Macrophage
Malignant
NK
T cell
GSE75688 BRCA
cell type
Tumor
Stromal
Bcell
Myeloid
Tcell
d
GSE81861 CRC
SFM.signature score
1.00
0.75
0.50
0.25
0.00
Fibroblast
Macrophage
Endothelial
Epithelial
Bcell
Tcell
e
GSE103322 HNSCC
SFM.signature score
1.00
0.75
0.50
0.25
0.00
Endothelial
Fibroblast
Macrophage
Malignant
Dendritic
Mast
B cell
T cell
f
GSE72056 melanoma
SFM.signature score
1.00
0.75
0.50
0.25
0.00
CAF
Endothelial
Malignant
Macrophage
NK
B cell
T cell
g
GSE75688 BRCA
SFM.signature score
1.00
0.75
0.50
0.25
0.00
Stromal
Myeloid
Tcell
Tumor
Bcell



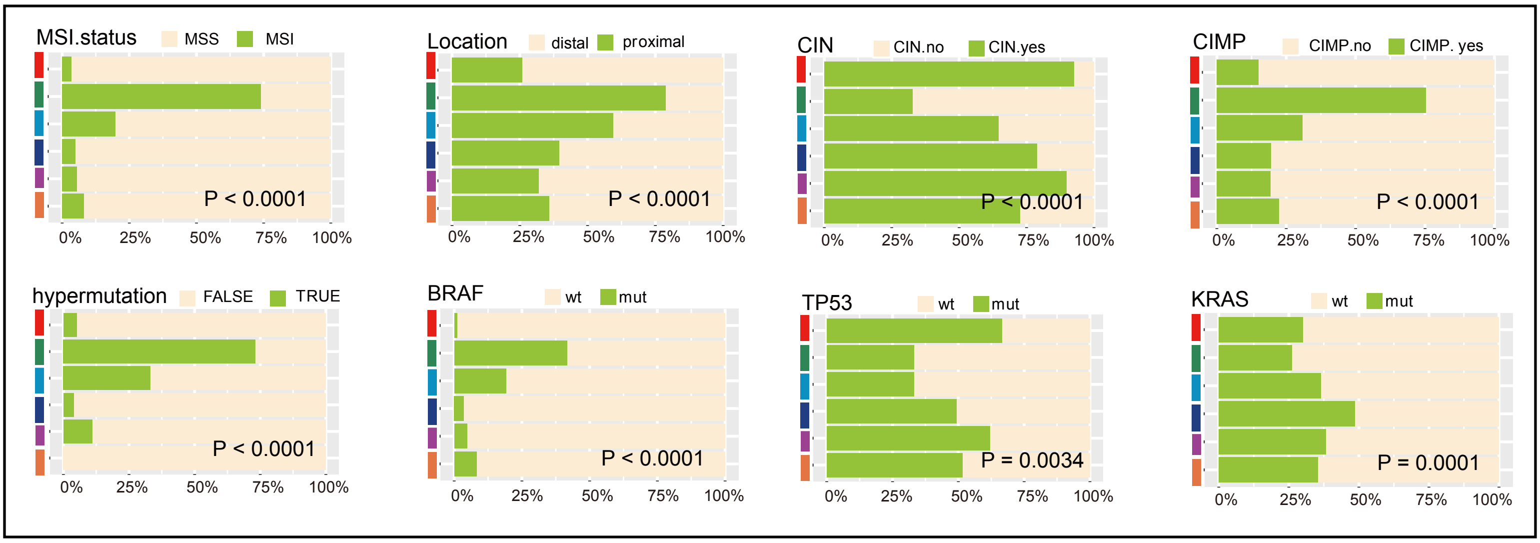
h
Gap statistic (k)
0.70
0.69
0.68
0.67
3 4 5 6 7 8
Number of clusters k
Cluster Dendrogram
−1 0 1
i
Gap statistic (k)
0.705
0.700
0.695
3 4 5 6 7 8
Number of clusters k
Cluster Dendrogram
−1 0 1
j
Gap statistic (k)
0.54
0.52
0.50
3 4 5 6 7 8
Number of clusters k
Cluster Dendrogram
−1 0 1
k
Gap statistic (k)
0.42
0.40
0.38
0.36
3 4 5 6 7 8
Number of clusters k
Cluster Dendrogram
−1 0 1
l
Gap statistic (k)
0.615
0.610
0.605
0.600
0.595
0.590
3 4 5 6 7 8
Number of clusters k
Cluster Dendrogram
PDX.515
cluster
1 0.5 0 −0.5 −1

m



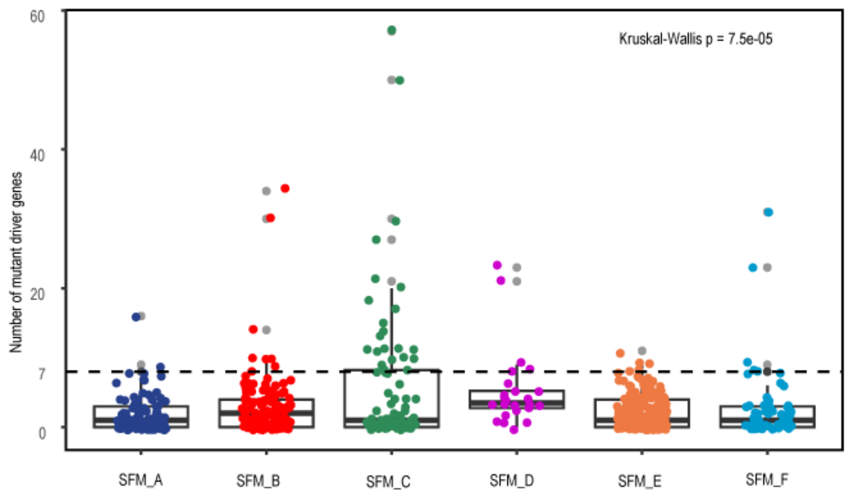
C1
C2
C3
C4
C5
C6
subtype.SFM
subtype.Marisa.et.al
CMS1
CMS2
CMS3
CMS4
subtype.SFM
subtype.Guinney.et.al
CIN
Invasive
MSI/CIMP
subtype.SFM
subtype.TCGA
CCS1
CCS2
CCS3
subtype.SFM
subtype.De.Sousa.et.al
CRISA
CRISB
CRISC
CRISD
CRISE
subtype.SFM
subtype.Isella.et.al
Enterocyte/Goblet-like
Inflammatory
Stem-like
TA
subtype.SFM
subtype.Sadanandam.et.al
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F

n

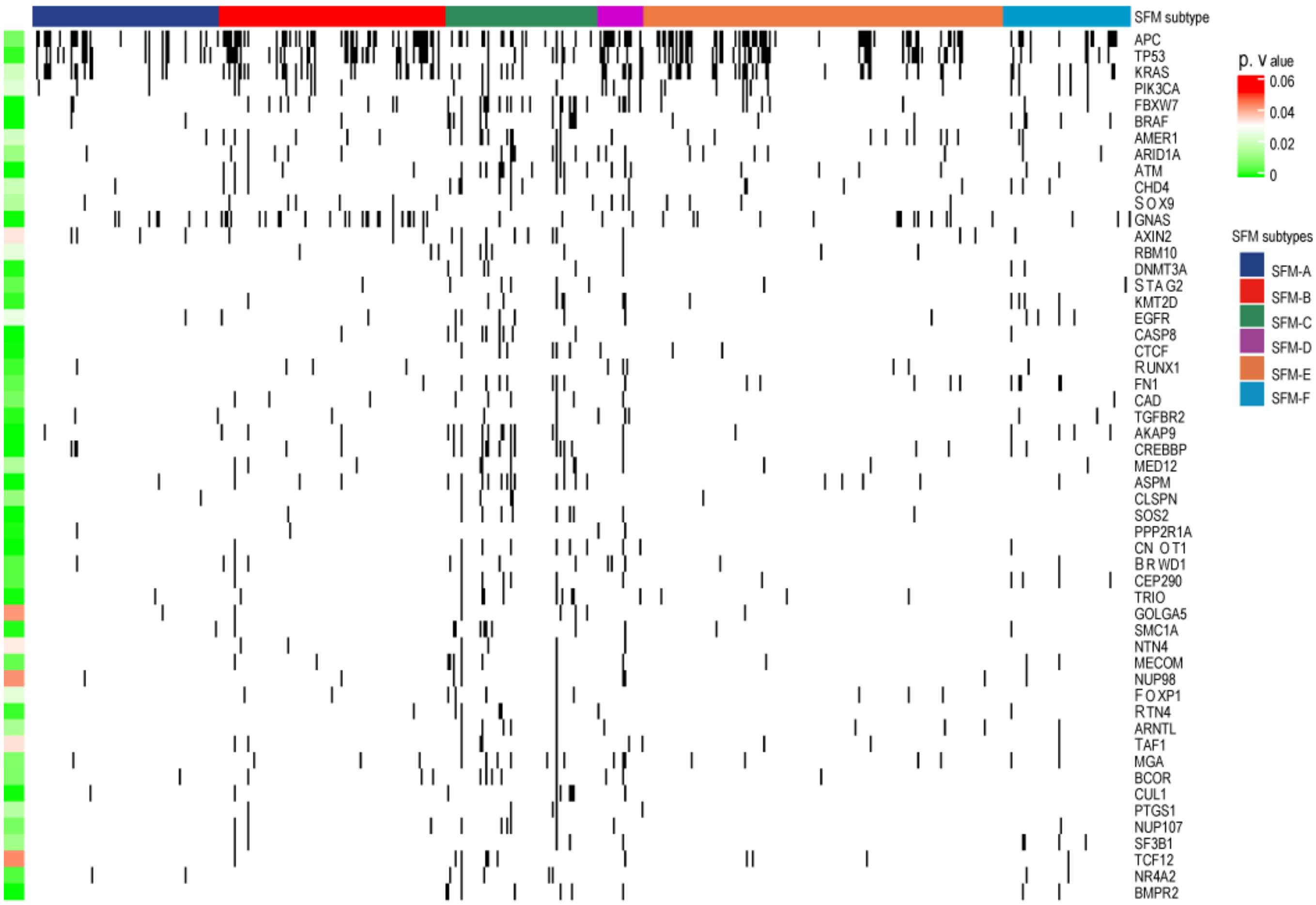


MSI.status MSS MSI
P < 0.0001
Location distal proximal
P < 0.0001
CIN CIN.no CIN.yes
P < 0.0001
CIMP CIMP.no CIMP. yes
P < 0.0001
hypermutation FALSE TRUE
P < 0.0001
BRAF wt mut
P < 0.0001
TP53 wt mut
P = 0.0034
KRAS wt mut
P = 0.0001
0% 25% 50% 75% 100%

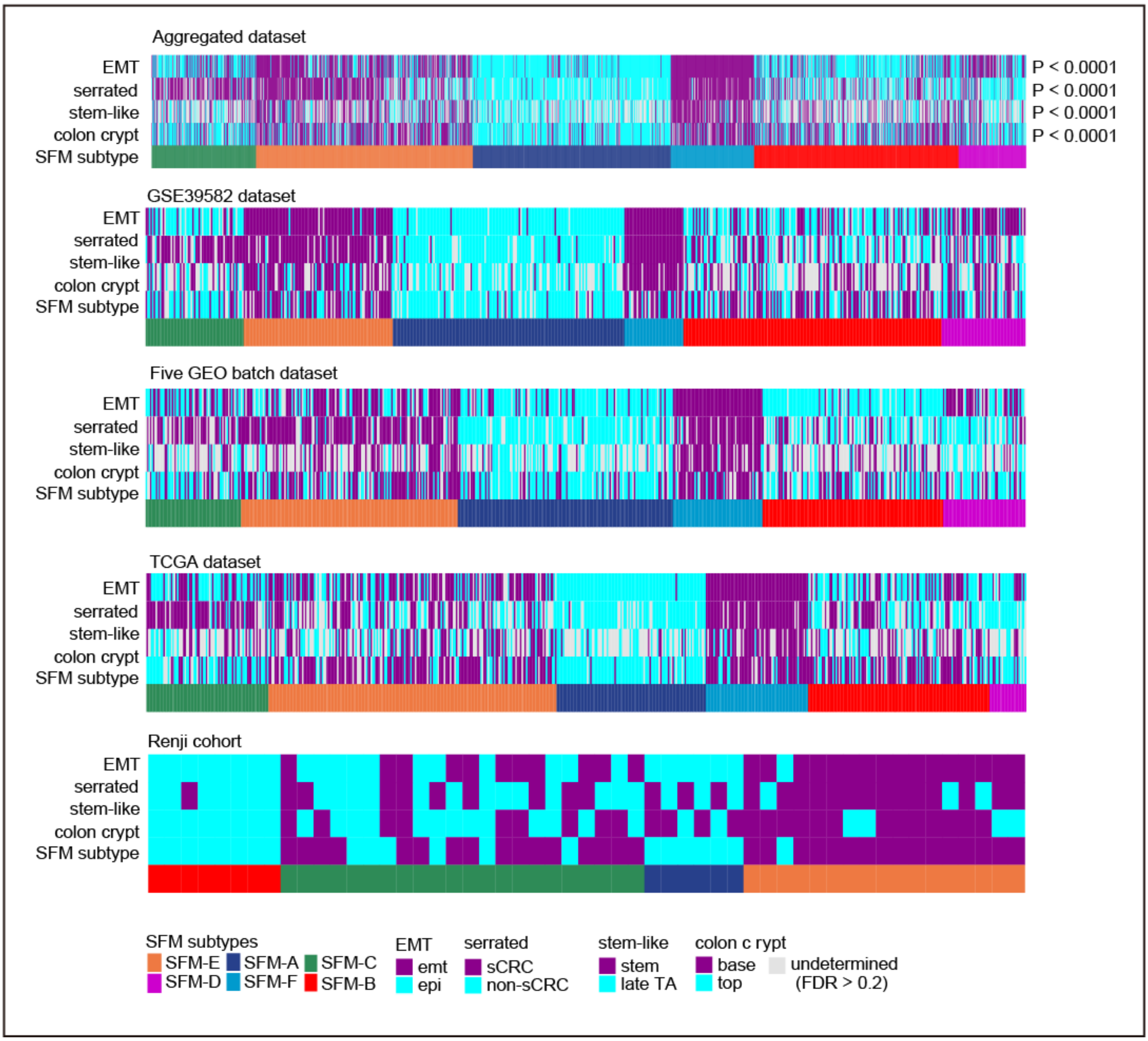
o


Kruskal-Wallis p = 7.5e-05
Number of mutant driver genes
60
40
20
7
0
SFM_A
SFM_B
SFM_C
SFM_D
SFM_E
SFM_F

p

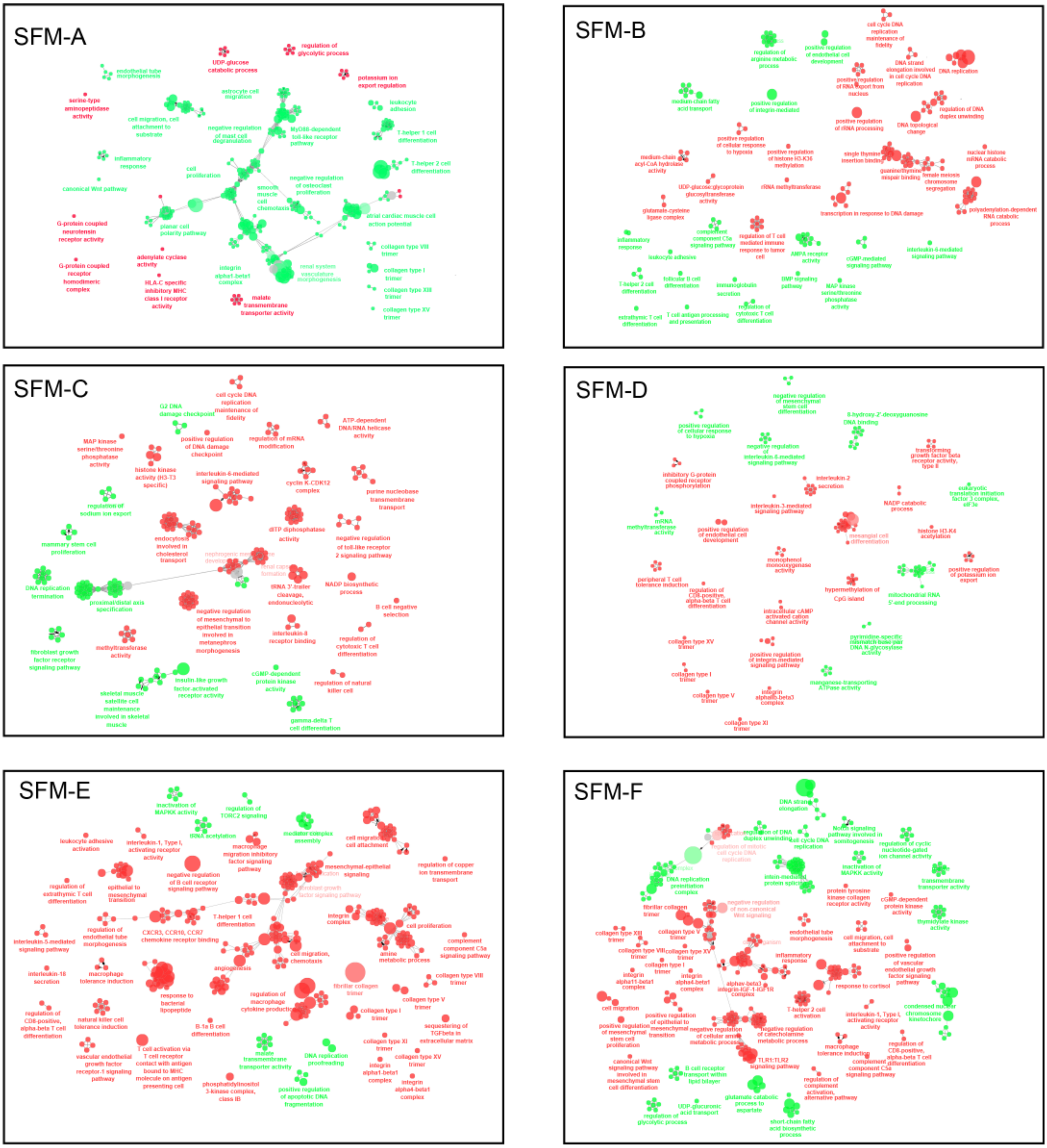

SFM subtype
APC
TP53
KRAS
PIK3CA
FBXW7
BRAF
AMER1
ARID1A
ATM
CHD4
SOX9
GNAS
AXIN2
RBM10
DNMT3A
STAG2
KMT2D
EGFR
CASP8
CTCF
RUNX1
FN1
CAD
TGFBR2
AKAP9
CREBBP
MED12
ASPM
CLSPN
SOS2
PPP2R1A
CNOT1
BRWD1
CEP290
TRIO
GOLGA5
SMC1A
NTN4
MECOM
NUP98
FOXP1
RTN4
ARNTL
TAF1
MGA
BCOR
CUL1
PTGS1
NUP107
SF3B1
TCF12
NR4A2
BMPR2
p. value
0.06
0.04
0.02
0
SFM subtypes
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F

q

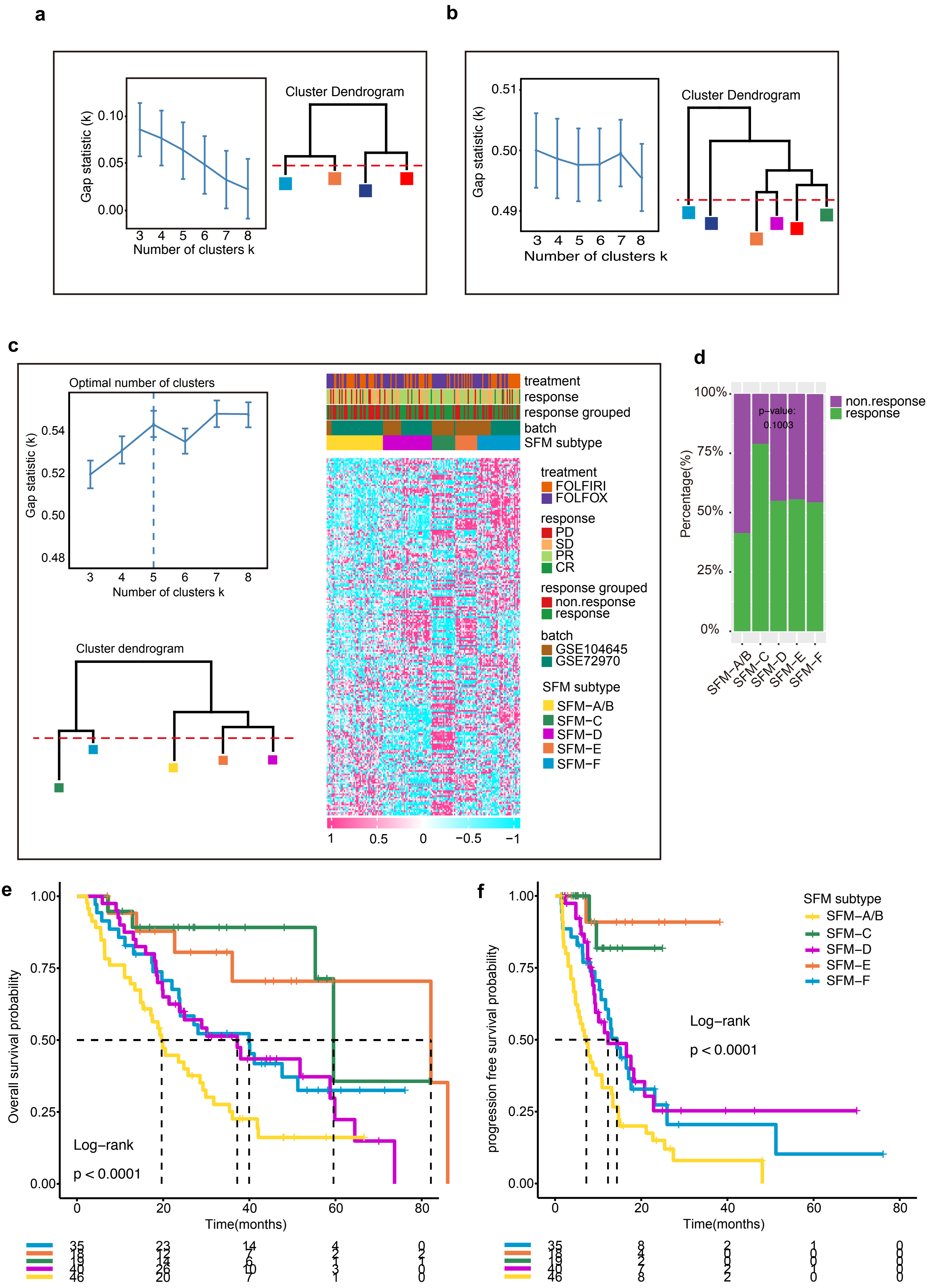


Aggregated dataset
EMT
serrated
stem-like
colon crypt
SFM subtype
P < 0.0001
P < 0.0001
P < 0.0001
P < 0.0001
GSE39582 dataset
EMT
serrated
stem-like
colon crypt
SFM subtype
Five GEO batch dataset
EMT
serrated
stem-like
colon crypt
SFM subtype
TCGA dataset
EMT
serrated
stem-like
colon crypt
SFM subtype
Renji cohort
EMT
serrated
stem-like
colon crypt
SFM subtype
SFM subtypes
SFM-E
SFM-A
SFM-C
SFM-D
SFM-F
SFM-B
EMT
emt
epi
serrated
sCRC
non-sCRC
stem-like
stem
late TA
colon c rypt
base
top
undetermined
(FDR > 0.2)

r

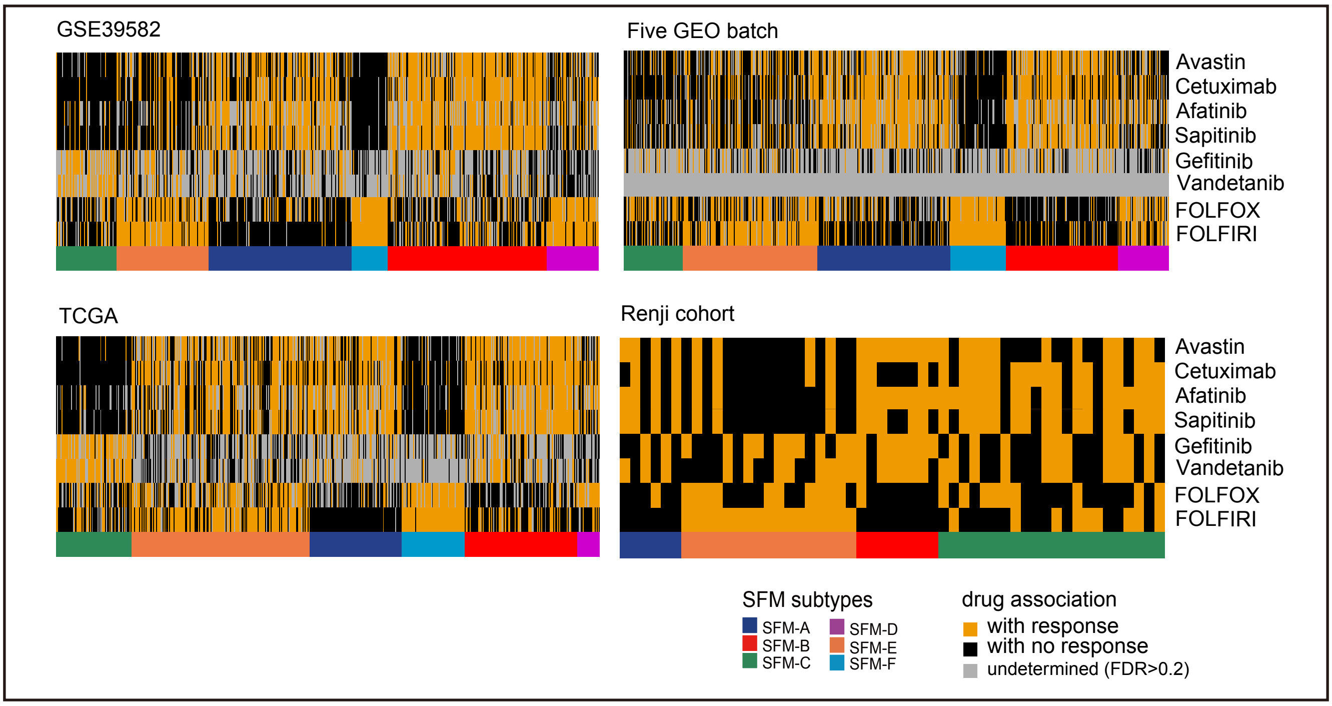


Supplementary Figure 1. Establishment of SFM subtypes and characteristics exploration. (a) Schematic workflow of SFM subtypes construction, validation and further analysis. (b) Heatmaps showing expression of SFM expression in GSE39395, GSE39396 and GSE62080, respectively. (c) Heatmaps showing expression of SFM expression in four scRNA-seq datasets. (d-g) Box plots showing SFM gene signature score based on GSVA among cell types in four scRNA-seq datasets, respectively. (h-l) K-means algorithm for molecular subtype classification in discovery and validation datasets (h, GSE39582; i, five GEO batch; j, TCGA; k, Renji cohort, l, CRC PDX). Gap statistics were plotted from K-means classification within the predetermined number of clusters (k) varying from 3 to 8 using SFM. Unsupervised hierarchical clustering displayed distinct molecular subtypes. Heatmaps showed SFM subtypes defined by SFM. (m) Sankey diagram showing how each SFM subtype contributes to previous CRC classifiers. (n) Distributions of key genomic and epigenomic markers (TP53, BRAF and KRAS, hypermutation, CIN, CIMP, MSI) and anatomical position in aggregated datasets. P value was calculated using Chi-squared test. (o) Box plots of the number of mutant CRC specific driver genes across SFM subtypes in TCGA data. (p) Landscape heatmap showing 53 out of 95 driver mutations that were significant among SFM subtypes. (q) Heatmap of critical pathological factors of SFM subtypes based on published gene signatures using the NTP algorithm. In these analyses, samples with FDR < 0.2 were regarded as significant. (r) Enriched functions and pathways of 2000 top differentially up and down-expressed genes associated with each SFM subtype, separately. The enrichment of KEGG, GO and immune system pathways were test in each subtype. The network of pathways were built using the ClueGO and CluePedia Cytoscappe apps. These pathways are functionally grouped and connected based on the kappa score. For d-g and o, box hinges represent 1st and 3rd quartiles, and middle represents the median. The short horizontal lines represent the standard deviations. The upper and lower whiskers extend from hinges up and down indicate the most extreme values that are within 1.5*IQR (interquartile range) of the respective hinge.



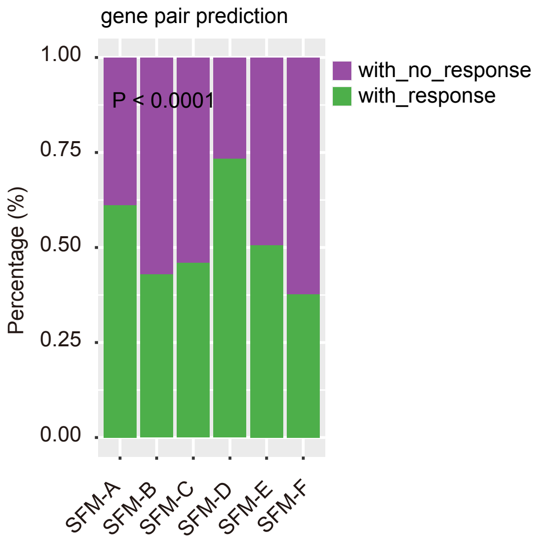
a
Cluster Dendrogram
Gap statistic (k)
Number of clusters k
b
Cluster Dendrogram
Gap statistic (k)
Number of clusters k
c
Optimal number of clusters
Gap statistic (k)
Number of clusters k
Cluster dendrogram
treatment
response
response grouped
batch
SFM subtype
treatment
FOLFIRI
FOLFOX
response
PD
SD
PR
CR
response grouped
non.response
response
batch
GSE104645
GSE72970
SFM subtype
SFM−A/B
SFM−C
SFM−D
SFM−E
SFM−F
d
Percentage(%)
non.response
response
p−value: 0.1003
SFM−A/B
SFM−C
SFM−D
SFM−E
SFM−F
e
Overall survival probability
Log−rank
p < 0.0001
Time(months)
f
progression free survival probability
SFM subtype
SFM−A/B
SFM−C
SFM−D
SFM−E
SFM−F
Log−rank
p < 0.0001
Time(months)

g



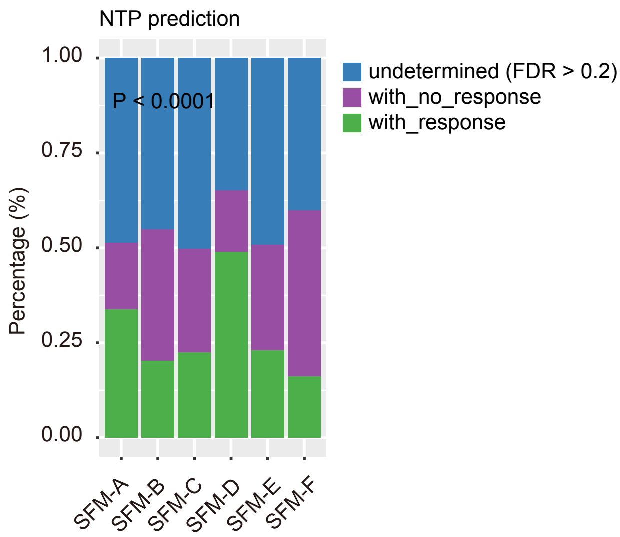
GSE39582
Five GEO batch
TCGA
Renji cohort
Avastin
Cetuximab
Afatinib
Sapitinib
Gefitinib
Vandetanib
FOLFOX
FOLFIRI
SFM subtypes
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F
drug association
with response
with no response
undetermined (FDR>0.2)

h



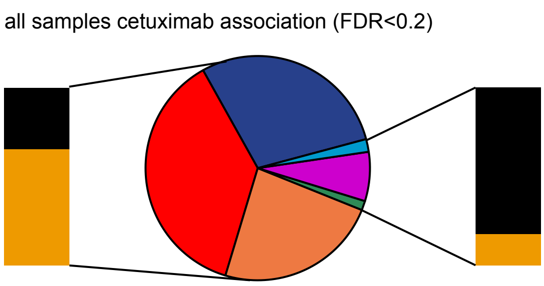
gene pair prediction
with_no_response
with_response
P < 0.0001
Percentage (%)
1.00
0.75
0.50
0.25
0.00
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F

i



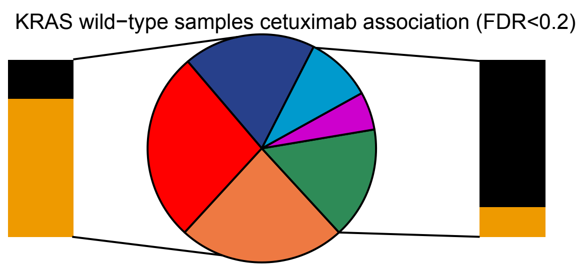
NTP prediction
undetermined (FDR > 0.2)
with_no_response
with_response
P < 0.0001
Percentage (%)
1.00
0.75
0.50
0.25
0.00
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F

j



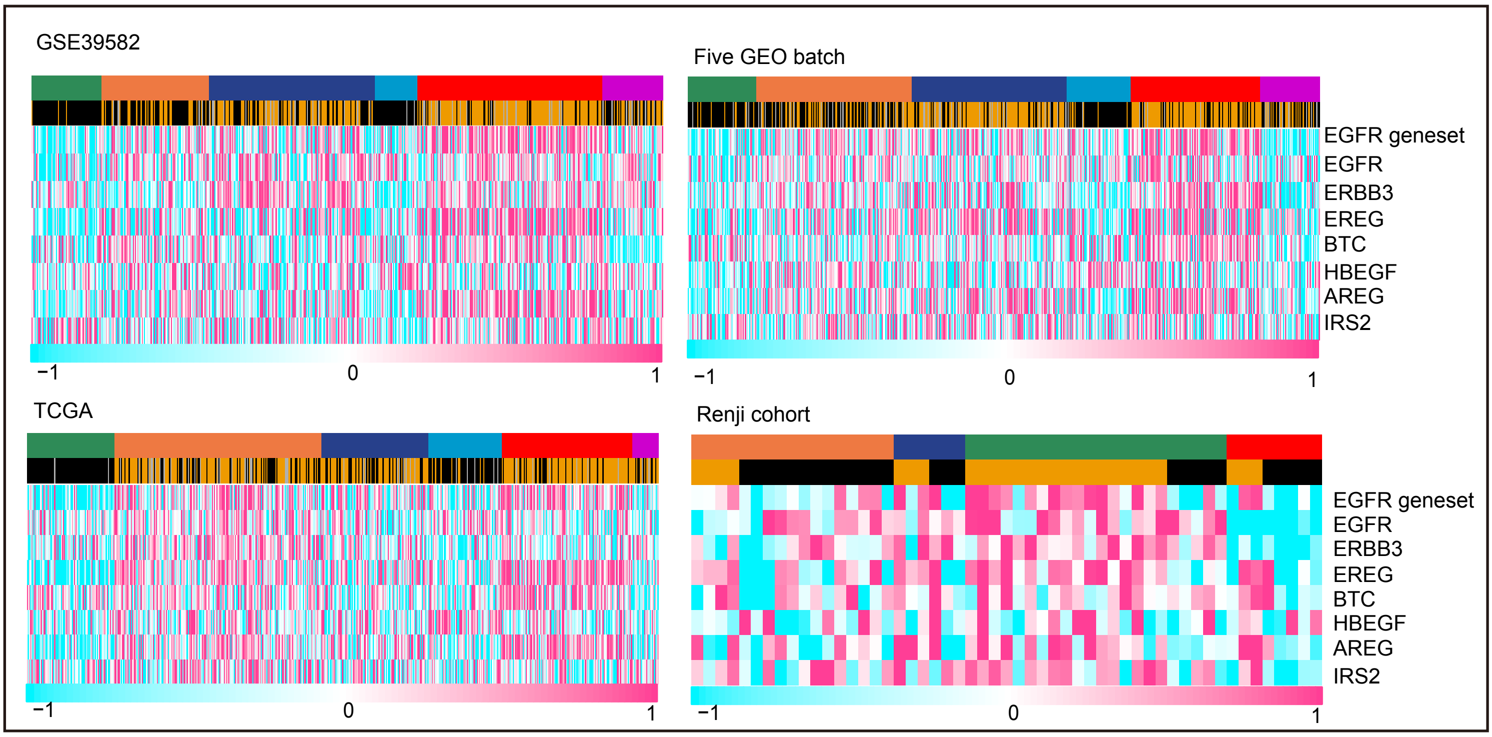
all samples cetuximab association (FDR<0.2)

k

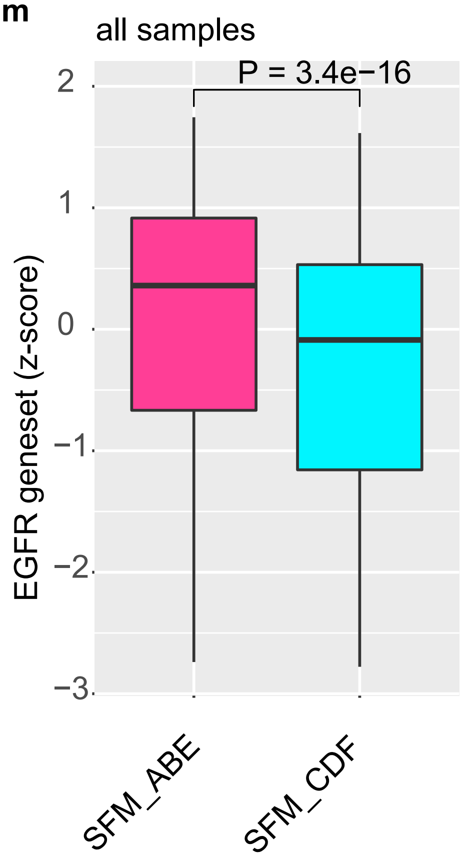


KRAS wild−type samples cetuximab association (FDR<0.2)

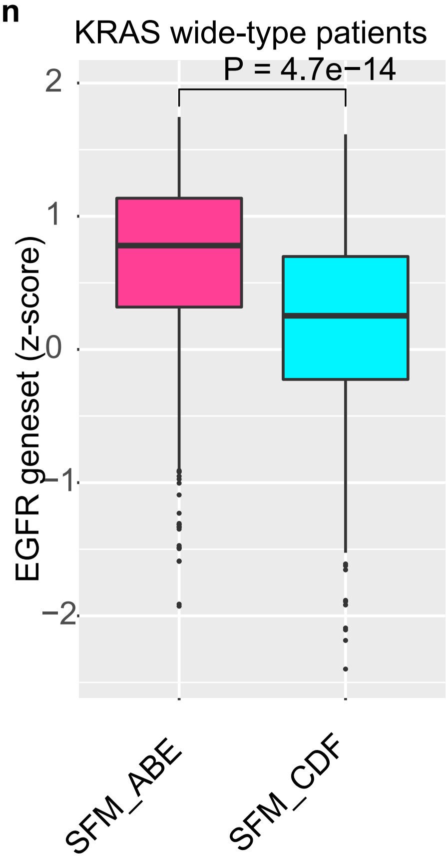
l


GSE39582
Five GEO batch
TCGA
Renji cohort
EGFR geneset
EGFR
ERBB3
EREG
BTC
HBEGF
AREG
IRS2
−1
0
1

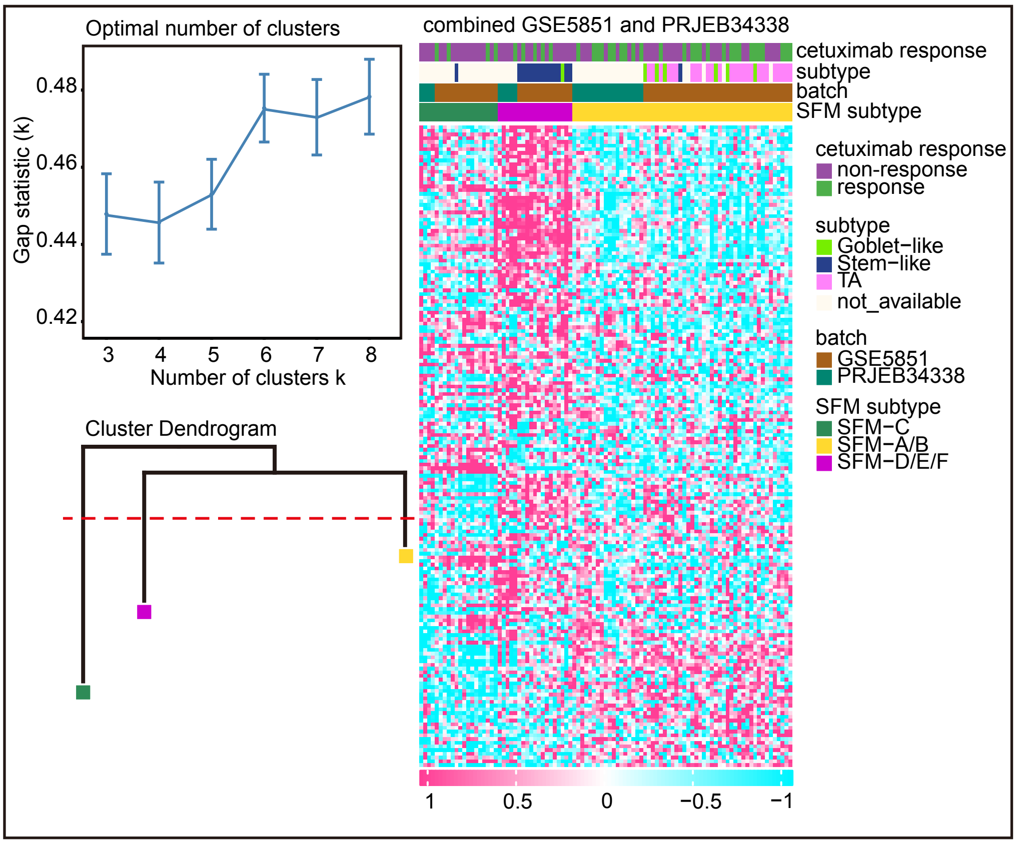
m


all samples
P = 3.4e−16
EGFR geneset (z-score)
2
1
0
−1
−2
−3
SFM_ABE
SFM_CDF

n

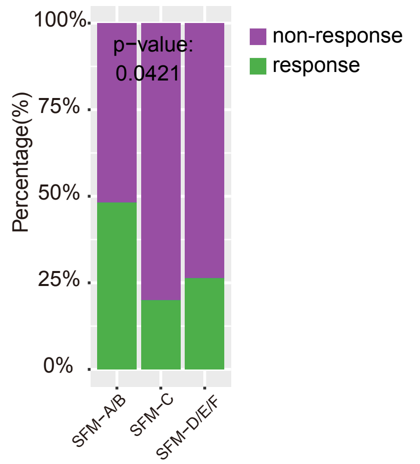

KRAS wide-type patients
P = 4.7e−14
EGFR geneset (z-score)
2
1
0
−1
−2
SFM_ABE
SFM_CDF

o



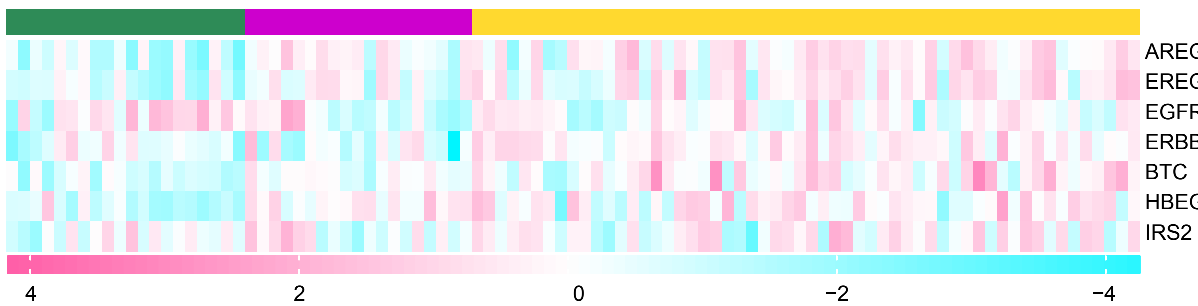
Optimal number of clusters
Gap statistic (k)
0.48
0.46
0.44
0.42
3
4
5
6
7
8
Number of clusters k
Cluster Dendrogram
combined GSE5851 and PRJEB34338
cetuximab response
subtype
batch
SFM subtype
cetuximab response
non−response
response
subtype
Goblet−like
Stem−like
TA
not_available
batch
GSE5851
PRJEB34338
SFM subtype
SFM−C
SFM−A/B
SFM−D/E/F
1
0.5
0
−0.5
−1

p



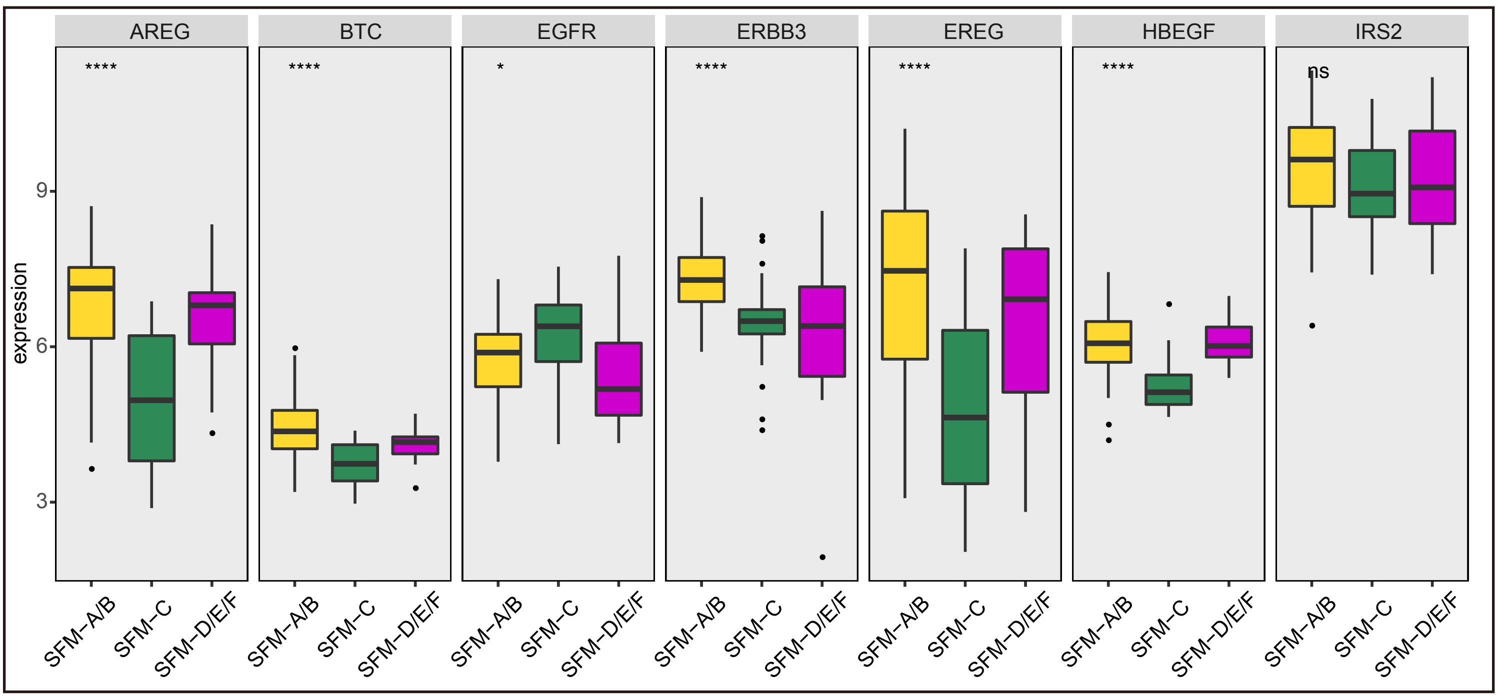
100%
75%
50%
25%
0%
Percentage(%)
p−value:
0.0421
non-response
response
SFM-A/B
SFM-C
SFM-D/E/F

q



AREG
EREG
EGFR
ERBB3
BTC
HBEGF
IRS2
4
2
0
−2
−4

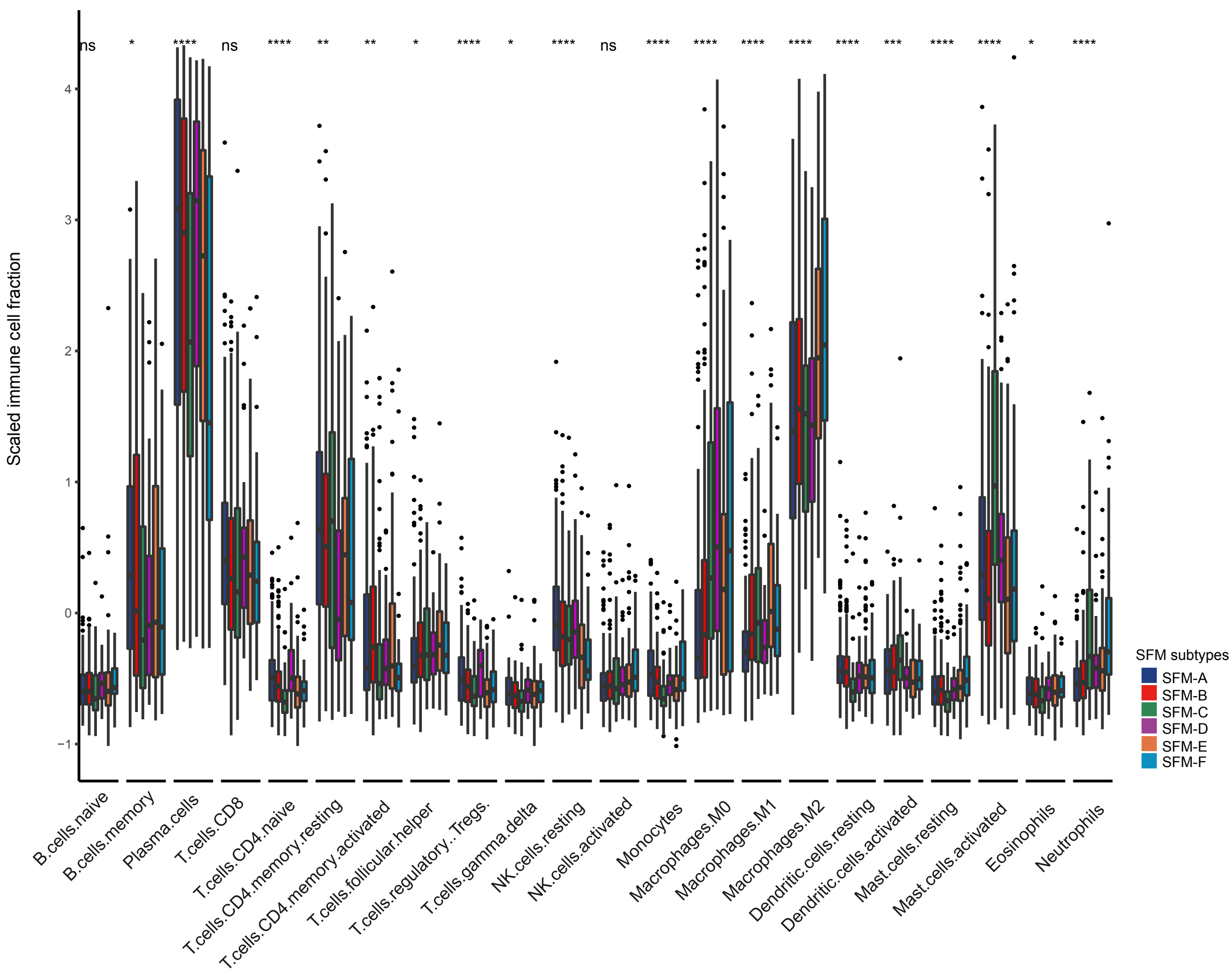
r



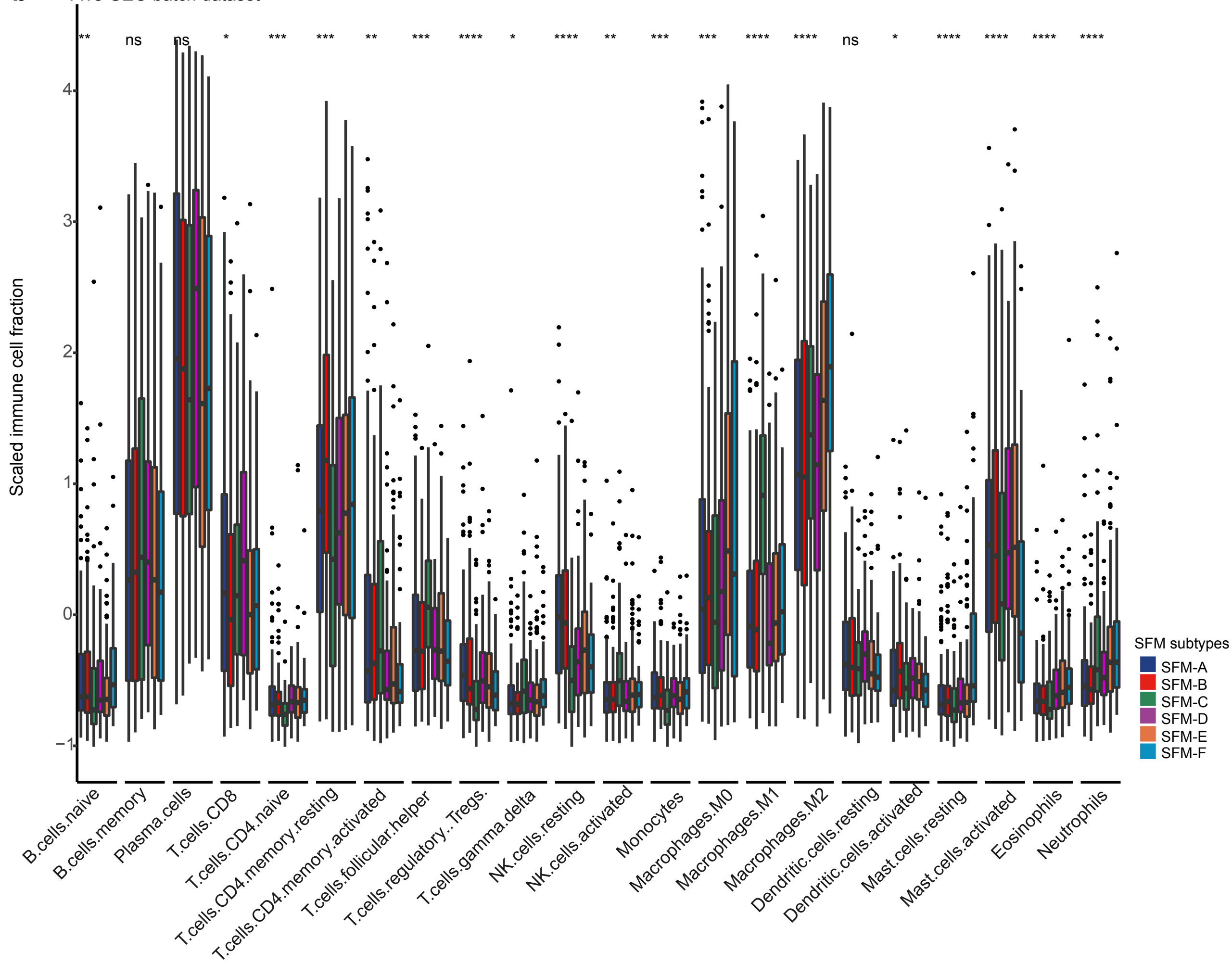
AREG
BTC
EGFR
ERBB3
EREG
HBEGF
IRS2
****
****
*
****
****
****
ns
expression
9
6
3
SFM−A/B
SFM−C
SFM−D/E/F

Supplementary Figure 2. Distinct sensitivities among SFM subtypes to FOLFIRI and FOLFOX chemotherapy regimens and EGFR inhibitors. (a-b) K-means algorithm for molecular subtype classification in GSE62080 (n = 21, a) and combined GSE19860, GSE28702 and GSE69657 (n = 142, b). Gap statistics were plotted from K-means classification within the predetermined number of clusters (k) varying from 3 to 8 using SFM. Unsupervised hierarchical clustering displayed distinct molecular subtypes. (c) K-means algorithm for molecular subtype classification in combined GSE104645 and GSE72970 (n = 158). (d) Stacked plot showing the proportion of responders and non-responders amongst SFM subtypes in in combined GSE104645 and GSE72970 dataset. P value was calculated using Chi-squared test. (e-f) Kaplan-Meier plots of SFM subtypes in combined GSE104645 and GSE72970 dataset for OS (e) and progression free survival (PFS, f). The tick marks on the Kaplan-Meier curves indicated the censored patients. The differences between the curves were determined by the log-rank test. (g) Heatmaps showing association of individual CRC patient's response to FOLFIRI, FOLFOX and EGFR inhibitors based on published gene signatures using NTP algorithm. In these analyses, samples with FDR < 0.2 were regarded as significant. (h-i) Stacked plots showing the distribution of responders and non-responders among SFM-subtypes based on two different approaches for FOLFOX response prediction, five gene pair prediction (h) and NTP (i). P value was calculated using Chi-squared test. (j-k) Cetuximab response association among SFM subtypes. Bar-of-pie charts showing the distribution of SFM subtypes in terms of cetuximab response after combining SFM A-B-E as one compared with SFM C-D-F in all CRC cases (j) and only in KRAS wild-type cases (k). (l) Heatmaps showing response to cetuximab, quantified expression of gene set of the EGFR pathway activity by applying GSVA and expression of individual genes of the EGFR gene set among SFM subtypes in training and validation datasets. (m-n) Box plots of the EGFR gene set across SFM subtypes after combining SFM A-B-E as one compared with SFM C-D-F in all CRC cases (m) and only in KRAS wild-type cases (n). (o) K-means algorithm for molecular subtype classification in combined GSE5851 and PRJEB34338 treated with cetuximab (n = 95). (d) Stacked plot showing the proportion of responders and non-responders amongst SFM subtypes in combined GSE5851 and PRJEB34338 dataset. P value was calculated using Chi-squared test. (q) Heatmaps showing the expression profiles of the EGFR associated genes among SFM subtypes in combined GSE5851 and PRJEB34338 dataset. (r) Box plots comparing the expression of EGFR associated genes among SFM subtypes in combined GSE5851 and PRJEB34338 dataset. The statistical difference was examined using the Kruskal-Wallis test. (ns, P > 0.05; *, P <= 0.05; **, P <= 0.01; ***, P <= 0.001; ****, P <= 0.0001). For m, n and r, box hinges represent 1st and 3rd quartiles, and middle represents the median. The short horizontal lines represent the standard deviations. The upper and lower whiskers extend from hinges up and down indicate the most extreme values that are within 1.5*IQR (interquartile range) of the respective hinge.

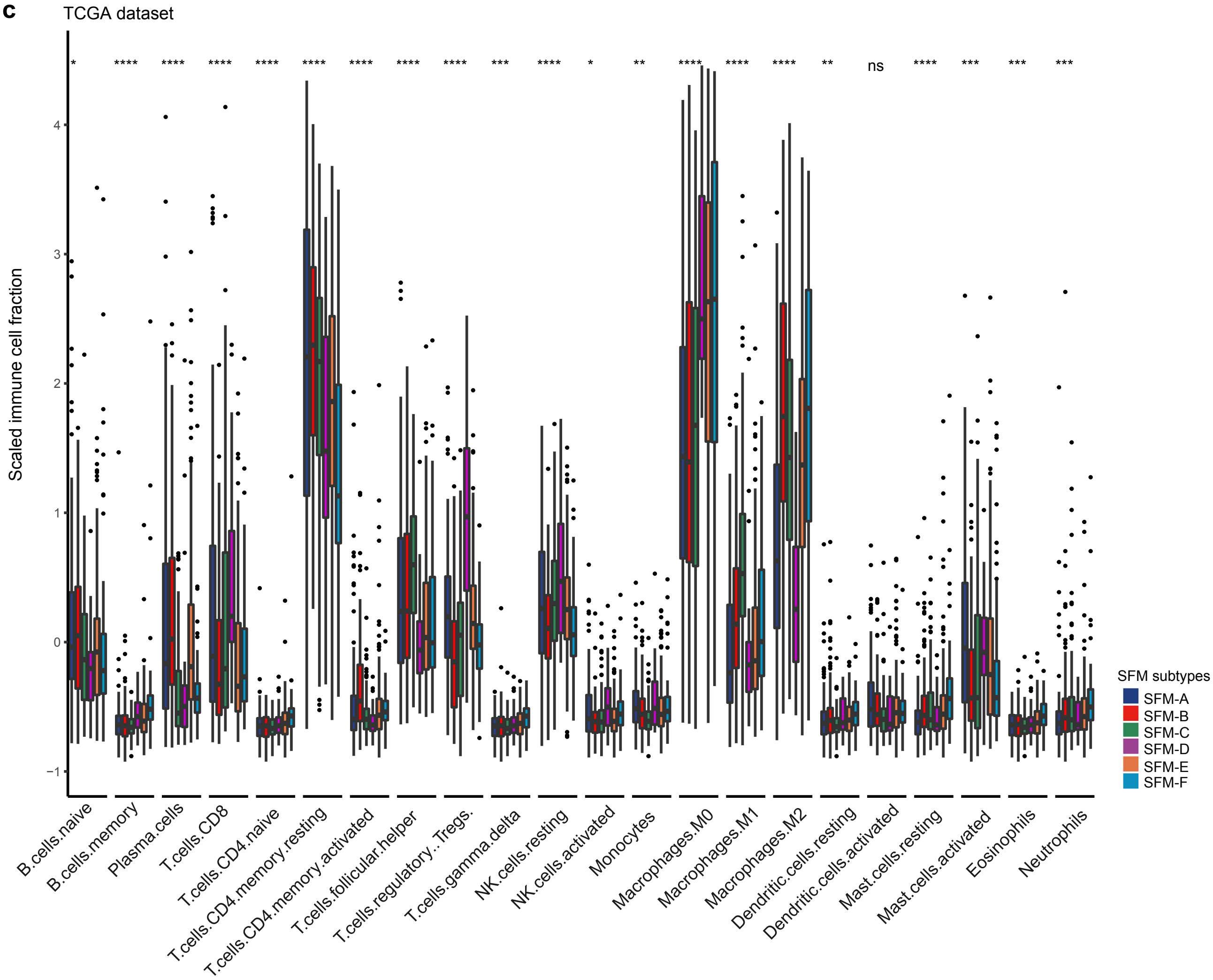
a


GSE39582 dataset
Scaled immune cell fraction
ns * **** ns **** ** ** * **** * **** ns **** **** **** **** **** *** **** **** * ****
SFM subtypes
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F
B.cells.naive
B.cells.memory
Plasma.cells
T.cells.CD8
T.cells.CD4.naive
T.cells.CD4.memory.resting
T.cells.CD4.memory.activated
T.cells.follicular.helper
T.cells.regulatory..Tregs.
T.cells.gamma.delta
NK.cells.resting
NK.cells.activated
Monocytes
Macrophages.M0
Macrophages.M1
Macrophages.M2
Dendritic.cells.resting
Dendritic.cells.activated
Mast.cells.resting
Mast.cells.activated
Eosinophils
Neutrophils

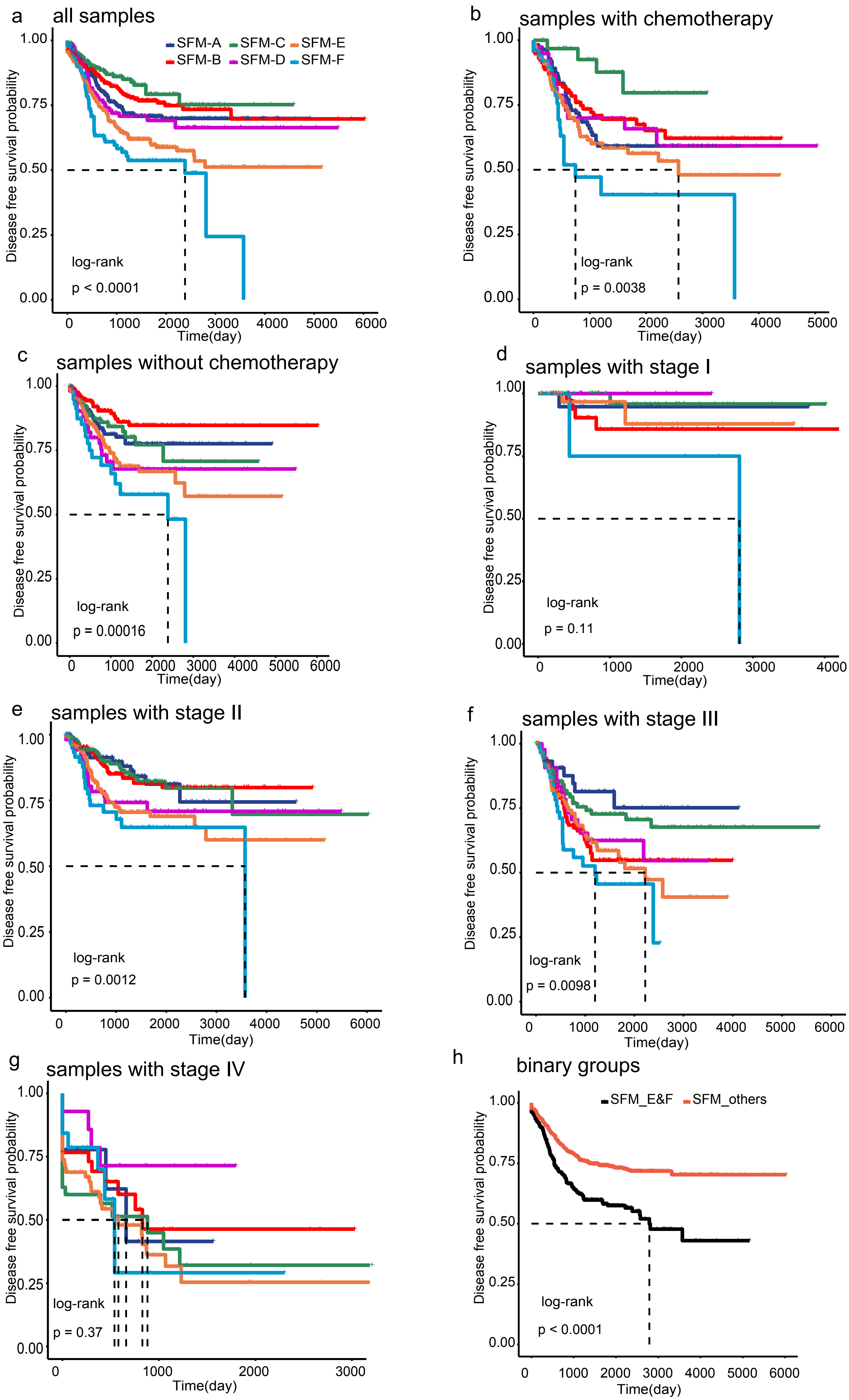
b

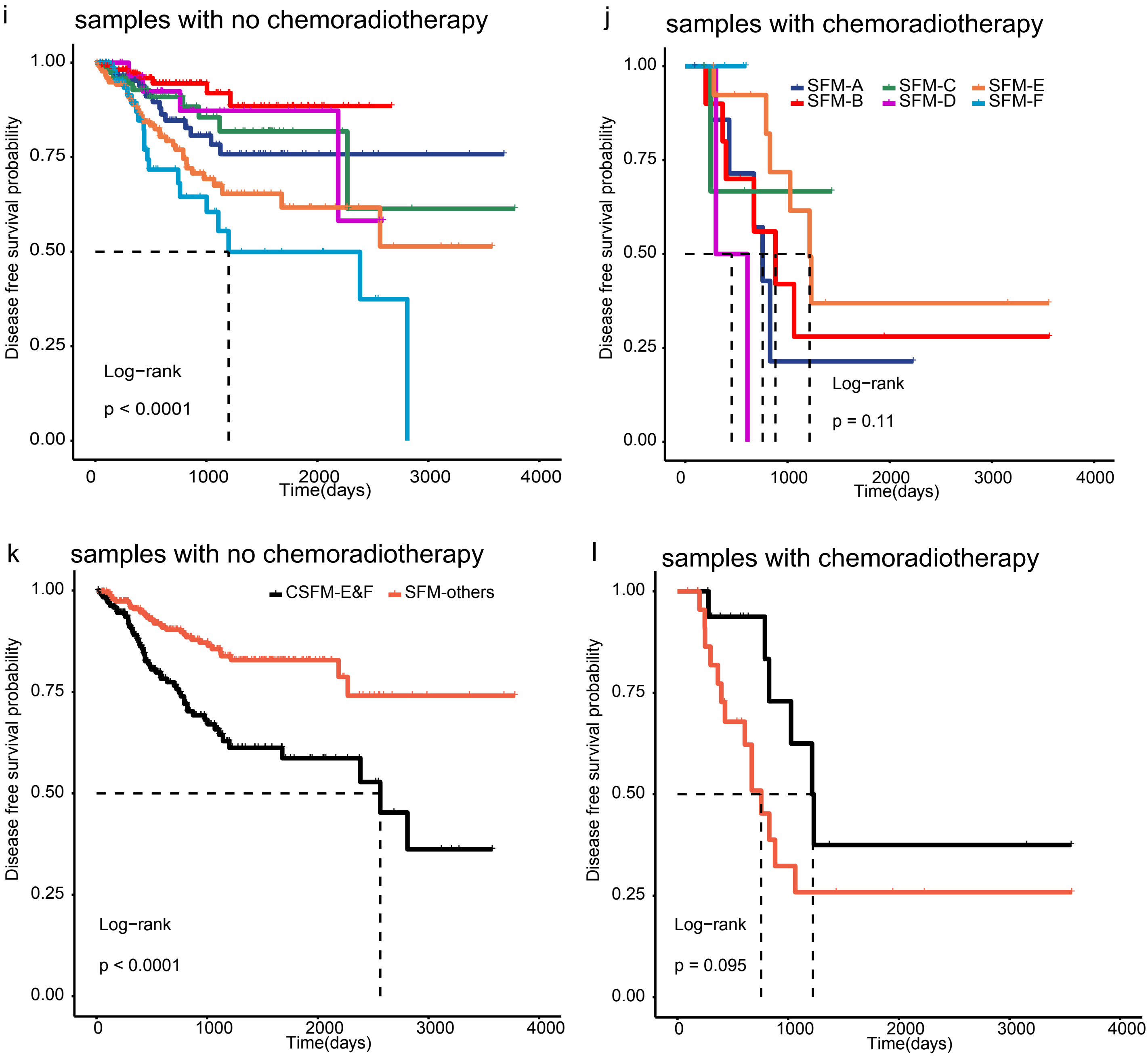

Five GEO batch dataset
Scaled immune cell fraction
** ns ns * *** *** ** *** **** * **** ** *** *** **** **** ns * **** **** **** ****
SFM subtypes
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F
B.cells.naive
B.cells.memory
Plasma.cells
T.cells.CD8
T.cells.CD4.naive
T.cells.CD4.memory.resting
T.cells.CD4.memory.activated
T.cells.follicular.helper
T.cells.regulatory..Tregs.
T.cells.gamma.delta
NK.cells.resting
NK.cells.activated
Monocytes
Macrophages.M0
Macrophages.M1
Macrophages.M2
Dendritic.cells.resting
Dendritic.cells.activated
Mast.cells.resting
Mast.cells.activated
Eosinophils
Neutrophils

c


TCGA dataset
Scaled immune cell fraction
* **** **** **** **** **** **** **** **** *** **** * ** **** **** **** ** ns **** *** *** ***
4
3
2
1
0
−1
B.cells.naive
B.cells.memory
Plasma.cells
T.cells.CD8
T.cells.CD4.naive
T.cells.CD4.memory.resting
T.cells.CD4.memory.activated
T.cells.follicular.helper
T.cells.regulatory..Tregs.
T.cells.gamma.delta
NK.cells.resting
NK.cells.activated
Monocytes
Macrophages.M0
Macrophages.M1
Macrophages.M2
Dendritic.cells.resting
Dendritic.cells.activated
Mast.cells.resting
Mast.cells.activated
Eosinophils
Neutrophils
SFM subtypes
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F

Supplementary Figure 3. Estimate immune cells filtration using CIBERSORT. The fraction of immune cells were plotted using box plot across SFM subtypes (a, GSE39582; b, Five GEO batch; c, TCGA). The statistical difference was examined using the Kruskal-Wallis test. (ns, P > 0.05; *, P <= 0.05; **, P <= 0.01; ***, P <= 0.001; ****, P <= 0.0001). Box hinges represent 1st and 3rd quartiles, and middle represents the median. The short horizontal lines represent the standard deviations. The upper and lower whiskers extend from hinges up and down indicate the most extreme values that are within 1.5*IQR (interquartile range) of the respective hinge.

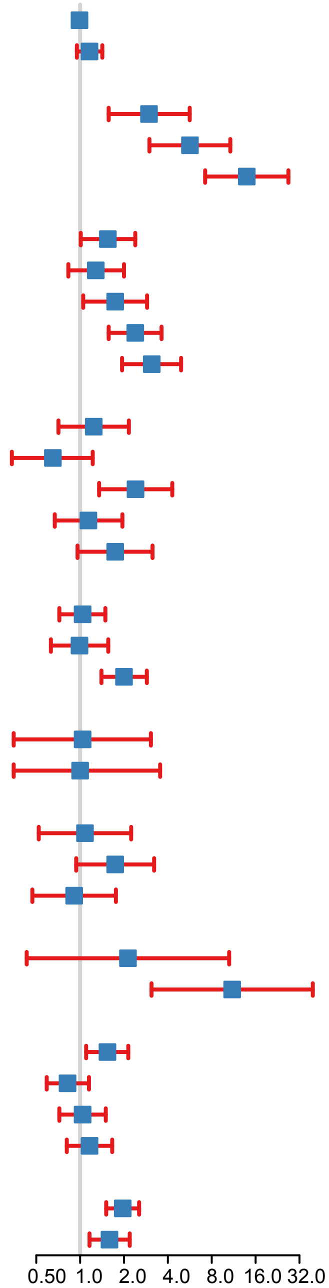

a
all samples
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F
Disease free survival probability
log-rank
p < 0.0001
Time(day)
b
samples with chemotherapy
log-rank
p = 0.0038
c
samples without chemotherapy
log-rank
p = 0.00016
d
samples with stage I
log-rank
p = 0.11
e
samples with stage II
log-rank
p = 0.0012
f
samples with stage III
log-rank
p = 0.0098
g
samples with stage IV
log-rank
p = 0.37
h
binary groups
SFM_E&F
SFM_others
log-rank
p < 0.0001



i
samples with no chemoradiotherapy
Disease free survival probability
1.00
0.75
0.50
0.25
0.00
Log−rank
p < 0.0001
0
1000
2000
3000
4000
Time(days)
j
samples with chemoradiotherapy
SFM-A
SFM-B
SFM-C
SFM-D
SFM-E
SFM-F
Disease free survival probability
Log−rank
p = 0.11
Time(days)
k
samples with no chemoradiotherapy
CSFM-E&F
SFM-others
Disease free survival probability
Log−rank
p < 0.0001
Time(days)
l
samples with chemoradiotherapy
Disease free survival probability
Log−rank
p = 0.095
Time(days)

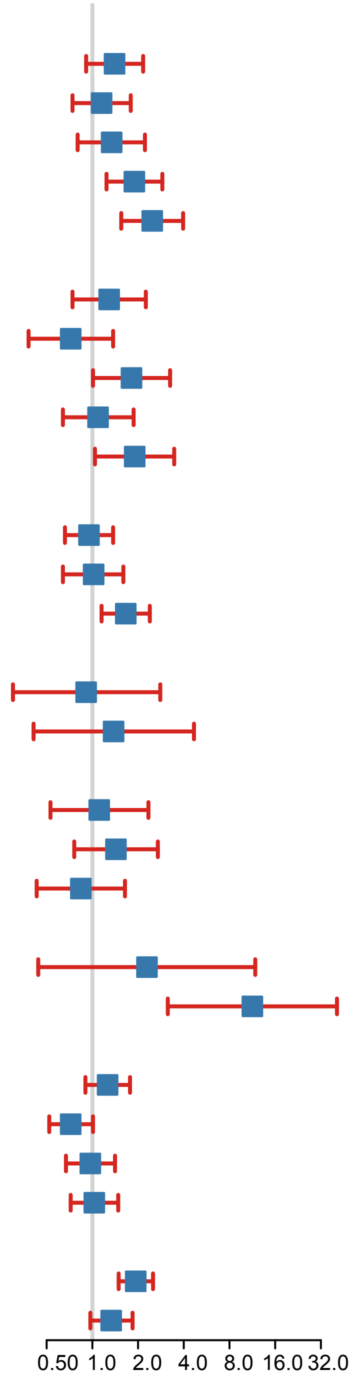
m

Univariate risk factors	HR	95%CI	P value
age	0.99	(0.99 − 1.00)	0.0966
gender	1.16	(0.95 − 1.42)	0.1395
stage.I (ref)	1.00		
stage.II	2.97	(1.57 − 5.65)	0.0009
stage.III	5.67	(2.99 − 10.73)	<0.00001
stage.IV	13.92	(7.21 − 26.87)	<0.00001
SFM_C (ref)	1.00		
SFM_A	1.55	(1.01 − 2.39)	0.0455
SFM_B	1.28	(0.83 − 2.00)	0.2670
SFM_D	1.74	(1.05 − 2.88)	0.0319
SFM_E	2.39	(1.57 − 3.62)	<0.00001
SFM_F	3.10	(1.94 − 4.93)	<0.00001
C3.subtype.Marisa.et.al (ref)	1.00		
C1.subtype.Marisa.et.al	1.24	(0.71 − 2.16)	0.4453
C2.subtype.Marisa.et.al	0.65	(0.34 − 1.22)	0.1801
C4.subtype.Marisa.et.al	2.40	(1.35 − 4.29)	0.0030
C5.subtype.Marisa.et.al	1.14	(0.67 − 1.95)	0.6220
C6.subtype.Marisa.et.al	1.74	(0.96 − 3.14)	0.0677
CMS1.subtype.Guinney.et.al (ref)	1.00		
CMS2.subtype.Guinney.et.al	1.04	(0.72 − 1.49)	0.8453
CMS3.subtype.Guinney.et.al	0.99	(0.63 − 1.56)	0.9785
CMS4.subtype.Guinney.et.al	2.00	(1.40 − 2.87)	0.0002
MSI.CIMP.TCGA (ref)	1.00		
CIN.TCGA	1.04	(0.35 − 3.06)	0.9478
Invasive.TCGA	1.00	(0.35 − 3.54)	0.8625
Enterocyte.Goblet−like.subtype.Sadanandam.et.al (ref)	1.11		
Inflammatory.subtype.Sadanandam.et.al	1.08	(0.52 − 2.24)	0.8295
Stem−like.subtype.Sadanandam.et.al	1.74	(0.94 − 3.22)	0.0778
TA.subtype.Sadanandam.et.al	0.91	(0.47 − 1.76)	0.7880
CCS1.subtype.De.Sousa.et.al (ref)	1.00		
CCS2.subtype.De.Sousa.et.al	2.13	(0.43 − 10.54)	0.3555
CCS3.subtype.De.Sousa.et.al	11.05	(3.09 − 39.51)	0.0002
CRISA.subtype.Isella.et.al (ref)	1.00		
CRISB.subtype.Isella.et.al	1.54	(1.10 − 2.14)	0.0119
CRISC.subtype.Isella.et.al	0.82	(0.59 − 1.15)	0.2487
CRISD.subtype.Isella.et.al	1.04	(0.72 − 1.50)	0.8479
CRISE.subtype.Isella.et.al	1.16	(0.81 − 1.66)	0.4143
low.oncotype.DX (ref)	1.00		
high.oncotype.DX	1.96	(1.51 − 2.54)	<0.00001
intermediate.oncotype.DX	1.59	(1.16 − 2.19)	0.0043



n

Multivariate risk factors (adjusted by age, gender and AJCC stage)	HR	95%CI	P value
SFM_C (ref)	1.00		
FSM_A	1.40	0.91 − 2.16	0.1277
SFM_B	1.15	0.74 − 1.79	0.5392
SFM_D	1.34	0.80 − 2.22	0.2649
SFM_E	1.89	1.24 − 2.89	0.0031
SFM_F	2.48	1.55 − 3.96	0.0001
C3.subtype.Marisa.et.al (ref)	1.00		
C1.subtype.Marisa.et.al	1.29	0.74 − 2.25	0.3731
C2.subtype.Marisa.et.al	0.72	0.38 − 1.37	0.3183
C4.subtype.Marisa.et.al	1.81	1.01 − 3.25	0.0462
C5.subtype.Marisa.et.al	1.09	0.64 − 1.87	0.7399
C6.subtype.Marisa.et.al	1.90	1.04 − 3.46	0.0364
CMS1.subtype.Guinney.et.al (ref)	1.00		
CMS2.subtype.Guinney.et.al	0.95	0.66 − 1.37	0.7771
CMS3.subtype.Guinney.et.al	1.02	0.64 − 1.60	0.9473
CMS4.subtype.Guinney.et.al	1.66	1.15 − 2.39	0.0063
MSI.CIMP.TCGA (ref)	1.00		
CIN.TCGA	0.91	0.3 − 2.8	0.8737
Invasive.TCGA	1.38	0.41 − 4.67	0.6077
Enterocyte/Goblet−like.subtype.Sadanandam.et.al (ref)	1.00		
Inflammatory.subtype.Sadanandam.et.al	1.11	0.53 − 2.34	0.7737
Stem−like.subtype.Sadanandam.et.al	1.43	0.76 − 2.70	0.2667
TA.subtype.Sadanandam.et.al	0.84	0.43 − 1.64	0.6092
CCS1.subtype.De.Sousa.et.al (ref)	1.00		
CCS2.subtype.De.Sousa.et.al	2.29	0.44 − 11.83	0.3214
CCS3.subtype.De.Sousa.et.al	11.32	3.14 − 40.84	0.0002
CRISA.subtype.Isella.et.al (ref)	1.00		
CRISB.subtype.Isella.et.al	1.26	0.90 − 1.77	0.1784
CRISC.subtype.Isella.et.al	0.72	0.52 − 1.01	0.0556
CRISD.subtype.Isella.et.al	0.97	0.67 − 1.41	0.8738
CRISE.subtype.Isella.et.al	1.03	0.72 − 1.48	0.8577
low.oncotype.DX (ref)	1.00		
high.oncotype.DX	1.93	1.49 − 2.51	<0.00001
intermediate.oncotype.DX	1.33	0.97 − 1.84	0.0776



Supplementary Figure 4. Survival analysis across SFM subtypes using aggregated dataset. (a) Kaplan-Meier plot of DFS of all patients. (b) Kaplan-Meier plot of DFS in CRC patients with chemotherapy. (b) Kaplan-Meier plot of DFS in CRC patients without chemotherapy. (d-g) Kaplan-Meier plot of DFS in individual stage patients. (h) Kaplan-Meier plot of DFS after combining SFM E and F as one. (i-j) Kaplan-Meier plot of DFS in CRC patients with or without chemoradiotherapy. (k-l) Kaplan-Meier plot of DFS in CRC patients with or without chemoradiotherapy after combining SFM E and F as one. (l) Univariate Cox regression analysis for age, gender, AJCC stage, SFM subtypes, Oncotype DX and previous CRC classifiers. (m) Multivariate Cox regression analysis for SFM subtypes, Oncotype DX and previous CRC classifiers. These included factors were individually adjusted by age, gender and AJCC stage.

Supplementary Table 1. Data sets and variables used for correlative analyses

Dataset	Download Source	Platform	Tissue	Study design	Total	Age	Gender	stage(early/late)	Site(L/R)	location(distal)	AJCC Stage	Adjctx	Adjxrt	KRAS mut	BRAF mut	TP53 mut	hypermutation	MSI status	CIMP status	CIN status	RFS/DFS	OS
GSE39395	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	24																	
GSE39396	public	Affymetrix HT HG-U133+ PM Array Plate	fresh	Prospective series	24																	
GSE14333	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	157	*	*	*	*		*	*	*								*	
GSE39582	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	566	*	*	*	*	*	*	*		*	*	*		*	*	*	*	
GSE33113	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	90	*	*				*			*	*			*	*		*	
GSE17536	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	177	*	*	*			*										*	*
GSE17537	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	55	*	*	*			*										*	*
GSE62080(Rio)	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	21																	
GSE37892	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	130	*	*		*		*										*	
GSE28702	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	83	*			*	*		*										
GSE19860	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	29																	
GSE69657	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	30	*	*				*											
TCGA	public	RNA sequencing	fresh	Prospective series	577	*	*			*	*	*	*	*	*		*	*	*		*	*
Renji cohort	renji hospital	RNA sequencing	fresh	Prospective series	53	*	*		*	*	*											
GSE5851	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	68																	
PRJEB34338	public	RNA sequencing	fresh	Prospective series	27																	
GSE72970	public	Affymetrix Human Genome U133 Plus 2.0 Array	fresh	Prospective series	92																	
GSE104645	public	Agilent-014850 Whole Human Genome Microarray 4x4	fresh	Prospective series	66																	
GSE81861	public	single cell RNA seq	fresh	Prospective series	363 cells																	
GSE103322	public	single cell RNA seq	fresh	Prospective series	5502 cells																	
GSE72056	public	single cell RNA seq	fresh	Prospective series	4054 cells																	
GSE75688	public	single cell RNA seq	fresh	Prospective series	515 cells																	

Supplementary Table 2. gene lists of Signature associated with FOFIRI resistant and Microenvironment (SFM)

probe_id	Gene Symbol
209534_x_at	NA
221718_s_at	NA
222024_s_at	NA
213099_at	NA
213001_at	NA
213004_at	NA
209298_at	NA
214758_at	NA
209588_at	NA
209589_s_at	NA
210651_s_at	NA
221945_at	NA
218084_x_at	NA
207966_s_at	NA
1555097_s_at	NA
1553678_a_at	NA
1554306_at	NA
212086_x_at	NA
1556763_at	NA
1559949_at	NA
1561896_at	NA
1562306_at	NA
1562834_at	NA
1569672_at	NA
1570089_at	NA
213183_s_at	NA
215557_at	NA
215831_at	NA
215962_at	NA
216040_x_at	NA
217051_s_at	NA
217083_at	NA
217193_x_at	NA
217409_at	NA
224082_at	NA
224084_at	NA
229629_at	NA
234382_x_at	NA
235674_at	NA
236515_at	NA
237289_at	NA
237643_at	NA
239039_at	NA
239255_at	NA
239610_at	NA
240327_at	NA
241052_at	NA
241780_at	NA
242264_at	NA
242588_at	NA
242664_at	NA
242903_at	NA
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244579_at	NA
244838_at	NA
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224941_at	NA
224942_at	NA
203379_s_at	NA
206138_s_at	NA
204517_at	NA
1554997_a_at	NA
212012_at	NA
202963_at	NA
212415_at	42984
208561_at	ABCC9
1567622_at	ABLIM2
209749_s_at	ACE
205180_s_at	ADAM8
206629_at	ADAMTSL2
234799_at	ADARB1
224884_at	AKAP13
224229_s_at	AKT3
36865_at	ANGEL1
219514_at	ANGPTL2
210143_at	ANXA10
213454_at	APITD1
39248_at	AQP3
232567_at	ARHGAP8
219636_s_at	ARMC9
221483_s_at	ARPP19
230275_at	ARSI
235619_at	ASB4
203454_s_at	ATOX1
214255_at	ATP10A
201172_x_at	ATP6V0E1
234955_at	AZGP1P1
222915_s_at	BANK1
1559220_at	BC039681
1562997_a_at	BC041484
228311_at	BCL6B
1570383_at	BMP1
230722_at	BNC2
226280_at	BNIP2
231859_at	C14orf132
228373_at	C16orf72
219476_at	C1orf116
1556721_at	C20orf203
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1568796_at	CCDC157
227043_at	CCDC159
1554175_at	CD300LB
35150_at	CD40
225685_at	CDC42EP3
219534_x_at	CDKN1C
227290_at	CDYL2
1560255_at	CELF2-AS1
1554488_at	CEP70
228007_at	CEP85L
237367_x_at	CFLAR
208807_s_at	CHD3
1568704_a_at	CHERP
204591_at	CHL1
239717_at	CHRNA10
206703_at	CHRNB1
205101_at	CIITA
230223_at	CINP
1569421_at	CLDN4
204482_at	CLDN5
1567079_at	CLN6
238527_at	CLUHP3
229604_at	CMAHP
239989_at	CNTLN
204345_at	COL16A1
205509_at	CPB1
201116_s_at	CPE
216314_at	CRISP1
218648_at	CRTC3
200621_at	CSRP1
204309_at	CYP11A1
219149_x_at	DBR1
226938_at	DCAF4
242605_at	DCN
238524_at	DENND2D
228184_at	DISP1
215341_at	DNAH6
241709_s_at	DOCK1
235721_at	DTX3
209365_s_at	ECM1
214445_at	ELL2
229011_at	EMP1
211165_x_at	EPHB2
234552_at	EPPK1
224030_s_at	FAM115A
223019_at	FAM129B
1553749_at	FAM76B
222013_x_at	FAM86A
223545_at	FANCD2
232968_at	FANK1
236405_at	FBXO41
231093_at	FCRL3
206412_at	FER
1565752_at	FGD2
229652_s_at	FOXN3
220819_at	FRMD1
226072_at	FUK
224252_s_at	FXYD5
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201816_s_at	GBAS
211767_at	GINS4
221407_at	GJD2
212045_at	GLG1
229435_at	GLIS3
35436_at	GOLGA2
208798_x_at	GOLGA8A
219388_at	GRHL2
220190_s_at	GTF2A1L
213835_x_at	GTPBP3
215071_s_at	HIST1H2AC
1559891_at	HMGA2
214851_at	HNF4A
204110_at	HNMT
39763_at	HPX
226944_at	HTRA3
1564573_at	IFITM10
203426_s_at	IGFBP5
212657_s_at	IL1RN
205291_at	IL2RB
207538_at	IL4
227774_s_at	IMPAD1
203331_s_at	INPP5D
238584_at	IQCA1
204562_at	IRF4
211945_s_at	ITGB1
203723_at	ITPKB
209760_at	KIAA0922
216077_s_at	L3MBTL1
200770_s_at	LAMC1
202267_at	LAMC2
1559224_at	LCE1E
1561327_at	LINC00242
1569090_x_at	LINC00957
212089_at	LMNA
231232_at	LOC100506125
209360_s_at	RUNX1
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240382_at	LOC101928076
244609_at	LOC102724487
212707_s_at	RASA4
1569739_at	LOC221946
244649_at	LOC646484
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200785_s_at	LRP1
202904_s_at	LSM5
202729_s_at	LTBP1
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1559256_at	MAGI1
235421_at	MAP3K8
214969_at	MAP3K9
206296_x_at	MAP4K1
211499_s_at	MAPK11
244662_at	MBD5
228632_at	MEG9
1552432_at	MFSD6L
232568_at	MGC24103
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201875_s_at	MPZL1
209928_s_at	MSC
225080_at	MYO1C
241966_at	MYO5A
212803_at	NAB2
228608_at	NALCN
226707_at	NAPRT
217465_at	NCKAP1
1554082_a_at	NOL9
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208709_s_at	NRD1
222075_s_at	OAZ3
234371_at	OR2AD1P
223464_at	OSBPL5
228703_at	P4HA3
228128_x_at	PAPPA
205717_x_at	PCDHGA1
215836_s_at	NA
221957_at	PDK3
214121_x_at	PDLIM7
218634_at	PHLDA3
1554822_at	PHTF2
210417_s_at	PI4KB
203035_s_at	PIAS3
229245_at	PLEKHA6
204518_s_at	PPIC
229375_at	PPIE
238522_at	PPP3CB-AS1
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217177_s_at	PTPRB
1552480_s_at	PTPRC
219812_at	PVRIG
203149_at	PVRL2
212013_at	PXDN
241938_at	QKI
238853_at	RAB3IP
228548_at	RAP1A
213280_at	RAP1GAP2
224068_x_at	RBM22
239169_at	RDM1
202964_s_at	RFX5
203823_at	RGS3
242985_x_at	RNF180
1555529_at	RNH1
227943_at	RP11-196G18.24
217336_at	RPS10P2
213437_at	RUFY3
1560665_at	SCPEP1
230232_at	SEL1L3
209722_s_at	SERPINB9
214853_s_at	SHC1
1561880_a_at	SIGLEC16
206519_x_at	SIGLEC6
206052_s_at	SLBP
215274_at	SLC12A3
1568718_at	SLC22A23
225212_at	SLC25A25
212907_at	SLC30A1
219885_at	SLFN12
225014_at	SMIM20
215617_at	SPATS2L
205861_at	SPIB
204955_at	SRPX
233141_s_at	ST7L
1555088_x_at	STAT5B
214954_at	SUSD5
202565_s_at	SVIL
44702_at	SYDE1
202796_at	SYNPO
232387_at	SYNRG
1563360_at	T-18
234402_at	TCRVA15
226778_at	TDRP
201174_s_at	TERF2IP
1567704_at	TFE3
235086_at	THBS1
201666_at	TIMP1
202011_at	TJP1
216005_at	TNC
227345_at	TNFRSF10D
227812_at	TNFRSF19
205641_s_at	TRADD
202734_at	TRIP10
218502_s_at	TRPS1
239123_at	TSC22D1
220309_at	TTC22
219633_at	TTPAL
221964_at	TULP3
227141_at	TYW3
1570145_at	UCHL5
208998_at	UCP2
229812_at	USP48
1552415_a_at	WFDC9
228949_at	WLS
208318_s_at	XYLB
233031_at	ZEB2
213876_x_at	ZRSR2

Supplementary Table 3. Previously published gene signatures used to identify CRC molecuar subtypes

CRC subtype	Reference
De_Sousa_E_Melo_2013	De Sousa E Melo et al. Nature Medicine. 2013
De_Sousa_E_Melo_2011	De Sousa E Melo et al. Cell Stem Cell. 2011
Sadanandam_2013	Sadanandam et al. Nature Medicine. 2013
Marisa_2013	Marisa et al. Plos Medicine. 2013
Isella_2017	Claudio Isella et al. Nature communications. 2017
Roepman_2013	Roepman et al. International Journal of Cancer. 2013
Budinska_2013	Budinska et all. Journal of Pathology. 2013
Popovici_2012	Popovici et al. Journal of Clinical Oncology. 2012

Gene lists

De_Sousa_E_Melo_	De_Sousa_E_Melo_	Sadanandam_2013	Marisa_2013	Isella_2017	Roepman_2013	Budinska_2013	Popovici_2012
SRSF6	ACSL6	SFRP2	RGS1	REG4	HSPA4L	CEACAM7	ACOX1
HNRNPL	ADH6	MGP	CD69	MUC2	SLC7A11	FAM55A	AIFM3
ZIC2	AGPAT9	COL10A1	LILRB2	FCGBP	NUDT6	FAM55D	AMACR
CYP1B1	AKR1B10	MSRB3	GZMB	ZG16	ME1	MUC12	APCDD1
EIF5A	ANXA6	CYP1B1	LOC100287927	SPINK4	DLG7	SLC26A2	AQP5
TOB1	APCDD1	FNDC1	ST8SIA4	ST6GALNAC1	KNTC2	SLC26A3	ARID3A
KIAA0226L	APOBEC1	SFRP4	FCGR2B	FAM3D	PRC1	AK3L1	C10orf99
ITCH	AREGB	GAS1	OAS2	CLCA1	ECHS1	ARID3A	C11orf9
QPRT	ARL14	CCDC80	TLR1	ITLN1	DEPDC1	EREG	C13orf18
RBM6	ASB4	SPOCK1	TFEC	TFF1	ACADSB	LDLRAD3	C20orf111
PSIP1	ATXN1	THBS2	MGC29506	CDC42EP5	EIF4A2	ZBTB10	CBFA2T2
HTR2B	B3GNTL1	MFAP5	IGKV1-5	TCN1	MREG	HEPH	CD55
C10orf99	BZRAP1	ASPN	GZMA	CA2	NIPA1	KRT20	CDX2
PPP1R14C	C15orf48	TNS1	GPR34	BCL2L15	TIAL1	LOC644844	CELP
GAS1	C1orf105	TAGLN	CCL8	PIGR	URM1	MUC20	CFTR
NUTF2	C2	COMP	IFI44	CTSE	ZNF167	NGEF	CRIP1
SPP1	C8orf84	NTM	MRC1	IL1R2	RARA	ASCL2	CTSE
AXIN2	CAB39L	HOPX	IGLV1-36	LRRC26	SNX21	BCL11A	CTTNBP2
PLAGL2	CACHD1	AEBP1	ITM2A	DHRS9	NRXN2	CDCA7	DDC
SEMA5A	CADM1	FRMD6	CXCL9	TPSG1	ARFGAP1	DDC	DUSP4
HOXC6	CALCA	PLN	MSR1	AGR3	PAPLN	GPR160	FLJ32063
ECM2	CAMK2N2	FBN1	IFIT1	AGR2	SMARCC2	PHF16	FSCN1
VAV3	CAPN6	COL11A1	CCRL1	REP15	AS3MT	PRLR	GGH
KCNE4	CAPN8	ANTXR1	IGL@	MLPH	DKFZp547K054	VAV3	HOXD3
RGS4	CCL24	MIR100HG	CCL18	SPDEF	RGN	AIFM3	HSF5
MDM4	CD5	PCDH7	HLA-DQB1	KLK12	CTSF	C13orf18	IRX3
PDGFRL	CD55	DDR2	IGLJ3	HEPACAM2	SORBS1	CDX2	KIAA0802
RNF43	CDC20B	MYL9	IGLV1-40	WFDC2	FCGRT	IHH	KLK10
CFH	CEACAM5	FERMT2	NCF2	HYAL1	LARP6	NR1I2	LOC388199
FITM2	CEACAM6	VCAN	SAMD9L	LGALS9	FHOD3	PCDH21	MIR142
ASCL2	CEL	CDH11	MIR155HG	SLC9A2	NINL	ACE2	MLPH
TRIM7	CELP	SYNPO2	CXCL11	PFKP	SRPX2	C10orf99	OSBP2
CLEC5A	CGNL1	SULF1	ANKRD36BP2	TRIM7	BG114486	LRRC19	PHYH
STON1	CHP2	FAP	FCER1G	TMEM173	THC2669157	PPP1R14D	PIK3AP1
ATP10B	CHST13	COL3A1	C16orf54	RAB27B	QPRT	RPS6KA3	PIWIL1
PRPF39	CORO2A	CTHRC1	FCGR3A	SCNN1A	PLA2G12B	SPINK1	PLCB4
NAP1L3	CRNDE	ADAM12	RSAD2	PALLD	VAV3	CTSL2	PLK2
KHDRBS3	CSRNP3	COL1A2	IGHM	ARHGDIB	PTPRO	FHDC1	PLLP
CCDC80	CST1	TIMP2	SAMSN1	CA9	RNF43	GGH	PPP1R14C
AMFR	CXCR4	PRRX1	CLEC7A	MRAP2	DDC	PITX2	PPP1R14D
ISM1	CYP2S1	BGN	TNFRSF17	L1TD1	AXIN2	PLAGL2	PPPDE2
CDHR1	CYP4X1	GLT8D2	SLAMF7	MMP7	C13orf18	SPAG1	PTPRD
DDC	DACT1	DCN	TLR8	MGST1	TSPAN6	TSPAN6	PTPRO
PLN	DEFA5	FABP4	IFI44L	ATOH1	GGH	ANO9	RASSF6
AMACR	DEFA6	FBLN1	KYNU	IQGAP2	PLAGL2	C20orf112	RBBP8
PRDX5	DEPDC7	EFEMP1	CP	FOXA1	ACSL6	CHMP4B	RBM8A
PCDH7	DKK4	VGLL3	PRKCB	C12orf36	RBP2	CLDN3	REG4
MSRB3	DLX1	SPARC	MS4A4A	OASL	SLC6A4	PPP1R3D	RNF43
CASP2	DMBT1	ITGBL1	HLA-DPA1	GSDMB	CTSL2	PRSS8	RSBN1L
CXCL12	DPEP1	AKAP12	CXCL13	CKAP4	AMACR	RBM39	S100A16
TMEM45A	EDAR	INHBA	IGJ	FHL2	POFUT1	SPATA2	SATB2
PPP1R14D	EMB	COL5A2	POU2AF1	PLA2G3	CEBPA	TH1L	SERPINB5
TREM1	EML1	RAB31	TAGAP	KLF2	PARD6B	YTHDF1	SLC25A37
ZFPM2	EMP1	ISLR	ERAP2	KLF9	PRDX5	ANLN	SOX8
PRR15	EPAS1	STON1	DOCK8	BCAS1	SEPHS2	ASPM	SPINK1
TNFAIP6	ETV1	NOX4	FAM26F	PLA2G2A	C20orf142	BUB1	TM4SF4
VGLL3	F13A1	LOX	IDO1	CAPN9	GPSM2	BUB1B	TNNC2
ZNF827	FABP1	POSTN	IGHG1	F3	SLC5A6	C12orf48	TPK1
MEIS2	FLJ90757	ECM2	AIM2	NGFRAP1	TP53RK	CCNA2	TRNP1
PMEPA1	FLNA	LHFP	CCL5	XK	NCOA6	CCNB2	TSPAN6
PTGIS	FMOD	SERPINF1	MS4A7	MT1E	C20orf111	CDC2	VAV3
FSCN1	FOSL1	NNMT	GPNMB	ST3GAL4	C20orf43	CDT1	ZIC2
COLEC12	FRAS1	PTGIS	IGKV4-1	KLK1	HNF4A	CENPA	ZNF141
HSD17B6	FZD2	MYLK	IGKC	ANGPTL4	PSMA7	CENPE	ZSWIM1
DUSP4	GAD1	MAP1B	SAMD9	SOCS2	VAPB	CEP55	
TSPAN6	GALNT5	CALD1	GNLY	KIT	HNRNPA1L2	DEPDC1B	
PRLR	GATS	GREM1	42795	DLL1	KIF3B	DHFR	
PDGFC	GCNT3	COL5A1	FCGR1B	CAPN8	ARFGEF2	DSCC1	
IHH	GLT25D2	CNN1	LY96	CYB5R2	PIWIL2	ECT2	
HOPX	GPA33	TIMP3	CXCL10	KLF4	FANCF	FEN1	
ULBP2	GPR155	COL6A2	HLA-DRB1	FAM107B	THC2644861	FIGNL1	
PRRX1	GPR161	ZEB1	MNDA	C8orf4	MOCS3	GMNN	
LOC157860	HAS2	PPAPDC1A	IGHA1	FGFBP1	PIGU	HJURP	
AIFM3	HEPH	OLFML2B	KLRC1	FAM46A	CEP250	HOOK1	
CYR61	HMGCS2	HTRA1	TRDV3	RIMS3	IFT52	IQGAP3	
ETV5	HMOX1	CXCL12	PCDHGA4	RARRES3	CXorf56	KIF11	
FAP	HSD17B2	DPYSL3	CDKN2B	LEFTY1	COBLL1	KIF23	

Supplemantary Table 4. Classification of three datasets according to the SFM using K-means algorithm

sample_id	cohort.id	DFS	DFS_status	SFM subtypes
GSM971957	GSE39582	0	1	SFM-C
GSM971979	GSE39582	1590	0	SFM-C
GSM971980	GSE39582	1770	0	SFM-C
GSM971983	GSE39582	2610	0	SFM-C
GSM971988	GSE39582	450	1	SFM-C
GSM971997	GSE39582	2670	0	SFM-C
GSM972002	GSE39582	750	1	SFM-C
GSM972015	GSE39582	2730	0	SFM-C
GSM972016	GSE39582	420	1	SFM-C
GSM972056	GSE39582	2760	0	SFM-C
GSM972058	GSE39582	1800	0	SFM-C
GSM972076	GSE39582	4590	0	SFM-C
GSM972080	GSE39582	1590	1	SFM-C
GSM972114	GSE39582	1380	0	SFM-C
GSM972129	GSE39582	330	0	SFM-C
GSM972168	GSE39582	120	1	SFM-C
GSM972196	GSE39582	2190	0	SFM-C
GSM972214	GSE39582	0	1	SFM-C
GSM972221	GSE39582	1950	0	SFM-C
GSM972222	GSE39582	1710	0	SFM-C
GSM972223	GSE39582	990	0	SFM-C
GSM972226	GSE39582	600	0	SFM-C
GSM972229	GSE39582	0	0	SFM-C
GSM972261	GSE39582	210	0	SFM-C
GSM972264	GSE39582	2190	0	SFM-C
GSM972265	GSE39582	1800	0	SFM-C
GSM972270	GSE39582	1950	0	SFM-C
GSM972276	GSE39582	1290	0	SFM-C
GSM972277	GSE39582	1530	0	SFM-C
GSM972278	GSE39582	1350	0	SFM-C
GSM972280	GSE39582	1380	0	SFM-C
GSM972282	GSE39582	1530	0	SFM-C
GSM972283	GSE39582	1530	0	SFM-C
GSM972285	GSE39582	60	0	SFM-C
GSM972286	GSE39582	1110	0	SFM-C
GSM972292	GSE39582	750	0	SFM-C
GSM972294	GSE39582	750	0	SFM-C
GSM972298	GSE39582	270	0	SFM-C
GSM972305	GSE39582	930	0	SFM-C
GSM972316	GSE39582	2490	0	SFM-C
GSM972317	GSE39582	150	1	SFM-C
GSM972325	GSE39582	1590	1	SFM-C
GSM972332	GSE39582	2610	0	SFM-C
GSM972346	GSE39582	2160	0	SFM-C
GSM972364	GSE39582	3090	0	SFM-C
GSM972391	GSE39582	1290	1	SFM-C
GSM972403	GSE39582	1680	0	SFM-C
GSM972406	GSE39582	3180	0	SFM-C
GSM972408	GSE39582	960	0	SFM-C
GSM972430	GSE39582	1590	0	SFM-C
GSM972445	GSE39582	1050	0	SFM-C
GSM972446	GSE39582	NA	NA	SFM-C
GSM972447	GSE39582	930	0	SFM-C
GSM972448	GSE39582	NA	NA	SFM-C
GSM972452	GSE39582	2970	0	SFM-C
GSM972458	GSE39582	510	0	SFM-C
GSM972465	GSE39582	2520	0	SFM-C
GSM972471	GSE39582	NA	NA	SFM-C
GSM972472	GSE39582	2400	0	SFM-C
GSM972473	GSE39582	1350	1	SFM-C
GSM972488	GSE39582	1470	0	SFM-C
GSM972499	GSE39582	2160	0	SFM-C
GSM972507	GSE39582	1260	0	SFM-C
GSM971958	GSE39582	0	1	SFM-E
GSM971961	GSE39582	30	1	SFM-E
GSM971963	GSE39582	510	1	SFM-E
GSM971966	GSE39582	1890	0	SFM-E
GSM971968	GSE39582	2790	1	SFM-E
GSM971977	GSE39582	1470	0	SFM-E
GSM971981	GSE39582	1440	0	SFM-E
GSM971982	GSE39582	1260	0	SFM-E
GSM971987	GSE39582	2040	0	SFM-E
GSM971999	GSE39582	30	0	SFM-E
GSM972006	GSE39582	0	1	SFM-E
GSM972010	GSE39582	300	1	SFM-E
GSM972019	GSE39582	630	1	SFM-E
GSM972026	GSE39582	960	1	SFM-E
GSM972046	GSE39582	630	1	SFM-E
GSM972047	GSE39582	990	0	SFM-E
GSM972063	GSE39582	2100	0	SFM-E
GSM972064	GSE39582	0	1	SFM-E
GSM972072	GSE39582	5160	0	SFM-E
GSM972073	GSE39582	4890	0	SFM-E
GSM972084	GSE39582	3870	0	SFM-E
GSM972088	GSE39582	2370	0	SFM-E
GSM972092	GSE39582	1410	0	SFM-E
GSM972093	GSE39582	2220	0	SFM-E
GSM972094	GSE39582	1830	0	SFM-E
GSM972095	GSE39582	2010	0	SFM-E
GSM972102	GSE39582	1380	0	SFM-E
GSM972112	GSE39582	960	0	SFM-E
GSM972116	GSE39582	60	1	SFM-E
GSM972117	GSE39582	330	1	SFM-E
GSM972125	GSE39582	420	1	SFM-E
GSM972128	GSE39582	2790	0	SFM-E
GSM972133	GSE39582	810	1	SFM-E
GSM972134	GSE39582	210	1	SFM-E
GSM972140	GSE39582	1680	1	SFM-E
GSM972141	GSE39582	450	1	SFM-E
GSM972146	GSE39582	1980	0	SFM-E
GSM972158	GSE39582	3600	0	SFM-E
GSM972162	GSE39582	2310	0	SFM-E
GSM972164	GSE39582	90	1	SFM-E
GSM972165	GSE39582	1080	1	SFM-E
GSM972170	GSE39582	2190	0	SFM-E
GSM972171	GSE39582	3900	0	SFM-E
GSM972187	GSE39582	270	1	SFM-E
GSM972201	GSE39582	2010	0	SFM-E
GSM972204	GSE39582	120	1	SFM-E
GSM972206	GSE39582	0	1	SFM-E
GSM972208	GSE39582	0	1	SFM-E
GSM972209	GSE39582	0	1	SFM-E
GSM972213	GSE39582	0	1	SFM-E
GSM972220	GSE39582	30	0	SFM-E
GSM972224	GSE39582	600	1	SFM-E
GSM972231	GSE39582	420	0	SFM-E
GSM972232	GSE39582	630	0	SFM-E
GSM972235	GSE39582	210	0	SFM-E
GSM972242	GSE39582	510	0	SFM-E
GSM972251	GSE39582	210	0	SFM-E
GSM972255	GSE39582	150	0	SFM-E
GSM972263	GSE39582	2280	0	SFM-E
GSM972274	GSE39582	1710	0	SFM-E
GSM972279	GSE39582	1560	0	SFM-E
GSM972290	GSE39582	1170	0	SFM-E
GSM972291	GSE39582	300	1	SFM-E
GSM972293	GSE39582	1500	0	SFM-E
GSM972297	GSE39582	1380	0	SFM-E
GSM972301	GSE39582	3150	0	SFM-E
GSM972327	GSE39582	2490	0	SFM-E
GSM972329	GSE39582	2340	0	SFM-E
GSM972330	GSE39582	2580	0	SFM-E
GSM972334	GSE39582	2310	0	SFM-E
GSM972337	GSE39582	1230	0	SFM-E
GSM972352	GSE39582	2220	1	SFM-E
GSM972353	GSE39582	3990	0	SFM-E
GSM972355	GSE39582	510	1	SFM-E
GSM972380	GSE39582	180	1	SFM-E
GSM972400	GSE39582	240	1	SFM-E
GSM972409	GSE39582	3120	0	SFM-E
GSM972412	GSE39582	150	1	SFM-E
GSM972421	GSE39582	660	1	SFM-E
GSM972431	GSE39582	1620	0	SFM-E
GSM972437	GSE39582	0	1	SFM-E
GSM972439	GSE39582	0	1	SFM-E
GSM972440	GSE39582	1560	0	SFM-E
GSM972441	GSE39582	0	1	SFM-E
GSM972459	GSE39582	360	0	SFM-E
GSM972464	GSE39582	2580	0	SFM-E
GSM972470	GSE39582	2550	0	SFM-E
GSM972474	GSE39582	270	1	SFM-E
GSM972482	GSE39582	1260	0	SFM-E
GSM972484	GSE39582	2280	0	SFM-E
GSM972493	GSE39582	1770	0	SFM-E
GSM972494	GSE39582	1710	0	SFM-E

sample_id	cohort.id	SFM subtypes	dfs_status	dfs_days
GSM358342	GSE14333	SFM-F	1	435.9
GSM358343	GSE14333	SFM-A	0	494.1
GSM358344	GSE14333	SFM-D	0	592.5
GSM358345	GSE14333	SFM-A	0	600.6
GSM358354	GSE14333	SFM-B	0	1923
GSM358355	GSE14333	SFM-D	0	1931.1
GSM358357	GSE14333	SFM-A	0	2015.7
GSM358359	GSE14333	SFM-F	0	2055.3
GSM358362	GSE14333	SFM-A	0	2508
GSM358363	GSE14333	SFM-A	0	2511.9
GSM358364	GSE14333	SFM-F	0	2523.9
GSM358369	GSE14333	SFM-A	NA	NA
GSM358370	GSE14333	SFM-A	0	684
GSM358371	GSE14333	SFM-B	0	432
GSM358372	GSE14333	SFM-B	NA	NA
GSM358373	GSE14333	SFM-B	0	1632
GSM358374	GSE14333	SFM-E	0	1935
GSM358375	GSE14333	SFM-B	0	54
GSM358376	GSE14333	SFM-C	0	1260
GSM358377	GSE14333	SFM-C	0	1695
GSM358378	GSE14333	SFM-B	0	1089
GSM358379	GSE14333	SFM-B	NA	NA
GSM358380	GSE14333	SFM-B	0	1326
GSM358381	GSE14333	SFM-C	0	1563
GSM358382	GSE14333	SFM-E	0	900
GSM358383	GSE14333	SFM-E	0	1317
GSM358384	GSE14333	SFM-D	0	2424
GSM358386	GSE14333	SFM-F	1	180.3
GSM358387	GSE14333	SFM-D	1	298.8
GSM358389	GSE14333	SFM-D	1	427.8
GSM358390	GSE14333	SFM-A	0	451.5
GSM358394	GSE14333	SFM-E	1	580.8
GSM358395	GSE14333	SFM-C	0	660.6
GSM358399	GSE14333	SFM-A	1	756.3
GSM358402	GSE14333	SFM-A	0	795.9
GSM358403	GSE14333	SFM-A	0	799.8
GSM358406	GSE14333	SFM-A	1	829.2
GSM358407	GSE14333	SFM-D	0	858.9
GSM358409	GSE14333	SFM-D	0	876.6
GSM358413	GSE14333	SFM-E	0	1077
GSM358416	GSE14333	SFM-E	0	1119.3
GSM358421	GSE14333	SFM-D	0	1495.2
GSM358422	GSE14333	SFM-C	0	1564.2
GSM358426	GSE14333	SFM-D	0	1740.6
GSM358428	GSE14333	SFM-D	0	1798.8
GSM358439	GSE14333	SFM-E	0	3208.2
GSM358440	GSE14333	SFM-E	0	3323.7
GSM358442	GSE14333	SFM-C	0	363
GSM358443	GSE14333	SFM-D	0	888
GSM358444	GSE14333	SFM-E	0	1110
GSM358445	GSE14333	SFM-B	0	855
GSM358446	GSE14333	SFM-A	0	1689
GSM358447	GSE14333	SFM-C	0	1422
GSM358448	GSE14333	SFM-A	0	405
GSM358449	GSE14333	SFM-A	0	1704
GSM358450	GSE14333	SFM-E	0	1584
GSM358451	GSE14333	SFM-A	0	1359
GSM358452	GSE14333	SFM-E	0	1671
GSM358453	GSE14333	SFM-B	0	1200
GSM358454	GSE14333	SFM-E	1	426
GSM358455	GSE14333	SFM-B	0	123
GSM358456	GSE14333	SFM-B	0	1785
GSM358457	GSE14333	SFM-B	0	1287
GSM358458	GSE14333	SFM-E	1	978
GSM358459	GSE14333	SFM-B	0	939
GSM358460	GSE14333	SFM-B	0	1017
GSM358461	GSE14333	SFM-B	0	1431
GSM358462	GSE14333	SFM-F	0	1146
GSM358463	GSE14333	SFM-C	0	1332
GSM358464	GSE14333	SFM-E	0	1344
GSM358465	GSE14333	SFM-E	0	1710
GSM358466	GSE14333	SFM-A	0	1212
GSM358467	GSE14333	SFM-D	0	156
GSM358468	GSE14333	SFM-E	0	348
GSM358469	GSE14333	SFM-E	0	1752
GSM358470	GSE14333	SFM-E	0	1086
GSM358471	GSE14333	SFM-A	0	1362
GSM358472	GSE14333	SFM-F	0	1527
GSM358473	GSE14333	SFM-A	0	1677
GSM358474	GSE14333	SFM-A	1	429
GSM358475	GSE14333	SFM-F	0	1014
GSM358476	GSE14333	SFM-E	0	1140
GSM358477	GSE14333	SFM-C	0	2226
GSM358478	GSE14333	SFM-F	0	2547
GSM358480	GSE14333	SFM-E	1	47.1
GSM358486	GSE14333	SFM-A	1	249.3
GSM358490	GSE14333	SFM-A	1	441.6
GSM358492	GSE14333	SFM-C	1	567.9
GSM358502	GSE14333	SFM-C	0	787.8
GSM358504	GSE14333	SFM-E	1	827.4
GSM358512	GSE14333	SFM-A	0	1142.1
GSM358513	GSE14333	SFM-D	0	1161.6
GSM358514	GSE14333	SFM-E	1	1231.8
GSM358526	GSE14333	SFM-E	0	1929.9
GSM358527	GSE14333	SFM-E	0	1947.9
GSM358530	GSE14333	SFM-A	0	2230.8
GSM358532	GSE14333	SFM-F	1	2383.8
GSM358533	GSE14333	SFM-A	0	2568.3
GSM358535	GSE14333	SFM-E	0	2688.6
GSM358540	GSE14333	SFM-A	0	927
GSM358541	GSE14333	SFM-F	0	720
GSM358542	GSE14333	SFM-A	0	948
GSM358543	GSE14333	SFM-A	0	1488
GSM358544	GSE14333	SFM-A	1	456
GSM358545	GSE14333	SFM-B	0	726
GSM358546	GSE14333	SFM-E	0	2073
GSM358547	GSE14333	SFM-B	0	2043
GSM358548	GSE14333	SFM-E	1	309
GSM358549	GSE14333	SFM-B	0	1776
GSM358550	GSE14333	SFM-B	0	1842
GSM358551	GSE14333	SFM-E	0	450
GSM358552	GSE14333	SFM-B	0	1734
GSM358553	GSE14333	SFM-F	0	564
GSM358554	GSE14333	SFM-C	1	135
GSM358555	GSE14333	SFM-E	1	1143
GSM358556	GSE14333	SFM-B	0	1212
GSM358557	GSE14333	SFM-A	1	171
GSM358558	GSE14333	SFM-D	0	306
GSM358559	GSE14333	SFM-C	0	2541
GSM358560	GSE14333	SFM-B	0	507
GSM358561	GSE14333	SFM-E	1	285
GSM358562	GSE14333	SFM-B	0	2061
GSM358563	GSE14333	SFM-E	0	1785
GSM358564	GSE14333	SFM-D	0	561
GSM358565	GSE14333	SFM-D	0	2124
GSM358566	GSE14333	SFM-B	1	133.2
GSM358567	GSE14333	SFM-F	1	1200
GSM358568	GSE14333	SFM-D	1	2187
GSM358569	GSE14333	SFM-A	1	540
GSM358570	GSE14333	SFM-F	NA	NA
GSM358573	GSE14333	SFM-E	NA	NA
GSM358575	GSE14333	SFM-E	NA	NA
GSM358582	GSE14333	SFM-E	NA	NA
GSM358591	GSE14333	SFM-F	NA	NA
GSM358599	GSE14333	SFM-A	NA	NA
GSM358600	GSE14333	SFM-A	NA	NA
GSM358608	GSE14333	SFM-C	NA	NA
GSM358611	GSE14333	SFM-E	NA	NA
GSM358612	GSE14333	SFM-B	NA	NA
GSM358613	GSE14333	SFM-B	NA	NA
GSM358614	GSE14333	SFM-D	NA	NA
GSM358615	GSE14333	SFM-A	NA	NA
GSM358616	GSE14333	SFM-E	NA	NA
GSM358617	GSE14333	SFM-E	NA	NA
GSM358618	GSE14333	SFM-B	NA	NA
GSM358619	GSE14333	SFM-B	NA	NA
GSM358620	GSE14333	SFM-B	NA	NA
GSM358621	GSE14333	SFM-F	NA	NA
GSM358622	GSE14333	SFM-A	NA	NA
GSM358623	GSE14333	SFM-B	NA	NA
GSM358624	GSE14333	SFM-A	NA	NA
GSM358625	GSE14333	SFM-F	NA	NA
GSM358626	GSE14333	SFM-B	NA	NA
GSM358627	GSE14333	SFM-B	NA	NA
GSM358628	GSE14333	SFM-C	NA	NA

sample_id	cohort.id	os	os_status	dfs	dfs_status	SFM subtypes
TCGA.A6.267	TCGA	503	0	503	0	SFM-C
TCGA.A6.267	TCGA	447	0	447	0	SFM-C
TCGA.A6.380	TCGA	314	0	314	0	SFM-C
TCGA.A6.566	TCGA	306	0	306	0	SFM-C
TCGA.A6.566	TCGA	404	0	404	0	SFM-C
TCGA.A6.665	TCGA	282	0	282	0	SFM-C
TCGA.A6.678	TCGA	354	0	354	0	SFM-C
TCGA.AA.351	TCGA	396	1	NA	NA	SFM-C
TCGA.AA.351	TCGA	31	0	NA	NA	SFM-C
TCGA.AA.352	TCGA	245	0	245	0	SFM-C
TCGA.AA.354	TCGA	30	0	NA	NA	SFM-C
TCGA.AA.355	TCGA	911	0	91	1	SFM-C
TCGA.AA.366	TCGA	1643	0	NA	NA	SFM-C
TCGA.AA.368	TCGA	182	0	182	0	SFM-C
TCGA.AA.371	TCGA	821	0	821	0	SFM-C
TCGA.AA.371	TCGA	579	0	579	0	SFM-C
TCGA.AA.381	TCGA	306	1	NA	NA	SFM-C
TCGA.AA.381	TCGA	1005	0	1005	0	SFM-C
TCGA.AA.382	TCGA	31	0	NA	NA	SFM-C
TCGA.AA.384	TCGA	0	1	NA	NA	SFM-C
TCGA.AA.385	TCGA	1096	0	1096	0	SFM-C
TCGA.AA.386	TCGA	1612	0	1612	0	SFM-C
TCGA.AA.387	TCGA	943	0	943	0	SFM-C
TCGA.AA.394	TCGA	791	0	791	0	SFM-C
TCGA.AA.395	TCGA	730	0	730	0	SFM-C
TCGA.AA.398	TCGA	NA	NA	NA	NA	SFM-C
TCGA.AA.A00	TCGA	1157	0	NA	NA	SFM-C
TCGA.AA.A00	TCGA	913	0	913	0	SFM-C
TCGA.AA.A00	TCGA	549	0	549	0	SFM-C
TCGA.AA.A00	TCGA	30	0	NA	NA	SFM-C
TCGA.AA.A01	TCGA	1064	0	1064	0	SFM-C
TCGA.AA.A01	TCGA	31	0	NA	NA	SFM-C
TCGA.AA.A02	TCGA	NA	NA	NA	NA	SFM-C
TCGA.AA.A02	TCGA	670	1	NA	NA	SFM-C
TCGA.AD.590	TCGA	2	0	NA	NA	SFM-C
TCGA.AD.688	TCGA	1720	0	NA	NA	SFM-C
TCGA.AD.689	TCGA	22	0	NA	NA	SFM-C
TCGA.AD.A5E	TCGA	NA	NA	NA	NA	SFM-C
TCGA.AG.359	TCGA	61	1	NA	NA	SFM-C
TCGA.AG.359	TCGA	366	0	366	0	SFM-C
TCGA.AG.360	TCGA	184	0	184	0	SFM-C
TCGA.AG.A00	TCGA	638	0	638	0	SFM-C
TCGA.AG.A02	TCGA	1885	0	NA	NA	SFM-C
TCGA.AM.582	TCGA	28	0	NA	NA	SFM-C
TCGA.AU.600	TCGA	824	0	NA	NA	SFM-C
TCGA.AY.619	TCGA	423	0	423	0	SFM-C
TCGA.AZ.461	TCGA	1002	0	1002	0	SFM-C
TCGA.AZ.461	TCGA	156	1	156	0	SFM-C
TCGA.AZ.659	TCGA	1503	1	1503	0	SFM-C
TCGA.AZ.660	TCGA	3042	1	2270	1	SFM-C
TCGA.CA.525	TCGA	68	0	68	0	SFM-C
TCGA.CA.671	TCGA	3	0	NA	NA	SFM-C
TCGA.CI.662	TCGA	184	0	NA	NA	SFM-C
TCGA.CK.495	TCGA	2134	1	480	1	SFM-C
TCGA.CK.495	TCGA	475	0	475	0	SFM-C
TCGA.CK.591	TCGA	1561	0	1561	0	SFM-C
TCGA.CK.591	TCGA	643	1	292	1	SFM-C
TCGA.CK.674	TCGA	NA	NA	NA	NA	SFM-C
TCGA.CK.675	TCGA	3780	0	3780	0	SFM-C
TCGA.CM.474	TCGA	184	0	184	0	SFM-C
TCGA.CM.586	TCGA	335	0	335	1	SFM-C
TCGA.CM.617	TCGA	182	0	182	0	SFM-C
TCGA.CM.667	TCGA	150	0	150	0	SFM-C
TCGA.CM.667	TCGA	153	0	153	0	SFM-C
TCGA.D5.653	TCGA	621	0	621	0	SFM-C
TCGA.D5.654	TCGA	491	0	491	0	SFM-C
TCGA.D5.692	TCGA	287	0	287	0	SFM-C
TCGA.D5.693	TCGA	46	0	NA	NA	SFM-C
TCGA.D5.693	TCGA	365	0	365	0	SFM-C
TCGA.DM.A1H	TCGA	4126	0	4126	0	SFM-C
TCGA.EI.650	TCGA	607	0	607	0	SFM-C
TCGA.EI.688	TCGA	262	0	262	0	SFM-C
TCGA.EI.691	TCGA	531	0	531	0	SFM-C
TCGA.F4.685	TCGA	591	0	591	0	SFM-C
TCGA.F5.681	TCGA	16	0	NA	NA	SFM-C
TCGA.G4.630	TCGA	1574	0	1574	0	SFM-C
TCGA.G4.632	TCGA	792	0	789	1	SFM-C
TCGA.G4.658	TCGA	796	0	796	0	SFM-C
TCGA.G4.662	TCGA	1595	0	1595	0	SFM-C
TCGA.QG.A5Z	TCGA	952	0	952	0	SFM-C
TCGA.A6.267	TCGA	424	0	NA	NA	SFM-E
TCGA.A6.267	TCGA	648	0	535	1	SFM-E
TCGA.A6.267	TCGA	846	0	846	0	SFM-E
TCGA.A6.268	TCGA	522	0	522	0	SFM-E
TCGA.A6.268	TCGA	552	0	552	0	SFM-E
TCGA.A6.268	TCGA	424	1	381	1	SFM-E
TCGA.A6.268	TCGA	387	0	387	0	SFM-E
TCGA.A6.380	TCGA	333	0	333	0	SFM-E
TCGA.A6.410	TCGA	442	1	364	1	SFM-E
TCGA.A6.410	TCGA	231	0	231	0	SFM-E
TCGA.A6.566	TCGA	453	0	453	0	SFM-E
TCGA.A6.613	TCGA	348	0	348	0	SFM-E
TCGA.A6.613	TCGA	280	0	280	0	SFM-E
TCGA.A6.614	TCGA	255	0	255	0	SFM-E
TCGA.A6.614	TCGA	368	0	368	0	SFM-E
TCGA.A6.665	TCGA	456	0	456	0	SFM-E
TCGA.A6.678	TCGA	189	0	189	0	SFM-E
TCGA.A6.A56	TCGA	1881	1	1069	1	SFM-E
TCGA.A6.A56	TCGA	1711	1	1678	1	SFM-E
TCGA.A6.A5Z	TCGA	293	0	293	0	SFM-E
TCGA.AA.349	TCGA	31	0	NA	NA	SFM-E
TCGA.AA.350	TCGA	1765	0	NA	NA	SFM-E
TCGA.AA.351	TCGA	212	0	59	1	SFM-E
TCGA.AA.351	TCGA	1186	0	821	1	SFM-E
TCGA.AA.352	TCGA	731	0	NA	NA	SFM-E
TCGA.AA.352	TCGA	NA	NA	NA	NA	SFM-E
TCGA.AA.352	TCGA	0	1	NA	NA	SFM-E
TCGA.AA.353	TCGA	882	0	NA	NA	SFM-E
TCGA.AA.353	TCGA	882	0	882	0	SFM-E
TCGA.AA.354	TCGA	426	0	426	0	SFM-E
TCGA.AA.354	TCGA	1034	0	1034	0	SFM-E
TCGA.AA.354	TCGA	639	0	639	0	SFM-E
TCGA.AA.355	TCGA	396	1	122	1	SFM-E
TCGA.AA.366	TCGA	184	0	184	0	SFM-E
TCGA.AA.367	TCGA	1522	0	1522	0	SFM-E
TCGA.AA.367	TCGA	1430	0	1430	0	SFM-E
TCGA.AA.368	TCGA	335	1	335	0	SFM-E
TCGA.AA.369	TCGA	153	1	NA	NA	SFM-E
TCGA.AA.371	TCGA	NA	NA	NA	NA	SFM-E
TCGA.AA.381	TCGA	NA	NA	NA	NA	SFM-E
TCGA.AA.381	TCGA	761	0	761	0	SFM-E
TCGA.AA.383	TCGA	1186	0	1186	0	SFM-E
TCGA.AA.385	TCGA	0	1	NA	NA	SFM-E
TCGA.AA.385	TCGA	1006	0	NA	NA	SFM-E
TCGA.AA.385	TCGA	0	1	NA	NA	SFM-E
TCGA.AA.385	TCGA	975	0	NA	NA	SFM-E
TCGA.AA.385	TCGA	30	0	NA	NA	SFM-E
TCGA.AA.386	TCGA	945	0	945	0	SFM-E
TCGA.AA.386	TCGA	518	0	518	0	SFM-E
TCGA.AA.386	TCGA	731	0	394	1	SFM-E
TCGA.AA.386	TCGA	822	1	822	0	SFM-E
TCGA.AA.395	TCGA	61	1	NA	NA	SFM-E
TCGA.AA.395	TCGA	1035	0	NA	NA	SFM-E
TCGA.AA.396	TCGA	669	0	669	0	SFM-E
TCGA.AA.397	TCGA	489	0	489	0	SFM-E
TCGA.AA.397	TCGA	397	0	397	0	SFM-E
TCGA.AA.397	TCGA	1036	0	1036	0	SFM-E
TCGA.AA.398	TCGA	580	0	580	0	SFM-E
TCGA.AA.398	TCGA	242	1	NA	NA	SFM-E
TCGA.AA.399	TCGA	822	0	822	0	SFM-E
TCGA.AA.A00	TCGA	578	0	578	0	SFM-E
TCGA.AA.A00	TCGA	1035	0	1035	0	SFM-E
TCGA.AA.A00	TCGA	549	0	NA	NA	SFM-E
TCGA.AA.A00	TCGA	1278	0	1278	0	SFM-E
TCGA.AA.A01	TCGA	457	0	457	0	SFM-E
TCGA.AA.A01	TCGA	457	0	457	0	SFM-E
TCGA.AA.A01	TCGA	334	1	NA	NA	SFM-E
TCGA.AA.A01	TCGA	791	0	791	1	SFM-E
TCGA.AA.A02	TCGA	90	1	NA	NA	SFM-E
TCGA.AA.A02	TCGA	61	1	NA	NA	SFM-E
TCGA.AD.654	TCGA	650	0	650	0	SFM-E
TCGA.AF.269	TCGA	323	0	323	0	SFM-E
TCGA.AF.269	TCGA	412	0	327	1	SFM-E
TCGA.AF.269	TCGA	581	0	581	0	SFM-E
TCGA.AF.411	TCGA	441	0	441	0	SFM-E

sample_id	cohort.id	SFM subtype	gender	age	n	T.stage	N.stage	M.stage	TNM.stage
RJ014C	Renji.cohort	SFM-A	male	69	rectum	T3	N0	M0	II
RJ030C	Renji.cohort	SFM-A	female	51	rectum	NA	NA	NA	NA
RJ043C	Renji.cohort	SFM-A	female	51	rectum	T4	aN	OMO	II
RJ062C	Renji.cohort	SFM-A	female	67	ascendens	T4	N0	M0	II
RJ063C	Renji.cohort	SFM-A	male	71	right hemico	T3	N1	M0	III
RJ08C	Renji.cohort	SFM-A	male	88	descendens	T3	N0	M0	II
RJ011C	Renji.cohort	SFM-B	male	77	rectum	T4	N0	M0	II
RJ013C	Renji.cohort	SFM-B	male	58	rectum	T4	N3	M0	III
RJ017C	Renji.cohort	SFM-B	male	65	rectum	T4	N0	M0	II
RJ026C	Renji.cohort	SFM-B	female	75	rectum	NA	NA	NA	NA
RJ02C	Renji.cohort	SFM-B	male	71	sigmoid	T2	N0	M0	I
RJ031C	Renji.cohort	SFM-B	male	79	sigmoid	T4	N1	M0	III
RJ033C	Renji.cohort	SFM-B	female	63	ascendens	T4	N1	M1	IV
RJ07C	Renji.cohort	SFM-B	male	59	sigmoid	T4	N0	M0	II
RJ015C	Renji.cohort	SFM-C	male	65	rectum	NA	NA	NA	NA
RJ016C	Renji.cohort	SFM-C	male	60	right hemico	NA	NA	NA	NA
RJ018C	Renji.cohort	SFM-C	female	75	ascendens	T4	N0	M1	IV
RJ019C	Renji.cohort	SFM-C	male	63	rectum	T2	N0	M0	I
RJ020C	Renji.cohort	SFM-C	male	82	ascendens	T3	N1	M0	III
RJ022C	Renji.cohort	SFM-C	male	62	ascendens	NA	NA	NA	NA
RJ023C	Renji.cohort	SFM-C	male	29	rectum	T4	N2	M1	IV
RJ025C	Renji.cohort	SFM-C	male	49	sigmoid	T4	N2	M0	III
RJ027C	Renji.cohort	SFM-C	female	69	sigmoid	T1	N0	M0	I
RJ032C	Renji.cohort	SFM-C	male	64	sigmoid	T4	N2	M0	III
RJ036C	Renji.cohort	SFM-C	male	31	sigmoid	T4	N0	M0	II
RJ040C	Renji.cohort	SFM-C	male	59	rectum	T2	N0	M0	I
RJ042C	Renji.cohort	SFM-C	male	87	ascendens	T4	N2	M0	III
RJ044C	Renji.cohort	SFM-C	female	56	right hemico	T3	N0	M0	II
RJ045C	Renji.cohort	SFM-C	male	62	sigmoid	NA	NA	NA	NA
RJ049C	Renji.cohort	SFM-C	male	53	right hemico	T4	N1	M1	IV
RJ051C	Renji.cohort	SFM-C	male	64	transverse	T4	N2	M0	III
RJ054C	Renji.cohort	SFM-C	male	54	sigmoid	T3	N0	M0	II
RJ056C	Renji.cohort	SFM-C	male	70	sigmoid	T4	N2	M1	IV
RJ058C	Renji.cohort	SFM-C	female	67	sigmoid	NA	NA	NA	NA
RJ059C	Renji.cohort	SFM-C	male	50	transverse	NA	NA	NA	NA
RJ060C	Renji.cohort	SFM-C	male	73	rectum	T4	N0	M0	II
RJ01C	Renji.cohort	SFM-E	male	59	sigmoid	T1	N1	M0	III
RJ021C	Renji.cohort	SFM-E	male	42	rectum	T4	N0	M0	II
RJ024C	Renji.cohort	SFM-E	male	46	ascendens	NA	NA	NA	NA
RJ029C	Renji.cohort	SFM-E	female	53	rectum	T4	N0	M0	II
RJ034C	Renji.cohort	SFM-E	female	65	sigmoid	T2	N0	M0	I
RJ035C	Renji.cohort	SFM-E	male	31	rectum	T4b	N2	M1	IV
RJ037C	Renji.cohort	SFM-E	male	66	rectum	T4	N2	M0	III
RJ038C	Renji.cohort	SFM-E	female	70	sigmoid	T3	N1	M0	III
RJ039C	Renji.cohort	SFM-E	male	73	rectum	T3	N0	M0	II
RJ03C	Renji.cohort	SFM-E	female	60	ileocecal ju	T4	N3	M0	III
RJ041C	Renji.cohort	SFM-E	male	69	sigmoid	T4	N2	M0	III
RJ046C	Renji.cohort	SFM-E	female	75	sigmoid	T3	N0	M0	II
RJ048C	Renji.cohort	SFM-E	male	68	sigmoid	T4	N1	M0	III
RJ053C	Renji.cohort	SFM-E	male	66	right hemico	T3	N0	M1a	IV
RJ05C	Renji.cohort	SFM-E	male	59	rectum	T4a	N2b	M0	III
RJ06C	Renji.cohort	SFM-E	male	56	left hemicol	T4	N0	M0	II
RJ09C	Renji.cohort	SFM-E	male	82	right hemico	NA	NA	NA	NA

Supplementary Table 5. Details of gene signatures used for characteristizing SFM subtypes using NTP algorithm

signature_type	author name	paper name
EMT signature	Loboda et al	EMT is the dominant program in human colon cancer
colon crypt base vs top	Kosinski et al	Gene expression patterns of human colon tops and basal crypts and BMP antagonists as intestinal stem cell niche factors
stem-like signature	Merlos-Suarez et a	The Intestinal Stem Cell Signature Identifies Colorectal Cancer Stem Cells and Predicts Disease Relapse Cell Stem Cell
serreated CRC signature	Laiho et al	Serrated carcinomas form a subclass of colorectal cancer with distinctmolecular basis
FOLFOX response signatu	Tong et al	Identifying clinically relevant drug resistance genes indrug-induced resistant cancer cell lines and post-chemotherapytissues
FOLFIRI response signature	Graudens et al	Deciphering cellular states of innate tumor drug responses
EGFR inhitors signatures	Schutte et al	Molecular dissection of colorectal cancerin pre-clinical models identifies biomarkerspredicting sensitivity to EGFR inhibitors

EMT_UP	EMT_DOWN_EPI	Crypt_bottom	Crypt_up	STEM	late_TA	serrated_	non-serra	FOLFIRI_	FOLFIRI_	FOLFOX_	FOLFOX_	avastin_	avastin_	cetuxima	cetuxima
ADAM23	ACPP	ACPL2	AAK1	4933406C1	1810022C2	ANXA2	ERAL1	LOC25513C	FLJ41589	APOC1	NAT1	LUC7L	ALOX5	TSPAN6	FYN
ADAMTS1	AGR3	ACY1L2	ABCB1	5730471H1	2010106E1	PLS1	FBXO46	MGC4083	MGC4189	BST2	ABP1	HSF2	CPS1	CEACAM7	ALOX5
AFF3	ALDH3B2	ADAMTS1	ABCG1	ARL4C	2210403KC	HIF1A	SH2B	BC008967	LGALS1	C1QA	ACTG2	TOMM34	NLRP2	KIF26A	VSIG2
AK5	ANK3	ADH1B	ABCG2	ASCL2	ACE	ANXA2	SMCX	ARMCX1	MGC4504	CD38	ADORA2B	PHKA2	TYMP	CYP2W1	GRAMD1B
AKAP12	ANKRD22	ALDH1A1	ABHD5	ASRGL1	ACE2	PAM	F8A1	BA108L7.2	GTF2H1	CDA	ANG	RCN1	ZIC2	DNMT3B	RAB27B
ALPK2	ANXA9	ALDH1B1	ACE2	BCL2	ADH4	ATP1B1	HNRPA1	FLJ45342	ABCC1	AKR1C4	APOBEC1	MCUR1	TMCC3	CDIP1	TNC
ANGPTL2	AP1M2	ALG8	ACHE	BEX1	AI317395	PLEKHB2	PABPN1	ABL1	ALS2CR2	CHIT1	ASCL2	LETMD1	PTPRU	SORBS1	ZIC2
ANKRD1	AQP3	AMT	ACOX1	BEX4	AI481121	SDCBP	ATP7B	ACTR1A	ARL4A	ABCC2	KLF5	SPAG4	GPC1	TIMP3	GNA15
ANTXR1	ARHGAP8	ANAPC1	ADM	C13ORF15	AKP3	ATP2B1	NFATC2IP	AGRN	ASF1B	COL9A3	BUB1B	MYH7B	BCAS1	PLTP	DGKA
ANXA6	ARHGDIB	ANGPTL1	AIM1L	CBS	AKR1B7	NOLA3	KATNB1	AHR	ASNS	COL17A1	CCNB1	C1QTNF3	SBNO2	ABHD12	TRIB2
AOX1	ATAD4	ANXA13	AKR1B10	CD44	ALDH1A1	MFAP1	MTA1	ANXA5	AURKB	DFNA5	CDC6	RRAGB	CLDN18	RAE1	FSCN1
AP1S2	ATP2C2	ARGBP2	ALDOB	CENPF	ANPEP	ARPP-19	NEK3	ARL7	BIRC5	DUSP5	CDH17	PEBP1	PFKP	NELFCD	HSD17B2
ARMCX1	B3GNT3	ARHGAP8	ALDOC	CHST11	APOA4	ADAM10	CRSP2	BGN	C10orf3	EGR2	CDKN3	CECR1	GNB5	PSMA7	PXN
ATP8B2	BLNK	ARID5B	ALOX5	CYP11A1	APOC2			BRD9	C20orf55	FCGR2B	CHGA	DDT	FSTL3	POFUT1	LYZ
ATP8B3	BSPRY	ATBF1	ALPI	CYP2E1	APOC3			C5orf4	CDC20	HSPA6	CLCA1	GZMB	DHRS9	PIGU	GLG1
AXL	C11orf52	ATIC	AMACR	DCLK1	ASAH2			COL11A1	CENPJ	HSPB1	CPE	ISM2	ANO8	ACOT8	FCGBP
BDNF	C19orf21	ATOH8	AMFR	E330027M2	BST1			COL2A1	CHEK1	ID1	CLDN3	TRIB3	CIC	APMAP	CD200
BICC1	C1orf106	ATP11A	AMID	EPHB3	C11ORF86			COL4A2	CHEK2	IL6	CLDN7	AHCY	SLC4A4	SCML2	NRP1
BNC2	C1orf116	AURKB	ANPEP	ESAM	C6ORF145			COL6A1	CKB	LAMA5	DDC	SMS	FCGBP	NOD1	APOL1
BVES	C1orf210	B4GALT2	APOBEC3B	FAM49A	CD36			COL6A2	CKS1B	CXCL9	COCH	FGD1	HSD3B7	RARRES2	NTSR1
C10orf38	C1orf34	BEX1	APXL2	FSTL1	CEACAM20			CSPG2	CRIP1	MMP9	SLC26A2	PIN4	STS	SLC6A4	SMARCA1
C10orf56	CCDC64B	BEX2	AQP7	FZD2	CHP2			CSRP1	DDX11	MTTP	EPHB3	PBDC1	CA2	KAT2A	C16orf62
C16orf45	CD24	BRIX	AREG	HEBP2	CIDEC			DAB2	DIRAS2	CLDN11	F2RL1	BEX4	DMPK	ACOT13	CA2
C1S	CDH1	BST1	ARHE	IGFBP4	CLEC2D			DDR2	DKFZp762E	SERPINE1	FOXF2	AQP8	TNNT1	FN1	CALB1
C9orf19	CDH3	BYSL	ARHGEF18	KIF26B	CLIC5			DUSP4	DPYSL2	PLTP	FMO5	CALB1	TGFB1	TGIF2	CAV2
CAP2	CDS1	C18orf24	ARL4A	KLHL8	CML5			ECM1	FASTK	PRNP	FRZB	FZD10	ERF	COPS5	BLVRA
CCL2	CEACAM5	C4orf14	ARSA	LFNG	CNDP1			EFEMP2	FGFBP1	CCL2	NR5A2	TMEM14C	SIPA1L3	FABP3	UNC5B
CDH11	CEACAM6	C5orf13	ASAHL	LGR5	CREB3L3			EGR1	FLJ10407	CCL5	FUT2	TNNC1	NPTX2	MOCS3	ANXA10
CDH2	CGN	CACNA2D2	ASS	LIMCH1	CUBN			EMILIN1	GLO1	CCL18	FUT3	OLFML3	ADTRP	DDX27	SELPLG
CDH4	CKMT1B	CAP2	ATF3	MARVELD1	CYP2B6			FER1L3	GOLGA4	CXCL12	FUT4	NID1	DUSP1	BCAS4	ADTRP
CHN1	CLDN4	CCNA2	ATP1B3	MEX3A	CYP2C44			FSTL1	HIS1	SLC2A3	GCG	MTIF3	CHST3	EREG	VNN1
CLDN11	CLDN7	CCNB1	ATP6V0D1	MPP3	CYP2C68			GLG1	HMGB2	SLC22A3	GMDS	GTF3A	PI3	GZF1	PDE4D
CLIP3	CNKSR1	CCNB2	B2M	NA	CYP2D26			GTF2H1	HOXA1	TNNC1	CXCL3	EBPL	SEMG1	SNRPB2	HYAL1
CMTM3	CNTNAP2	CDC2	BAPX1	NAV1	CYP2D6			GUCY1A3	KIAA0040	TYROBP	GUCA2A	PFDN5	AHNAK	PLAGL2	MLPH
COL12A1	CTAGE4	CDC20	BCAS1	PCDH8	CYP3A4			HIST2H2BE	KIF13A	UCHL1	HLA-DPB1	ATP5E	ABCC4	SNRPN	KYNU
COL1A2	DAPP1	CDC25C	BCL10	PHGDH	CYP3A43			HRMT1L1	KIF2C	CYP4F2	HMGCS2	WRNIP1	SCAF1	TAF4	EPHA4
COL3A1	DENND2D	CDC6	BCLP	PRICKLE1	CYP3A7			IGFBP6	KIF4A	SLIT2	FOXA3	SNRPC	PRR12	RAMP2	F3
COL4A1	DMKN	CDC7	BDKRB2	PSRC1	DNASE1			IGFBP7	KLF13	GFPT2	HNF4G	RPP40	MLLT1	NXT1	RARRES1
COL5A1	DSC2	CDCA1	BENE	PTHLH	DPEP1			KIAA1627	KLHDC3	MSLN	HOXA11	GPCPD1	ULBP2	CTNNBL1	KLF12
COL5A2	DSP	CDCA3	BIRC3	PTPRO	EGLN3			LAMB1	LDHB	GPNMB	HOXA13	SNRPB2	BARX1	PPP1R3D	FKBP1B
COL6A1	EHF	CDCA5	BIRC4	PVT1	EMP1			LMCD1	LMNB2	PROCR	HSPA2	PRDX5	KDM6B	WASF3	IFIT3
CPA4	ELF3	CDCA7	BMP2	PXDN	ENPP3			LMO2	LOC90355	TNFSF13B	IL7	CTAG2	CA1	E2F5	IFIT2
CTGF	ELF5	CDK4	C18orf11	RASSF5	F3			LOC92689	LSM4	C10orf116	IMPA2	TNFRSF19	REG4	ECHDC3	DUSP4
CYBRD1	EPN3	CDK6	C21orf4	SCN2B	FAM3B			LOXL2	MAD2L1	PTP4A3	KIF11	ERMARD	RSAD2	SLC19A3	BHLHE41
DAB2	EPPK1	CDKN3	C2orf31	SLC14A1	FMO5			LTBP4	MCM6	VSIG4	LGALS2	CKMT2	CMPK2	TBRG4	RAB38
DFNA5	ERBB3	CENPA	C4A	SLC1A2	G6PC			LUM	MKKS	TRIM29	LGALS4	MTL5	ITM2C	MYC	SEMG1

Supplementary Table 6. molecular, clinicopathological features and drug response across SFM subtypes based on NTP algorithm

sample_id	SFM subtypes	STEM	EMT	crypt_top	serratedCRC	FOLFIRI_response	Vandetanib_respon	Gefitinib_response	AZD8931_respons	afatinib_response	cetuximab_respons	Avastin_response	FOLFOX_response
GSM971957	SFM-C	undetermined	emt	base	nsCRC	with_response	undetermined	undetermined	with_response	with_response	with_response	with_response	undetermined
GSM971979	SFM-C	stem	emt	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM971980	SFM-C	late.TA	epi	top	sCRC	undetermined	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM971983	SFM-C	stem	emt	base	sCRC	with_response	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM971988	SFM-C	late.TA	epi	top	undetermined	undetermined	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM971997	SFM-C	undetermined	emt	base	undetermined	undetermined	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972002	SFM-C	stem	epi	top	nsCRC	with_no_response	with_no_response	undetermined	with_no_response	with_no_response	with_no_response	undetermined	with_response
GSM972015	SFM-C	undetermined	epi	top	sCRC	with_response	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972016	SFM-C	undetermined	emt	base	sCRC	with_no_response	with_response	undetermined	undetermined	with_response	with_no_response	with_no_response	with_no_response
GSM972056	SFM-C	late.TA	epi	top	undetermined	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972058	SFM-C	stem	undetermined	base	sCRC	undetermined	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM972076	SFM-C	stem	emt	base	sCRC	with_response	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972080	SFM-C	undetermined	undetermined	undetermined	sCRC	with_no_response	with_response	with_response	with_no_response	undetermined	with_no_response	with_no_response	with_no_response
GSM972114	SFM-C	late.TA	epi	undetermined	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972129	SFM-C	undetermined	epi	undetermined	sCRC	with_no_response	undetermined	with_response	with_response	with_response	with_no_response	with_no_response	with_no_response
GSM972168	SFM-C	undetermined	epi	top	sCRC	with_no_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM972196	SFM-C	undetermined	epi	top	undetermined	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	undetermined	with_response
GSM972214	SFM-C	undetermined	epi	top	sCRC	with_no_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972221	SFM-C	stem	epi	base	undetermined	with_no_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972222	SFM-C	undetermined	epi	top	sCRC	with_no_response	undetermined	with_response	with_response	with_response	with_no_response	with_no_response	with_no_response
GSM972223	SFM-C	late.TA	emt	top	sCRC	undetermined	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972226	SFM-C	late.TA	epi	top	sCRC	with_no_response	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972229	SFM-C	stem	undetermined	base	undetermined	undetermined	undetermined	with_response	with_no_response	with_no_response	with_no_response	undetermined	undetermined
GSM972261	SFM-C	undetermined	epi	top	sCRC	undetermined	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM972264	SFM-C	stem	epi	base	undetermined	with_no_response	with_response	with_response	with_response	with_response	with_response	undetermined	with_no_response
GSM972265	SFM-C	undetermined	undetermined	undetermined	nsCRC	with_response	undetermined	undetermined	with_no_response	undetermined	with_no_response	with_no_response	with_no_response
GSM972270	SFM-C	late.TA	epi	undetermined	undetermined	with_no_response	undetermined	with_response	with_no_response	undetermined	with_no_response	with_no_response	with_no_response
GSM972276	SFM-C	late.TA	epi	top	sCRC	with_no_response	with_response	with_response	with_no_response	undetermined	with_no_response	with_no_response	undetermined
GSM972277	SFM-C	undetermined	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972278	SFM-C	stem	epi	undetermined	undetermined	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	undetermined	with_response
GSM972280	SFM-C	stem	emt	top	undetermined	with_no_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972282	SFM-C	stem	epi	base	nsCRC	with_no_response	undetermined	with_no_response	with_response	with_response	with_response	with_response	with_no_response
GSM972283	SFM-C	undetermined	epi	top	sCRC	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972285	SFM-C	undetermined	epi	top	sCRC	undetermined	with_response	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response
GSM972286	SFM-C	undetermined	emt	base	sCRC	with_no_response	with_response	with_response	with_no_response	undetermined	with_no_response	with_no_response	with_no_response
GSM972292	SFM-C	late.TA	epi	top	undetermined	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM972294	SFM-C	undetermined	undetermined	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972298	SFM-C	late.TA	epi	top	sCRC	with_no_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972305	SFM-C	late.TA	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972316	SFM-C	late.TA	epi	top	sCRC	with_no_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972317	SFM-C	undetermined	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972325	SFM-C	undetermined	undetermined	base	sCRC	with_no_response	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972332	SFM-C	undetermined	emt	top	sCRC	with_response	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM972346	SFM-C	stem	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM972364	SFM-C	undetermined	epi	top	undetermined	with_no_response	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972391	SFM-C	undetermined	epi	top	undetermined	with_no_response	with_response	undetermined	with_no_response	undetermined	with_no_response	with_no_response	undetermined
GSM972403	SFM-C	late.TA	epi	top	sCRC	with_no_response	with_response	undetermined	undetermined	with_no_response	with_no_response	undetermined	with_response
GSM972406	SFM-C	stem	undetermined	base	sCRC	with_response	with_response	with_response	undetermined	undetermined	with_no_response	with_no_response	undetermined
GSM972408	SFM-C	undetermined	epi	top	sCRC	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972430	SFM-C	undetermined	undetermined	top	sCRC	with_no_response	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972445	SFM-C	stem	emt	base	undetermined	undetermined	with_response	with_response	with_response	with_response	with_no_response	with_no_response	with_response
GSM972446	SFM-C	undetermined	emt	undetermined	sCRC	undetermined	undetermined	undetermined	with_no_response	undetermined	with_no_response	with_response	with_no_response
GSM972447	SFM-C	late.TA	epi	undetermined	sCRC	with_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972448	SFM-C	late.TA	undetermined	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM972452	SFM-C	stem	emt	base	sCRC	with_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM972458	SFM-C	undetermined	emt	base	sCRC	undetermined	undetermined	undetermined	with_response	with_response	with_no_response	with_no_response	with_response
GSM972465	SFM-C	stem	epi	base	undetermined	with_no_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972471	SFM-C	late.TA	epi	top	sCRC	with_no_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972472	SFM-C	stem	undetermined	base	sCRC	with_no_response	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972473	SFM-C	late.TA	epi	undetermined	sCRC	undetermined	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972488	SFM-C	undetermined	epi	top	sCRC	with_no_response	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM972499	SFM-C	undetermined	epi	top	sCRC	with_no_response	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM972507	SFM-C	late.TA	epi	undetermined	sCRC	with_no_response	with_response	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM358376	SFM-C	undetermined	epi	top	undetermined	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM358377	SFM-C	stem	epi	undetermined	sCRC	with_no_response	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM358381	SFM-C	late.TA	epi	undetermined	undetermined	with_no_response	undetermined	undetermined	with_response	with_response	with_no_response	with_no_response	with_response
GSM358395	SFM-C	undetermined	emt	base	sCRC	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM358422	SFM-C	late.TA	epi	top	undetermined	with_no_response	undetermined	with_no_response	with_response	with_response	undetermined	undetermined	undetermined
GSM358442	SFM-C	stem	emt	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM358447	SFM-C	undetermined	emt	top	undetermined	undetermined	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM358463	SFM-C	undetermined	epi	base	undetermined	with_no_response	undetermined	undetermined	with_response	undetermined	with_no_response	with_response	undetermined
GSM358477	SFM-C	undetermined	emt	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM358492	SFM-C	undetermined	emt	base	sCRC	with_response	undetermined	undetermined	with_response	with_response	with_response	undetermined	with_response
GSM358502	SFM-C	undetermined	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM358554	SFM-C	undetermined	emt	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM358559	SFM-C	undetermined	epi	top	nsCRC	with_no_response	undetermined	with_response	with_response	with_response	with_response	with_response	with_no_response
GSM358608	SFM-C	stem	emt	base	undetermined	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM358628	SFM-C	stem	emt	base	undetermined	undetermined	undetermined	undetermined	undetermined	with_no_response	with_no_response	with_response	with_response
GSM437105	SFM-C	late.TA	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	undetermined	with_no_response	with_no_response	with_no_response
GSM437118	SFM-C	undetermined	emt	top	undetermined	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM437126	SFM-C	late.TA	epi	top	undetermined	with_no_response	undetermined	with_response	undetermined	undetermined	with_no_response	with_no_response	with_response
GSM437133	SFM-C	undetermined	emt	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM437143	SFM-C	undetermined	epi	undetermined	undetermined	with_no_response	undetermined	with_response	undetermined	undetermined	with_no_response	undetermined	with_response
GSM437145	SFM-C	stem	emt	base	sCRC	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM437147	SFM-C	undetermined	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	undetermined
GSM437148	SFM-C	late.TA	epi	top	sCRC	with_no_response	undetermined	with_no_response	with_response	with_response	with_response	with_response	with_no_response
GSM437155	SFM-C	undetermined	emt	base	undetermined	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM437156	SFM-C	late.TA	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM437160	SFM-C	undetermined	epi	top	nsCRC	with_no_response	undetermined	with_response	undetermined	with_response	with_no_response	with_no_response	with_no_response
GSM437176	SFM-C	late.TA	epi	top	undetermined	undetermined	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM437178	SFM-C	undetermined	emt	base	sCRC	with_response	undetermined	undetermined	with_no_response	undetermined	with_no_response	with_no_response	with_no_response
GSM437184	SFM-C	undetermined	epi	top	sCRC	with_no_response	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM437196	SFM-C	late.TA	epi	base	sCRC	undetermined	undetermined	undetermined	undetermined	with_no_response	with_response	with_no_response	undetermined
GSM437203	SFM-C	undetermined	emt	top	sCRC	with_response	undetermined	undetermined	with_response	with_response	with_no_response	undetermined	with_response
GSM437209	SFM-C	undetermined	emt	top	sCRC	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM437212	SFM-C	undetermined	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM437213	SFM-C	undetermined	undetermined	base	undetermined	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_response	undetermined
GSM437225	SFM-C	stem	emt	base	sCRC	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM437254	SFM-C	undetermined	emt	top	undetermined	with_no_response	undetermined	with_no_response	undetermined	undetermined	with_response	with_response	with_response
GSM437267	SFM-C	stem	emt	base	sCRC	undetermined	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM437273	SFM-C	undetermined	epi	top	undetermined	with_no_response	undetermined	with_response	with_no_response	undetermined	with_no_response	with_no_response	with_no_response
GSM437288	SFM-C	undetermined	epi	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	undetermined	with_response
GSM437294	SFM-C	undetermined	undetermined	undetermined	sCRC	undetermined	undetermined	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response
GSM437297	SFM-C	undetermined	emt	base	sCRC	with_response	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM437307	SFM-C	undetermined	emt	undetermined	sCRC	with_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM437309	SFM-C	undetermined	epi	base	undetermined	with_no_response	undetermined	undetermined	with_response	with_response	with_no_response	undetermined	with_response
GSM437313	SFM-C	stem	undetermined	base	sCRC	with_response	undetermined	undetermined	undetermined	with_no_response	undetermined	with_response	undetermined
GSM820068	SFM-C	late.TA	epi	top	undetermined	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM820071	SFM-C	stem	emt	base	undetermined	undetermined	undetermined	undetermined	with_response	with_response	with_response	with_response	with_response
GSM820074	SFM-C	undetermined	emt	base	undetermined	with_no_response	undetermined	with_no_response	with_response	with_response	with_response	with_response	with_response
GSM820075	SFM-C	late.TA	emt	undetermined	undetermined	with_no_response	undetermined	undetermined	with_no_response	undetermined	with_no_response	with_no_response	with_no_response
GSM820080	SFM-C	undetermined	epi	undetermined	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM820096	SFM-C	undetermined	emt	undetermined	sCRC	with_response	undetermined	undetermined	with_no_response	undetermined	with_no_response	with_no_response	undetermined
GSM820098	SFM-C	undetermined	epi	base	sCRC	with_response	with_response	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM820105	SFM-C	undetermined	emt	top	nsCRC	with_response	undetermined	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response
GSM820114	SFM-C	late.TA	epi	top	sCRC	with_no_response	undetermined	undetermined	undetermined	undetermined	with_no_response	with_no_response	with_no_response
GSM820118	SFM-C	stem	emt	top	undetermined	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM820121	SFM-C	stem	emt	undetermined	sCRC	undetermined	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_response
GSM820122	SFM-C	stem	emt	top	undetermined	with_response	undetermined	undetermined	with_response	with_response	with_response	with_response	with_response
GSM820126	SFM-C	stem	emt	undetermined	nsCRC	with_no_response	undetermined	undetermined	with_no_response	undetermined	undetermined	with_response	with_response
GSM820135	SFM-C	undetermined	undetermined	top	sCRC	with_no_response	undetermined	undetermined	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response
GSM929496	SFM-C	stem	emt	base	undetermined	with_no_response	undetermined	undetermined	undetermined	undetermined	undetermined	with_response	with_response
GSM929510	SFM-C	undetermined	epi	undetermined	sCRC	with_no_response	undetermined	with_response	with_response	with_response	with_no_response	with_no_response	with_no_response
GSM929521	SFM-C	undetermined	emt	base	sCRC	with_response	undetermined	undetermined	undetermined	with_no_response	with_no_response	undetermined	with_response
GSM929531	SFM-C	late.TA	undetermined	top	sCRC	undetermined	undetermined	with_response	with_no_response	with_no_response	with_no_response	with_no_response	with_no_response

Supplementar Table 7. Differential expression analysis of each SFM subtype versus the rest subtypes

SFM-A | SFM-B | SFM-C | SFM-D | SFM-E | SFM-F

Supplementary Table 8. Classification of four drug-associated datasets according to the SFM using K-means algorithm

A

GSE62080 dataset (FOLFIRI)

sample_id	Response	SFM subtype
GSM1519418	S	SFM-E
GSM1519430	S	SFM-E
GSM1519437	S	SFM-E
GSM1519419	R	SFM-B
GSM1519421	R	SFM-B
GSM1519422	R	SFM-B
GSM1519425	R	SFM-B
GSM1519426	R	SFM-B
GSM1519427	R	SFM-B
GSM1519431	S	SFM-B
GSM1519432	R	SFM-B
GSM1519433	R	SFM-B
GSM1519438	R	SFM-B
GSM1519420	S	SFM-F
GSM1519423	S	SFM-F
GSM1519424	S	SFM-F
GSM1519428	S	SFM-F
GSM1519429	S	SFM-F
GSM1519434	R	SFM-A
GSM1519435	R	SFM-A
GSM1519436	R	SFM-A

B

GSE19860, GSE28702 and GSE69657 datasets (FOLFOX)

sample_id	FL_response	GEO_id	SFM subtype
GSM1705393	noresponder	GSE69657	SFM-C
GSM1705409	noresponder	GSE69657	SFM-C
GSM1705410	responder	GSE69657	SFM-C
GSM1705413	responder	GSE69657	SFM-C
GSM1705417	noresponder	GSE69657	SFM-C
GSM1705418	noresponder	GSE69657	SFM-C
GSM496017	noresponder	GSE19860	SFM-C
GSM496019	noresponder	GSE19860	SFM-C
GSM496021	responder	GSE19860	SFM-C
GSM496024	noresponder	GSE19860	SFM-C
GSM496031	noresponder	GSE19860	SFM-C
GSM496033	noresponder	GSE19860	SFM-C
GSM496035	noresponder	GSE19860	SFM-C
GSM496041	responder	GSE19860	SFM-C
GSM710819	responder	GSE28702	SFM-C
GSM710833	noresponder	GSE28702	SFM-C
GSM710836	noresponder	GSE28702	SFM-C
GSM710837	noresponder	GSE28702	SFM-C
GSM710853	noresponder	GSE28702	SFM-C
GSM710855	noresponder	GSE28702	SFM-C
GSM710869	noresponder	GSE28702	SFM-C
GSM710873	noresponder	GSE28702	SFM-C
GSM710877	responder	GSE28702	SFM-C
GSM710883	responder	GSE28702	SFM-C
GSM710885	responder	GSE28702	SFM-C
GSM710892	responder	GSE28702	SFM-C
GSM710911	noresponder	GSE28702	SFM-C
GSM710922	noresponder	GSE28702	SFM-C
GSM710924	noresponder	GSE28702	SFM-C
GSM1705392	responder	GSE69657	SFM-E
GSM1705407	responder	GSE69657	SFM-E
GSM1705416	responder	GSE69657	SFM-E
GSM496016	noresponder	GSE19860	SFM-E
GSM496023	noresponder	GSE19860	SFM-E
GSM496025	noresponder	GSE19860	SFM-E
GSM496036	responder	GSE19860	SFM-E
GSM496037	noresponder	GSE19860	SFM-E
GSM496038	noresponder	GSE19860	SFM-E
GSM496039	responder	GSE19860	SFM-E
GSM710805	responder	GSE28702	SFM-E
GSM710806	responder	GSE28702	SFM-E
GSM710820	responder	GSE28702	SFM-E
GSM710829	noresponder	GSE28702	SFM-E
GSM710835	noresponder	GSE28702	SFM-E
GSM710841	noresponder	GSE28702	SFM-E
GSM710846	noresponder	GSE28702	SFM-E
GSM710849	noresponder	GSE28702	SFM-E
GSM710858	noresponder	GSE28702	SFM-E
GSM710898	responder	GSE28702	SFM-E
GSM710902	responder	GSE28702	SFM-E
GSM710908	noresponder	GSE28702	SFM-E
GSM710913	noresponder	GSE28702	SFM-E
GSM710915	noresponder	GSE28702	SFM-E
GSM710916	noresponder	GSE28702	SFM-E
GSM710926	noresponder	GSE28702	SFM-E
GSM710928	noresponder	GSE28702	SFM-E
GSM710930	noresponder	GSE28702	SFM-E
GSM1705390	noresponder	GSE69657	SFM-A
GSM1705403	noresponder	GSE69657	SFM-A
GSM1705405	noresponder	GSE69657	SFM-A
GSM1705408	noresponder	GSE69657	SFM-A
GSM1705411	responder	GSE69657	SFM-A
GSM1705412	noresponder	GSE69657	SFM-A
GSM1705414	noresponder	GSE69657	SFM-A
GSM1705415	noresponder	GSE69657	SFM-A
GSM496020	responder	GSE19860	SFM-A
GSM496022	noresponder	GSE19860	SFM-A
GSM496027	responder	GSE19860	SFM-A
GSM496028	noresponder	GSE19860	SFM-A
GSM496029	noresponder	GSE19860	SFM-A
GSM496032	noresponder	GSE19860	SFM-A
GSM496040	responder	GSE19860	SFM-A
GSM496042	noresponder	GSE19860	SFM-A
GSM496043	responder	GSE19860	SFM-A
GSM710802	responder	GSE28702	SFM-A
GSM710803	responder	GSE28702	SFM-A
GSM710808	responder	GSE28702	SFM-A
GSM710810	responder	GSE28702	SFM-A
GSM710811	responder	GSE28702	SFM-A
GSM710812	responder	GSE28702	SFM-A
GSM710818	responder	GSE28702	SFM-A
GSM710825	responder	GSE28702	SFM-A
GSM710845	noresponder	GSE28702	SFM-A
GSM710860	noresponder	GSE28702	SFM-A
GSM710862	noresponder	GSE28702	SFM-A
GSM710865	noresponder	GSE28702	SFM-A
GSM710867	noresponder	GSE28702	SFM-A
GSM710871	noresponder	GSE28702	SFM-A
GSM710905	noresponder	GSE28702	SFM-A
GSM710906	noresponder	GSE28702	SFM-A
GSM1705397	responder	GSE69657	SFM-F
GSM1705399	responder	GSE69657	SFM-F
GSM1705406	responder	GSE69657	SFM-F
GSM496018	noresponder	GSE19860	SFM-F
GSM710804	responder	GSE28702	SFM-F
GSM710809	responder	GSE28702	SFM-F
GSM710817	responder	GSE28702	SFM-F
GSM710831	noresponder	GSE28702	SFM-F
GSM1705391	noresponder	GSE69657	SFM-B
GSM1705394	noresponder	GSE69657	SFM-B
GSM1705395	noresponder	GSE69657	SFM-B
GSM1705396	responder	GSE69657	SFM-B
GSM1705398	responder	GSE69657	SFM-B
GSM496015	noresponder	GSE19860	SFM-B
GSM496026	noresponder	GSE19860	SFM-B
GSM496030	responder	GSE19860	SFM-B
GSM496034	noresponder	GSE19860	SFM-B
GSM710807	responder	GSE28702	SFM-B
GSM710822	responder	GSE28702	SFM-B
GSM710823	responder	GSE28702	SFM-B
GSM710824	responder	GSE28702	SFM-B
GSM710826	responder	GSE28702	SFM-B
GSM710827	responder	GSE28702	SFM-B
GSM710863	noresponder	GSE28702	SFM-B
GSM710886	responder	GSE28702	SFM-B
GSM710888	responder	GSE28702	SFM-B
GSM710890	responder	GSE28702	SFM-B
GSM710894	responder	GSE28702	SFM-B
GSM710896	responder	GSE28702	SFM-B
GSM710920	noresponder	GSE28702	SFM-B
GSM1705389	noresponder	GSE69657	SFM-D
GSM1705400	responder	GSE69657	SFM-D
GSM1705401	responder	GSE69657	SFM-D
GSM1705402	noresponder	GSE69657	SFM-D
GSM1705404	noresponder	GSE69657	SFM-D
GSM710801	responder	GSE28702	SFM-D
GSM710813	responder	GSE28702	SFM-D
GSM710814	responder	GSE28702	SFM-D
GSM710815	responder	GSE28702	SFM-D
GSM710816	responder	GSE28702	SFM-D
GSM710821	responder	GSE28702	SFM-D
GSM710828	noresponder	GSE28702	SFM-D
GSM710830	noresponder	GSE28702	SFM-D
GSM710832	noresponder	GSE28702	SFM-D
GSM710834	noresponder	GSE28702	SFM-D
GSM710839	noresponder	GSE28702	SFM-D
GSM710843	noresponder	GSE28702	SFM-D
GSM710875	responder	GSE28702	SFM-D
GSM710879	responder	GSE28702	SFM-D
GSM710881	responder	GSE28702	SFM-D
GSM710900	responder	GSE28702	SFM-D
GSM710918	noresponder	GSE28702	SFM-D

C

GSE104645, GSE72970 datasets (FOLFOX or FOLFIRI)

sample_id	treatment	response	GEO_id	response.agg	sfm	pfs.status	pfs	os.status	os
GSM2804851	FOLFOX	PR	GSE104645	response	SFM-A/B	0	15.83333	0	38.4
GSM2804866	FOLFOX	SD	GSE104645	non.response	SFM-A/B	1	6.8	1	29.9
GSM2804880	FOLFOX	PR	GSE104645	response	SFM-A/B	0	23.5	1	35.4
GSM2804930	FOLFOX	PD	GSE104645	non.response	SFM-A/B	0	1.466667	1	14.76667
GSM1875897	FOLFOX	PR	GSE72970	response	SFM-A/B	1	5.585216	1	5.585216
GSM1875899	FOLFOX	PD	GSE72970	non.response	SFM-A/B	1	1.87269	1	2.49692
GSM1875905	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	3.055441	1	3.449692
GSM1875906	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	14.65298	1	41.85626
GSM1875918	FOLFOX	PR	GSE72970	response	SFM-A/B	1	13.40452	0	47.83573
GSM1875919	FOLFOX	PR	GSE72970	response	SFM-A/B	1	4.336756	1	4.336756
GSM1875921	FOLFIRI	PD	GSE72970	non.response	SFM-A/B	1	1.64271	1	19.64682
GSM1875929	FOLFOX	PR	GSE72970	response	SFM-A/B	1	10.87474	1	17.1499
GSM1875930	FOLFIRI	PD	GSE72970	non.response	SFM-A/B	1	1.87269	1	25.79055
GSM1875933	FOLFIRI	PR	GSE72970	response	SFM-A/B	0	26.71047	0	26.71047
GSM1875937	FOLFOX	SD	GSE72970	non.response	SFM-A/B	1	4.731006	1	18.79261
GSM1875938	FOLFOX	PD	GSE72970	non.response	SFM-A/B	1	3.022587	1	11.03901
GSM1875939	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	4.271047	1	15.34292
GSM1875940	FOLFIRI	PR	GSE72970	response	SFM-A/B	1	9.494866	0	15.77002
GSM1875941	FOLFIRI	PR	GSE72970	response	SFM-A/B	1	13.40452	1	42.08624
GSM1875943	FOLFIRI	PR	GSE72970	response	SFM-A/B	1	10.94045	1	24.80493
GSM1875944	FOLFIRI	PD	GSE72970	non.response	SFM-A/B	1	2.004107	1	12.38604
GSM1875946	FOLFIRI	PR	GSE72970	response	SFM-A/B	1	8.213552	0	19.12115
GSM1875951	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	4.76386	1	6.373717
GSM1875952	FOLFOX	SD	GSE72970	non.response	SFM-A/B	1	7.26078	1	13.43737
GSM1875953	FOLFIRI	PD	GSE72970	non.response	SFM-A/B	1	1.708419	1	5.486653
GSM1875954	FOLFIRI	PR	GSE72970	response	SFM-A/B	1	13.14168	0	37.78234
GSM1875956	FOLFOX	PR	GSE72970	response	SFM-A/B	1	7.687885	1	14.75154
GSM1875960	FOLFIRI	PD	GSE72970	non.response	SFM-A/B	1	1.905544	1	19.21971
GSM1875961	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	3.646817	1	19.90965
GSM1875962	FOLFIRI	CR	GSE72970	response	SFM-A/B	1	48.09856	0	50.39836
GSM1875965	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	3.679672	1	17.47844
GSM1875967	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	5.256673	1	6.439425
GSM1875969	FOLFOX	PR	GSE72970	response	SFM-A/B	1	14.71869	1	20.50103
GSM1875972	FOLFOX	PR	GSE72970	response	SFM-A/B	1	15.01437	1	28.55031
GSM1875973	FOLFIRI	PD	GSE72970	non.response	SFM-A/B	1	2.464066	1	2.891171
GSM1875974	FOLFIRI	PD	GSE72970	non.response	SFM-A/B	1	1.741273	1	2.26694
GSM1875976	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	6.406571	1	6.406571
GSM1875977	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	21.15811	0	57.7577
GSM1875978	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	7.622177	1	11.03901
GSM1875981	FOLFOX	PR	GSE72970	response	SFM-A/B	1	25.42916	0	66.59548
GSM1875983	FOLFIRI	SD	GSE72970	non.response	SFM-A/B	1	5.913758	1	23.55647
GSM1875989	FOLFOX	SD	GSE72970	non.response	SFM-A/B	0	48.03286	0	48.03286
GSM1876008	FOLFOX	SD	GSE72970	non.response	SFM-A/B	1	22.70226	1	36.07392
GSM1876009	FOLFOX	PD	GSE72970	non.response	SFM-A/B	1	1.577002	1	7.556468
GSM1876011	FOLFIRI	PR	GSE72970	response	SFM-A/B	1	8.772074	1	31.73717
GSM1876012	FOLFIRI	PR	GSE72970	response	SFM-A/B	1	27.46612	1	29.24025
GSM2804850	FOLFOX	SD	GSE104645	non.response	SFM-D	0	7.8	1	30.13333
GSM2804853	FOLFOX	PD	GSE104645	non.response	SFM-D	0	2.266667	1	9.933333
GSM2804857	FOLFOX	PR	GSE104645	response	SFM-D	0	8.333333	1	21.36667
GSM2804867	FOLFOX	SD	GSE104645	non.response	SFM-D	1	22.86667	1	51.76667
GSM2804868	FOLFOX	SD	GSE104645	non.response	SFM-D	0	18.66667	1	64.46667
GSM2804873	FOLFOX	PR	GSE104645	response	SFM-D	0	11.43333	0	44.8
GSM2804882	FOLFIRI	PR	GSE104645	response	SFM-D	0	7.466667	1	73.7
GSM2804889	FOLFOX	PD	GSE104645	non.response	SFM-D	0	2.7	0	30.53333
GSM2804891	FOLFOX	PR	GSE104645	response	SFM-D	0	10.06667	1	24.93333
GSM2804948	FOLFOX	PR	GSE104645	response	SFM-D	0	14.7	0	43.96667
GSM2804981	FOLFIRI	SD	GSE104645	non.response	SFM-D	0	6.166667	1	18.3
GSM2804987	FOLFOX	SD	GSE104645	non.response	SFM-D	0	14.7	0	22.83333
GSM2804992	FOLFOX	PR	GSE104645	response	SFM-D	0	29.23333	0	33.46667
GSM2805004	FOLFOX	SD	GSE104645	non.response	SFM-D	0	5.6	0	35.9
GSM2805016	FOLFOX	PR	GSE104645	response	SFM-D	0	10.73333	1	10.96667
GSM1875898	FOLFOX	PR	GSE72970	response	SFM-D	1	8.476386	1	13.66735
GSM1875900	FOLFOX	PR	GSE72970	response	SFM-D	0	70.01232	0	70.01232
GSM1875901	FOLFIRI	PR	GSE72970	response	SFM-D	1	7.556468	1	19.9425
GSM1875902	FOLFOX	PR	GSE72970	response	SFM-D	1	17.60986	1	58.74333
GSM1875903	FOLFIRI	SD	GSE72970	non.response	SFM-D	1	7.556468	1	9.560575
GSM1875904	FOLFIRI	CR	GSE72970	response	SFM-D	0	46.29158	0	46.29158
GSM1875907	FOLFOX	SD	GSE72970	non.response	SFM-D	1	6.767967	1	9.067761
GSM1875913	FOLFIRI	SD	GSE72970	non.response	SFM-D	1	4.829569	1	13.07598
GSM1875915	FOLFIRI	CR	GSE72970	response	SFM-D	1	9.232033	0	52.40247
GSM1875916	FOLFOX	PR	GSE72970	response	SFM-D	1	7.88501	1	15.93429
GSM1875920	FOLFOX	PR	GSE72970	response	SFM-D	0	39.55647	0	39.55647
GSM1875922	FOLFIRI	SD	GSE72970	non.response	SFM-D	1	8.73922	1	19.81109
GSM1875923	FOLFOX	PR	GSE72970	response	SFM-D	1	16.55852	1	37.97947
GSM1875924	FOLFOX	PR	GSE72970	response	SFM-D	1	12.28747	1	37.19096
GSM1875925	FOLFIRI	PD	GSE72970	non.response	SFM-D	1	2.26694	1	17.97125
GSM1875926	FOLFIRI	SD	GSE72970	non.response	SFM-D	1	5.848049	1	18.69405
GSM1875927	FOLFIRI	SD	GSE72970	non.response	SFM-D	1	4.829569	1	5.880904
GSM1875928	FOLFIRI	SD	GSE72970	non.response	SFM-D	1	9.396304	1	28.94456
GSM1875931	FOLFIRI	PR	GSE72970	response	SFM-D	1	10.1191	0	33.5113
GSM1875932	FOLFOX	PR	GSE72970	response	SFM-D	1	20.79671	1	23.78645
GSM1875934	FOLFOX	SD	GSE72970	non.response	SFM-D	1	6.045175	0	24.67351
GSM1875935	FOLFOX	SD	GSE72970	non.response	SFM-D	0	24.90349	0	24.90349
GSM1875936	FOLFIRI	PR	GSE72970	response	SFM-D	1	11.46612	0	31.2115
GSM1875950	FOLFIRI	PR	GSE72970	response	SFM-D	1	9.034907	1	18.43121
GSM1875957	FOLFIRI	CR	GSE72970	response	SFM-D	1	18.26694	1	59.82751
GSM2804849	FOLFOX	PR	GSE104645	response	SFM-C	0	10.93333	0	22.43333
GSM2804854	FOLFOX	PR	GSE104645	response	SFM-C	0	5.333333	0	16.83333
GSM2804856	FOLFOX	SD	GSE104645	non.response	SFM-C	0	4.933333	1	59.53333
GSM2804858	FOLFOX	PR	GSE104645	response	SFM-C	0	15.63333	0	81.73333
GSM2804859	FOLFOX	PR	GSE104645	response	SFM-C	0	7.066667	0	26.03333
GSM2804864	FOLFOX	PR	GSE104645	response	SFM-C	0	11.3	0	57.96667
GSM2804878	FOLFOX	PR	GSE104645	response	SFM-C	0	14.46667	0	23.46667
GSM2804886	FOLFOX	PD	GSE104645	non.response	SFM-C	0	1.733333	1	7.133333
GSM2804890	FOLFOX	PR	GSE104645	response	SFM-C	0	23.1	0	32.96667
GSM2804897	FOLFOX	SD	GSE104645	non.response	SFM-C	0	5.266667	1	12.86667
GSM2804912	FOLFOX	PR	GSE104645	response	SFM-C	0	24.93333	1	55.3
GSM2804922	FOLFOX	PR	GSE104645	response	SFM-C	0	4.2	0	10.5
GSM2804944	FOLFIRI	PR	GSE104645	response	SFM-C	0	6.533333	0	26.96667
GSM2804972	FOLFOX	PR	GSE104645	response	SFM-C	0	11.2	0	27.3
GSM2804978	FOLFIRI	PR	GSE104645	response	SFM-C	0	12.83333	0	34.7
GSM2804999	FOLFOX	PR	GSE104645	response	SFM-C	0	9.7	0	14.6
GSM2805010	FOLFOX	PR	GSE104645	response	SFM-C	0	4.666667	0	39
GSM2805019	FOLFOX	SD	GSE104645	non.response	SFM-C	1	9.6	0	48.06667
GSM1875958	FOLFIRI	CR	GSE72970	response	SFM-C	1	7.950719	0	55.98357
GSM2804870	FOLFOX	SD	GSE104645	non.response	SFM-E	0	5.166667	1	82.13333
GSM2804872	FOLFOX	SD	GSE104645	non.response	SFM-E	0	30.33333	1	36.03333
GSM2804875	FOLFIRI	SD	GSE104645	non.response	SFM-E	0	5.3	1	13.8
GSM2804938	FOLFOX	SD	GSE104645	non.response	SFM-E	0	8.433333	0	32.33333
GSM2804939	FOLFOX	PR	GSE104645	response	SFM-E	0	24.1	0	45.56667
GSM2804957	FOLFIRI	PR	GSE104645	response	SFM-E	0	38.23333	0	50.93333
GSM2804958	FOLFOX	PR	GSE104645	response	SFM-E	0	25.43333	0	59.33333
GSM2804959	FOLFIRI	SD	GSE104645	non.response	SFM-E	0	3.766667	0	34.76667
GSM2804965	FOLFOX	PR	GSE104645	response	SFM-E	0	17.93333	1	22.66667
GSM2804979	FOLFIRI	PR	GSE104645	response	SFM-E	0	2.9	0	49.7
GSM2804983	FOLFOX	PD	GSE104645	non.response	SFM-E	0	1.333333	0	7
GSM2804995	FOLFIRI	PR	GSE104645	response	SFM-E	0	14.26667	0	18.03333
GSM2804997	FOLFOX	PR	GSE104645	response	SFM-E	0	6.433333	0	26.36667
GSM2804998	FOLFIRI	PR	GSE104645	response	SFM-E	0	9.133333	0	43.7
GSM2805003	FOLFOX	PR	GSE104645	response	SFM-E	1	7.2	1	7.3
GSM2805011	FOLFOX	SD	GSE104645	non.response	SFM-E	0	8.433333	0	12.56667
GSM2805032	FOLFOX	PD	GSE104645	non.response	SFM-E	0	1.633333	0	14.56667
GSM2805036	FOLFOX	PR	GSE104645	response	SFM-E	0	16.26667	1	86.03333
GSM2804847	FOLFOX	SD	GSE104645	non.response	SFM-F	0	18.2	0	55.96667
GSM2804860	FOLFOX	PR	GSE104645	response	SFM-F	0	21	0	65.6
GSM2804862	FOLFOX	CR	GSE104645	response	SFM-F	0	5.566667	0	30.33333
GSM2804879	FOLFOX	PR	GSE104645	response	SFM-F	0	28.66667	0	42.83333
GSM2804946	FOLFIRI	SD	GSE104645	non.response	SFM-F	0	15.46667	0	34.8
GSM2804954	FOLFOX	SD	GSE104645	non.response	SFM-F	0	25.76667	0	71.4
GSM2804991	FOLFOX	PR	GSE104645	response	SFM-F	0	23.1	0	43.63333
GSM2805012	FOLFOX	SD	GSE104645	non.response	SFM-F	0	7.866667	0	13.66667
GSM2805014	FOLFOX	PR	GSE104645	response	SFM-F	0	10.5	1	19.7
GSM2805015	FOLFIRI	SD	GSE104645	non.response	SFM-F	1	15.16667	1	41.13333
GSM2805022	FOLFOX	SD	GSE104645	non.response	SFM-F	0	7.2	0	11.23333
GSM1875908	FOLFIRI	SD	GSE72970	non.response	SFM-F	1	17.08419	0	58.15195
GSM1875909	FOLFIRI	PR	GSE72970	response	SFM-F	1	8.180698	1	22.04517
GSM1875910	FOLFIRI	SD	GSE72970	non.response	SFM-F	1	6.472279	1	9.659138
GSM1875911	FOLFIRI	CR	GSE72970	response	SFM-F	1	11.72895	1	39.95072
GSM1875912	FOLFIRI	PR	GSE72970	response	SFM-F	1	10.71047	1	47.60575
GSM1875914	FOLFOX	PR	GSE72970	response	SFM-F	1	23.12936	0	53.38809
GSM1875917	FOLFOX	SD	GSE72970	non.response	SFM-F	1	13.14168	1	13.14168
GSM1875942	FOLFIRI	PR	GSE72970	response	SFM-F	1	10.31622	1	23.65503
GSM1875945	FOLFIRI	PR	GSE72970	response	SFM-F	1	12.9117	1	17.37988
GSM1875947	FOLFOX	PD	GSE72970	non.response	SFM-F	1	1.445585	1	5.749486
GSM1875948	FOLFOX	CR	GSE72970	response	SFM-F	1	17.64271	1	17.64271
GSM1875949	FOLFIRI	SD	GSE72970	non.response	SFM-F	1	3.712526	1	7.523614
GSM1875955	FOLFOX	PR	GSE72970	response	SFM-F	0	76.12321	0	76.12321
GSM1875959	FOLFOX	PD	GSE72970	non.response	SFM-F	1	1.675565	1	4.238193
GSM1875963	FOLFIRI	PR	GSE72970	response	SFM-F	1	25.98768	0	45.99589
GSM1875964	FOLFIRI	PD	GSE72970	non.response	SFM-F	1	1.544148	1	23.85216
GSM1875966	FOLFIRI	PR	GSE72970	response	SFM-F	1	14.35729	1	23.98357
GSM1875968	FOLFIRI	PD	GSE72970	non.response	SFM-F	1	1.774127	1	4.599589
GSM1875971	FOLFIRI	PR	GSE72970	response	SFM-F	1	12.38604	1	40.08213
GSM1875980	FOLFIRI	PR	GSE72970	response	SFM-F	1	9.232033	1	28.09035
GSM1875991	FOLFIRI	PR	GSE72970	response	SFM-F	1	6.373717	1	11.13758
GSM1875993	FOLFIRI	SD	GSE72970	non.response	SFM-F	1	16.52567	1	27.13758
GSM1875998	FOLFIRI	SD	GSE72970	non.response	SFM-F	1	5.125257	0	61.20739
GSM1876013	FOLFIRI	CR	GSE72970	response	SFM-F	1	51.25257	1	51.25257

D

GSE5851, PRJEB34338 datasets (cetuximab)

sample_id	cetuximab	mole_subtype	batch	sfm
X1_T	n	not.available	PRJEB34338	SFM-C
X2_T	n	not.available	PRJEB34338	SFM-C
X47_T	n	not.available	PRJEB34338	SFM-C
X53_T	n	not.available	PRJEB34338	SFM-C
GSM136584	y	not_available	GSE5851	SFM-C
GSM136590	n	not_available	GSE5851	SFM-C
GSM136594	n	not_available	GSE5851	SFM-C
GSM136603	y	not_available	GSE5851	SFM-C
GSM136605	n	not_available	GSE5851	SFM-C
GSM136614	n	Stem-like	GSE5851	SFM-C
GSM136615	n	not_available	GSE5851	SFM-C
GSM136618	n	not_available	GSE5851	SFM-C
GSM136625	n	not_available	GSE5851	SFM-C
GSM136627	n	not_available	GSE5851	SFM-C
GSM136636	n	not_available	GSE5851	SFM-C
GSM136638	n	not_available	GSE5851	SFM-C
GSM136642	n	not_available	GSE5851	SFM-C
GSM136643	y	not_available	GSE5851	SFM-C
GSM136649	n	not_available	GSE5851	SFM-C
GSM136652	y	not_available	GSE5851	SFM-C
X3080_T	n	not.available	PRJEB34338	SFM-D/E/F
X4612_AR_T	n	not.available	PRJEB34338	SFM-D/E/F
X14001378T	n	not.available	PRJEB34338	SFM-D/E/F
PYM.R	n	not.available	PRJEB34338	SFM-D/E/F
PYM.S	y	not.available	PRJEB34338	SFM-D/E/F
GSM136578	n	Stem-like	GSE5851	SFM-D/E/F
GSM136582	y	Stem-like	GSE5851	SFM-D/E/F
GSM136586	n	Stem-like	GSE5851	SFM-D/E/F
GSM136587	n	Stem-like	GSE5851	SFM-D/E/F
GSM136588	y	Stem-like	GSE5851	SFM-D/E/F
GSM136592	n	Stem-like	GSE5851	SFM-D/E/F
GSM136593	y	Stem-like	GSE5851	SFM-D/E/F
GSM136597	n	Stem-like	GSE5851	SFM-D/E/F
GSM136599	y	Stem-like	GSE5851	SFM-D/E/F
GSM136601	n	Stem-like	GSE5851	SFM-D/E/F
GSM136608	n	Stem-like	GSE5851	SFM-D/E/F
GSM136616	n	Goblet-like	GSE5851	SFM-D/E/F
GSM136630	n	Stem-like	GSE5851	SFM-D/E/F
GSM136645	n	Stem-like	GSE5851	SFM-D/E/F
X3772T	n	not.available	PRJEB34338	SFM-A/B
X12184612_S_T	y	not.available	PRJEB34338	SFM-A/B
X13004198T	n	not.available	PRJEB34338	SFM-A/B
X13004222T	n	not.available	PRJEB34338	SFM-A/B
X14000456T	n	not.available	PRJEB34338	SFM-A/B
X24_T	y	not.available	PRJEB34338	SFM-A/B
X32215804.T1.Lv	y	not.available	PRJEB34338	SFM-A/B
X32215804.T2.Co	y	not.available	PRJEB34338	SFM-A/B
X46_T	n	not.available	PRJEB34338	SFM-A/B
X54_T	y	not.available	PRJEB34338	SFM-A/B
X55_T	y	not.available	PRJEB34338	SFM-A/B
X65_T	n	not.available	PRJEB34338	SFM-A/B
X69_T	y	not.available	PRJEB34338	SFM-A/B
X72_T	y	not.available	PRJEB34338	SFM-A/B
X73_T	n	not.available	PRJEB34338	SFM-A/B
GJG.S.Tumor	y	not.available	PRJEB34338	SFM-A/B
JJ.R.Tumor	n	not.available	PRJEB34338	SFM-A/B
JJ.S.Tumor	y	not.available	PRJEB34338	SFM-A/B
GSM136579	n	Goblet-like	GSE5851	SFM-A/B
GSM136580	n	TA	GSE5851	SFM-A/B
GSM136581	n	TA	GSE5851	SFM-A/B
GSM136585	n	Goblet-like	GSE5851	SFM-A/B
GSM136589	y	TA	GSE5851	SFM-A/B
GSM136591	n	Goblet-like	GSE5851	SFM-A/B
GSM136595	n	TA	GSE5851	SFM-A/B
GSM136596	n	TA	GSE5851	SFM-A/B
GSM136598	n	TA	GSE5851	SFM-A/B
GSM136600	n	Stem-like	GSE5851	SFM-A/B
GSM136602	y	not_available	GSE5851	SFM-A/B
GSM136606	n	not_available	GSE5851	SFM-A/B
GSM136609	y	TA	GSE5851	SFM-A/B
GSM136610	y	TA	GSE5851	SFM-A/B
GSM136611	y	TA	GSE5851	SFM-A/B
GSM136612	n	not_available	GSE5851	SFM-A/B
GSM136617	y	TA	GSE5851	SFM-A/B
GSM136619	n	TA	GSE5851	SFM-A/B
GSM136620	n	Goblet-like	GSE5851	SFM-A/B
GSM136621	n	TA	GSE5851	SFM-A/B
GSM136622	y	not_available	GSE5851	SFM-A/B
GSM136623	n	Goblet-like	GSE5851	SFM-A/B
GSM136624	y	TA	GSE5851	SFM-A/B
GSM136626	y	TA	GSE5851	SFM-A/B
GSM136628	y	TA	GSE5851	SFM-A/B
GSM136629	n	TA	GSE5851	SFM-A/B
GSM136631	n	TA	GSE5851	SFM-A/B
GSM136632	y	TA	GSE5851	SFM-A/B
GSM136633	y	Goblet-like	GSE5851	SFM-A/B
GSM136634	y	TA	GSE5851	SFM-A/B
GSM136637	y	TA	GSE5851	SFM-A/B
GSM136641	n	TA	GSE5851	SFM-A/B
GSM136647	n	not_available	GSE5851	SFM-A/B
GSM136648	n	TA	GSE5851	SFM-A/B
GSM136650	n	TA	GSE5851	SFM-A/B
GSM136651	y	TA	GSE5851	SFM-A/B
GSM136653	y	TA	GSE5851	SFM-A/B
GSM136654	y	TA	GSE5851	SFM-A/B

of immune cell populations, gene signatures and immune checkpoint markers

immune cell fraction from CIBERSORT

	B.cells.naiv	B.cells.mem	Plasma.cell	T.cells.CD8	T.cells.CD4	T.cells.CD4	T.cells.CD4	T.cells.follic	T.cells.regu	T.cells.gam	NK.cells.res	NK.cells.ac	Monocytes	Macrophag	Macrophag	Macrophag	Dendritic.cc	Dendritic.cc
GSM971957	0	0.0507162	0.0959973	0.0820469	0	0.0250235	0.132896	0.0278886	0	0	0.0077104	0.0516353	0	0.1035528	0.0701162	0.1600469	0.0438761	0
GSM971958	0	0.0977094	0.1367345	0.0241512	0.0401835	0.0312525	0.0406362	0.0016659	0	0	0.0488319	0	0	0.2994603	0.0103522	0.1953669	0	0
GSM971959	0	0.0846397	0.2136025	0.057304	0	0.0090986	0	0.0157903	0.0263632	0	0.0034417	0.0015806	0	0	0.0082164	0.2053301	0.0005	0.0156839
GSM971960	0.0418613	0	0.4918877	0.0394799	0.0347803	0.0624137	0.045105	0.0103319	0	0	0.0415422	0	0.0137427	0.0115931	0.0038525	0.1402784	0	0
GSM971961	0	0.0319123	0.1746649	0.0321221	0	0	0.0128917	0.0133801	0.0198632	0	0.0307357	0	0.0013949	0.3984561	0.0057604	0.1953023	0	0
GSM971962	0.014071	0	0.2998496	0.0353509	0	0.0500447	0	0	0.0355898	0	0.0614043	0	0	0.1829746	0.0538604	0.1848016	0	0
GSM971963	0	0.0559773	0.1048123	0.1479566	0	0	0.1427314	0.0332647	0	0	0.0560141	0.0304675	0	0.0650634	0.110299	0.1836299	0.018817	0.0020132
GSM971964	0	0.0214883	0.4262117	0.0591663	0	0.1331027	0.0290567	0.0140284	0	0	0.0167902	0.0197417	0.0074186	0.0421207	0.001129	0.1079493	0.0477317	0.039765
GSM971965	0.0187445	0	0.2739167	0.057315	0.0006	0.0915928	0	0	0.0273625	0	0.0470157	0	0	0.1147716	0.0319453	0.2495027	0	0.0148675
GSM971966	0	0.1505047	0.1597733	0.0805429	0	0.0815084	0	0	0.0387985	0	0.0287292	0	0.0097596	0	0.0227821	0.247454	0.016068	0.0397651
GSM971967	0	0.0008	0.0469617	0.0457922	0	0.2450589	0.0039062	0.0262094	0	0	0.0449833	0.018613	0.0135331	0.0735846	0.0166242	0.1631041	0	0.0419356
GSM971968	0	0.103312	0.0870252	0.0457568	0	0.0618189	0	0.0138963	0.0173881	0	0	0.0606315	0.0591325	0.1439516	0.0211772	0.228382	0.05628	0.0213236
GSM971969	0	0.0839689	0.1938239	0.0807841	0	0.0747433	0.0496811	0.0400326	0.0135676	0.0646555	0	0	0	0.0884757	0.0840567	0.201697	0.0073609	0.0070476
GSM971970	0	0.0390235	0.0679303	0.1073047	0	0.1393749	0	0.1060683	0	0	0.1029734	0	0	0.0355409	0.0486309	0.2215343	0.0213747	0.0144453
GSM971971	0.0115906	0	0.217924	0.1715034	0	0.0316291	0.0616685	0.0451438	0	0	0.0094733	0.0218121	0	0.065997	0.1167871	0.1471426	0.0311037	0.0082988
GSM971972	0.0036173	0.0062161	0.2442624	0.173326	0	0.0459702	0.0528292	0.0508151	0	0	0.0218581	0.0299011	0.0255329	0.0199989	0.090227	0.1998216	0.018046	0
GSM971973	0	0.0629421	0.0306834	0.1364456	0	0	0	0.0566673	0.0346111	0	0.0168562	0.0122391	0	0.1286097	0.0411974	0.2770897	0.0200529	0.0108644
GSM971974	0	0.0315467	0.2985596	0.0609264	0.0171264	0.2038237	0	0.0098564	0.0174653	0	0.0500595	0	0	0.0360979	0.006468	0.1597288	0.0304147	0.0157918
GSM971975	0	0.1413386	0.1974679	0	0.0134766	0.1203928	0.0786555	0	0	0	0.1294875	0	0.0122366	0.0963423	0.0011687	0.0548657	0	0.0153258
GSM971976	0	0.1164031	0.227342	0.0926936	0.0508701	0.0906669	0.0843274	0.0039372	0	0	0.0491648	0	0.0034256	0	0.0625382	0.1352118	0.0132952	0
GSM971977	0	0.01022	0.2485965	0.0321598	0	0.0932601	0	0.0668443	0.0280847	0	0.0570251	0	0	0.0239626	0.090473	0.2044833	0.008723	0
GSM971978	0.0178581	0	0.24879	0.1420003	0	0.0021216	0.1027009	0.0667505	0	0	0.0279391	0.0251583	0	0.0501367	0.1022525	0.1673819	0.0136879	0
GSM971979	0	0.0253023	0.0192217	0.0053214	0	0.0712706	0	0.0017334	0	0	0.0275772	0	0	0.3055402	0.0138018	0.0902382	0	0.0063005
GSM971980	0.014327	0	0.308312	0.1394972	0	0.0999918	0.0176928	0.0113423	0	0	0.0164918	0.0062488	0	0.0001	0.1319564	0.1634652	0.0007	0.0452072
GSM971981	0	0.0432992	0.2278773	0.1314588	0	0	0.0313806	0.060102	0	0.0019176	0	0.0089109	0	0	0.1216667	0.2328596	0.0408404	0.0070661
GSM971982	0	0.1242248	0.0578918	0.0300556	0	0.052534	0.0743607	0.0403194	0	0	0.015611	0.0352304	0	0.0674288	0.1304161	0.1985195	0.0085467	0.0045049
GSM971983	0	0.0255304	0.1846393	0.0930093	0	0.0183637	0.0430379	0.0818968	0.0098444	0	0.0359189	0	0	0.1418431	0.0882683	0.1497917	0.0071377	0.0017055
GSM971984	0	0.1864602	0.1409126	0.0779633	0	0.0267933	0.088157	0.0422448	0	0	0.0274487	0.0246183	0.0203018	0.0926127	0.1051602	0.145416	0.0162417	0
GSM971985	0	0	0.4109818	0.0747788	0	0.2887785	0.0048774	0	0	0	0.023119	0	0	0.0029614	0.0129795	0.0776155	0.0412079	0.015086
GSM971986	0	0.0265746	0.2936382	0.082418	0	0.0977287	0.0238673	0.0365407	0.0108456	0	0.0500094	0	0	0.0710137	0.0532202	0.1775074	0	0
GSM971987	0	0.0466418	0.2464399	0.0955283	0.0334538	0.1547561	0	0.0042905	0	0.0004	0.005618	0	0	0	0.0293248	0.1587941	0.0982729	0.010823
GSM971988	0	0.0261303	0.1924341	0.1605739	0	0.1592846	0	0	0.0514137	0	0.0125572	0.0148692	0	0.0429365	0.038434	0.1484412	0.009049	0.070175
GSM971989	0	0.028782	0.4221168	0.0521205	0	0.2051306	0	0.0510406	0.0069422	0	0.0200238	0.0108633	0.0064224	0	0.0135383	0.0898993	0	0.0426993
GSM971990	0	0.0828121	0.2752081	0.073421	0	0.1059696	0.0327454	0.0305059	0	0	0.0229968	0.0142937	0	0.0715912	0.0647673	0.1532117	0.0077902	0.0128777
GSM971991	0	0.1141714	0.1627126	0.0394054	0	0.0678355	0.0717736	0.0194444	0	0	0.0578736	0	0	0.1987768	0.0495526	0.0900259	0	0.0092854
GSM971992	0	0.0810479	0.3651066	0.02227	0.0438872	0.0878228	0.045067	0.026473	0	0	0.0244014	0	0	0.0426579	0.0486169	0.1498785	0.007481	0
GSM971993	0	0.1400553	0.2303502	0.1098375	0	0.0579108	0.0076391	0.0572016	0	0	0.0235116	0	0.0147915	0	0.0727186	0.1437248	0.0167155	0.012363
GSM971994	0.0080713	0	0.3475538	0.0747099	0	0.1445453	0	0.0124766	0	0	0.0452024	0.0276797	0.048733	0.0031401	0.0118323	0.1775342	0.002927	0.0037262
GSM971995	0	0	0.3532813	0.1005445	0	0.0640535	0	0.0258796	0.0156625	0	0	0.0326978	0	0	0.0533791	0.1933522	0.0877441	0
GSM971996	0.0167057	0	0.1802071	0.073144	0	0.0466146	0.0168983	0.0327293	0	0	0	0.0361328	0	0.2363735	0.0684319	0.1922615	0	0.013797
GSM971997	0.0591317	0	0.1784893	0.1706419	0	0.0654883	0.0926648	0.0118574	0	0	0.0284084	0.0202548	0	0.0473897	0.1440128	0.1269909	0.0168454	0
GSM971998	0.01284	0	0.3964318	0.1038098	0.01114	0.084995	0.0110549	0	0	0	0.0315651	0	0	0	0.0570696	0.183477	0.0252094	0.0091082
GSM971999	0.0246728	0.0030502	0.2902087	0.0294843	0	0.1473667	0.0936922	0.049812	0	0	0.0354702	0	0.0117978	0.048968	0.0275429	0.1823412	0.0067631	0.0109026
GSM972000	0	0.1487567	0.0837073	0.162715	0.016966	0.0337712	0	0.0084662	0	0	0.029257	0	0.0269342	0.0769132	0.0433536	0.2902938	0.020308	0
GSM972001	0	0.0436033	0.4746093	0.1042312	0	0.0987741	0.0347629	0.008763	0.0069641	0	0.014953	0	0	0.0325236	0.0297832	0.0915093	0.0031184	0.0309913
GSM972002	0	0	0.1374036	0.0795335	0	0.0595369	0	0.0104062	0.011376	0	0.0370794	0	0	0.1173291	0.0400633	0.13261	0	0.021462
GSM972003	0	0.1421256	0.4160606	0.0607214	0.002323	0.0518337	0	0.0165915	0	0	0.0935022	0	0.0008	0	0.0175878	0.0098216	0.0105312	0.0114772
GSM972004	0.01607	0	0.3902414	0.0307016	0.0096686	0.1218424	0.0543495	0.0092748	0	0	0.0687865	0	0	0.0087577	0.0220518	0.1688158	0.0138712	0.0054571
GSM972005	0.0298163	0.039654	0.0187571	0.0062861	0	0.206447	0	0.0056798	0.0645732	0	0.098968	0	0.0565474	0	0.0078113	0	0.0404513	0
GSM972006	0.0199919	0	0.1824757	0.0794296	0	0.0836194	0.029771	0.0738189	0	0	0	0.0158245	0	0.0825858	0.0504475	0.2494105	0.0179327	0.005107
GSM972007	0.0068731	0	0.3668353	0.098408	0.0007	0.0390518	0.0038149	0.0081911	0.0213067	0	0.0085505	0.0072686	0.0475524	0.0225176	0.0146304	0.2728595	0.0158089	0.0143683
GSM972008	0	0.0497124	0.0915072	0.0333022	0	0.0744644	0.0162943	0.0171496	0	0	0.0213829	0	0.040042	0.1247278	0.0072501	0.206414	0	0.0399613
GSM972009	0	0	0.4731741	0.1164137	0	0.0706932	0	0.0072801	0.0028286	0	0.0096549	0.0078906	0	0	0.0070827	0.190033	0	0.0204669
GSM972010	0.0083125	0	0.1986083	0.0975895	0	0.044698	0.0662471	0.0044886	0	0	0.0082465	0.008916	0	0.1474304	0.0339566	0.1825843	0.006219	0.0269924
GSM972011	0.0309511	0	0.4333079	0.1050484	0.0111653	0	0	0.0393721	0.0076498	0	0	0.0354097	0.008945	0.0129732	0.1185553	0.1500106	0.0073924	0
GSM972012	0	0.1780017	0.2085866	0.0349729	0.0223906	0.1177192	0	0.0155294	0	0	0.1087181	0	0.0238342	0.0218267	0.0113217	0.0437696	0.0109241	0.0324108
GSM972013	0	0.0449376	0.1878485	0.0858758	0	0.0644311	0.0536151	0.0006	0.0007	0	0.0706815	0	0	0	0.0293908	0.2470871	0.0017304	0.0276093
GSM972014	0	0.0232284	0.1172515	0.063574	0	0.0666259	0	0.0250614	0.0277119	0	0	0.0037069	0	0.067064	0.0288527	0.1630421	0.0023018	0.0459279
GSM972015	0	0.0438993	0.0501047	0.1485326	0	0	0.0058388	0.0585461	0.0047176	0	0.0729246	0.018027	0	0.0958387	0.1193475	0.2308058	0	0.0258662
GSM972016	0.0148269	0	0.310857	0.0312386	0.0043546	0.0307562	0	0.0303692	0.0045159	0	0.0452698	0	0	0.1812481	0.0071192	0.1082758	0	0.0157797
GSM972017	0	0.0542015	0.2327247	0.0816271	0.0453302	0.0555811	0.0096833	0.0228233	0	0	0.0446246	0	0	0.1701745	0.0203304	0.1672653	0.0117404	0
GSM972018	0	0.1357241	0.1575666	0.0345784	0	0.0714563	0.0152181	0.0820798	0	0	0	0.0275481	0	0.0078256	0.1370101	0.1981464	0.0176236	0.0101717
GSM972019	0	0.1559456	0.1622943	0.1521667	0	0.0110742	0.0197202	0.1378072	0.0129579	0.0198164	0	0	0.0097407	0	0.0651705	0.1744469	0.0240925	0.0132167
GSM972020	0.0359882	0	0.4326979	0.0347994	0	0.1346076	0.009528	0.0218445	0.0095932	0	0.0496195	0	0	0.0100757	0.0264857	0.0826128	0.027248	0.0263166
GSM972021	0	0.1398842	0.0954603	0.0239219	0	0.1461437	0	0.0092813	0.0318995	0	0.0905218	0	0	0.1110966	0.0121102	0.1377152	0.0153321	0.0195597
GSM972022	0	0.0289257	0.3517276	0.1326248	0.0060954	0.0579989	0	0.0151189	0	0	0.020878	0	0.0160719	0.0487528	0.0883445	0.1352597	0.0181368	0
GSM972023	0	0.0527285	0.1878567	0.0380016	0.0542224	0.0849136	0	0	0	0	0.0396781	0	0	0.2392325	0.0225143	0.1035579	0	0
GSM972024	0	0.0546691	0.0907588	0.0223307	0.0135274	0.1610809	0.1010361	0.001445	0	0	0.1043708	0	0.0058574	0.0555908	0.0119284	0.1812647	0.0466917	0.0110452
GSM972025	0	0	0.4139592	0.1240287	0	0.1484165	0	0	0.0080327	0	0	0.0172897	0	0.0088602	0.0231598	0.1531631	0.0351946	0
GSM972026	0.0172841	0.0025034	0.1226697	0.1190013	0.0222941	0.0111379	0.1239975	0	0	0	0	0.0655306	0.0169123	0	0.0264641	0.3174699	0.0277956	0.0201381
GSM972027	0	0.1506712	0.1429095	0.0677079	0.0518959	0	0.0686436	0	0	0	0.0940858	0	0.0660535	0.1489088	0	0.1138078	0.0177362	0.0020334
GSM972028	0.0058294	0	0.3851207	0.0588314	0	0.1108988	0.0322405	0	0.0082012	0	0.0517696	0	0	0	0.0281416	0.1780242	0.0472001	0.0003
GSM972029	0.0168392	0	0.2729455	0.0989808	0.0133685	0.1311539	0	0.0082806	0	0	0.0687559	0	0	0.0839447	0.017232	0.1879309	0	0.0100077
GSM972030	0	0.184728	0.2058545	0.0792103	0.0343417	0.0979826	0	0	0	0	0.0679662	0	0.0383092	0	0.0233672	0.1366501	0.0024183	0.017098
GSM972031	0	0.1960047	0.2525087	0.0197192	0.0217524	0.1042996	0	0.0214952	0	0	0.0844174	0	0.0281702	0.0409045	0.025354	0.0790829	0.0172265	0.0038313
GSM972032	0	0.1725152	0.2197345	0.0072206	0.0432473	0.1127222	0.0892124	0.0318341	0	0	0.0787918	0	0.0295094	0.0369566	0.0089672	0.0740103	0.0078185	0.0218949
GSM972033	0	0.0952712	0.1776954	0.1484717	0	0.0799544	0.0091825	0.0370777	0.0340571	0	0.0385171	0.0015806	0	0	0.0009	0.233721	0.0154269	0.0275192
GSM972034	0	0.2788878	0.2237201	0.0159425	0.0547453	0.0714315	0.0037269	0	0	0	0.0494943	0	0.0193226	0	0.0110812	0.0743402	0.0162545	0.0415225
GSM972035	0	0.046641	0.1048073	0.0528448	0	0.1734602	0.052956	0.0192189	0.0157864	0	0.0513573	0	0	0	0.0168356	0.3034284	0.0622534	0.042708
GSM972036	0.0279324	0	0.3984235	0.030476	0	0.1637331	0.0412671	0	0	0	0.0730907	0	0	0.0302315	0.0386047	0.1278622	0.0228745	0
GSM972037	0	0.096408	0.2724783	0.0941022	0	0.1219478	0	0.0272184	0	0	0.0329234	0	0	0.0449305	0.0707065	0.1595601	0.0041205	0.0301289
GSM972038	0.0095235	0.046191	0.115816	0.1120819	0	0.0403475	0.0077553	0.0686612	0.039998	0	0.0096367	0.0281253	0.0043803	0.0383343	0.0367834	0.2511001	0.033624	0.0691497
GSM972039	0	0.1433868	0.4346162	0.0668412	0	0.0539716	0	0.0814887	0	0.0062627	0	0	0.0370786	0	0.0101356	0.0595843	0	0.0197408

Supplementary Table 10. Top 15 abundance microbes in each subtype

SFM-A		SFM-B		SFM-C		SFM-D		SFM-E		SFM-F	
Genus	**%**	**Genus**	**%**	**Genus**	**%**	**Genus**	**%**	**Genus**	**%**	**Genus**	**%**
escherichia.coli	28	escherichia.coli	57.7	escherichia.coli	37.7	escherichia.coli	35	escherichia.coli	41.7	escherichia.coli	30.4
propionibacterium.acnes	10.9	propionibacterium.acnes	6.4	propionibacterium.acnes	6.1	propionibacterium.acnes	7.3	propionibacterium.acnes	7.4	propionibacterium.acnes	8.4
pseudomonas.fluorescens	2.1	acinetobacter.baumannii	1.4	fusobacterium.nucleatum	4.5	bacteroides.fragilis	2.3	pseudomonas.fluorescens	2	pseudomonas.fluorescens	2.8
acinetobacter.baumannii	2.1	fusobacterium.nucleatum	1.1	bacteroides.fragilis	3.4	fusobacterium.nucleatum	2.3	acinetobacter.baumannii	1.4	fusobacterium.nucleatum	2.5
fusobacterium.nucleatum	1.7	pseudomonas.fluorescens	1	pseudomonas.fluorescens	1.9	bacteroides.vulgatus	1.7	ralstonia.pickettii	1.3	bacteroides.fragilis	2.1
staphylococcus.epidermidis	1.5	bacteroides.vulgatus	1	acinetobacter.baumannii	1.5	rhodopseudomonas.palustris	1.7	fusobacterium.nucleatum	1.1	ralstonia.pickettii	1.7
ralstonia.pickettii	1.4	staphylococcus.epidermidis	0.9	bacteroides.thetaiotaomicron	1.2	[clostridium].saccharolyticum	1.3	staphylococcus.epidermidis	0.9	acinetobacter.baumannii	1.6
bacteroides.fragilis	1.3	ralstonia.pickettii	0.7	ralstonia.pickettii	1.1	pseudomonas.fluorescens	1.1	bacteroides.fragilis	0.9	bacteroides.vulgatus	1.3
pseudomonas.mendocina	1.1	pseudomonas.putida	0.6	bacteroides.vulgatus	1.1	oscillibacter.valericigenes	1.1	pseudomonas.putida	0.9	pseudomonas.putida	1.2
staphylococcus.aureus	0.8	streptococcus.pneumoniae	0.5	[clostridium].saccharolyticum	1	pseudomonas.putida	0.9	bacteroides.vulgatus	0.8	[clostridium].saccharolyticum	1
pseudomonas.putida	0.8	staphylococcus.aureus	0.5	pseudomonas.putida	0.8	roseburia.hominis	0.7	staphylococcus.aureus	0.6	staphylococcus.epidermidis	0.9
agrobacterium.sp..h13-3	0.7	bacteroides.fragilis	0.5	roseburia.hominis	0.7	acinetobacter.baumannii	0.6	[clostridium].saccharolyticu m	0.6	roseburia.hominis	0.8
micrococcus.luteus	0.7	pseudomonas.mendocina	0.4	staphylococcus.epidermidis	0.6	microbacterium.testaceum	0.6	pseudomonas.mendocina	0.5	pseudomonas.mendocina	0.7
pseudomonas.aeruginosa	0.6	pseudomonas.aeruginosa	0.3	pseudomonas.stutzeri	0.6	paracoccus.denitrificans	0.6	pseudomonas.aeruginosa	0.5	corynebacterium.aurimucosum	0.7
streptococcus.pneumoniae	0.6	shigella.sonnei	0.3	pseudomonas.aeruginosa	0.5	[eubacterium].rectale	0.6	roseburia.hominis	0.5	pseudomonas.aeruginosa	0.7

data for drawwing Fig. 5

	CRSS_A	CRSS_B	CRSS_(	CRSS_D	CRSS_E	CRSS_F	p.value
Pseudomonas.mendocina	1.062	0.368777577	0.486	0.169491673	0.541	0.706040387	######
escherichia.coli	27.97	57.70114047	37.71	34.98348652	41.65	30.38986482	######
Rhodopseudomonas.palustri	0.362	0.142685299	0.156	1.703969399	0.24	0.187046759	######
Agrobacterium.sp..h13-3	0.742	0.312669231	0.373	0.044327268	0.394	0.547589297	2E-07
Fusobacterium.nucleatum	1.716	1.084502	4.464	2.284216035	1.135	2.460814015	2E-05
Oscillibacter.valericigenes	0.154	0.138129817	0.375	1.05589719	0.32	0.430715524	7E-05
[Clostridium].saccharolyticu	0.273	0.327511563	0.982	1.349365442	0.627	0.974617501	0.0001
Bacteroides.fragilis	1.31	0.469511487	3.393	2.319138398	0.94	2.123527165	0.0002
[Eubacterium].rectale	0.198	0.164780589	0.492	0.574876564	0.358	0.593671562	0.0002
Roseburia.hominis	0.238	0.262849471	0.734	0.653166828	0.452	0.783240718	0.0005
Microbacterium.testaceum	0.188	0.105133173	0.115	0.602063757	0.208	0.149447129	0.0005
Ralstonia.pickettii	1.401	0.737701994	1.122	0.124468586	1.265	1.709520718	0.0007
Pseudomonas.fluorescens	2.106	0.997462089	1.858	1.106171809	1.978	2.756970225	0.0018
Micrococcus.luteus	0.728	0.313277249	0.241	0.228828176	0.316	0.327378875	0.0045
Staphylococcus.epidermidis	1.527	0.862064343	0.644	0.278019346	0.94	0.897266037	0.0046
Pseudomonas.aeruginosa	0.607	0.332291198	0.538	0.356011459	0.49	0.67332042	0.0195
Staphylococcus.aureus	0.827	0.47610077	0.414	0.385998938	0.65	0.487106471	0.0262
Propionibacterium.acnes	10.95	6.371077329	6.063	7.262427897	7.447	8.381980958	0.0386
Shigella.sonnei	0.2	0.329653293	0.263	0.372844823	0.266	0.187294847	0.0408
Bacteroides.thetaiotaomicro	0.518	0.318176177	1.175	0.541609097	0.423	0.630584825	0.0506
Corynebacterium.aurimucosu	0.459	0.242939	0.319	0.371499447	0.285	0.703531095	0.0567
Streptococcus.pneumoniae	0.581	0.515711745	0.28	0.307148679	0.299	0.288951658	0.0579
Pseudomonas.putida	0.82	0.562078273	0.792	0.889922791	0.859	1.181991154	0.0905
Acinetobacter.baumannii	2.079	1.404405282	1.514	0.619177667	1.372	1.561749602	0.0935
Paracoccus.denitrificans	0.309	0.04575912	0.097	0.588394346	0.281	0.349542164	0.128
Pseudomonas.stutzeri	0.488	0.298898171	0.585	0.319854662	0.431	0.533309562	0.2232
Bacteroides.vulgatus	0.503	0.97520664	1.061	1.709571719	0.761	1.294990309	0.3019