

Supplementary Table 1. Association between 4.1N expression and clinicopathological characteristics in EOC

Characteristics	n=268(%)	4.1N expression		p value
		Low expression n=168(%)	High expression n=100(%)	
Age (years)				0.093
<50	103(38.4)	58(34.5)	45(45.0)	
≥50	165(61.6)	110(65.5)	55(55.0)	
FIGO stage				0.008**
I	65(24.25%)	33(19.6)	32(32.0)	
II	31(11.57%)	16(9.5)	15(15.0)	
III	138(51.49%)	91(54.2)	47(47.0)	
IV	34(12.69%)	28(16.7)	6(6.0)	
Tumor histology				0.002**
High-grade serous	172(64.18%)	121(72.0)	51(51.0)	
Low-grade serous	10(3.73%)	6(3.6)	4(4.0)	
Clear cell	37(13.81%)	18(10.7)	19(19.0)	
Endometrioid	36(13.43%)	14(8.3)	22(22.0)	
Mucinous	8(2.98%)	7(4.2)	1(1.0)	
Seromucino	5(1.87%)	2(1.2)	3(3.0)	

**p<0.01 represents the p-values with significant differences.

Supplementary Table 2. Primer sequences for qRT-PCR

Gene	Primer
4.1N	Forward: 5'-AGGAAACCACGCCGAGACACAA-3' Reverse: 5'-GGTGGATGAGTTTGCTGTTGGG-3'
E-cadherin	Forward: 5'-ATTTTTCCCTCGACACCCGAT-3' Reverse: 5'-TCCCAGGCGTAGACCAAGA-3'
N-cadherin	Forward: 5'-ACAGTGGCCACCTACAAAGG-3' Reverse: 5'-CCGAGATGGGGTTGATAATG-3'
ZO-1	Forward: 5'-TATTATGGCACATCAGCACG-3' Reverse: 5'-TGGGCAAACAGACCAAGC-3'
Fibronectin	Forward: 5'-TCCCTCGGAACATCAGAAAC-3' Reverse: 5'-CAGTGGGAGACCTCGAGAAG-3'
Snail	Forward: 5'-TCGGAAGCCTAACTACAGCG-3' Reverse: 5'-GATGAGCATTGGCAGCGAG-3'
MMP2	Forward: 5'-TTTCCATTCCGCTTCCAGGGCAC-3' Reverse: 5'-TCGCACACCACATCTTTCCGTC-3'
Bax	Forward: 5'-CTAAAGTGCCCGAGCTGAGCA-3' Reverse: 5'-TGAGGACTCCAGCCACAAAGA-3'
Bcl-2	Forward: 5'-ATAACCGGGAGATCGTGATG-3' Reverse: 5'-CAGGCTGGAAGGAGAAGATG-3'
14-3-3 ζ	Forward: 5'-CCTGCATGAAGTCTGTA-3' Reverse: 5'-GACCTACGGGCTCCTACAACA-3'
β -actin	Forward: 5'-AGCACAGAGCCTCGCCTTTG-3' Reverse: 5'-ACATGCCGGAGCCGTTGT-3'
GAPDH	Forward: 5'-AAGGTCGGAGTCAACGGATT-3' Reverse: 5'-CCATGGGTGGAATCATATTGG-3'

Supplementary Table 3. Interaction proteins of 4.1N

Accession	PROTEIN	GENE	Score	Coverage
Q9H4G0	4.1N	EPB41L1	185.15	40.41
P06733	Alpha-enolase	ENO1	44.5	43.09
Q00610	Clathrin heavy chain 1	CLTC	44.45	15.76
P68371	Tubulin beta-4B chain	TUBB4B	26.49	34.16
P60842	Eukaryotic initiation factor 4A-I	EIF4A1	22.84	20.94
P14625	Endoplasmin	HSP90B1	20.12	12.08
P12956	X-ray repair cross-complementing protein 6	XRCC6	17.9	14.45
P17844	Probable ATP-dependent RNA helicase DDX5	DDX5	16.59	11.89
P10412	Histone H1.4	HIST1H1E	14.14	23.29
P14866	Heterogeneous nuclear ribonucleoprotein L	HNRNPL	14.09	14.09
Q9NZI8	Insulin-like growth factor 2 mRNA-binding protein 1	IGF2BP1	12.51	14.9
P50990	T-complex protein 1 subunit theta	CCT8	12.05	11.31
P27797	Calreticulin	CALR	11.49	11.75
Q9UGI8	Testin	TES	11.22	13.3
P23284	Peptidyl-prolyl cis-trans isomerase B	PPIB	10.93	22.69
P26641	Elongation factor 1-gamma	EEF1G	10.61	11.21
P69905	Hemoglobin subunit alpha	HBA1	10.07	19.01
P02042	Hemoglobin subunit delta	HBD	9.8	21.77
P62937	Peptidyl-prolyl cis-trans isomerase A	PPIA	8.32	18.79
Q15366	Poly(rC)-binding protein 2	PCBP2	7.58	10.41
P62917	60S ribosomal protein L8	RPL8	6.87	13.62
Q99623	Prohibitin-2	PHB2	6.85	10.03
P21796	Voltage-dependent anion-selective channel protein 1	VDAC1	6.82	10.25
Q9H0U4	Ras-related protein Rab-1B	RAB1B	6.76	14.93
P62266	40S ribosomal protein S23	RPS23	6.68	15.38
P63104	14-3-3 zeta/delta	YWHAZ	5.95	22.45
P61981	14-3-3 gamma	YWHAG	5.63	12.96
Q13151	Heterogeneous nuclear ribonucleoprotein A0	HNRNPA0	5.27	13.77
P60866	40S ribosomal protein S20	RPS20	5.24	15.13
Q04917	14-3-3 eta	YWHAH	4.93	13.01
P23528	Cofilin-1	CFL1	4.63	20.48
P09211	Glutathione S-transferase P	GSTP1	4.3	14.76
P63241	Eukaryotic translation initiation factor 5A-1	EIF5A	4.09	20.13
P35080	Profilin-2	PFN2	3.66	10
P62913	60S ribosomal protein L11	RPL11	3.15	11.8
P62244	40S ribosomal protein S15a	RPS15A	2.25	10.77
P63220	40S ribosomal protein S21	RPS21	2.03	12.05
Q9H3K6	BolA-like protein 2	BOLA2	0	18.6

Supplementary Table 4. 89 differential proteins in four clinical EOC samples.

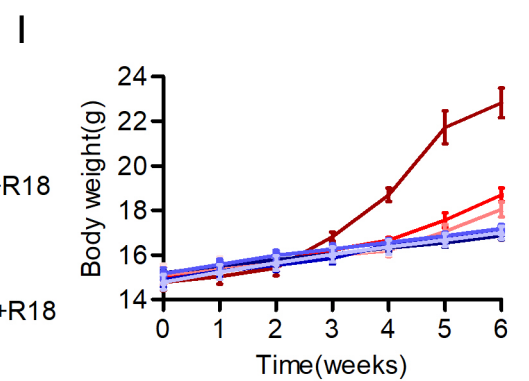
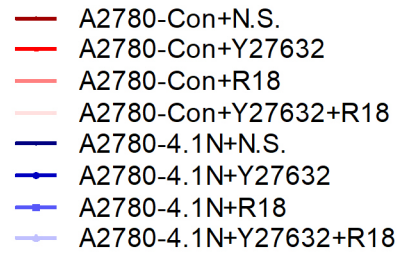
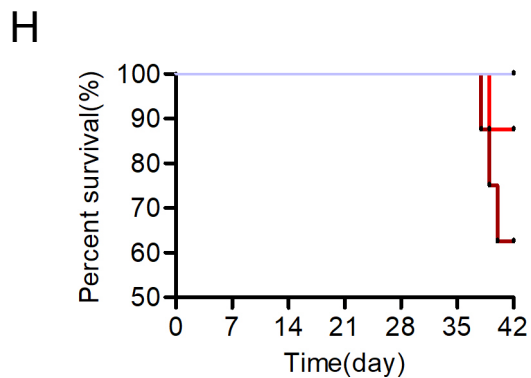
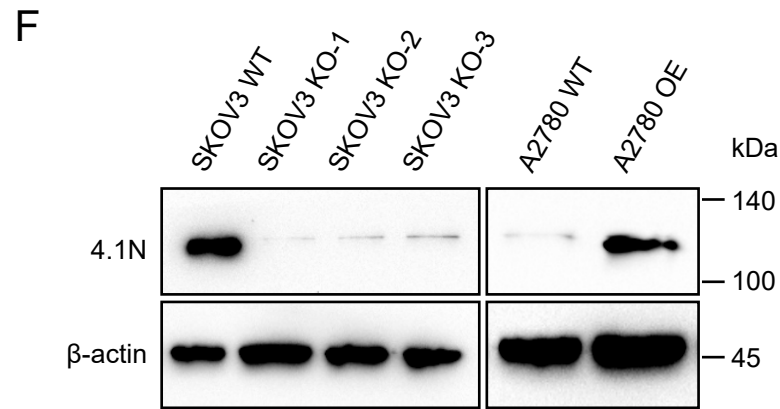
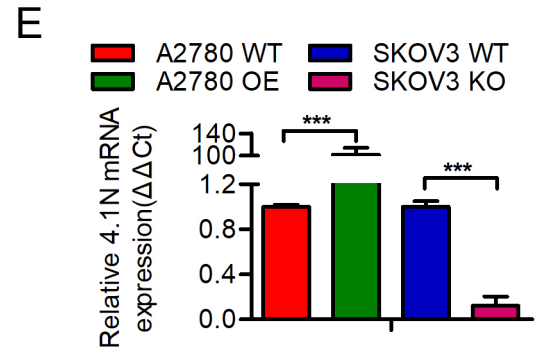
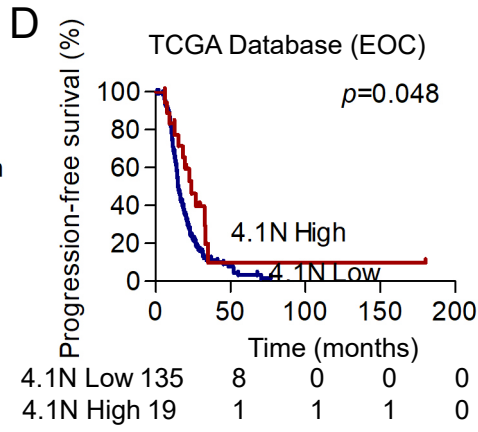
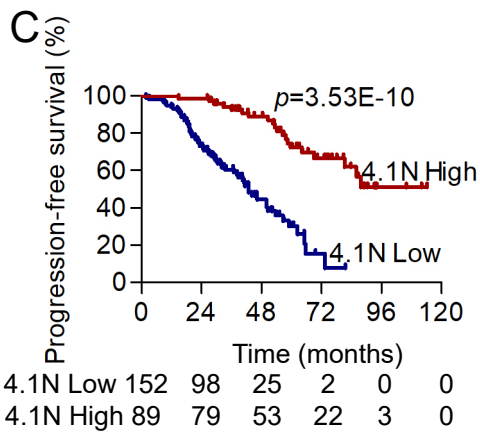
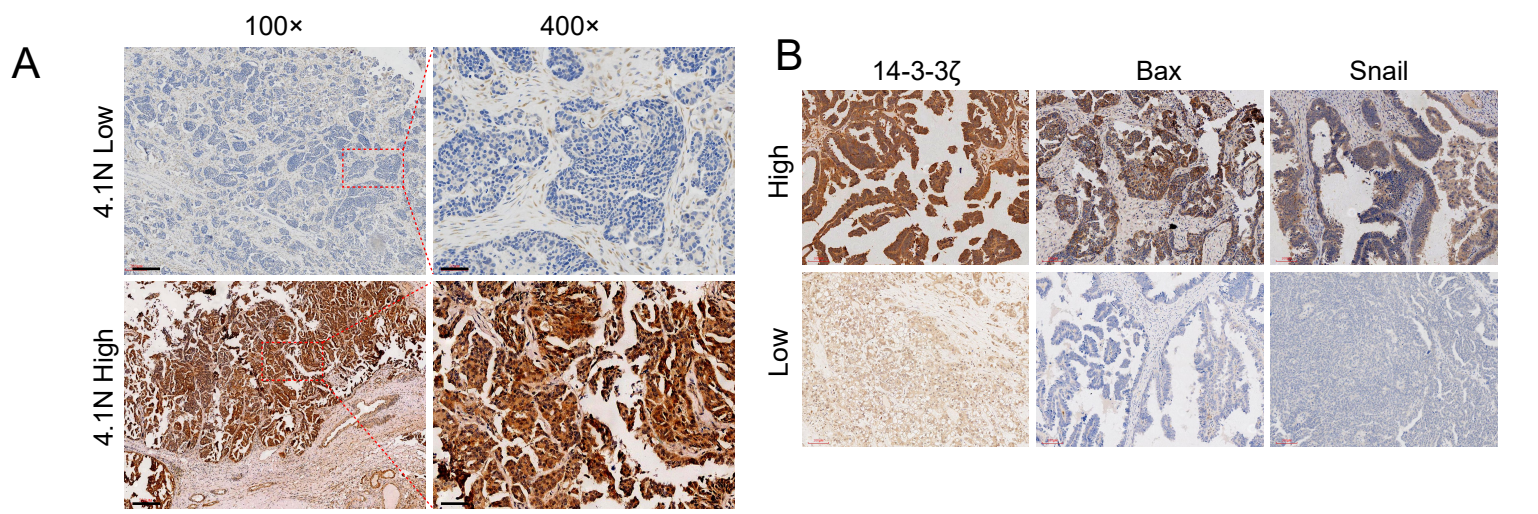
GeneID	log2 Ratio	Pvalue
RAB5B Ras-related protein Rab-5B	0.09	0.03
S100A9 Protein S100-A9	0.09	0.00
S100A9 Protein S100-A9	0.09	0.00
BANF1 Barrier-to-autointegration factor	0.10	0.01
HBA2;HBA1 Hemoglobin subunit alpha	0.11	0.00
ALB Isoform 1 of Serum albumin	0.11	0.00
VTN Vitronectin	0.12	0.00
FGG Uncharacterized protein	0.13	0.00
CRABP1 Cellular retinoic acid-binding protein 1	0.14	0.05
FGA Isoform 1 of Fibrinogen alpha chain	0.14	0.00
SPRR3 Uncharacterized protein	0.15	0.00
FGB Fibrinogen beta chain	0.16	0.00
MPO Isoform H17 of Myeloperoxidase	0.17	0.00
GSTA1 Glutathione S-transferase A1	0.18	0.00
AZU1 Azurocidin	0.19	0.00
SRSF3 Serine/arginine-rich splicing factor 3	0.20	0.02
SERPINA1 Isoform 1 of Alpha-1-antitrypsin	0.21	0.00
DEFA1;DEFA1B Neutrophil defensin 1	0.22	0.04
C1orf31 cDNA FLJ60021, moderately similar to Protein transport protein Sec61 subunit alpha isoform 1	0.23	0.04
HBB Hemoglobin subunit beta	0.23	0.00
ORM1 Alpha-1-acid glycoprotein 1	0.24	0.01
CLU Isoform 5 of Clusterin	0.25	0.00
KRT5 Keratin, type II cytoskeletal 5	0.25	0.00
KRT5 Keratin, type II cytoskeletal 5	0.25	0.00
C9 Complement component C9	0.25	0.00
S100A8 Protein S100-A8	0.26	0.00
LTF Uncharacterized protein	0.26	0.00
HP;HPR Haptoglobin	0.26	0.00
NPC2 cDNA FLJ59142, highly similar to Epididymal secretory protein E1	0.26	0.00
SERPINF2 Alpha-2-antiplasmin	0.28	0.05
MAPRE1 cDNA FLJ52068, highly similar to Microtubule-associated protein RP/EB family member 1	0.29	0.02
APOE Apolipoprotein E	0.30	0.00
AHSG cDNA FLJ55606, highly similar to Alpha-2-HS-glycoprotein	0.30	0.01
SLC4A1 Solute carrier family 4, anion exchanger, member 1	0.32	0.01
FTL Ferritin light chain	0.32	0.01
APOC2 Apolipoprotein C-II	0.34	0.01
CTSG Cathepsin G	0.35	0.00
IGHV4-31;IGHG1 Putative uncharacterized protein DKFZp686G11190	0.35	0.03
LCN2 Neutrophil gelatinase-associated lipocalin	0.37	0.05
TXN Thioredoxin	0.38	0.00

Supplementary Table 4. 89 differential proteins in four clinical EOC samples.

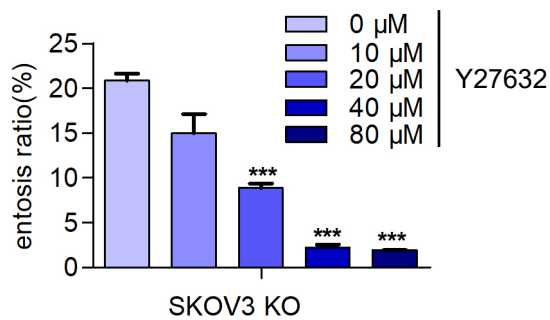
GeneID	log2 Ratio	Pvalue
PLG Plasminogen	0.38	0.00
GPX1 Glutathione peroxidase 1	0.39	0.04
LGALS3BP Galectin-3-binding protein	0.39	0.01
SRSF9 Serine/arginine-rich splicing factor 9	0.41	0.00
HBD Hemoglobin subunit delta	0.42	0.03
RPL18A 60S ribosomal protein L18a	0.42	0.00
LYZ Lysozyme C	0.43	0.01
HINT1 Histidine triad nucleotide-binding protein 1	0.44	0.04
RPS17;RPS17L 40S ribosomal protein S17	0.45	0.01
TCEB2 Transcription elongation factor B polypeptide 2	0.46	0.01
RPLP0 60S acidic ribosomal protein P0	0.46	0.02
UCHL1 Ubiquitin carboxyl-terminal hydrolase isozyme L1	0.46	0.04
APOA1 Apolipoprotein A-I	0.46	0.00
PKM2 Isoform M2 of Pyruvate kinase isozymes M1/M2	0.47	0.00
- Transthyretin	0.48	0.01
TF Serotransferrin	0.49	0.04
SOD1 Superoxide dismutase [Cu-Zn]	0.50	0.05
GAPDH Glyceraldehyde-3-phosphate dehydrogenase	0.51	0.02
TRMT112 tRNA methyltransferase 112 homolog	0.52	0.03
RPL35A 60S ribosomal protein L35a	0.52	0.01
DHX15 Uncharacterized protein	0.54	0.02
PRKCSH glucosidase 2 subunit beta isoform 2	0.55	0.03
RBMX Heterogeneous nuclear ribonucleoprotein G	0.55	0.00
FN1 Isoform 15 of Fibronectin	0.56	0.00
STMN1 Isoform 1 of Stathmin	0.58	0.04
C3 Complement C3 (Fragment)	0.61	0.00
A1BG Isoform 1 of Alpha-1B-glycoprotein	0.61	0.03
COL6A1 Collagen alpha-1(VI) chain	1.66	0.01
COL1A1 Collagen alpha-1(I) chain	1.71	0.00
THBS1 Thrombospondin-1	1.74	0.01
AHNAK Neuroblast differentiation-associated protein AHNAK	1.80	0.00
LMNA Isoform A of Prelamin-A/C	1.82	0.01
DES Desmin	1.87	0.03
DCN Isoform A of Decorin	1.94	0.01
COL6A3 Isoform 1 of Collagen alpha-3(VI) chain	2.00	0.00
OGN cDNA FLJ59205, highly similar to Mimecan	2.15	0.02
COL6A2 Isoform 2C2 of Collagen alpha-2(VI) chain	2.25	0.01
MZB1 Isoform 1 of Plasma cell-induced resident endoplasmic reticulum protein	2.25	0.01
COL14A1 Isoform 2 of Collagen alpha-1(XIV) chain	2.40	0.00
PSMB8 30 kDa protein	2.51	0.04

Supplementary Table 4. 89 differential proteins in four clinical EOC samples.

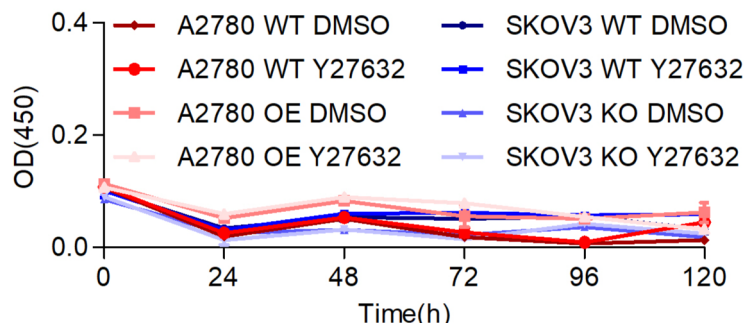
GeneID	log2 Ratio	Pvalue
KRT7 Keratin, type II cytoskeletal 7	2.65	0.00
KRT10 Keratin, type I cytoskeletal 10	2.70	0.00
S100A6 Protein S100-A6	2.70	0.02
COL1A2 Collagen alpha-2(I) chain	3.02	0.00
ANXA4 annexin A4	3.05	0.00
KRT2 Keratin, type II cytoskeletal 2 epidermal	3.05	0.00
KRT9 Keratin, type I cytoskeletal 9	3.25	0.00
KRT1 Keratin, type II cytoskeletal 1	3.40	0.00
MTDH Uncharacterized protein	3.87	0.05



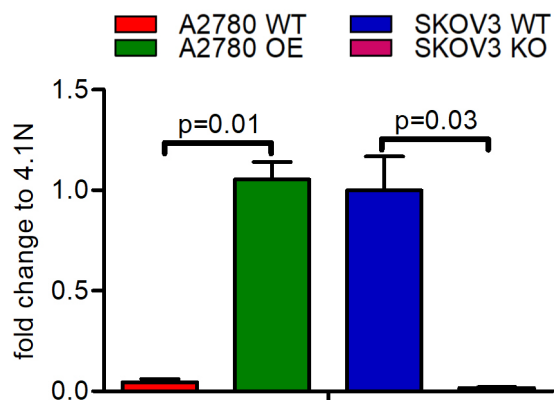
A



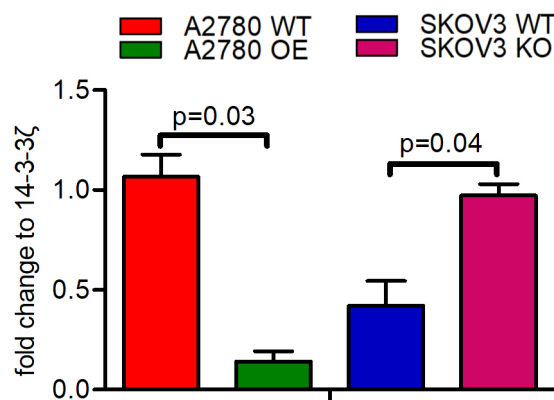
B



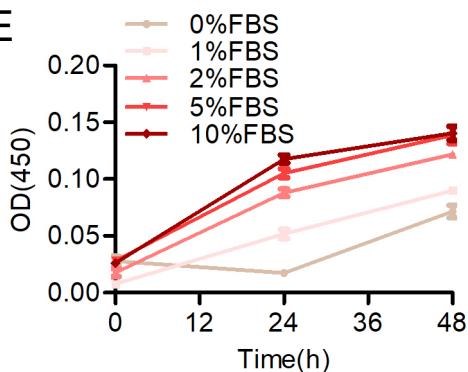
C



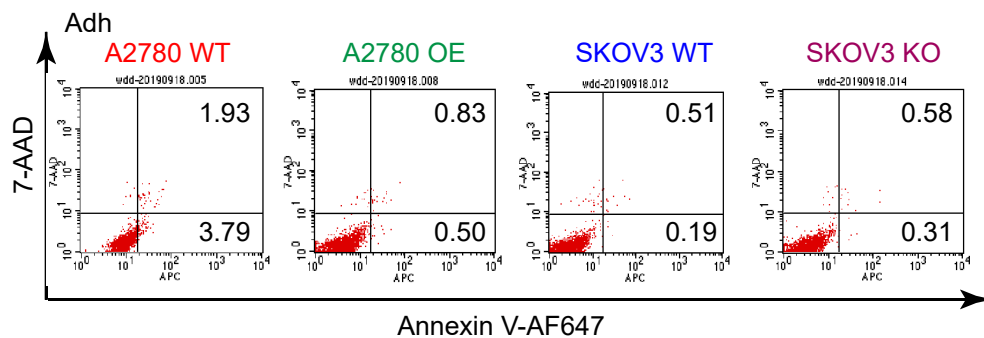
D



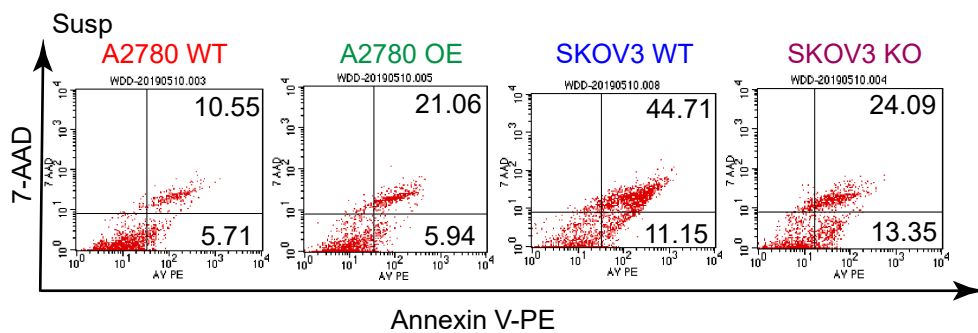
E



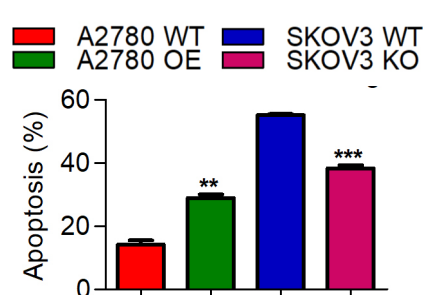
F



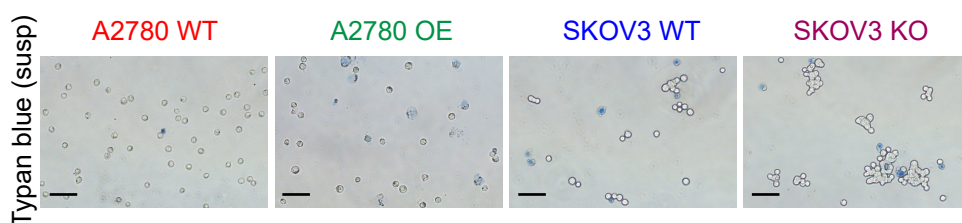
G



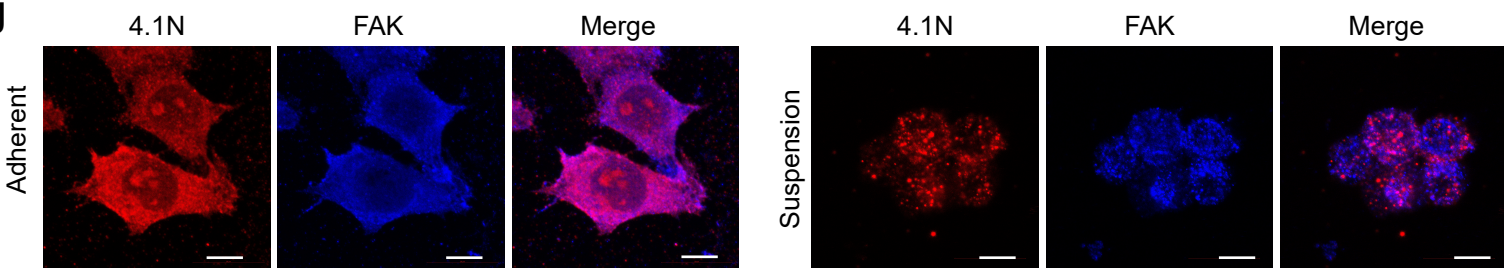
H



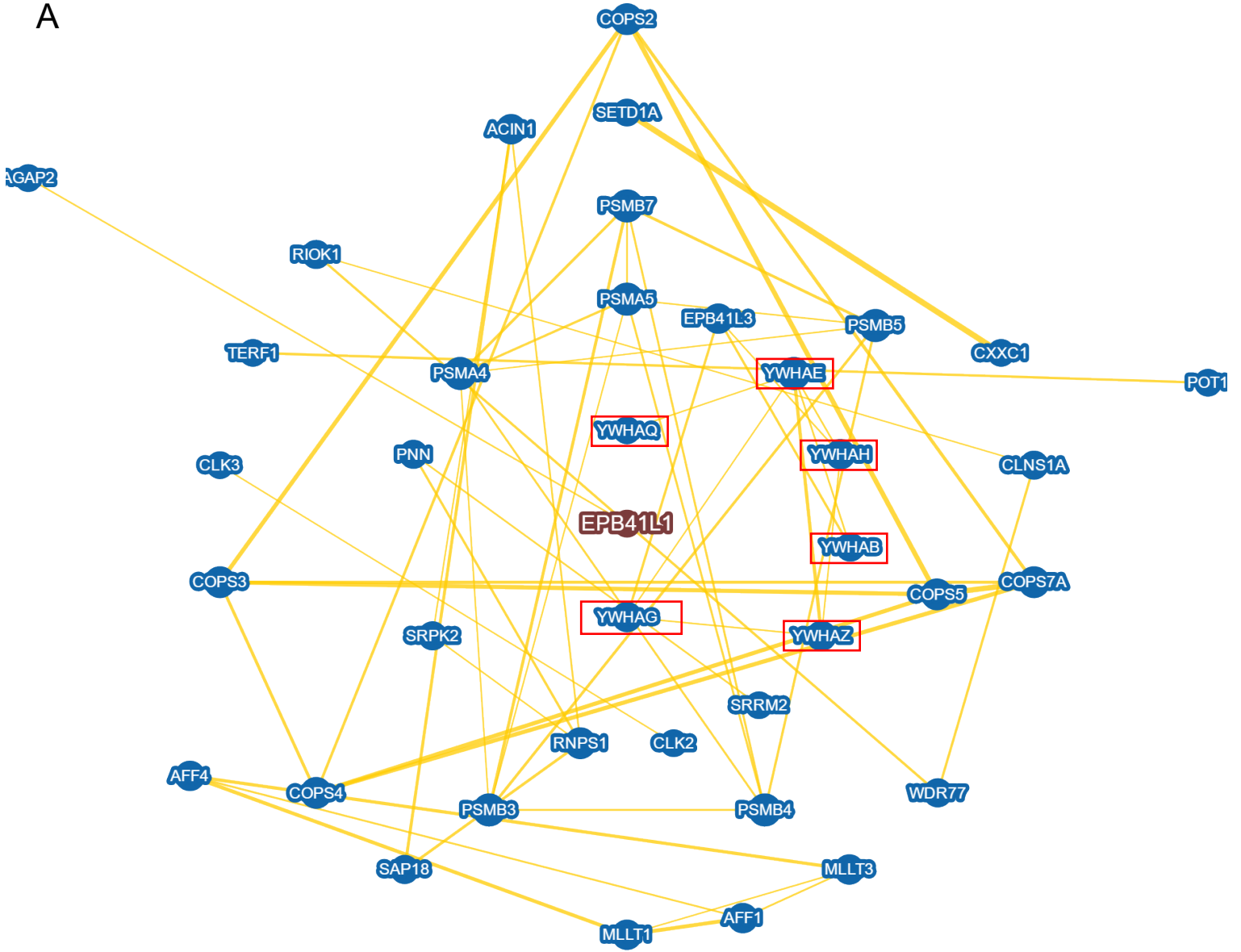
I



J



A



B

