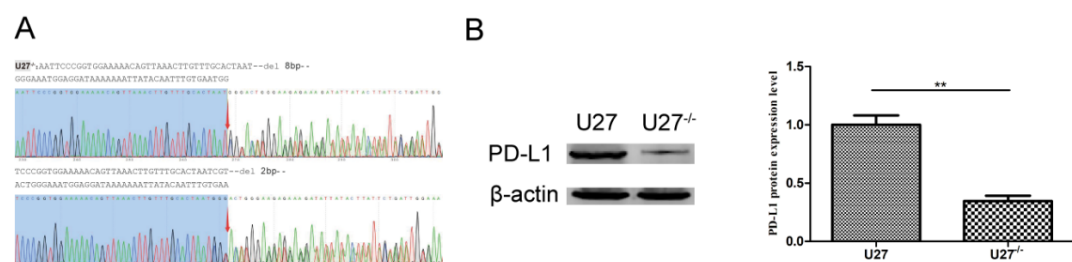
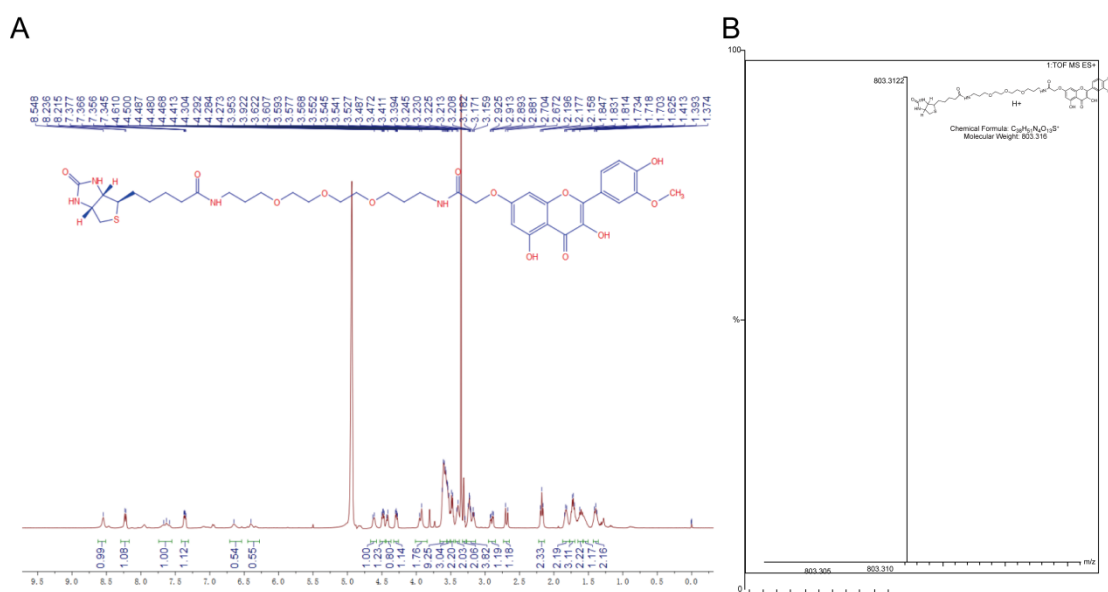


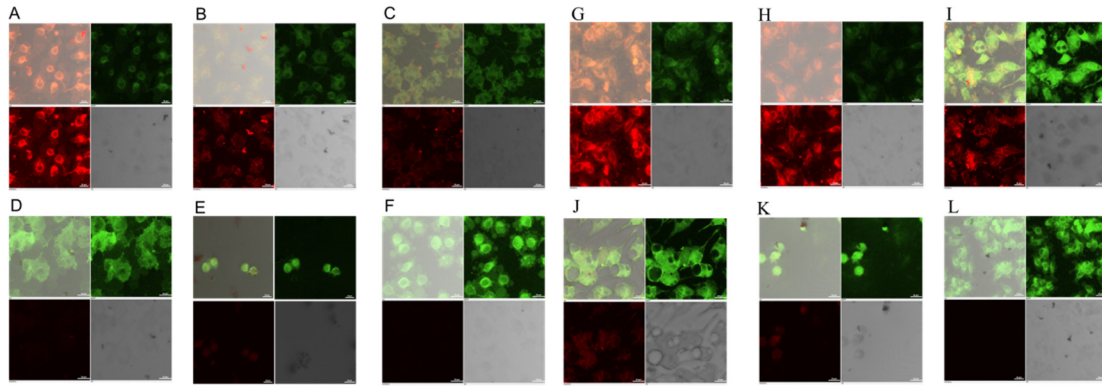
## Supplementary Figures and legends



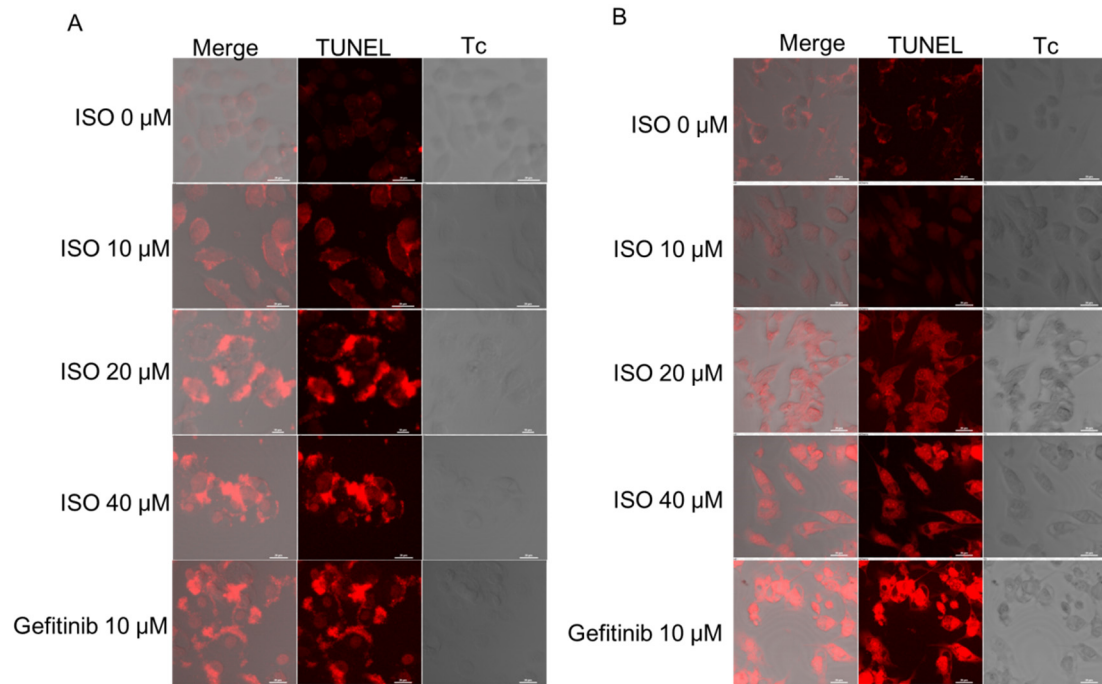
**Figure S1.** Nucleotide sequencing of *CD274* in U27<sup>-/-</sup> and PD-L1 expression in U27 and U27<sup>-/-</sup> cell. (A) Sequence determination of Knockout *CD274* in U27<sup>-/-</sup> cell. (B) PD-L1 expression in U27 and U27<sup>-/-</sup> cell. Data are mean  $\pm$ SD. (n = 3, \*\*  $p < 0.01$  on t-test)



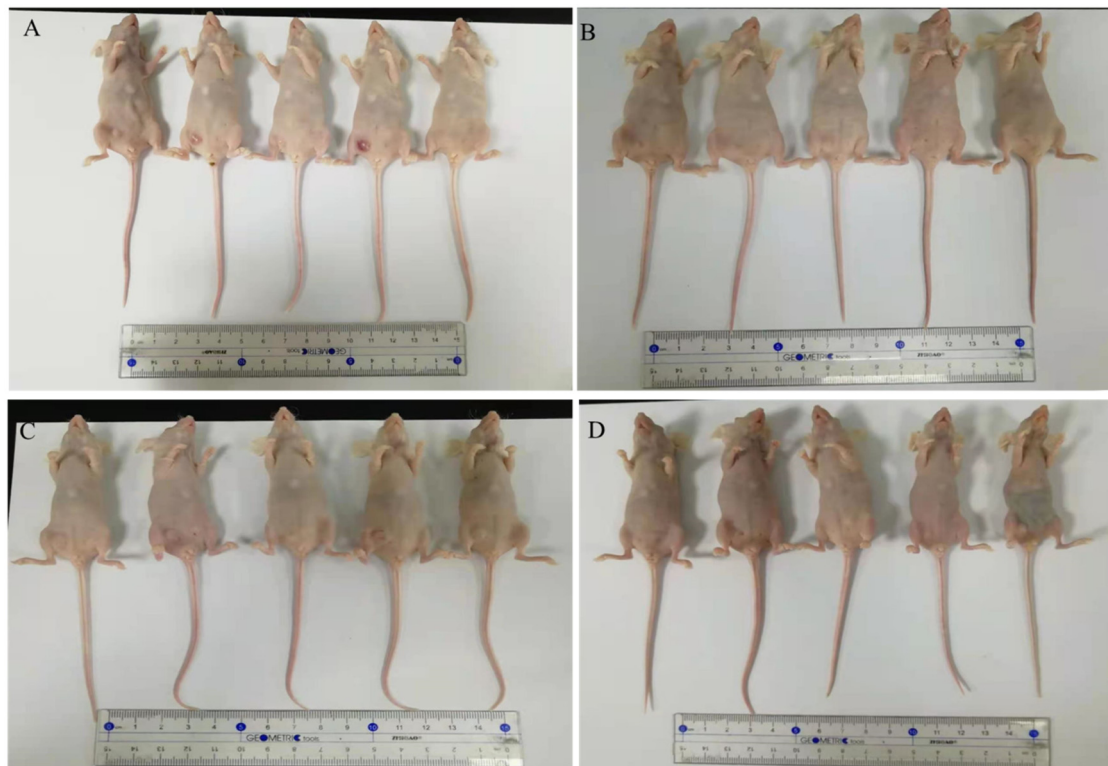
**Figure S2.** (A) <sup>1</sup>H NMR of ISO-PROTAC linker 24-biotin. <sup>1</sup>H NMR (400 MHz, Methanol-d<sub>4</sub>)  $\delta$  8.55 (s, 1H), 8.23 (d, J = 8.4 Hz, 1H), 7.63 (t, J = 16.8 Hz, 1H), 7.36 (dd, J = 8.4, 4.2 Hz, 1H), 6.65 (s, 1H), 6.40 (s, 1H), 4.62 (d, J = 7.8 Hz, 1H), 4.48 (dd, J = 7.7, 5.0 Hz, 1H), 4.42 (d, J = 7.3 Hz, 1H), 4.29 (dd, J = 7.9, 4.4 Hz, 1H), 3.94 (d, J = 12.4 Hz, 2H), 3.66 – 3.56 (m, 9H), 3.55 – 3.51 (m, 3H), 3.48 (d, J = 6.0 Hz, 2H), 3.40 (d, J = 7.0 Hz, 2H), 3.29 (s, 2H), 3.27 – 3.14 (m, 4H), 2.90 (dd, J = 12.9, 4.8 Hz, 1H), 2.69 (d, J = 12.7 Hz, 1H), 2.18 (t, J = 7.4 Hz, 2H), 1.83 (t, J = 6.4 Hz, 2H), 1.77 – 1.70 (m, 3H), 1.60 (d, J = 16.9 Hz, 2H), 1.39 (t, J = 7.8 Hz, 2H). (B) Ion to mass charge ratio (m/z) mapping. m/z calcd for C<sub>38</sub>H<sub>51</sub>N<sub>4</sub>O<sub>13</sub>S + 803.3168, found: 803.3122.



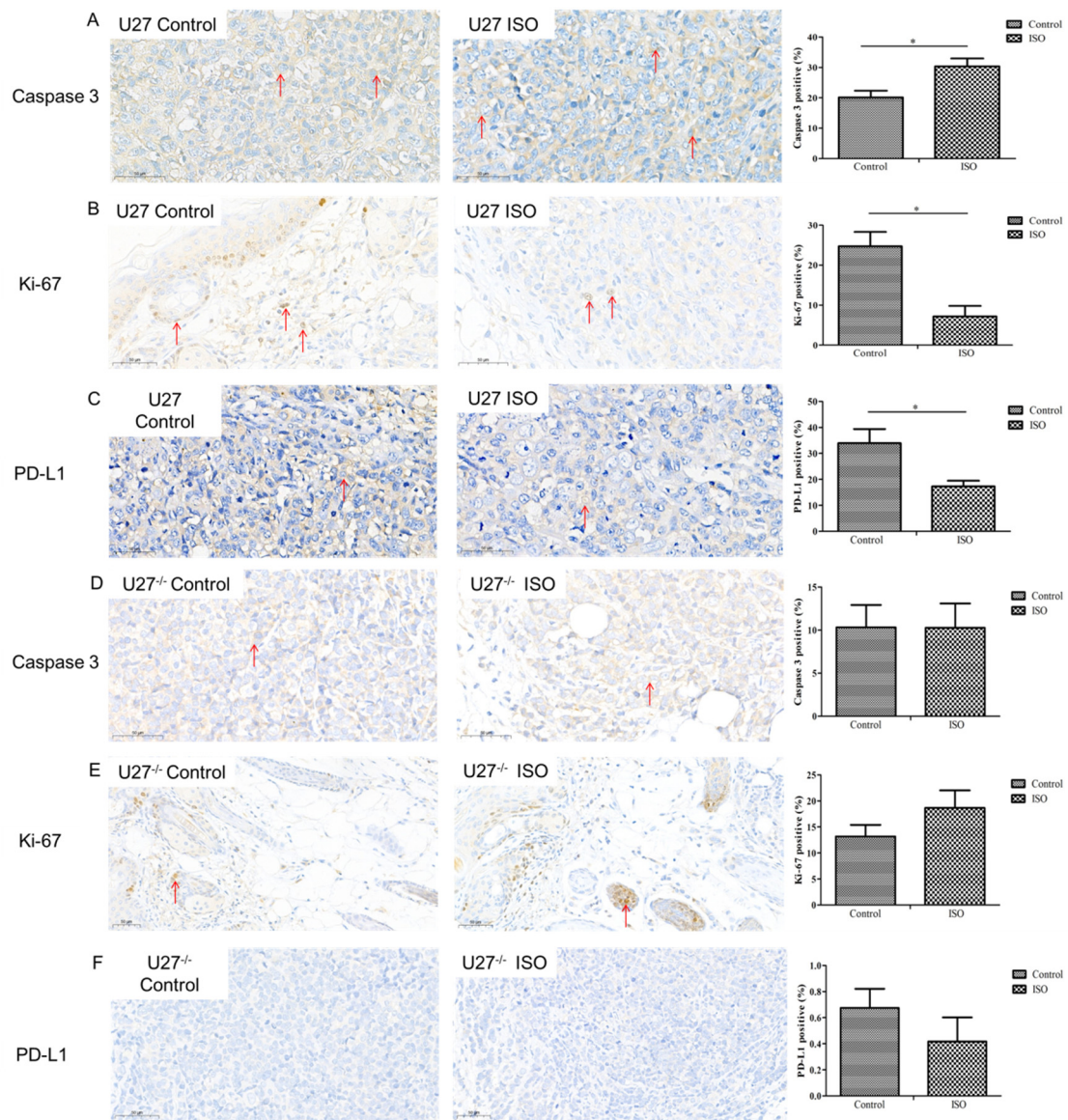
**Figure S3. ISO induces apoptosis by decreasing the mitochondrial membrane potential in U27 (A–F) and U27<sup>-/-</sup> cells (G–L).** (A,G) control group; cells treated with 10  $\mu$ M ISO (B,H), 20  $\mu$ M ISO (C,I), 40  $\mu$ M ISO (D,J), gefitinib (10  $\mu$ M) (E,K), or CCCP (F,L). Increasing drug concentration resulted in increased green fluorescence and cellular damage.



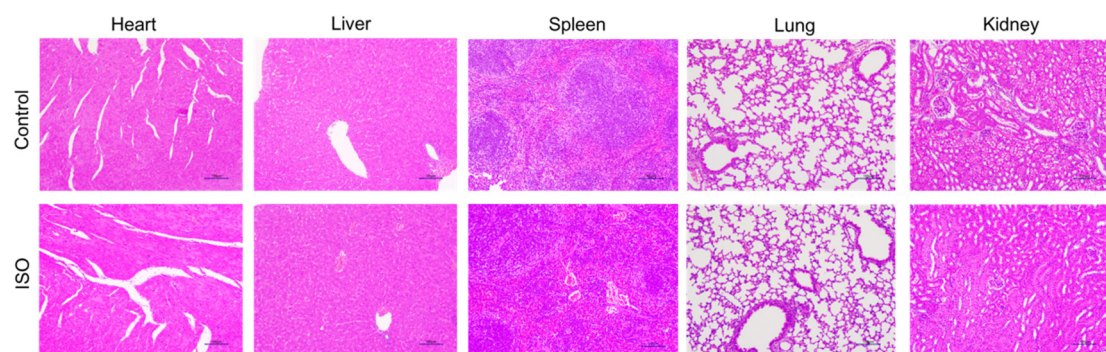
**Figure S4. Detection of ISO-induced apoptosis in U27(A) and U27<sup>-/-</sup> (B) cells by TUNEL assays.** ISO induced apoptosis of U27 cells along a concentration gradient (A) and reduced apoptosis in U27<sup>-/-</sup> cells (B). With the increase in drug concentration, both the red fluorescence and degree of apoptosis of cells increased.



**Figure S5. ISO inhibits mammary tumor growth in U27 and U27<sup>-/-</sup> xenograft mice. (A)** control group with U27 treated. **(B)** ISO (50mg/kg) group with U27 treated. **(C)** control group with U27<sup>-/-</sup> treated. **(D)** ISO (50mg/kg) group with U27<sup>-/-</sup> treated.



**Figure S6.** Immunohistochemical of cells and quantification in U27-treated control and ISO-treated mice (400X) and in U27<sup>-/-</sup>-treated control and ISO-treated mice tissues for (A, D), Caspase3, (B, E) Ki-67, (C, F) PD-L1.



**Figure S7.** ISO shows low toxicity in a mouse model. H&E staining of various organs from control and ISO-treated mice (n=3).



F1PYU9	KRT10	Keratin, type I cytoskeletal 10 OS=Canis lupus familiaris OX=9615 GN=KRT10 PE=3 SV=2	11	8	8	7	568	57.7
F1Q0B0	NCL	Nucleolin OS=Canis lupus familiaris OX=9615 GN=NCL PE=4 SV=2	10	7	7	7	715	77.4
A0A5F4C AZ7	ATP1A1	Sodium/potassium-transporting ATPase subunit alpha OS=Canis lupus familiaris OX=9615 GN=ATP1A1 PE=3 SV=1	8	7	7	7	1028	113.8
E2R0T6	HSPA8	Heat shock protein family A (Hsp70) member 8 OS=Canis lupus familiaris OX=9615 GN=HSPA8 PE=3 SV=1	15	8	8	6	646	70.9
Q6EII9	KRT1	Keratin, type II cytoskeletal 1 OS=Canis lupus familiaris OX=9615 GN=KRT1 PE=2 SV=1	8	6	6	6	619	63.8
F1PBJ3	LMNA	Lamin A/C OS=Canis lupus familiaris OX=9615 GN=LMNA PE=3 SV=2	10	6	6	6	751	82.7
A0A5F4D 8X1	HDLBP	High density lipoprotein binding protein OS=Canis lupus familiaris OX=9615 GN=HDLBP PE=4 SV=1	5	5	6	5	1569	171.2
A0A5S6C Y29	ACTB	Actin, cytoplasmic 1 OS=Canis lupus familiaris OX=9615 GN=ACTB PE=3 SV=1	21	5	5	5	400	44.5
F1PAR8	PHB	Prohibitin OS=Canis lupus familiaris OX=9615 GN=PHB PE=3 SV=2	22	5	5	5	262	28.9
A0A5F4C W76	ATP5F1B	ATP synthase subunit beta OS=Canis lupus familiaris OX=9615 GN=ATP5F1B PE=3 SV=1	11	5	5	5	640	70.2
A0A140T 8E6	JUP	Junction plakoglobin OS=Canis lupus familiaris OX=9615 GN=JUP PE=3 SV=1	8	5	5	5	744	81.7
A0A5F4B S50	MTHFD1L	Formyltetrahydrofolate synthetase OS=Canis lupus familiaris OX=9615 GN=MTHFD1L PE=3 SV=1	6	5	5	5	908	98.1
E2RSI6	EZR	Ezrin OS=Canis lupus familiaris OX=9615 GN=EZR PE=4 SV=1	7	4	5	4	586	69.4

E2QUU5	HSPD1	60 kDa chaperonin OS=Canis lupus familiaris OX=9615 GN=HSPD1 PE=3 SV=2	9	4	4	4	573	61
J9NXT1	LOC608051	Tubulin alpha chain OS=Canis lupus familiaris OX=9615 GN=LOC608051 PE=3 SV=1	12	4	4	4	450	49.9
L7N095	KRT75	Keratin 75 OS=Canis lupus familiaris OX=9615 GN=KRT75 PE=3 SV=2	6	4	4	4	565	60.2
A0A5F4C R13	COPA	Coatomer subunit alpha OS=Canis lupus familiaris OX=9615 GN=COPA PE=4 SV=1	4	4	4	4	1115	126.1
F6XTD9	NUP155	Nucleoporin 155 OS=Canis lupus familiaris OX=9615 GN=NUP155 PE=3 SV=1	4	4	4	4	1390	155
E2RLQ9	VCP	15S Mg(2+)-ATPase p97 subunit OS=Canis lupus familiaris OX=9615 GN=VCP PE=3 SV=3	6	4	4	4	806	89.2
A0A5F4D J40	PHB2	Prohibitin OS=Canis lupus familiaris OX=9615 GN=PHB2 PE=3 SV=1	19	4	4	4	267	29.8
E2RLS3	HSP90AB1	HATPase_c domain-containing protein OS=Canis lupus familiaris OX=9615 GN=HSP90AB1 PE=3 SV=2	9	6	6	3	724	83.2
F6XV93	LONP1	Lon protease homolog, mitochondrial OS=Canis lupus familiaris OX=9615 GN=LONP1 PE=3 SV=2	4	3	3	3	960	106.6
A0A5F4C 634	ATP2A2	Sarcoplasmic/endoplasmic reticulum calcium ATPase 2 OS=Canis lupus familiaris OX=9615 GN=ATP2A2 PE=4 SV=1	4	3	3	3	1001	109.8
F1PLG2	NNT	Proton-translocating NAD(P)(+) transhydrogenase OS=Canis lupus familiaris OX=9615 GN=NNT PE=3 SV=3	4	3	3	3	1104	115.5
A0A5F4C 137	SND1	Staphylococcal nuclease domain-containing protein OS=Canis lupus familiaris OX=9615 GN=SND1 PE=4 SV=1	4	3	3	3	853	95.6

F1P8B4	CANX	Calnexin OS=Canis lupus familiaris OX=9615 GN=CANX PE=3 SV=2	4	3	3	3	591	67.2
F1PM56	CPT1A	Carnitine O-palmitoyltransferase OS=Canis lupus familiaris OX=9615 GN=CPT1A PE=3 SV=1	4	3	3	3	773	88.1
J9P425	CD79A	40S ribosomal protein S19 OS=Canis lupus familiaris OX=9615 GN=CD79A PE=3 SV=2	19	3	3	3	145	16.1
F1Q0R0	KRT14	Keratin 14 OS=Canis lupus familiaris OX=9615 GN=KRT14 PE=3 SV=3	5	4	4	2	531	57.6
J9NSW0	TRAP1	TNF receptor associated protein 1 OS=Canis lupus familiaris OX=9615 GN=TRAP1 PE=3 SV=2	5	3	3	2	832	93.3
E2QYZ0	ALDH18A1	Delta-1-pyrroline-5-carboxylate synthase OS=Canis lupus familiaris OX=9615 GN=ALDH18A1 PE=3 SV=1	3	2	2	2	795	87.2
A0A5F4C WM9	MYH9	Myosin-9 OS=Canis lupus familiaris OX=9615 GN=MYH9 PE=3 SV=1	1	2	2	2	1981	229
F6Y258	GTF2I	General transcription factor Ili OS=Canis lupus familiaris OX=9615 GN=GTF2I PE=4 SV=1	3	2	2	2	999	112.4
A0A5F4B SL9		Uncharacterized protein OS=Canis lupus familiaris OX=9615 PE=3 SV=1	25	2	2	2	106	12.4
E2RQ08	RPN1	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase subunit 1 OS=Canis lupus familiaris OX=9615 GN=RPN1 PE=1 SV=1	4	2	2	2	607	68.5
A0A5F4D 104	EGFR	Receptor protein-tyrosine kinase OS=Canis lupus familiaris OX=9615 GN=EGFR PE=4 SV=1	3	2	2	2	1138	126.9
E2QW85		Elongation factor 1-alpha OS=Canis lupus familiaris OX=9615 PE=3 SV=2	5	2	2	2	461	49.9

F2Z4Q6	AFP	Alpha fetoprotein OS=Canis lupus familiaris OX=9615 GN=AFP PE=4 SV=2	2	2	2	2	637	71.9
F6XRY2	EEF2	Eukaryotic translation elongation factor 2 OS=Canis lupus familiaris OX=9615 GN=EEF2 PE=3 SV=1	3	2	2	2	858	95.3
L7N0I7	TUBB4B	Tubulin beta chain OS=Canis lupus familiaris OX=9615 GN=TUBB4B PE=3 SV=1	5	2	2	2	445	49.8
Q6TEQ7	ANXA2	Annexin A2 OS=Canis lupus familiaris OX=9615 GN=ANXA2 PE=1 SV=1	6	2	2	2	339	38.6
A0A5F4D I88	PRDX4	Peroxiredoxin 4 OS=Canis lupus familiaris OX=9615 GN=PRDX4 PE=4 SV=1	8	2	2	2	257	29.3
A0A5F4B SS2	HSPA9	75 kDa glucose-regulated protein OS=Canis lupus familiaris OX=9615 GN=HSPA9 PE=3 SV=1	4	2	2	2	625	67.4
Q28298	RRBP1	Ribosome-binding protein 1 OS=Canis lupus familiaris OX=9615 GN=RRBP1 PE=2 SV=1	1	2	2	2	1534	164.5
F1PPF7	HK1	Hexokinase OS=Canis lupus familiaris OX=9615 GN=HK1 PE=3 SV=3	2	2	2	2	935	104.2
E2RI34	RPL27A	60S ribosomal protein L27a OS=Canis lupus familiaris OX=9615 GN=RPL27A PE=3 SV=1	14	2	2	2	148	16.6
A0A5F4D 3H8	DDOST	Dolichyl-diphosphooligosaccharide--protein glycosyltransferase 48 kDa subunit OS=Canis lupus familiaris OX=9615 GN=DDOST PE=3 SV=1	5	2	2	2	442	49.1
F1Q0N9	KRT14	Keratin 14 OS=Canis lupus familiaris OX=9615 GN=KRT14 PE=3 SV=2	5	3	3	1	494	52.9
F1PGY1	HSP90AA1	Heat shock protein 90 alpha family class A member 1 OS=Canis lupus familiaris OX=9615 GN=HSP90AA1 PE=3 SV=3	5	2	2	1	542	63.6

E2RNT3	DHX9	DEAH box protein 9 OS=Canis lupus familiaris OX=9615 GN=DHX9 PE=3 SV=1	1	1	2	1	1276	141.2
O18740	KRT9	Keratin, type I cytoskeletal 9 OS=Canis lupus familiaris OX=9615 GN=KRT9 PE=3 SV=1	2	2	2	1	786	76.3
A0A5F4B RW6	POR	NADPH--hemoprotein reductase OS=Canis lupus familiaris OX=9615 GN=POR PE=4 SV=1	1	1	2	1	656	74.2
A0A5F4C UN5	KTN1	Kinectin 1 OS=Canis lupus familiaris OX=9615 GN=KTN1 PE=4 SV=1	1	1	1	1	1401	160.3
F1P6B7	ANXA1	Annexin OS=Canis lupus familiaris OX=9615 GN=ANXA1 PE=3 SV=1	3	1	1	1	345	38.6
J9P621	ATP5O	ATP synthase peripheral stalk subunit OSCP OS=Canis lupus familiaris OX=9615 GN=ATP5O PE=2 SV=1	7	1	1	1	213	23.5
J9P9Z7	RPS20	40S ribosomal protein S20 OS=Canis lupus familiaris OX=9615 GN=RPS20 PE=3 SV=1	9	1	1	1	119	13.4
F1Q1M2	IARS2	Isoleucyl-tRNA synthetase OS=Canis lupus familiaris OX=9615 GN=IARS2 PE=3 SV=3	1	1	1	1	963	108.1
F1PLR0	RACK1	Receptor for activated C kinase 1 OS=Canis lupus familiaris OX=9615 GN=RACK1 PE=4 SV=2	4	1	1	1	317	35.1
A0A5F4C GI3	DDX5	DEAD box protein 5 OS=Canis lupus familiaris OX=9615 GN=DDX5 PE=3 SV=1	2	1	1	1	535	60.5
E2REU6	KRT18	IF rod domain-containing protein OS=Canis lupus familiaris OX=9615 GN=KRT18 PE=3 SV=3	3	1	1	1	431	48.2
F1Q342	LOC489992	SpaA domain-containing protein OS=Canis lupus familiaris OX=9615 GN=LOC489992 PE=4 SV=2	1	1	1	1	1132	124.5

F2Z4P9	RAB10	Ras-related protein Rab-10 OS=Canis lupus familiaris OX=9615 GN=RAB10 PE=4 SV=1	6	1	1	1	200	22.5
F1Q3V2	ACLY	ATP-citrate synthase OS=Canis lupus familiaris OX=9615 GN=ACLY PE=3 SV=3	1	1	1	1	1134	123.9
J9NXR3	ITGB4	Integrin beta OS=Canis lupus familiaris OX=9615 GN=ITGB4 PE=3 SV=2	1	1	1	1	1766	196.2
F6V9R9	GLG1	Golgi apparatus protein 1 OS=Canis lupus familiaris OX=9615 GN=GLG1 PE=4 SV=1	1	1	1	1	1186	134.9
P81709		Lysozyme C, spleen isozyme OS=Canis lupus familiaris OX=9615 PE=1 SV=1	9	1	1	1	130	14.6
F1PEN6	TFRC	Transferrin receptor protein 1 OS=Canis lupus familiaris OX=9615 GN=TFRC PE=3 SV=2	1	1	1	1	918	100.9
A0A5F4C 4D4	LETM1	Leucine zipper-EF-hand-containing transmembrane protein 1 OS=Canis lupus familiaris OX=9615 GN=LETM1 PE=3 SV=1	2	1	1	1	765	85.7
E2R580	VAPA	VAMP associated protein A OS=Canis lupus familiaris OX=9615 GN=VAPA PE=4 SV=1	5	1	1	1	249	27.8
A0A5F4C NG7	DSP	Desmoplakin OS=Canis lupus familiaris OX=9615 GN=DSP PE=4 SV=1	0	1	1	1	2057	236.2
A0A5F4C JR2	HYOU1	Hypoxia up-regulated 1 OS=Canis lupus familiaris OX=9615 GN=HYOU1 PE=3 SV=1	2	1	1	1	678	75.3
E2R4F5	RPL13	60S ribosomal protein L13 OS=Canis lupus familiaris OX=9615 GN=RPL13 PE=3 SV=1	5	1	1	1	211	24.3
A0A5F4C 6J8	RPL22	Uncharacterized protein OS=Canis lupus familiaris OX=9615 GN=RPL22 PE=3 SV=1	10	1	1	1	128	14.8

A0A5F4B TP4	AP1B1	AP complex subunit beta OS=Canis lupus familiaris OX=9615 GN=AP1B1 PE=3 SV=1	1	1	1	1	938	103.5
E2QWK2	PNPT1	Polynucleotide phosphorylase 1 OS=Canis lupus familiaris OX=9615 GN=PNPT1 PE=3 SV=3	1	1	1	1	763	83.7
A0A5F4C T43	PDHA1	Pyruvate dehydrogenase E1 component subunit alpha OS=Canis lupus familiaris OX=9615 GN=PDHA1 PE=4 SV=1	3	1	1	1	405	44.9
F1Q3W0	HNRNPU	Heterogeneous nuclear ribonucleoprotein U OS=Canis lupus familiaris OX=9615 GN=HNRNPU PE=4 SV=3	1	1	1	1	805	88.3
F1PTZ5	CD44	CD44 antigen OS=Canis lupus familiaris OX=9615 GN=CD44 PE=4 SV=3	1	1	1	1	783	85.7
A0A5F4B YR1	UGGT1	UDP-glucose glycoprotein glucosyltransferase 1 OS=Canis lupus familiaris OX=9615 GN=UGGT1 PE=3 SV=1	1	1	1	1	1557	177.9
A0A5F4B U46	H1-2	Histone H2B OS=Canis lupus familiaris OX=9615 GN=H1-2 PE=3 SV=1	3	1	1	1	435	45.7
Q9XSU7	RPL27	60S ribosomal protein L27 OS=Canis lupus familiaris OX=9615 GN=RPL27 PE=2 SV=3	7	1	1	1	136	15.8
A0A5F4C JY9	AFG3L2	AFG3 like matrix AAA peptidase subunit 2 OS=Canis lupus familiaris OX=9615 GN=AFG3L2 PE=3 SV=1	1	1	1	1	732	81.2
E2RIA8	RPL8	60S ribosomal protein L8 OS=Canis lupus familiaris OX=9615 GN=RPL8 PE=3 SV=1	4	1	1	1	257	28
A0A5F4C 2R0	CTNND1	Uncharacterized protein OS=Canis lupus familiaris OX=9615 GN=CTNND1 PE=3 SV=1	1	1	1	1	896	100.2
E2R667	COPB2	Coatomer subunit beta' OS=Canis lupus familiaris OX=9615 GN=COPB2 PE=3 SV=1	1	1	1	1	906	102.3

F1PCE8	LOC475521	Peptidase S1 domain-containing protein OS=Canis lupus familiaris OX=9615 GN=LOC475521 PE=4 SV=1	4	1	1	1	246	26.3
E2RS49	RPS25	40S ribosomal protein S25 OS=Canis lupus familiaris OX=9615 GN=RPS25 PE=3 SV=3	8	1	1	1	125	13.7
E2RB37	PDIA6	Protein disulfide-isomerase A6 OS=Canis lupus familiaris OX=9615 GN=PDIA6 PE=3 SV=1	3	1	1	1	440	48.3
A0A5F4C XM3	TAOK3	TAO kinase 3 OS=Canis lupus familiaris OX=9615 GN=TAOK3 PE=4 SV=1	1	1	1	1	840	98.6
J9P4G7	C17H1orf68	Chromosome 17 C1orf68 homolog OS=Canis lupus familiaris OX=9615 GN=C17H1orf68 PE=4 SV=2	3	1	1	1	271	29.1
A0A5F4C 5B7	SEC24C	SEC24 homolog C, COPII coat complex component OS=Canis lupus familiaris OX=9615 GN=SEC24C PE=3 SV=1	1	1	1	1	1093	118.6
F1PAA9	CDH1	Cadherin-1 OS=Canis lupus familiaris OX=9615 GN=CDH1 PE=1 SV=2	1	1	1	1	885	97.7
A0A140T 8E0	CAPRIN1	Cell cycle associated protein 1 OS=Canis lupus familiaris OX=9615 GN=CAPRIN1 PE=3 SV=1	2	1	1	1	717	78.8
E2RFR0	RPS8	40S ribosomal protein S8 OS=Canis lupus familiaris OX=9615 GN=RPS8 PE=3 SV=1	6	1	1	1	208	24.2
E2R4L7	SHMT2	Serine hydroxymethyltransferase OS=Canis lupus familiaris OX=9615 GN=SHMT2 PE=3 SV=3	2	1	1	1	549	61.3
F2Z4P2	RPL7A	60S ribosomal protein L7a OS=Canis lupus familiaris OX=9615 GN=RPL7A PE=3 SV=3	4	1	1	1	266	30
E2RQP6	EIF3C	Eukaryotic translation initiation factor 3 subunit C OS=Canis lupus familiaris OX=9615 GN=EIF3C PE=3 SV=2	1	1	1	1	942	108.9

J9PA20	GLUD1	Glutamate dehydrogenase (NAD(P)(+)) OS=Canis lupus familiaris OX=9615 GN=GLUD1 PE=3 SV=2	2	1	1	1	572	62.2
A0A5F4C D08	SEC11A	Signal peptidase complex catalytic subunit SEC11 OS=Canis lupus familiaris OX=9615 GN=SEC11A PE=3 SV=1	4	1	1	1	183	21
F1PK90	DDX46	RNA helicase OS=Canis lupus familiaris OX=9615 GN=DDX46 PE=4 SV=2	1	1	1	1	1032	117.4
A0A5F4C 0Z8	GOLGA2	GOLGA2L5 domain-containing protein OS=Canis lupus familiaris OX=9615 GN=GOLGA2 PE=4 SV=1	1	1	1	1	987	111.5
E2R0B6	PSMB6	Proteasome subunit beta OS=Canis lupus familiaris OX=9615 GN=PSMB6 PE=3 SV=1	5	1	1	1	239	25.5
E2RNY7	ATP5F1C	ATP synthase subunit gamma OS=Canis lupus familiaris OX=9615 GN=ATP5F1C PE=2 SV=3	4	1	1	1	298	33
F1Q4J0	GANAB	Glucosidase II alpha subunit OS=Canis lupus familiaris OX=9615 GN=GANAB PE=3 SV=2	1	1	1	1	944	106.3
F1PDG4	UBB	Uncharacterized protein OS=Canis lupus familiaris OX=9615 GN=UBB PE=4 SV=2	21	1	1	1	229	25.7
E2RR58	RPL12	60S ribosomal protein L12 OS=Canis lupus familiaris OX=9615 GN=RPL12 PE=1 SV=1	5	1	1	1	165	17.8
E2R8R8	TFPT	40S ribosomal protein S9 OS=Canis lupus familiaris OX=9615 GN=TFPT PE=3 SV=2	3	1	1	1	228	26.3
F1PIP0	HADHA	Enoyl-CoA hydratase OS=Canis lupus familiaris OX=9615 GN=HADHA PE=3 SV=3	2	1	1	1	762	82.9
A0A5F4B WP4	SPATA7	Spermatogenesis associated 7 OS=Canis lupus familiaris OX=9615 GN=SPATA7 PE=4 SV=1	1	1	1	1	563	64.1

E2R4X3	DAD1	Dolichyl-diphosphooligosacchari de--protein glycosyltransferase subunit DAD1 OS=Canis lupus familiaris OX=9615 GN=DAD1 PE=1 SV=2	10	1	1	1	119	13.1
E2RHG2	PRDX1	Peroxiredoxin-1 OS=Canis lupus familiaris OX=9615 GN=PRDX1 PE=3 SV=2	5	1	1	1	220	24.3
E2QYG6	ATP6V1A	H(+)-transporting two-sector ATPase OS=Canis lupus familiaris OX=9615 GN=ATP6V1A PE=3 SV=1	1	1	1	1	618	68.4
F1P6U7	LRRC40	Leucine rich repeat containing 40 OS=Canis lupus familiaris OX=9615 GN=LRRC40 PE=4 SV=3	5	1	1	1	552	62.9

**Table S2.** Primers for sgRNA for gene knockdown.

Primer	Sequences (5'-3')
sgRNA	GTTTGCACTAATCGTCTACT-GGG
PD-L1 F	AGAGATGAGATCCAGGGTTCCA
PD-L1 R	TAGCCGATCAAGCAGCAGTAAA

PCR program: initial denaturation for 3 min at 94°C, 35 cycles at 94 °C for 30s, 62 °C for 35s, 72 °C for 35s, and a final extension step of 5 min at 72°C.