

Table S1: Primers required for the experiment.

Name	Forward (5'-3')	Reverse (5'-3')
USP1	AACTGCCATCATTATACTG	TTGTGCTCCATTCTTCTA
USP2	TGCTGAGACCCGACATCACT	TGGGGTCTATCCGGTAGCTA
USP3	CTGTTATCGCTGTGATGAT	CCAAGTTCTGTAAGTGTCT
USP4	GTCTTGTGAACTCCTATG	CAGATTCTTGCTCATCAT
USP5	TGGCTATTGGTGTGAAG	GGCAATCTCCAGGTAATC
USP6	ATGTGGAAGTGAAGAAGAA	GCAATGATGTAACCTGTAA
USP7	GCAAGTGCAGATAGTCGCAGAGGAC	CCATGGTCTGAGAGAGGCTCTGAAC
USP8	ACTATACACAATGATGACGGATA	TGGACTGATGGCTTCTTC
USP9X	AGGTGGTGAATGCTTAT	GAGGTCTGGTGGTGATAG
USP9Y	CTCAGTATCAACAGAATAATC	TCTTCATTGCCTTCATAA
USP10	GAATCTGTCCAAGGTTATAC	CCACCAGTCTTCTCATAA
USP11	AGTAGAACTGCTGCTTGT	ATAGAATCGGTATGGCTGAA
USP12	TGCGTATAAGAGTCAACCT	GAGTGGCTATGCTATGGA
USP13	ACGAGCAACGAATAATAAC	TTCTCCATCTCAATCACAA
USP14	AAATGGCTTCAGCGCAGTAT	TTCACCTTTCTCGGCAAACCT
USP15	GACAGGTATTAGTGATAGA	GATAGAGATGAAGGAGAG
USP16	AGAACCTGAGTTAAGTGATG	CAATCTTGCTGTCTCTC
USP17L	AACAAGATTGCCAAGAATG	TAGAGGACATAGACGAGAG
USP18	AATGGTTCTGCTTCAATG	CCAGTGGTAGTTAGGATT
USP19	TGGACCTGAGCAAGTTCT	ATAGTGGTTGATGACAGCATATAG
USP20	TATGTTGGCTGCGGAGAA	AGGTTACGGTCAAGTTGT
USP21	AGAACCTGAGTTAAGTGATG	CAATCTTGCTGTCTCTC
USP22	GAGAGCAGGATGAATGGA	AACAGCAAACAGGGAATAC
USP24	TGAGATGCCAGTTATTAGA	AGTTATCCAGCCAAGTAA
USP25	TCTCCTGTTGACGATATTG	TTCTGTTGTGCTTGGTAA
USP27X	ATGTGTAAGGACTATGTATATGAC	GAGGTGGAGGCTTGTAAAT
USP28	AATGCTGGACACTATTGG	GGAAGATTCAGTAACAGAGAT

USP29	ATGCTGTTCTCAAGGTAG	AACTCTTCTGCTTACACAT
USP30	ACTGATGATGAGGTCTTAG	TTCCAATGACGAGGTAAT
USP32	ATGTGGAAGTGAAGAAGAA	GCAATGATGTAACCTGTAA
USP34	GTTGTTGACTATGCTAAT	ACTGAGAAGGATTGTATT
USP35	ATTAGCAGGATGATTGAC	TGAACTTCTTAACAGCAG
USP37	CATCAGTGTGTCAGTCA	CTCCAGGTCATTGTAAGTAA
USP38	CAGCATATTCCTCTTCAG	ATAGCCAGTCAATCATTC
USP39	GGCATCACTGAGAAGGAA	AAGATTAGATATGGAGGCAACT
USP40	CTCTTCTCAGTTATTATACAC	CAATCTCTTCTTCACTCT
USP41	AATGGTTCTGCTTCAATG	CCAGTGGTAGTTAGGATT
USP42	ATCAGTATTCACAACAAG	ATTGGTAATGGTAGAAGA
USP43	TGGTACAGTTATGATGAC	TGATAGAACAGGATATAAGC
USP44	ACCAGTCACAGATACAGTAG	TTGATGCTCCACCACTTA
USP45	CTGCTCTGCTACTTGTA	GCCACTATGTTCCACTAT
USP46	CGATGCTTGAAGTGTGAA	TGTGTTGCTGAAGTCTCT
USP47	GCTAATGGACTTGAAGTCT	CACTCTCATCATATTCACTATC
USP48	CACTCTACTTATGTCCAA	ATCAATGTATCGCCTATT
USP49	GCTTGTGACCAGTGTAA	GAGGTAGTCTGTAGATCATTAA
USP50	GGATTACCACTGAGACAT	AGACTTCGTTCTTGTAGG
USP51	AAGACAAGCAATCAACCT	CCTGGACAATAACAATTCATAA
USP52	AGGTGGTGGATTACTTGAC	GTTAGGTGCTTGGAGGAA
USP53	GCTCCTCAACTAACGATT	CTCATTGGACAGGTAGAA
USP54	ATTCTTCTTGCCTTAA	CTTCTTGGTATATGTCT
CYLD	AGGCTTGGAGATAATGATTGG	GCAGAATAAGGTTGAGTCTAAGTA
USPL1	CTCCACATAAGCCTCAGAA	TCCACCGTCAATAGCAATA
UCHL1	CAAGAAGTTAGTCTAAAGTGTA	GCGTGAATAAGTCCGATT
UCHL3	GGCAATTCGTTGATGTAT	TCTTCTTCTTCTGTTCTG
UCHL5	TTAATAATGCTTGTGCTACTC	CTGATAATGTCTCGCCTAA
BAP1	TATCTTCTGTTCAAATG	CAATATCATCATCAATCAC

ATXN3	AACATTGCCTGAATAACT	TAGTAACTCCTCCTTCTG
ATXN3L	ACCAATAGAGAAGATGAACA	GAAGCAGGAGTTACACAT
OTUB1	AGGAGTATGCTGAAGATGAC	CTTGCGGATGTACGAGTA
OTUB2	GAGGAGCACAAGTTCAGAA	ACACTGAGCCATCCTTCT
OTUD1	AGATGCTGAATGTGAATA	TAATGAATCATGGTAGACA
OTUD3	TCTGAAGACGACCTGAGAG	CGAAGCACGGCAATTATTG
OTUD4	ATCCAAGCAGTTCTATAATCA	ACTCCTCACTTCTCACAT
HIN1L	GAAGCGATTATAGGAGGAT	AGTTACTTGTGAAGGAGAA
OTUD5	GGACTATCTGATGAAGAATGC	TCCGCTTCCTGTTAATGTA
OTUD6A	AGTAGCATTGAATCTGTC	ACTCCATTCTTTCTCTCT
OTUD6B	CAAGAATGACAAGAAGAG	TAACAGCAACAGAATCTA
YOD1	ATACACAGACAGTAAGAA	TATCATCATTAGAGGAGAA
A20	AATGAGATGAAGGAGAAG	ATTGATGAGATGAGTTGT
OTUD7A	AGCAATTCTAACAGCAATAAC	GTCTTGTCTTCTCCTTG
OTUD7B	AGCAGACACAGCAGAATA	TCAGTTCATTCCACTCCTT
TRABID	GACTGATTGGCTCTTCTCT	TGATGACTTGTATGCTTCTATG
VCPIP1	TGGAGTAGTAACAATGAGA	TGAAGCCTGAATAGAAGA
BRCC3	GATTACTATGGTCACTTG	CATCATCCTCATCAATAG
COPS5	ACTCAGATGCTCAATCAG	TGCGGATATTGTTCTTGT
COPS6	CCCTCTTTCTGAAGTTGA	GCCTCTCCATTGATTATATC
PSMD14	CAATGCTAATATGATGGTCTTA	GTAATGGAGTAATAATGTCTGTT
PSMD7	AAGAATAGTTGGCTGGTA	CGGAATTAGGACAGTATCT
AMSH	GAGTTGAGATTATCCGAATG	AGAGCGTGATATACTTGTT
AMSH-LP	ATGGAGAATGTAGAGGAAT	TTGATAGGAACAGTGAGT
MPND	GCAGCCATCAACAAGTTC	TCAGGTGACTGTGGAAGT
MYSM1	ATTGTATTGGACGGATTC	GTTGGTATGCTTCTACTG
PRPF8	GGATGAAGACTGGAATGAAT	TGGTGTGGAAGATTGTTG
EIF3F	TTCCTGATGAGCCTGGTTA	GGTCATTGATGTTGCTGTTG
EIF3H	GATGGACAGAGTGGATGAA	GACGCTGCTGATACTGAT

JOSD1	GTGGATTGGAGGCGAGAG	AGCAGGAGTTCACAGTCTT
JOSD2	TGAGATCTGCAAGAGGTT	ATCACATTGACATCATAGTTG
JOSD3	TTGACAGTCGTAGATACA	TTCAGTAATATCCTCTTCTTC

