Table 1 | All target site sequences mentioned in this study. The red - marked part is the PAM sequence, and the blue - marked part is the spacer sequence.

Name		Sequence	Related Figure
HPT	TTTCAGCTTCGATGTAGGAGGGCGTGG	ATGAAAAAGCCTGAACTCACCGCGACGTCTGTCGAGAAGTTTCTGATCGAAAAGTTCGACAGCGTCTCCGACCTGATGCAGCTCTCGGAGGGCGAAGAATCTCGTGCTTTCAGCTTCGATGTAGGAGGGCGTGGATATGTCCTGCGGGTAAATAGCTGCGCCGATGGTTTCTACAAAGATCGTTATGTTTATCGGCACTT	Fig.1b
ASFV	TTTAATGCGCATTTTAAGCCTTATGTTC	GAATTCTGTGAACAAAAGTTATGGGAAACCCGACCCCGAACCCACTTTGAGTCAAATCGAAGAAACACATTTGGTTCATTTTAATGCGCATTTTAAGCCTTATGTTCCAGTAGGGTTTGAATACAATAAAGTACGCCCGCATACGGGTACCCCCACCTTGGGAAACAAGCTTACCTTTGGTATTCCCCAGTACGGAGACT	Fig.1b
Kana	TTTGTCAAGACCGACCTGTCCGGT	ATGGGGATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGTCAGCGCAGGGGCGCCCGGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAACTCCAGGACGAGGCAGCGCG	Fig.1b
HsHEK2	GCTGAGGGGAGCAGTGGGGGAGAGGGT	GGCTTCTCACTTGGGAAGTTCAATCCTGTAATCACCTGCTTGAAAGACTAAACAAACCTTAACTGTCATGTGCTTGATTCAAGTACCACCAGTTTTATGAAGAAAAATGATATCCATTATTAGTGGCTGAATGCTGAGGGGAGCAGTGGGGGAGAGGGTGTTGCTGTGGATTAATGCATCATCTCTGCTTTCAGCTGTGGGCCAGGTTTTGAGTCTAGCTCTGACTGAATCCTGCCATACACTTTGAATAGCATAATGAAGTATTGTTATTGCCTCAGTCTAGTCATTACATCAGGGAAA	Fig.1b

HsVEGFA	GCCCCTGTGCCCAGCCCTGGGCTCTCT	CTCCCCTGGGAAGCATCCCTGGACACTTCCCAAAGGACCCCAGTCACTCCAGCCTGTTGGCTGCCGCTCACTTTGATGTCTGCAGGCCAGATGAGGGCTCCAGATGGCACATTGTCAGAGGGACACACTGTGGCCCCTGTGCCCAGCCCTGGGCTCTCTGTACATGAAGCAACTCCAGTCCCAAATATGTAGCTGTTTGGGAGGTCAGAAATAGGGGGTCCAGGAGCAAACTCCCCCCACCCCCTTTCCAAAGCCCATTCCCTCTTTAGCCAGAGCCGGGGTGTGCAGACGGCAGTCACT	Fig.1b, 2c, S2, S3, S5
HsRNF2	CTGGGAGTACAGGTGCACGCCACCATG	TTTATTTTTTTTATTTTTTTGAGATGGAGTCTTGCTGTGTCACCCAGGCCAGAGTGCAGTGGCACCATCTTGGCTCACTGCAACCTCTGCCTCCTGGGTTTCCAGCGATTCTCCTGCTTTAGCGTCTTGAGTAGCTGGGAGTACAGGTGCACGCCACCATGCCCAGCTAATTTTTGTATTTTTTAGTAGAGATGGGGTTTCACCATATTGGCGAGGCTGGTCTCAACTCCTGACCTTGTGATCTGCCTGCCTCGGCCTCCCAAAGTGCTGAGATTACAGGTGTGATCCACCACACCTGGCC	Fig.1b, 2c, S2, S3
OsALS	ACCCAGGTGTCACAGTTGTTGATATTG	ACTGGTGTTGGGCAGCACCAGATGTGGGCGGCACAATATTACACCTACAAGCGGCCACGGCAGTGGCTGTCTTCGGCTGGTCTGGGCGCAATGGGATTTGGGCTGCCTGCTGCAGCTGGTGCTTCTGTGGCTAACCCAGGTGTCACAGTTGTTGATATTGATGGGGATGGTAGCTTCCTCATGAACATTCAGGAGCTGGCATTGATCCGCATTGAGAACCTCCCTGTGAAGGTGATGGTGTTGAACAACCAACATTTGGGTATGGTGGTGCAATGGGAGGATAGGTTTTACAAGGCGAAT	Fig.1b, 2c, S2, S3
OsBADH2	TCTTGCAGCATATGTATATACTCTGTG	AATGCAAATTTGGAGGGAAGAAGTTTTTGGTCCAGTGCTCTGTGTGAAAGAATTTAGCACTGAAGAAGAAGCCATTGAATTGGCCAACGATACTCAGTGAGTTTTTTTTTTTAATACAGTTC	Fig.1b, 2c, S2, S3

		ATTGTCCTGTTCAATCTTGCAGCAT ATGTATATACTCTGTGGCATATGAA CTTATTCTGCTACTACTACTTTTGA TAGTTATGGTCTGGCTGGTGCTGT GCTTTCCGGTGACCGCGAGCGAT GCCAGAGATTAACTGAGGTATATC CAAGTGAAGGGGGTTGGCATTGT TTGATTCATA	
OsACC1	GTCTGAATGC TTGTCGAATG ATCCTTG	GGTGATCTTATAGCTAGGCTGGAT CTTGATGACCCTTCTGCTGTTAAG AGAGCTGAGCCGTTCGAAGATACT TTTCCACAAATGGGTCTCCCTATT GCTGCTTCTGGCCAAGTTCACAAA TTATGTGCTGCAAGTCTGAATGCT TGTCGAATGATCCTTGCGGGGTAT GAGCATGATATTGACAAGGTAAAC ATCATGTCCTCTTGTTTTTTCTTTT GTTTATCATGCATTCTTATGTTCAT CATGTCCTCTGGCAAATCTAGATT CCGCTGTCGTTTCACACAGATTTT TCTCATTCTC	Fig.1b, 1d, 2c, S2, S3
OsCDC48	CTGGCTGAAG ATGTGAGTTAT CACCAC	GCTACAAACCGGCCAAACAGTATT GATCCTGCTCTCAGAAGGTTTGGT AGGTTCGATCGGGAGATTGACATT GGTGTTCCTGATGAAGTTGGGCG GCTTGAAGTTCTTCGGATTCACAC CAAAAACATGAAGCTGGCTGAAGA TGTGAGTTATCACCACTACAGTCT AGATGCAAAATATTCTTTATTGGTT GCATTTTTTTTAATAGTTATTACAT TGTTGTCGCAGGTTGACCTGGAA CACATTGCCAAAGACACTCATGGG TATGTGGGTGCTGATCTTGCTGCT CTTTGCACTGA	Fig.1b, 1d
OsAAT	GATCTCGGTT CAGCTCCTTC AGGTGCA	CTGGATTTCCAAGGTACCAATTTC AATTTTCCATGGAGGAACTTGTTC TTATGAAGAAGATTAATTGCAAGAT TGTTTGCACCTGTCTGACTTGATC AAGGATGTGTTTTCGTGTTACAGG GCTGTTAGAAGATCTCGGTTCAGC TCCTTCAGGTGCAATTGTACTGCT TCATGCTTGTGCCCACAACCCTAC TGGAGTAGACCCAACTTTGGACCA GTGGGAACAGATCAGGCAGTTGA	Fig.1b, 1d, 2c, S2, S3

		TGAGATCAAAAGCATTGCTGCCAT TCTTTGATAGCGCTTATCAGGTAAA TTATTGGCATC	
HsDNMT1	AAAGGTCCAG AGATGGCAGT GGCCTGG	TAAGACATGGGTCCAGCAAAGCAT TCCTCATGCTGCTGCCTGCACTTA CCCTCTAGGAAGGCCAGCCTGGA GGAGCCACTTCTGCCCTTCAGGC AAATGATAACTGAGCACCTGTCTG TGCGGGTGCTAGGTGGAAAGGTC CAGAGATGGCAGTGGCCTGGTCC CTGCCTGGGGCACCTTCTCTCCA CCAACAGACACTTACCCAGCTGGT TAGGCCTGTTCTCACCCCGCAGT CTGTAGTTAGCACCCAGGCTGGG AACAACAGCCTGTGTTCCTCTCCC TTTCCTTGGTACCTTCTCT	Fig.1b, 1d, 2c, S2, S3, S5
OsDEP1 without PAM	TGGACGTGTC TATCTCCGCCA TTGCTT	CTTGGCCCTCTTTGGGCGTGGCG CCATGGCTGTACTACCTTTGTCGT TGTTTGGTTGGGCTCCTCGTTGGA GAAAAGAAGAGCGTGGGCATGGA CAACTGACCTGAGTGGCCTTGTC AGGGAGAGCCATAGCAGTGGACG TGTCTATCTCCGCCATTGCTTCGT CGACACTGGACGTGCAGACGGCA TGGCCATGAGGGCTTTGCACGAT GGGTGGTGCCGTGTTGGTGTTAT GGGCTGCCACCATGGTTTGAGGC TTTTGATGTTGCTAGATTTTGTGTT TAACGAGGGAGGGAAGAAT	Fig. 1c, 2b-c, S1b, S2-S5
OsDEP1 with PAM	TTTACGTGTCT ATCTCCGCCAT TGCTT	AGCTTGGCCCTCTTTGGGCGTGG CGCCATGGCTGTACTACCTTTGTC GTTGTTTGGTTGGGCTCCTCGTTG GAGAAAAGAAGAGCGTGGGCATG GACAACTGACCTGAGTGGCCTTG TCAGGGAGAGCCATAGCAGTTTAC GTGTCTATCTCCGCCATTGCTTCG TCGACACTGGACGTGCAGACGGC ATGGCCATGAGGGCTTTGCACGAT GGGTGGTGCCGTGTTGGTGTTAT GGGCTGCCACCATGGTTTGAGGC TTTTGATGTTGCTAGATTTTGTGTT TAACGAGGGAGGGAAGA	Fig. 1c, S1b
HsHEK3	GCACTGAGCC TAGTGCTGAG	CCACTAAAGTGCTCTGGTGAATTT CTTTTCCAACACCCTAATGCTGAG	Fig. 2c, S2

	GATACAG	GCTTTCCAGCCATCCACCCATCCA TCCATCACTCATTTCCTTGGCCAT CCACCACCCATTAAATGTGAGGAT ACTATGGCCCAGGCACTGAGCCTA GTGCTGAGGATACAGGGCTGAAT CAGACCCAGCCTTGATCCTCAGG GTGGTCAGGGCCAGTGCAAAAAC AAGCAAGGAGATAAAATATGCTGG TACTAGGCTTTCCTGCTGCATTCT CATTGCAGACTTGCGTGAAAGGG AGCTTACAGCAGGAGT	
OsEPSPS	AGTGCCACGA ATGAGGGAGA GACCGAT	GGGAACGCTGGAACTGCAATGCG ACCATTGACAGCAGCCGTGACTG CTGCTGGTGGAAATGCAACGTATG TTTTTTTTTTTAATGTTTATGAAAAT ATGTATGGAATTCATGGGGTATGTT TTATGACCTTTTTCTTTACCATCAG TTATGTGCTTGATGGAGTGCCACG AATGAGGGAGAGACCGATTGGTG ACTTGGTTGTCGGGTTGAAACAAC TTGGTGCGGATGTCGACTGTTTCC TTGGCACTGAATGCCCACCTGTTC GTGTCAAGGGAATTGGAGGACTT CCTGGTGGCAAG	Fig. 2c, S2, S3, S5
HsHEK4	GCAGAGGTGG GGAGACCTGC TGAGGGC	CTACTGAGATCCTGTCCTTAGTTTA CTGCGTGGAGACAGACCACAAGC AGGTAAACAAGCAAATATGTAAGT CCCAGGTCAGATAAATTTTAGGAA GTGCTGTTTTCCAGTGGTTCAATG GTCATCCCAGGGCAGAGGTGGGG AGACCTGCTGAGGGCGGCTTCTC CCTCAGTCAGTCCATGCCTGCAG GGTCTGGAACCCAGGTAGCCAGA GACCGCTGGTCTTCTTTCCCCTC CCCTGCCCTCCCCTCCCTTCAAG ATGGCTGACAAAGGCCGGGCTGG GTGGAAGGAAGGGAGGAA	Fig. 2c, S3
HsRUNX1	CTGGGACAGA GGACGGCTGC ACAGCCG	GCTCACACACCGAGTACAGGGGC ATGGAGCAACCAGTAGCAGAAGC ACCTTTGGAAACAGCAACTGACCC GATTCTGAATGGCAAGAAGCCTTT CTGAGCTTTTGAAAGCAAATGAGT AGCTGAGACGTTCCTACATTCTCT CAAAATAGATCCGAAAGATGTGCT	Fig. S3

		CAGAAAATATGTAGCCCTTTACTGA GAAATCAAGCCTGGTGAGATGCT GGGACAGAGGACGGCTGCACAG CCGCTGTGCACACACAGACTTTAA TAAGGAGCCCAAGGCCTAGAGAG AAGAGTCTGGAGGCATAAGAGCA CCTGCTATTAGAGAAAGCAATGGC AGGAGGTCTGTGCAGGGAATGTG CTCAGATGACACAGTGATGGCCTT TTCTTTCTTTTCTTTTTTCTGGCTT TCATCAAATAGCATATAGAACTTCT CTCTTGAGCCTTAGTTTCCTCATC TGCAGAGTAAGGATTGCAATAGTA CC	
OsGAPDH without PAM	TATGTCGTGG AGTCCACCGG TGTCTTC	TCAGGTAACTTGATATTGATATTAC AGCTTAGATGAAAGTAACTTGTTTA TGGTAGCGAGCGTGGAACTGATG TTTGATCCTGTGCAATTTGAAAGG AACCCTGACGAGATTCCGTGGGC TGAGGCTGGTGCTGAGTATGTCG TGGAGTCCACCGGTGTCTTCACT GACAAGGAGAAGGCTGCTGCTCA CTTGAAGGTATTATCACTGTTGCTT TTCATTCCAACAAATTGGCATATTG TTACATATTGTTCCCATGGGATTGC ATACAAGCAAGTAAATAATGCTATG GTTATTTTTAA	Fig. S1a, S2
OsGAPDH with PAM	TTTGTCGTGG AGTCCACCGG TGTCTTC	TCAGGTAACTTGATATTGATATTAC AGCTTAGATGAAAGTAACTTGTTTA TGGTAGCGAGCGTGGAACTGATG TTTGATCCTGTGCAATTTGAAAGG AACCCTGACGAGATTCCGTGGGC TGAGGCTGGTGCTGAGTTTGTCG TGGAGTCCACCGGTGTCTTCACT GACAAGGAGAAGGCTGCTGCTCA CTTGAAGGTATTATCACTGTTGCTT TTCATTCCAACAAATTGGCATATTG TTACATATTGTTCCCATGGGATTGC ATACAAGCAAGTAAATAATGCTATG GTTATTTTTAA	Fig. S1a
OsCDC48 without PAM	CTGGCTGAAG ATGTGAGTTAT CACCAC	GGTGCTACAAACCGGCCAAACAG TATTGATCCTGCTCTCAGAAGGTT TGGTAGGTTCGATCGGGAGATTGA CATTGGTGTTCCTGATGAAGTTGG	Fig. S1b

		GCGGCTTGAAGTTCTTCGGATTCA CACCAAAAACATGAAGCTGGCTGA AGATGTGAGTTATCACCACTACAG TCTAGATGCAAAATATTCTTTATTG GTTGCATTTTTTTTAATAGTTATTA CATTGTTGTCGCAGGTTGACCTGG AACACATTGCCAAAGACACTCATG GGTATGTGGGTGCTGATCTTGCTG CTCTTTGCACT	
OsCDC48 with PAM	CTGGCTGAAG ATGTGAGTTAT CACCAC	GGTGCTACAAACCGGCCAAACAG TATTGATCCTGCTCTCAGAAGGTT TGGTAGGTTCGATCGGGAGATTGA CATTGGTGTTCCTGATGAAGTTGG GCGGCTTGAAGTTCTTCGGATTCA CACCAAAAACATGAAGCTGGCTGA AGATGTGAGTTATCACCACTACAG TCTAGATGCAAAATATTCTTTATTG GTTGCATTTTTTTTAATAGTTATTA CATTGTTGTCGCAGGTTGACCTGG AACACATTGCCAAAGACACTCATG GGTATGTGGGTGCTGATCTTGCTG CTCTTTGCAC	Fig. S1b
OsPi2	GGGAGTATGT CCTGCAAAAC TGGATTG	CAGGAAAACACTCGCCACATAGCA TTCCATGGGAGTATGTCCTGCAAA AC(A/T)GGATTGGATTGGAGCATTA TTCGATCATTAGCTATTTTTGGTGA CAGAC	Fig, 2f
EcLex E84P	GGTCGTGTGG CTGCCGGTCC GCCACTT	AGGAAGAGGAAGAAGGGTTGCCG CTGGTAGGTCGTGTGGCTGCCGG T(GAA/CCG)CCACTTCTGGCGCAA CAGCATATTGAAGGTCATTATCAG GTCGATCCTTC	Fig, 2f
AtGun4	TCGACGTTCT GGAGAACCAT TTCGTCA	CGCCACAACTGCCGAAACCGCGA CCATATTCGACGTTCTGGAGAACC AT(G/T)CGTCAATCAAAACTTCAG ACAAGCCGACGAGGAGACACGGA GATTACTC	Fig, 2f
EcLex G80A	AAGAAGGGTT GCCGCTGGTA GCCCGTG	ACGCGGGATTCGTCTGTTGCAGG AAGAGGAAGAAGGGTTGCCGCTG GTA(GGT/GCC)CGTGTGGCTGCC GGTGAACCACTTCTGGCGCAACA GCATATTGAAGGT	Fig, 2f
MmGrin1	CAGCTGCATC TGCTTCCTACA	CTTCCTCCACACGTTCACGGCTG CAAAAGCCAGCTGCATCTGCTTCC	Fig, 2f

	GGCATC	TAC(G/A)GGCATCCTTGTGTCGCT TGTAGGCGATCTCGATGAAAATGA GGAAGATC	
MmTuba1	TGAAGAAGGT GTTGAAGGAG CCATCTC	GGGGCACATGCTTGCCAGCTCCT GTCTCACTGAAGAAGGTGTTGAA GGAG(T/C)CATCTCCTCCCCCAAT GGTCTTGTCACTTGGCATCTGGCC ATCAGGCTG	Fig, 2f
HsCXCR2	CCCATTGTGG TCACAGGAAG CAGAGGA	TTCTTCTTGGTCTCAGTGTCAATG CAGCCCCCATTGTGGTCACAGGA AG(T/C)AGAGGAGGCCACGTTCTT ACTAGTTTCCCTTGCATGGTTTAG AAAGCTTG	Fig, 2f
HsCRC	TTGAGCTCAG CAGATGAAAG TCACTGA	GTAGCCAGAGTTAATACCCTCATC GTCCTTTGAGCTCAGCAGATGAAA G(G/T)CACTGAGAAAAGTACAAAG AATTTTTATGTGCTATTGACTTTATT TTATT	Fig, 2f
SeparC	CCATGGCTTC ATAGCAGGCG ATGTCGC	AACGGTAAGAGAACGGCTGCGCC ATCAGCACCATGGCTTCATAGCAG GCG(C/A)TGTCGCCATGCGGGTGA TACTTACCCAGTACGTCACCAACG GTACGGGC	Fig, 2f
AaCDC25A	GACAGGAGCC TCAGTGCTCC CGAATTG	CAGCAGCTCAAGGCCAGGACAGC CGGCTGGACAGGAGCCTCAGTGC TCC(A/C)GAATTGGGCCCTGTGTT TGTGAGGCAAGGCCCAGTCCTTG GGTCATCCAG	Fig, 2f
NbTsw	TTGACTGTTTT AGTTTTTTCCA GATTG	TCTCTTTGATTTTTATCGTGATCTC CCAAGTTGACTGTTTTAGTTTTTTC (T/C)AGATTGGGTTTTTCGCGATTC TCAAATTCCTCCATATCTTCAACTA ATC	Fig, 2f
HsTLR9	CACTCATTCAC GGAGCTACCA CGACTG	TCCCACAATAAGCTGGACCTCTAC CACGAGCACTCATTCACGGAGCTA CC(G/A)CGACTGGAGGCCCTGGA CCTCAGCTACAACAGCCAGCCCTT TGGCATGC	Fig, 2f
HsIRF5	AAACACTGTA GTTACAAGATA TCATTT	TGCTATTTGATAAATGATCACAATG TGTAAAACACTGTAGTTACAAGAT(C/A)TCATTTAATCCGCCTAACAACC TTGCCAAGTATTAATAAAACCCGTT TTA	Fig, 2f
ASFV-	GGTATCAATCT	TTATTAAAAACATTTCCGTAACTGC	Fig, 2f

B646L	TATCGATAAAT TTCCA	TCATGGTATCAATCTTATCGATAA(G /A)TTTCCATCAAAGTTCTGCAGCT CTTACATACCCTTCCACTACGGAG GCAA	
SIBBX18	GAGATATCTAC TGTGTGTTCG TTTACC	CCTGGAAACTCAACTTTCTGCCTC AACAGGAGATATCTACTGTGTGTT C(A/G)TTTACCGCCAACGTGTATAC CATCATGTCACATTGCACACACAG AGAACT	Fig, 2f
OsJNBa0083 M16.2	AATCTGCCAG TGTCAACTGC GTGCTTC	AAAATCTACTCTGCCGTAGACTGT ATAATCTCCCGTGTTTGTTGAACTA ACTACCATATCTCAAATCTGAATGT ATAATCTGCCAGTGTCAACTGC(T/ G)TGCTTCCATTTCAACCCGAGGT GTAACATGTGCACACAAAAGCTCT TCTCTGAATTCCGCAAATAAACTCT GCTTAATTTGCAGATGAGTTCGTA GTTGTCAC	Fig, 2f
HsHBB	AGTAGATTGG CCAACCCTAG CGTGTGG	TCAGAAGCAAATGTAAGCAATAGA TGGCTCTGCCCTGACTTTTATGCC CAGCCCTGGCTCCTGCCCTCCCT GCTCCTGGGAGTAGATTGGCCAA CCCTAG(G/C)GTGTGGCTCCACAG GGTGAGGTCTAAGTGATGACAGC CGTACCTGTCCTTGGCTCTTCTGG CACTGGCTTAGGAGTTGGACTTCA AACCCTCAGCCCTC	Fig, 2f
EcLex-S119A	AATGCCGATAT CTTTCATAGCC ATCCC	TTTATGCACTGCCAGCAAGTCACC ATCCATAATGCCGATATCTTTCAT(T CG/AGC)CATCCCGCTGACGCGCA GCAGGAAATCAGCATTCGGCTTGA ATAAGGAA	Fig, 2f
SARS-COV-2 (L452R)	AUUACCGGUA UAGAUUGUUU AGGAAGU	AAUUCUAACAAUCUUGAUUCUAA GGUUGGUGGUAAUUAUAAUUAC(CUG/CGG)UAUAGAUUGUUUAGGA AGUCUAAUCUCAAACCUUUUG	Fig, 3b, S6
SARS-COV-2 (T478K)	AAUCUAUCAG GCCGGUAGCA AACCUUG	UAAUCUCAAACCUUUUGAGAGAG AUAUUUCAACUGAAAUCUAUCAG GCCGGUAGC(ACA/AAA)CCUUGU AAUGGUGUUGAAGGUUUUAAUUG UUACUUUCCUUUA	Fig, 3b, 3i, S6, S8
SARS-COV-2 (N501Y)	UAUGGUUUCC AACCCACUUA CGGUGUU	AAGGUUUUAAUUGUUACUUUCCU UUACAAUCAUAUGGUUUCCAACC CACU(AAU/UAC)GGUGUUGGUUA	Fig, 3b, S6

		CCAACCAUACAGAGUAGUAGUAC UUUCUUUUGAACU	
SARS-COV-2 (D614G)	AUCAGGCUGU UAACUGCACA GAAGUCC	GUGUUAUAACACCAGGAACAAAU ACUUCUAACCAGGUUGCUGUUCU UUAUCAG(GAU/GCU)GUUAACUG CACAGAAGUCCCUGUUGCUAUUC AUGCAGAUCAACUUACUCCUACU UGGCGUGUUU	Fig, 3b, 3i, S6, S8
SARS-COV-2 (P681R)	UCAGACUCAG ACUAAUUCUC GUCGGCG	AGUGUGACAUACCCAUUGGUGCA GGUAUAUGCGCUAGUUAUCAGAC UCAGACUAAUUCU(CCU/CGU)CG GCGGGCACGUAGUGUAGCUAGU CAAUCCAUCAUUGCCUACACUAU GUCACUUGGUG	Fig, 3b, 3c, S6
SARS-COV-WT	CCAGCUUGAG AGCAAAAUGU CUGGUAA	UUGCUUUGCUGCUGCUUGACAG AUUGAACCAGCUUGAGAGCAAAA UGUCUGGUAAAGGCCAACAACAA CAAGGCCAAACUGUCACUAAGAA AUCUGCUGC	Fig. 3d, 3e
SARS-COV-B1.1.7	CCAGCUUGAG AGCAAAAUGU UUGGUAA	UUGCUUUGCUGCUGCUUGACAG AUUGAACCAGCUUGAGAGCAAAA UGUUUGGUAAAGGCCAACAACAA CAAGGCCAAACUGUCACUAAGAA AUCUGCUGC	Fig. 3d, 3e
HsCYP2C19	AGGATTGTAA GCACCCCCTG AATCCAG	TAACAAATATGAAGTGTTTTATATCT AATGTTTACTCATATTTTAAAATTGT TTCCAATCATTTAGCTTCACCCTGT GATCCCACTTTCATCCTGGGCTGT GCTCCCTGCAATGTGATCTGCTCC ATTATTTTCCAGAAACGTTTCGATT ATAAAGATCAGCAATTTCTTAACTT GATGGAAAAATTGAATGAAAACAT CAGGATTGTAAGCACCCCCTG(G/A)ATCCAGGTAAGGCCAAGTTTTTTG CTTCCTGAGAAACCACTTACAGTC TTTTTTTCTGGGAAATCCAAAATTC TATATTGACCAAGCCCTGAAGTAC ATTTTTGAATACTACAGTCTTGCCT AGACAGCCATGGGGTGAATATCTG GAAAAGATGGCAAAGTTCTTTATTT TATGCACAGGAAATGAATATCCCAA TATAGATCAGGCTTCTAAGCCCATT AGCTCCCTGATCAGTG	Fig. 3g, S8
*HsCYP2C9**	TGCACGAGGT	TTTTCTCCTTTTCCATCAGTTTTTA	Fig. 3g, 4b, S8

3	CCAGAGATAC CTTGACC	CTTGTGTCTTATCAGCTAAAGTCC AGGAAGAGATTGAACGTGTGATTG GCAGAAACCGGAGCCCCTGCATG CAAGACAGGAGCCACATGCCCTA CACAGATGCTGTGGTGCACGAGG TCCAGAGATAC(A/C)TTGACCTTCT CCCCACCAGCCTGCCCCATGCAG TGACCTGTGACATTAAATTCAGAA ACTATCTCATTCCCAAGGTAAGTTT GTTTCTCCTACACTGCAACTCCAT GTTTTCGAAGTCCCCAAATTCATA GTATCATTTTTAAACC	
ZIKV-African	CAGCAGCUGG CAUCAUGAAG AAUCCCG	GCCUACAGGCAGCAGCAGCGCG UGCUGCCCAGAAGAGAACAGCAG CUGGCAUCAUGAAGAAUCCCGUU GUGGAUGGAAUAGUGGUAACUG ACAUUGACAC	Fig, S7
ZIKV-American		GGCUGCAGGCAGCAGCUGCGCG UGCUGCCCAGAAGAGAACGGCAG CUGGCAUCAUGAAGAACCCUGUU GUGGAUGGAAUAGUGGUGACUG ACAUUGACAC	Fig, S7
ZIKV-SNP2	CAGCAGCUGG CAUCAUGAAG UAUCCCG	GCCUACAGGCAGCAGCAGCGCG UGCUGCCCAGAAGAGAACAGCAG CUGGCAUCAUGAAGUAUCCCGUU GUGGAUGGAAUAGUGGUAACUG ACAUUGACAC	Fig. 3i, S8
HBV		TTCCTGCTGGTGGCTCCAGTTCC GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCCCACATCGTCAATC TTCTCGAGGACTGGGGACCCTGC ACCGAACATGGAGAGCACAACAT CAGGATTCCTAGGACCCCTGCTC GTGTTACAGGCGGGGTTTTTCTTG TTGACAAGAATCCTCACAATACCA CAGAGTCTAGACTCGTGGTGGAC TTCTCTCAATTTTCTAGGGGGAGC ACCCACGTGTCCTGGCCAAAATTC GCAGTCCCCAACCTCCAATCACTC ACCAACCTCTTGTCCTCCAACTTG TCCTGGCTATCGCTGGATGTGTCT GCGGCGTTTTATCATATTCCTCTTC ATCCTGCTGCTATGCCTCATCTTCT TGTTGGTTCTTCTGGACTACCAAG	

		GTATGTTGCCCGTTTGTCCTCTAC TTCCAGGAACATCAACTACCAGCA CGGGGCCATGCAAGACCTGCACG ATTCCTGCTCAAGGAACCTCTATG TTTCCCTCTTGTTGCTGTACAAAA CCTTCGGATGGAAACTGCACTTGT ATTCCCATCCCATCATCCTGGGCT TTCGCAAGATTCCTATGGGAGTGG GCCTCAGTCCGTTTCTCCTGGCTC AGTTTA	
HBV-B1		TTCCTGCTGGTGGCTCCAGTTCA GGAACAGTAAGCCCTGCTCAGAAT ACTGTCTCTGCCATATCGTCAATCT TATCGAAGACTGGGGACCCTGTG CCGAACATGGAGAACATCGCATCA GGACTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGGTTTTTCTTGTT GACAAAAATCCTCACAATACCACA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAACAC CCGTGTGTCTTGGCCAAAATTCGC AGTCCCAAATCTCCAGTCACTCAC CAACCTGTTGTCCTCCAATTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTGCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGATCATCAACCACCAGCAC GGGACCATGCAAGACCTGCACAA CTCCTGCTCAAGGAACCTCTATGT TTCCCTCATGTTGCTGTACAAAAC CTACGGATGGAAACTGCACCTGTA TTCCCATCCCATCATCTTGGGCTT TCGCAAAATACCTATGGGAGTGGG CCTCAGTCCGTTTCTCTTGGCTCA GTTTA	Fig. S9-S11
HBV-B2		TTCCTGCTGGTGGCTCCAGTTCA GGAACAGTGAGCCCTGCTCAGAA TACTGTCTCTGCCATATCGTCAATC TTATCGAAGACTGGGGACCCTGT GCCGAACATGGAGAACATCGCATC AGGACTCCTAGGACCCCTGCTCG TGTTACAGGCGGGGGTTTTTCTTGT	Fig. S9-S11

| | | TGACAAAAATCCTCACAATACCAC AGAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAACAC CCGTGTGTCTTGGCCAAAATTCGC AGTCCCAAATCTCCAGTCACTCAC CAACCTGTTGTCCTCCAATTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTGCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGATCATCAACCACCAGCAC GGGACCATGCAAAACCTGCACAA CTCCTGCTCAAGGAACCTCTATGT TTCCCTCATGTTGCTGTACAAAAC CTACGGACGGAAACTGCACCTGT ATTCCCATCCCATCATCTTGGGCT TTCGCAAAATACCTATGGGAGTGG GCCTCAGTCCGTTTCTCTTGGCTC AGTTTA | |
| HBV-B3 | | TTCCTGCTGGTGGCTCCAGTTCA GGAACAGTGAACCCTGTTCAGAA CACTGCCTCTCCCATATCGTCAAT CTTATCGAAGACTGGGGACCCTGT GCCGAACATGGAGAACATCGCATC AGGACTCCTAGGACCCCTGCTCG TGTTACAGGCGGGGTTTTTCTTGT TGACAAAAATCCTCACAATACCAC AGAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGAAACAC CCGTGTGTCTTGGCCAAAATTCGC AGTCCCAAATCTCCAGTCACTCAC CAACTTGTTGTCCTCCGATTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTGCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGATCATCAACCACCAGCAC CGGACCCTGCAAAACCTGCACGA CTCCTGCTCAAGGAACCTCTATGT TTCCCTCATGTTGCTGTACAAAAC CTACGGACGGAAACTGCACCTGT ATTCCCATCCCATCATCTTGGGCT | Fig. S9-S11 |

		TTCGCAAAATACCTATGGGAGTGG GCCTCAGTCCGTTTCTCTTGGCTC AGTTTA	
HBV-B4		TTCCTGCTGGTGGCTCCAGTTCA GGAACAGTGAGCCCTGCTCAGAA TACTGCCTCTGCCATATCGTCAAC CTTCTTGAAGACTGGGGACCCTG TACCGAACATGGAGAACATCGCAT CAGGACTCCTAGGACCCCTGCTC GTGTTACAGGCGGGGTTTTTCTTG TTGACAAAAATCCTCACAATACCA CAGAGTCTAGACTCGTGGTGGAC TTCTCTCAATTTTCTAGGGGGAAC ACCCGTGTGTCTTGGCCAAAATTC GCAGTCCCAAATCTCCAGTCACTC ACCAACTTGTTGTCCTCCAATTTG TCCTGGTTATCGCTGGATGTGTCT GCGGCGTTTTATCATCTTCCTCTG CATCCTGCTGCTATGCCTCATCTT CTTGTTGGTTCTTCTGGACTATCA AGGTATGTTGCCCGTTTGTCCTCT AATTCCAGGATCATCAACCACCAG CACCGGACCATGCAGAACCTGCA CGACTCCTGCTCAAGGAACCTCTA TGTTTCCCTCATGTTGCTGTACAA AACCTACGGACGGAAACTGCACC TGTATTCCCATCCCATCATCTTGG GCTTTCGCAAAATACCTATGGGAG TGGGCCTCAGTCCGTTTCTCTTGG CTCAGTTTA	Fig. S9-S11
HBV-B6		TTCCTGCTGGTGGCTCCAGTTCA GGAACAGTGAACCCTGCTCAGAG TACTGCCTCTGCCATATCGTCAAC CTTATCGACGACTGGGGACCCTG CACCGAACATGGAGAACATCGCAT CAGGACTCCTAGGACCCCTGCTC GTGTTACAGGCGGGGTTTTTCTTG TTGACAAAAATCCTCACAATACCA CAGAGTCTAGACTCGTGGTGGAC TTCTCTCAATTTTCTAGGGGGAAATG CCCGGGTGTCTTGGCCAAAATTC GCAGTCCCAAATCTCCAGTCACTC ACCAACCTGTTGTCCTCCAATCTG TCCTGGTTATCGCTGGATGTGTCT	Fig. S9-S11

		GCGGCGTTTTATCATCTTCCTTTG CATCCTGCTGCTATGCCTCACCTT CTTGTTGGTTCTTCTGGACTATCA AGGTATGTTGCCCGTTTGTCCTCT AATTCCAGGATCATCAACCACCAG CACCGGACCATGCAAAACCTGCA CGACTCCTGCTCAAGGAACCTCTA TGTTTCCCTCATGTTGCTGTACAA AACCTACGGACGGAAACTGCACC TGTATTCCCATCCCATCATCTTGG GCTTTCGCAAAATACCTATGGGAG TGGGCCTCAGTCCGTTTCTCTTGG CTCAGTTTA	
HBV-B7		TTCCTGCTGGTGGCTCCAGTTCA GGAACAGTGAACCCTGTTCAGAC CACTGCCTCTTCCATATCGTCAAT CTTATCGAAGACTGGGGACCCTGT GCCGAACATGGAGAACATCGCATC AGGACTCCTAGGACCCCTGCTCG TGTTACAGGCGGGGGTTTTTCTTGT TGACAAAAATCCTCACAATACCAC AGAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAACAC CCGTGTGTCTTGGCCAAAATTCGC AGTCCCAAATCTCCAGTCACTCAC CAACTTGTTGTCCTCCGATTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTGCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGATCATCAACCACCAGCAC CGGACCATGCAGAACCTGCACGA CTCCTGCTCAAGGAACCTCTATGT TTCCCTCATGTTGCTGTACAAAAC CTACGGACGGAAACTGCACCTGT ATTCCCATCCCATCATCTTGGGCT TTCGCAAAATACCTATGGGAGTGG GCCTCAGTCCGTTTCTCTTGGCTC AGTTTA	Fig. S9-S11
HBV-C1		TTCCTGCTGGTGGCTCAAGTTCC GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCCCATATCGTCAATC TTCTCGAGGACTGGGGACCCTGC	Fig. S9-S11

		ACCGAATATGGAGAGCACCACATC AGGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGTTTTTCTTGTT GACAAGAATCCTCACAATACCACA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAGCAC CCACGTGTCCTGGCCAAAATTTGC AGTCCCCAACCTCCAATCACTCAC CAACCTCTTGTCCTCCAATTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTTCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTACCAAGG TATGTTGCCCGTTTGTCCTCTACTT CCAGGAACATCAACTACCAGCAC GGGACCATGCAAGACCTGCACGA TTCCTGCTCAAGGAACCTCTATGT TTCCCTCTTGTTGCTGTACAAAC CTTCGGACGGAAATTGCACTTGTA TTCCCATCCCATCATCTTGGGCTT TCGCAAGATTCCTATGGGAGTGGG CCTCAGTCCGTTTCTCCTGGCTCA GTTTA	
HBV-C2		TTCCTGCTGGTGGCTCCAGTTCC GGAACAGTAAACCCTGTTCCGACT ACTGCCTCACCCATATCGTCAATC TTCTCGAGGACTGGGGACCCTGC ACCGAACATGGAGAACACAACATC AGGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGTTTTTCTTGTT GACAAGAATCCTCACAATACCACA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAGCAC CCACGTGTCCTGGCCAAAATTCG CAGTCCCCAACCTCCAATCACTCA CCAACCTCTTGTCCTCCAACTTGT CCTGGCTATCGCTGGATGTGTCTG CGGCGTTTTATCATATTCCTCTTCA TCCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTACCAAGG TATGTTGCCCGTTTGTCCTCTACTT CCAGGAACATCAACTACCAGCAC GGGACCATGCAAGACCTGCACGA TTCCTGCTCAAGGAACCTCTATGT	Fig. S9-S11

		TTCCCTCTTGTTGCTGTACAAAAC CTTCGGACGGAAACTGCACTTGTA TTCCCATCCCATCATCCTGGGCTT TCGCAAGATTCCTATGGGAGTGGG CCTCAGTCCGTTTCTCCTGGCTCA GTTTA	
HBV-C3		TTCCTGCTGGTGGCTCCAGTTCC GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCTCATTTCGTCAATC TTCTCGAGGATTGGGGACCCTGTA ACGAACATGGAGAACACAACATCA GGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGTTTTTCTTGTT GACAAAAATCCTCACAATACCACA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAGCAC CCGTGTGTCCTGGCCAAAATTCG CAGTCCCCAACCTCCAATCACTCA CCAACCTCTTGTCCTCCAATTTGT CCTGGCTATCGCTGGATGTGTCTG CGGCGTTTTATCATCTTCCTCTTCA TCCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTACCAAGG TATGTTGCCCGTTTGTCCTCTACTT CCAGGAACATCAACTACCAGCAC GGGACCATGCAAGACCTGCACGA TTCCTGCTCAAGGAACCTCTATGT TTCCCTCATGTTGCTGTACAAAAC CTTCGGACGGAAACTGCACTTGTA TTCCCATCCCATCATCCTGGGCTT TCGTAAGATTCCTATGGGAGTGGG CCTCAGTCCGTTTCTCCTGGCTCA GTTTA	Fig. S9-S11
HBV-C4		TTCCTGCTGGTGGCTCCAGTTCC GGAACAGTAAACCCTGTTCCGAAT ACTGTCTCTCACATCTCATCAATCT TCACGAAGACTGGGGACCCTGCA TCGAACATGGAGAGCACAACATCA GGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGTTTTTCTTGTT GACAAGAATCCTCACAATACCTCA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAGCTC CCGCGTGTCTTGGCCAAAATTCG	Fig. S9-S11

		CAGTCCCAAACCTCCAATCACTCA CCAACCTCTTGTCCTCCAACCTGT CCTGGCTATCGTTGGATGTGTCTG CGGCGTTTTATCATCTTCCTCTTCA TCCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTACTT CCAGGATCAACGACCACCAGCAC GGGACCTTGCAGAACCTGCACGA TCACTGCTCAAGGAACCTCTATGT TTCCCTCATGTTGCTGTACAAAAC CTTCGGACGGAAATTGCACCTGTA TTCCCATCCCATCATCTTGGGCTT TCGCAAAATTCCTATGGGAGTGGG CCTCAGTCCGTTTCTCCTGGCTCA GTTTA	
HBV-C5		TTCCTGCTGGTGGCTCCAGTTCC GGAACAGCAAACCCTGTTCCGAC TACTGCCTCTCCCATATCGTCAATC TTCTCGAGGACTGGGGACCCTGC ACCGAATATGGAGAACACAACATC AGGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGGTTTTTCTTGTT GACAAAAATCCTCACAATACCACA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAGCAC CCACGTGTCCTGGCCAAAATTCG CAGTCCCCAACCTCCAATCACTCA CCAACCTCTTGTCCTCCAATTTGT CCTGGCTATCGCTGGATGTGTCTG CGGCGTTTTATCATATTCCTCTTCA TCCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTACCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGAACATCCACAACAAGCAC GGGACCATGCAAGACCTGCACGA CTCCTGCTCAAGGCACCTCTATGT TTCCCTCTTGTTGCTGTACAAAAC CTTCGGACGGAAACTGCACCTGT ATTCCCATCCCATCATCCTGGGCT TTCGCAAAATTCCTATGGGAGTGG GCCTCAGTCCGTTTCTCATGGCTC AGTTTA	Fig. S9-S11
HBV-C6		TTCCTGCTGGTGGCTCCAGTTCC	Fig. S9-S11

		GGAACAGTAAACCCTGTTCCGACT ATTGCCTCTCCCATCTCGTCAATC TTCTCGAGGACTGGGGACCCTGC ACCGAACATGGAGAGCACAACAT CCGGATTCCTAGGACCCCTGCTC GTGTTACAGGCGGTGTTTTTCTTG TTGACAAGAATCCTCACAATACCA CAGAGTCTAGACTCGTGGTGGAC TTCTCTCAATTTTCTAGGGGAAGC ACCCATGTGTCCTGGCCAAAATTC GCAGTCCCCAACCTCCAATCACTC ACCAACCTCTTGTCCTCCAATTTG TCCTGGCTATCGCTGGATGTGTCT GCGGCGTTTTATCATCTTCCTCTT CATCCTGCTGCTATGCCTCATCTT CTTGTTGGTTCTTCTGGATTACCA AGGTATGTTGCCCGTTTGTCCTCT ACTTCCAGGAACATCAACTACCAG CACGGGACCTTGCAAGACCTGCA CAATTCCTGCTCAAGGAACCTCTA TGTTTCCCTCATGTTGCTGTACAA AACCTTCGGACGGAAACTGCACTT GTATTCCCATCCCATCATCCTGGG CTTTCGCAAGATTCCTATGGGAGT GGGCCTCAGTCCGTTTCTCCTGG CTCAGTTTA	
HBV-C11		TTCCTGCTGGTGGCTCCAGTTCC GGAACAGTAAACCCTGTTCCGATT ACTGCCTCTCCCATATCGTCAATC TTCTTGAGGACTGGGGACCCTGC ACCGAACATGGACAACACAACATC AGGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGTGTTTTTCTTGTT GACAAGAATCCTCACAATACCACA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGAAGCTC CCATGTGTCCTGGCCAAAATTCGC AGTCCCCAACCTCCAATCACTCAC CAACCTCTTGTCCTCCAATTTGTC CTGGCTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTTCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGATTACCAAGG TATGTTGCCCGTTTGTCCTCTACTT	Fig. S9-S11

		CCAGGAACATCAACTACCACCACG GGACCATGCAGGACCTGCACAAT TCCTGCTCAAGGAACCTCTATGTT TCCCTCATGTTGCTGTACAAAACC TTCGGACGGAAACTGCACTTGTAT TCCCATCCCATCATCCTGGGCTTT CGCAAGATTCCTATGGGAGTGGG CCTCAGTCCGTTTCTCCTGGCTCA GTTTA	
HBV-C12		TTCCTGCTGGTGGCTCCAGTTCC GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCCCATATCGTCAATC TTCTCGAGGATTGGGGACCTTGC ACCGAACATGGAGAGCACAACAT CAGGATTCCTAGGACCCCTGCTC GTGTTACAGGCGGTGTTTTTCTTG TTGACAAGAATCCTCACAATACCA CAGAGTCTAGACTCGTGGTGGAC TTCTCTCAATTTTCTAGGGGAAGC ACCCGCGTGTCCTGGCCAAAATT CGCAGTCCCCAACCTCCAATCACT CACCAACCTCTTGTCCTCCAATTT GTCCTGGCTATCGCTGGATGTGTC TGCGGCGTTTTATCATCTTCCTCTT CATCCTGCTGCTATGCCTCATCTT CTTGTTGGTTCTTCTGGATTACCA AGGTATGTTGCCCGTTTGTCCTCT ACTTCCAGGAACATCAACAACCAG CACGGGACCATGCAAGACCTGCA CGATTCCTGCTCAAGGAACCTCTA TGTTTCCCTCATGTTGCTGTACAA AACCTTCGGACGGAAACTGCACTT GTATTCCCATCCCATCATCCTGGG CTTTCGCAAGATTCCTATGGGAGT GGGCCTCAGTCCGTTTCTCTTGG CTCAGTTTA	Fig. S9-S11
HBV-D1		TCCCTGCTGGTGGCTCCAGTTCA GGAACAGTAAACCCTGTTCCGACT ACTGTCTCTCACATATCGTCAATCT TCTCGAGGATTGGGGACCCTGCG CTGAACATGGAGAACATCACATCA GGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGTTTTTCTTGTT GACAAGAATCCTCACAATACCGCA	Fig. S9-S11

		GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAACTA CCGTGTGTCTTGGCCAAAATTCGC AGTCCCCAACCTCCAATCACTCAC CAACCTCCTGTCCTCCAACTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTTCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGATCTTCAACCACCAGCAC GGGACCATGCAGAACCTGCACGA CTCCTGCTCAAGGAACCTCTATGT ATCCCTCCTGTTGCTGTACCAAAC CTTCGGACGGAAATTGCACCTGTA TTCCCATCCCATCATCTTGGGCTT TCGGAAAATTCCTATGGGAGTGGG CCTCAGCCCGTTTCTCCTGGCTCA GTTTA	
HBV-D2		TCCCTGCTGGTGGCTCCAGTTCA GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCCCATATCGTCAATC TTCTCGAGGATTGGGGACCCTGC GCTGAACATGGAGAACATCACATC AGGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGGTTTTTCTTGTT GACAAGAATCCTCACAATACCGCA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAACTA CCGTGTGTCTTGGCCAAAATTCGC AGTCCCCAACCTCCAATCACTCAC CAACCTCCTGTCCTCCAACTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTTCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTCTGTCCTCTAATT CCAGGATCTTCAACCACCAGCGT GGGACCATGCAGAACCTGCACGA CTACTGTTCAAGGAACCTCTATGT ATCCCTCCTGTTGCTGTACCAAAC CTTCGGACGGAAATTGCACCTGTA TTCCCATCCCATCATCCTGGGCTT TCGGAAAATTCCTATGGGAGTGGG	Fig. S9-S11

		CCTCAGCCCGTTTCTCCTGGCTCA GTTTA	
HBV-D3		TCCCTGCTGGTGGCTCCAGTTCA GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCACTTATCGTCAATCT TCTCGAGGATTGGGGACCCTGCG CTGAACATGGAGAACATCACATCA GGATTCCTAGGACCCCTTCTCGTG TTACAGGCGGGGTTTTTCTTGTTG ACAAGAATCCTCACAATACCGCAG AGTCTAGACTCGTGGTGGACTTCT CTCAATTTTCTAGGGGGAACTACC GTGTGTCTTGGCCAAAATTCGCAG TCCCCAACCTCCAATCACTCACCA ACCTCCTGTCCTCCAACTTGTCCT GGTTATCGCTGGATGTGTCTGCGG CGTTTTATCATCTTCCTCTTCATCC TGCTGCTATGCCTCATCTTCTTGTT GGTTCTTCTGGACTATCAAGGTAT GTTGCCCGTTTGTCCTCTAATTCC AGGATCCTCAACCACCAGCACGG GACCATGCAGAACCTGCACGACT CCTGCTCAAGGAACCTCTATGTAT CCCTCCTGTTGCTGTACCAAACCT TCGGACGGAAATTGCACCTGTATT CCCATCCCATCATCCTGGGCTTTC GGAAAATTCCTATGGGAGTGGGC CTCAGCCCGTTTCTCCTGGCTCA GTTTA	Fig. S9-S11
HBV-D4		TCCCTGCTGGTGGCTCCAGTTCA GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCACATATCGTCAATCT TCTCGAGGATTGGGGACCCTGCG CTGAACATGGAGAACATCACATCA GGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGTTTTTCTTGTT GACAAGAATCCTCACAATACCGCA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAACTA CCGTGTGTCTTGGCCAAAATTCGC AGTCCCCAACCTCCAATCACTCAC CAACCTCCTGTCCTCCAACTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTTCAT	Fig. S9-S11

		CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGATCATCAACCACCAGCAC GGGACCCTGCAGAACCTGCACGA CTCCTGCTCAAGGAACCTCTATGT ATCCCTCCTGTTGCTGTACAAAAC CTTCGGATGGAAACTGCACCTGTA TTCCCATCCCATCGTCCTGGGCTT TCGGAAAATTCCTATGGGAGTGGG CCTCAGCCCGTTTCTCTTGGCTCA GTTTA	
HBV-D5		TCCCTGCTGGTGGCTCAACTTCA GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCCCATATTGTCAATCT TCTCGAAGATTGGGGACCCTGCA CCGAACATGGAGAACATCACATCA GGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGGTTTTTCTTGTT GACAAGAATCCTCACAATACCGCA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAACTA CCGTGTGTCTTGGCCAAAATTCGC AGTCCCCAACCTCCAATCACTCAC CAACCTCCTGTCCTCCAGCTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTTCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGATCTTCGACCACCAGCAC GGGACCATGCAGAACCTGCATGA CTACTGCTCAAGGAACCTCTATGT ATCCCTCCTGTTGCTGTACCAAAC CTTCGGACGGAAATTGCACCTGTA TTCCCATCCCATCATCCTGGGCTT TCGGAAAATTCCTATGGGAGTGGG CCTCAGCCCGTTTCTCCTGGCTCA GTTTA	Fig. S9-S11
HBV-D7		TCCCTGCTGGTGGCTCCAGTTCA GGAACAGTAAACCCTGTTCCGACT ACTGCCTCTCCCATATCGTCAATC TTCTCGAGGATTGGGGACCCTGC GCTGAACATGGAGAACATCACATC	Fig. S9-S11

		AGGATTCCTAGGACCCCTGCTCGT GTTACAGGCGGGGTTTTTCTTGTT GACAAAAATCCTCACAATACCGCA GAGTCTAGACTCGTGGTGGACTT CTCTCAATTTTCTAGGGGGAACTA CCGTGTGTCTTGGCCAAAATTCGC AGTCCCCAACCTCCAATCACTCAC CAACCTCCTGTCCTCCAACTTGTC CTGGTTATCGCTGGATGTGTCTGC GGCGTTTTATCATCTTCCTCTTCAT CCTGCTGCTATGCCTCATCTTCTT GTTGGTTCTTCTGGACTATCAAGG TATGTTGCCCGTTTGTCCTCTAATT CCAGGATCTTCAACCACCAGCAC GGGACCATGCAGAACCTGCACGA CTCCTGCTCAAGGAACCTCTATGT ATCCCTCCTGTTGCTGTACAAAAC CTTCGGATGGAAACTGCACCTGTA TTCCCATCCCATCATCATGGGCTT TCGGAAAATTCCTATGGGAGTGGG CCTCAGCCCGTTTCTCCTGGCTCA GTTTA	
HsPNPLA3	TTGGTATGTTC CTGCTTCATG CCTTTC	ACCTACTCTGTGCAAAGGGCATTT TCAAGTTTGTTGCCCTGCTCACTT GGAGAAAGCTTATGAAGGATCAGG AAAATTAAAAGGGTGCTCTCGCCT ATAACTTCTCTCTCCTTTGCTTTCA CAGGCCTTGGTATGTTCCTGCTTC AT(C/G)CC(C/T)TTCTACAGTGGCC TTATCCCTCCTTCCTTCAGAGGCG TGGTAAGTCGGCTTTCTCTGCTAG CGCTGAGTCCTGGGGGCCTCTGA AGTGTGCTCACACATCTCCTGCCT GCAGGGCACTGGTGTCGGGCACC TCAGGGTCTGTCCCATGG	Fig. 4b, 4c, S12, S13
*HsALDH2*2*	ACGGGCTGCA GGCATACACTA AAGTGA	CCCCAAGAGTGATTTCTGCAATCT CGTTTCAAATTACAGGGTCAACTG CTATGATGTGTTTGGAGCCCAGTC ACCCTTTGGTGGCTACAAGATGTC GGGGAGTGGCCGGGAGTTGGGC GAGTACGGGCTGCAGGCATACAC T(G/A)AAGTGAAAACTGTGAGTGT GGGACCTGCTGGGGGCTCAGGG CCTGTTGGGGCTTGAGGGTCTGC	Fig. 4b, 4c, S12, S13

		TGGTGGCTCGGAGCCTGCTGGGG GATTGGGGTCTGTTGGGGGCTCG GGGCCTGCCAGAGGTTCAGGACC TGCCGGGGACTCAGGGCCTGCTG G	
*HsCYP2C19 *2*	TTTCCCAGGA ACCCATAACAA ATTACT	ATATACAATATATTTTATTTATATTTAT AGTTTTAAATTACAACCAGAGCTTG GCATATTGTATCTATACCTTTATTAA ATGCTTTTAATTTAATAAATTATTGT TTTCTCTTAGATATGCAATAATTTTC CCACTATCATTGATTATTTCCC(G/A) GGAACCCATAACAAATTACTTAAAA ACCTTGCTTTTATGGAAAGTGATAT TTTGGAGAAAGTAAAAGAACACCA AGAATCGATGGACATCAACAACCC TCGGGACTTTATTGATTGCTTCCT GATCAAAATGGAGAAGGTAAAATG	Fig. 4b
HsEGFR	TCATCATGCAG CTCATGCCCTT CGGCT	CTCCCTCCCTCCAGGAAGCCTAC GTGATGGCCAGCGTGGACAACCC CCACGTGTGCCGCCTGCTGGGCA TCTGCCTCACCTCCACCGTGCAG CTCATCA(C/T)GCAGCTCATGCCC TTCGGCTGCCTCCTGGACTATGTC CGGGAACACAAAGACAATATTGGC TCCCAGTACCTGCTCAACTGGTGT GTGCAGATCGCAAAG	Fig. 4d
HsNPM1	TCTCTGTCTG GCAGTGGAGG AAGTCTC	TTTTTTTTTTAAGATTTAACTTTCGG GGGGTAAAATGAAAAATAGATGTT GAATTTTGCAAAGAGCCTTTTAATT TTTTGATGTTTAAAAAGGGTTGGG GTCCCTTACCCCCTTTTTTTTTTTT TTTTCCAGGCTATTCAAGATCTCTG (/TCTG)GCAGTGGAGGAAGTCTCT TTAAGAAAATAGTTTAAACAATTTG TTAAAAAATTTTCCGTCTTATTTCAT TTCTGTAACAGTTGATATCTGGCT GTCCTTTTTATAATGCAGAGTGAG AACTTTCCCTACCGTGTTTGATAAA TGTTGTCCA	Fig. 4d
Rice-chr1:227142 7	GAAATATCTTG GCCTTCTCGT ACTTGT	CCCAGCTACGAACTGTGGGGGTG ATGAGAGGAAATATCTTGGCCTTC TCG(T/A)ACTTGTCAGGGAGCTCC TCGAGCTGATGCAGTCAGGGAAG CTGGAGCCGG	Fig. 5b, S14

Rice-chr2:24573278	CACCACCGGCATCACTGATTAGCCGTT	AATCATTACCGAAGCCAAGAGCGACGCCGCCACCACCGGCATCACTGATT(A/C)GCCGTTGGACACAATGGCCGCGTAAGCCATGCGAGCTATCAGAATGCCTT	Fig. 5b, S14
Rice-chr3:17741591	ACAAAGCGTCTTCTATTACAGAGTTGC	GTATTTTGTTATAACATTCATGCTGAGGAAACAAAGCGTCTTCTATTACA(G/A)AGTTGCAGTTCGTCTGAATCGGTTAAATTAAAACCTGCCCTGAATTGGCG	Fig. 5b, S14
Rice-chr3:29589636	GATTGTTGAACACCAACCAAACATGTA	AATGATTATGGATCCTTTTATCTAAGAGGGGATTGTTGAACACCAACCAA(A/T)CATGTAAACTACCTACTTCTCAGTTTACTTATCCAAATTAGCAGCCCAAA	Fig. 5b, S14
Rice-chr4:30726420	TTTTGTGATCCCCATTGTTTGCAGGAC	TAGTTTCTTCTGATTGGCCACATTCCGTAATTTTGTGATCCCCATTGTTT(G/C)CAGGACTGTTGAATTCAATGTCCAAGCTGATTGAAGGTAAACTTCTCTGG	Fig. 5b, S14
Rice-chr4:31079938	TGAGTCCACCACCATTGTGGACACTGC	TTGAGACCGGTGATAGTATCCAGCAGCCAATGAGTCCACCACCATTGTGG(A/C)CACTGCAGCAGACATTGAAACAAGGCCCGCAAAGGGGAAGGGATTCCTAT	Fig. 5b, S14
Rice-chr5:5361894	TGTATGGATGAGTCATCAGTGTGATGC	CAGTGGCCACGAGTCAAGATGCTGTATATATGTATGGATGAGTCATCAGT(G/A)TGATGCATGATCTCACATCTCGTCACTGATGATCTCCAGCTTGAGCTTGC	Fig. 5b, S14
Rice-chr6:1768724	GACGTCAGCGAGTGGGATCCCAGCAAG	ACCGGCATCACCGGCATCGTCAACGGCATGGACGTCAGCGAGTGGGATCC(T/C)AGCAAGGACAAGTACATCACCGCCAAGTACGACGCAACCACGGTAAGAAC	Fig. 5b, S14
Rice-chr6:1768006	CCCATACTTCAAAGGAACTTCTGGTGA	GGCTCCTAGGATCCTAAACCTCAACAACAACCCATACTTCAAAGGAACTT(A/C)TGGTGAGTTACAATTGATCTCAAGATCTTATAACTTTCTTCGAAGGAATC	Fig. 5b, S14
Rice-chr7:28305040	AAAATGTATGTTAGAGATCAAAGTCTT	GTTGTTGCTTAAGGAGAATGATGGTGACAAAAAATGTATGTTAGAGATCA(G/A)AGTCTTGGAGTTCTATTATAAAGCCCCGTTCGGTAGTGAGCTA	Fig. 5b, S14

		GTAGTGG	
Rice-chr8:20897662	AACTGTCTGCAATATCACGTCATGCAC	ACATCCAGACCAGAAAGCTGTTGTCCCAACAACTGTCTGCAATATCACGT(C/T)ATGCACAGTCATTATTTGAATGCTACTCCCTTCATCCTAAAATAAACCAA	Fig. 5b, S14
Rice-chr8:26726297	ATCCACACTGCTAAATTCTGGCCGTCA	AATTAACCAACTAATTAAAGTTCGGTAGTAATCCACACTGCTAAATTCTG(T/G)CCGTCATCGATCCGGCCATCGTCGTCGTCTTCTTCATCAGTAGCGAGAAT	Fig. 5b, S14
Rice-chr12:13698063	CAACTTGCCATGCTGAAACATCTGATC	TCTTGCTATTTCTTGAGTTCCCTTGCCCCCCAACTTGCCATGCTGAAACA(T/C)CTGATCAGAGGCGTGGCAAGGCTGTTCTTATGGAAGGTGACAGTGAACAG	Fig. 5b, S14
OsUGT75A	GAAGGTGTTCACAAGCACCCACGGCTT	CATTGCATGTAGCCTGCGTCGTCGTCTTGCTCGAAGAGGTCGCCGCCGCCGTCGGCCTCCGTGTCGGTGACCATGGGTCCAACCGGGATGAGGTCAATGCCGGGGACGGACGCGAGCGCCTTCGGCTCGAGCGCGTCGAAGGTGTTCACAAGCACCC(G/A)CGGCTTCGCGCCACTCTGGCCATGGGCATGGCACGACGCGGCGGCGGTGGCCTCGACGACGTGGAACATCTCCCGGAAGG	Fig. 5c, S15
OsGAPDH-T1	TGAGTATGTCGTGGAGTCCAACGGTGT	CGAGCGTGGAACTGATGTTTGATCCTGTGCAATTTGAAAGGAACCCTGACGAGATTCCGTGGGCTGAGGCTGGTGCTGAGTATGTCGTGGAGTCA(G/A)CGGTGTCTTCACTGACAAGGAGAAGGCTGCTGCTCACTTGAAGGTATTATCACTGTTGCTTTTCATTCCAACAAATTGGCATATTGTTACATATTGTTCCCATGGGATTGCATACAAGC	Fig. 5d
OsACC1-T1	CCTCGTGCTGGACAAGTGTGCTTTCCA	AAGGGAAATGGTTAGGTGGTATGTTTGATAAAGACAGCTTTGTGGAAACATTTGAAGGTTGGGCTAAGACAGTGGTTACTGGCAGAGCAAAGCTTGGTGGAATTCCAGTGGGTGTGATAGCTGTGGAGACTCAGACCATGATGCAAACTATCCCTGCTGACCCTGG	Fig. 5d

		TCAGCTTGATTCCCGTGAGCAATC TGTTCCTCGTGCTGGACAAGTGT G(G/C)TTTCCAGATTCTGCAACCA AGACTGCGCAGGCATTGCTGGAC TTCAACCGTGAAGGATTACCTCTG TTCATCCTCGCTAACTGGAGAGGC TTCTCTGGTGGACAAAGAGATCTT TTTGAAGGAATTCTTCAGGCTGGC TCGACTATTGTTGAGAACCTTAGG ACATACAATCAGCCTGCCTTTGTC TACATTCCCATGGCTGCAGAGCTA CGAGGAGGGGCTTGGGTTGTGGT TGATAGCAAGATAAACCCAGACCG CATTGAGTGCTATGCTGAGAGGAC TGCAAAAGGCAATGTTCT	
ShSPS-T1	ACGTGGATCA AGGTCGTCGC CACACGC	AAGGGCGTCGACGAGAGCGACCT CCACCGGACGTGGATCAAGGTCG TCGCCACACGCAACGCCCGCGAG CGCAGCACCAGGCTCGAGAACAT GTGCTGGC	Fig. 5e
ShSPS-T2	AAGAAGTTCC AGAGGAACTT CTCTGAC	GTGAGCTTGCGCCGGTTGAGACG GCCAAGAAGAAGTTCCAGAGGAA CTTCTCTGACCTTACCGTCTGGTC TGACGACAATAAGGAGAAGAAGCT TTACAT	Fig. 5e
ShSPS-T3	ATTGTGCGCAT ACCGTGTGGG CCACGG	AGGGGATGGGTGAGAGTGCTGGA GCCTACATTGTGCGCATACCGTGT GGGCCACGGGATAAATACCTCAAG AAAGAAGCACTGTGGCCTTACCTC CAAGA	Fig. 5e
ShSPS-T4	CCGTCCATGT CCTCGGTCGG AGACGGT	GTGCAGAAGATCATGAACAAGATC AAGCAGTCGTCCGCGCTTCCGCC GTCCATGTCCTCGGTCGGAGACG GTGCCAAGAATGCAGCCGAGGCC ACAGGCA	Fig. 5e
ShSPS-T5	CACCGAGAAG GGTTCGGAAG AGCTGGT	ATGCTATCTGGATTACACAAGACT GTGATCGTCCGGGGTGTCACCGA GAAGGGTTCGGAAGAGCTGGTGA GGAGCCCAGGAAGCTACAAGAGG GACGACG	Fig. 5e
ShSPS-T6	CACGACTGGT GAGCTGAAGG CCGATGA	GTCGTCCCGTCTGAGACCCCCTT GGCTGCGTACACGACTGGTGAGC TGAAGGCCGATGAGATCATGCGG GCTCTGAAGCAGGTCTCCAAGAC	Fig. 5e

		TTCTAGCG	
ShSPS-T7	GACAGCGTCG TCTGAACCGT TCTGACT	TGTGCATTACTGGACGCCACGTCC AGCTCGACAGCGTCGTCTGAACC GTTCTGACTGGCCATGAGCTTCG CTATGGTCTGCCTCACGCCGTCAT GGGACC	Fig. 5e
ShPDS-T7	GATGAAGATG GGGATTATTAC GAGACT	AAGAGATGTTTTGGGTGGAAAGGT AGCTGCTTGGAAGGATGAAGATG GGGATTATTACGAGACTGGGCTTC ATATCTTTTTTGGAGCTTATCCCAA CATA	Fig. S16
ShPDS-T6	CTTATCCCAAC ATACAGAATCT GTTTG	CGAGACTGGGCTTCATATCTTTTTT GGAGCTTATCCCAACATACAGAAT CTGTTTGGTGAGCTTGGAATTGAG GATCGTTTGCAGTGGAAAGAACAT TCC	Fig. S16
ShPDS-T1	CGTTTGCAGT GGAAAGAACA CTCCATG	GGAGCTTATCCCAACATACAGAAT CTGTTTGGTGAGCTTGGAATTGAG GATCGTTTGCAGTGGAAAGAACAC TCCATGATATTTGCCATGCCAAACA AGC	Fig. S16
ShPDS-T5	ATGGGCCATA CTGAGAAACA ATGAAAT	GGTTTGATTTCCCAGAAACTTTGC CAGCCCCTGTAAACGGGATATGG GCCATACTGAGAAACAATGAAATG CTTACCTGGCCGGAGAAGGTGAA GTTTGC	Fig. S16
ShPDS-T11	GGTGGTCAAC CTTATGTTGAA GCTCAA	TTGCGATTGGACTTCTGCCAGCGA TGGTGGGTGGTCAACCTTATGTTG AAGCTCAAGATGGCTTAACCGTTT CAGAATGGATGAAAAGCAGGTAC GAGT	Fig. S16
ShPDS-T8	TGATCGGGTG AATGATGAGG TTTTCAT	ATGGCTTAACCGTTTCAGAATGGA TGAAAAGCAGGGTGTTCCTGATC GGGTGAATGATGAGGTTTTCATTG CAATGTCCAAGGCACTCAATTTCA TAAA	Fig. S16
ShPDS-T9	CTCAAGAGTG GAGTGAAATTA CTTACT	TTGATATCTTCAAGCTTCTTGTACC TCAAGAGTGGAGTGAAATTACTTA CTTCAAGAAGCTGGAGAAGTTGG TGGGAGTTCCTGTTATCAATGTTC ATAT	Fig. S16
ShPDS-T10	CAAACTGTGA ACCTTGCCGA CCTCTCC	TTGACAGATCGGTTTACAAAACTG TCCCAAACTGTGAACCTTGCCGAC CTCTCCAAAGGTCACCGATCGAA	Fig. S16

		GGTTTCTATCTGGCTGGTGATTAC ACAAA	
ShPDS-T14	CCTGTGCCTAT TGGTTGAAGT GGAGCT	TGGCTCCTCTTGAATTTGCAGTAG TCTGCCTGTGCCTATTGGTTGAAG TGGAGCTGACAACACTTCATCAAG AGTTGCTTCATCATGGACACTGGC TGCC	Fig. S16

Table 2 | The full-length crRNA, split crRNA, and Cas13a-targeting crRNA used in this study.

Name	Sequence	Split crRNA-23-X	Fig
*HPT-*crRNA	UAAUUUCUACUAAGUGUAGAUAGCUUCGAUGUAG GAGGGCGUGG		Fig.1 b
*ASFV-*crRNA	UAAUUUCUACUAAGUGUAGAUAUGCGCAUUUUAA GCCUUAUGUUC		Fig.1 b
*Kana-*crRNA	UAAUUUCUACUAAGUGUAGAUUCAAGACCGACCU GUCCGGU		Fig.1 b
*HsHEK2-*crRNA	UAAUUUCUACUAAGUGUAGAUAGGGGAGCAGUGG GGGAGAGGGU		Fig.1 b
HsVEGFA -crRNA	UAAUUUCUACUAAGUGUAGAUCUGUGCCCAGCCC UGGGCUCUCU		Fig.1 b, S2
*HsRNF2-*crRNA	UAAUUUCUACUAAGUGUAGAUGAGUACAGGUGCA CGCCACCAUG		Fig.1 b, S2
*OsALS-*crRNA	UAAUUUCUACUAAGUGUAGAUAGGUGUCACAGUU GUUGAUAUUG		Fig.1 b, S2
OsBADH2 -crRNA	UAAUUUCUACUAAGUGUAGAUGCAGCAUAUGUAU AUACUCUGUG		Fig.1 b,S2
*OsACC1-*crRNA	UAAUUUCUACUAAGUGUAGAUGAAUGCUUGUCGA AUGAUCCUUG		Fig.1 b, 1d, S2
*OsCDC48-*crRNA	UAAUUUCUACUAAGUGUAGAUCUGAAGAUGUGAG UUAUCACCAC		Fig.1 b, 1d, S1
*OsAAT-*crRNA	UAAUUUCUACUAAGUGUAGAUUCGGUUCAGCUCC UUCAGGUGCA		Fig.1 b,

			1d, S2
HsDNMT1-crRNA	UAAUUUCUACUAAGUGUAGAUGUCCAGAGAUGGCAGUGGCCUGG		Fig.1 b, 1d, S2
OsDEP1-crRNA	UAAUUUCUACUAAGUGUAGAUCGUGUCUAUCUCCGCCAUUGCUU		Fig.1 c, S1b, S2
HsHEK3-crRNA	UAAUUUCUACUAAGUGUAGAUUGAGCCUAGUGCUGAGGAUACAG		Fig.1 c, S2
OsEPSPS-crRNA	UAAUUUCUACUAAGUGUAGAUCCACGAAUGAGGGAGAGACCGAU		Fig.1 c, S2
HsHEK4-crRNA	UAAUUUCUACUAAGUGUAGAUAGGUGGGGAGACCUGCUGAGGGC		Fig.1 c
HsRUNX1-crRNA	UAAUUUCUACUAAGUGUAGAUGACAGAGGACGGCUGCACAGCCG		Fig.1 c
OsGAPDH-crRNA	UAAUUUCUACUAAGUGUAGAUUCGUGGAGUCCACCGGUGUCUUC		Fig. S1
OsDEP1-Split-crRNA-10	UAAUUUCUACUAAGUGUAGAUCGUGUCUAUC	UCCGCCAUUGCUU	Fig. 2a, 2b
OsDEP1-Split-crRNA-11	UAAUUUCUACUAAGUGUAGAUCGUGUCUAUCU	CCGCCAUUGCUU	Fig. 2a, 2b
OsDEP1-Split-crRNA-12	UAAUUUCUACUAAGUGUAGAUCGUGUCUAUCUC	CGCCAUUGCUU	Fig. 2a, 2b
OsDEP1-Split-crRNA-13	UAAUUUCUACUAAGUGUAGAUCGUGUCUAUCUCC	GCCAUUGCUU	Fig. 2a, 2b, 2c,S3, S4
OsDEP1-Split-crRNA-14	UAAUUUCUACUAAGUGUAGAUCGUGUCUAUCUCCG	CCAUUGCUU	Fig. 2a, 2b
OsDEP1-Split-crRNA-15	UAAUUUCUACUAAGUGUAGAUCGUGUCUAUCUCCGC	CAUUGCUU	Fig. 2a, 2b
OsDEP1-Split-crRNA-16	UAAUUUCUACUAAGUGUAGAUCGUGUCUAUCUCCGCC	AUUGCUU	Fig. 2a, 2b

OsBADH2-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGCAGCAUAUGUAU	AUACUCU GUG	Fig. 2c, S3
OsAAT-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCGGUUCAGCUCC	UUCAGG UGCA	Fig. 2c, S3
OsACC1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGAAUGCUUGUCGA	AUGAUCC UUG	Fig. 2c, S3
OsEPSPS-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCCACGAAUGAGGG	AGAGACC GAU	Fig. 2c, S3
OsALS-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGGUGUCACAGUU	GUUGAUA UUG	Fig. 2c, S3
HsVEGFA-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCUGUGCCCAGCCC	UGGGCU CUCU	Fig. 2c, S3
HsHEK3-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGAGCCUAGUGCU	GAGGAUA CAG	Fig. 2c
HsHEK4-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGGUGGGGAGACC	UGCUGA GGGC	Fig. 2c, S3
HsRNF2-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGAGUACAGGUGCA	CGCCACC AUG	Fig. 2c, S3
HsDNMT1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUCCAGAGAUGGC	AGUGGC CUGG	Fig. 2c, S3
HsRUNX1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGACAGAGGACGGC	UGCACAG CCG	Fig, S3
OsPi2-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUAUGUCCUGCAA	AACUGGA UUG	Fig. 2f
EcLex E84P-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUGUGGCUGCCGG	UCCGCCA CUU	Fig. 2f
AtGun4-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCGUUCUGGAGAAC	CAUUUCG UCA	Fig. 2f

EcLex G80A-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGGGUUGCCGCUG	GUAGCC CGUG	Fig. 2f
MmGrin1- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGCAUCUGCUUCC	UACAGGC AUC	Fig. 2f
MmTuba1- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGAAGGUGUUGAAG	GAGCCAU CUC	Fig. 2f
HsCXCR2 -Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUUGUGGUCACAGG	AAGCAGA GGA	Fig. 2f
HsCRC- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGCUCAGCAGAUGA	AAGUCAC UGA	Fig. 2f
SeparC- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGGCUUCAUAGCAG	GCGAUG UCGC	Fig. 2f
AaCDC25 A-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGGAGCCUCAGUGC	UCCCGAA UUG	Fig. 2f
NbTsw- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCUGUUUUAGUUUU	UUCCAGA UUG	Fig. 2f
HsTLR9- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCAUUCACGGAGCU	ACCACGA CUG	Fig. 2f
HsIRF5- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUACUGUAGUUACAA	GAUAUCA UUU	Fig. 2f
Asfv B646L- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCAAUCUUAUCGA	UAAAUUU CCA	Fig. 2f
SlBBX18 SNP-328- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUAUCUACUGUGUG	UUCGUU UACC	Fig. 2f
HsHBB- Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGAUUGGCCAACCC	UAGCGU GUGG	Fig. 2f
OsJNBa00 83M16.2-	UAAUUUCUACUAAGUGUAGAUGCCAGTGTCAAC	UGCGUG CUUC	Fig. 2f

Split crRNA-13			
EcLex-S119A-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCCGAUAUCUUUCA	UAGCCAU CCC	Fig. 2f
SARS-COV-2 (L452R)-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCCUAAACAAUCUA	UACCGG UAAU	Fig, 3b, S6
SARS-COV-2 (T478K)-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUAUCAGGCCGGUA	GCAAACC UUG	Fig, 3b, 3i, S6, S8
SARS-COV-2 (N501Y)-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUUUCCAACCCAC	UUACGG UGUU	Fig, 3b, S6
SARS-COV-2 (D614G)-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUUCUGUGCAGUUA	ACAGCCU GAU	Fig, 3b, 3i, S6
SARS-COV-2 (P681R)-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUACUCAGACUAAUU	CUCGUC GGCG	Fig, 3b, 3c, S6, S8
SARS-COV-WT-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCUUGAGAGCAAAA	UGUCUG GUAA	Fig. 3d, 3e
SARS-COV-B1.1.7-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCUUGAGAGCAAAA	UGUUUG GUAA	Fig. 3d, 3e
HsCYP2C19-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUUGUAAGCACCCC	CUGAAUC CAG	Fig. 3g

HsCYP2C9*3-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCGAGGUCCAGAGA	UACCUUG ACC	Fig. 3g, 4b
HsCYP2C19-crRNA (SUREST)	GACCACCCCAAAAAUGAAGGGGACUAAAACCCCCC UGAAUCCAGGUAAGGCCAAGUUU		Fig. 3g
HsCYP2C9*3-crRNA (SUREST)	GACCACCCCAAAAAUGAAGGGGACUAAAACGAGAU ACCUUGACCUUCUCCCCACCAGC		Fig. 3g
SARS-COV-2 (T478K) (SUREST)	GACCACCCCAAAAAUGAAGGGGACUAAAACGGUA GCAAACCUUGUAAUGGUGUUGAAG		Fig. 3g
ZIKV-SNP2-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGCUGGCAUCAUG	AAGUAUC CCG	Fig. 3i, S8
African-crRNA1 (SHERLOCK)	GAUUUAGACUACCCCAAAAACGAAGGGGACUAAAA CGGAUUGUUCAUGAUGCCAGCUGCUGUUC		Fig. S7
African-crRNA2 (SHERLOCK)	GAUUUAGACUACCCCAAAAACGAAGGGGACUAAAA CGGAUACUUCAUGAUGCCAGCUGCUGUUC		Fig. S7, S8
SARS-COV-2 (T478K) (SHERLOCK)	GAUUUAGACUACCCCAAAAACGAAGGGGACUAAAA CACACCAUUACAAGGUUUGCUACCGGCCU		Fig. S8
SARS-COV-2 (D614G) (SHERLOCK)	GAUUUAGACUACCCCAAAAACGAAGGGGACUAAAA CUCUGUGCAGUUAACACCCUGAUAAAGAA		Fig. S8
HBV-crRNA-B-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCAGUCCCAAAUCU	CCAGUCA CUC	Fig. S9
HBV-crRNA-C-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAACCUCCAAUCAC	UCACCAA CCU	Fig. S9
HBV-crRNA-D-	UAAUUUCUACUAAGUGUAGAUAUCACUCACCAAC	CUCCUG UCCU	Fig. S9

Split crRNA-13			
HBV-3-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGACUGGGGACCC	UGUGCC GAAC	Fig. S10-S11
HBV-6-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCAGAACACUGCC	UCUCCCA UAU	Fig. S10-S11
HBV-18-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGUUCAGGAACAG	UGAGCC CUGC	Fig. S10-S11
HBV-19-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCUAGGGGGAGCAC	CCGUGU GUCC	Fig. S10-S11
HBV-11-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGCCCGUUUGUCCU	CUAAUUC CAG	Fig. S10-S11
HBV-14-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUUGUCAAUCUUCU	CGAAGAU UGG	Fig. S10-S11
HBV-16-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUACCAAACCUUC	GGACGG AAAU	Fig. S10-S11
HBV-23-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGACUACUGCCUCU	CACUUAU CGU	Fig. S10-S11
HBV-7-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGCGGCGUUUUAU	CAUCUUC CUC	Fig. S10-S11
HBV-8-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGUUGGUUCUUCU	GGAUUAC CAA	Fig. S10-S11
HBV-10-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCCUCUACUUCCA	GGAACAU CAA	Fig. S10-S11
HBV-11-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGCCCGUUUGUCCU	CUAAUUC CAG	Fig. S10-S11
HBV-12-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCCUCAGUCCGUUU	CUCUUG GCUC	Fig. S10-S11
HBV-13-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCTAGGGGAAGCAC	CCAUGU GUCC	Fig. S10-S11

HsPNPLA3-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUAUGUUCCUGCUU	CAUGCCU UUC	Fig, 4b, 4c, S12, S13
*HsALDH2*2*-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGCUGCAGGCAUAC	ACUAAAG UGA	Fig, 4b, 4c, S12
*HsCYP2C19*2*-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAUUUGUUAUGGGU	UCCUGG GAAA	Fig, 4b
HsEGFR-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGAAGGGCAUGAGC	UGCAUGA UGA	Fig, 4d
HsNPM1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCUUCCUCCACUGC	CAGACAG AGA	Fig, 4d
Rice-V1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUAUCUUGGCCUUC	UCGUACU UGU	Fig. 5b, S14
Rice-V2-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUACCGGCAUCACUG	AUUAGCC GUU	Fig. 5b, S14
Rice-V3-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGCGUCUUCUAUU	ACAGAGU UGC	Fig. 5b, S14
Rice-V4-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUUGAACACCAAC	CAAACAU GUA	Fig. 5b, S14
Rice-V5-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUGAUCCCCAUUG	UUUGCA GGAC	Fig. 5b, S14
Rice-V6-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCCACCACCAUUG	UGGACAC UGC	Fig. 5b, S14
Rice-V7-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGGAUGAGUCAUC	AGUGUG AUGC	Fig. 5b, S14
Rice-V8-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCAGCGAGUGGGA	UCCCAGC AAG	Fig. 5b, S14

Rice-V9-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUACUUCAAAGGAA	CUUCUG GUGA	Fig. 5b, S14
Rice-V10-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGUAUGUUAGAGA	UCAAAGU CUU	Fig. 5b, S14
Rice-V11-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUCUGCAAUAUCA	CGUCAU GCAC	Fig. 5b, S14
Rice-V12-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUACACUGCUAAAUU	CUGGCC GUCA	Fig. 5b, S14
Rice-V13-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUUGCCAUGCUGAA	ACAUCUG AUC	Fig. 5b, S14
OsUGT75A-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUGUUCACAAGCA	CCCACG GCUU	Fig. 5c, S15
OsGAPDH-T1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUAUGUCGUGGAGU	CCAACGG UGU	Fig. 5d
OsACC1-T1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUGCUGGACAAGU	GUGCUU UCCA	Fig. 5d
ShSPS-T1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGGAUCAAGGUCGU	CGCCACA CGC	Fig. 5e
ShSPS-T2-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGUUCCAGAGGAA	CUUCUCU GAC	Fig. 5e
ShSPS-T3-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGCGCAUACCGUG	UGGGCC ACGG	Fig. 5e
ShSPS-T4-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCUCCGACCGAGG	ACAUGGA CGG	Fig. 5e
ShSPS-T5-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGAGAAGGGUUCGG	AAGAGCU GGU	Fig. 5e
ShSPS-T6-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUACUGGUGAGCUGA	AGGCCG AUGA	Fig. 5e

ShSPS-T7-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGCGUCGUCUGAAC	CGUUCU GACU	Fig. 5e
shPDS-T7-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCGUAAUAAUCCC	CAUCUUC AUC	Fig. S16
shPDS-T6-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUCCCAACAUACAG	AATCTGT TTG	Fig. S16
shPDS-T1-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGCAGUGGAAAGA	ACACUCC AUG	Fig. S16
shPDS-T5-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCAUUGUUUCUCAG	UAUGGC CCAU	Fig. S16
shPDS-T11-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUGUCAACCUUAUGU	UGAAGCU CAA	Fig. S16
shPDS-T8-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAAACCUCAUCAUU	CACCCGA UCA	Fig. S16
shPDS-T9-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUAGAGUGGAGUGAA	AUUACUU ACU	Fig. S16
shPDS-T10-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUCUGUGAACCUUGC	CGACCUC UCC	Fig. S16
shPDS-T14-Split crRNA-13	UAAUUUCUACUAAGUGUAGAUUGCCUAUUGGUUG	AAGUGGA GCU	Fig. S16

Table 3 | The reporter sequences used in this study.

Reporter Name	Sequence	Application
RNA-FQ	/5'6-FAM/UUUUU /3'BHQ-1/	Cas13a
5'-FAM-labeled hairpin DNA-BHQ reporter	/5'6-FAM/CTCTCATTTTTTTTTTAGAGAG /3'BHQ-1/	Cas12a
5′-FAM-labeled ssDNA-biotin reporter	/5'6-FAM/TTATT/3' Biotin/	Cas12a for fluorescence labeling detection

Table 4 | Standard samples for medication guidance

Stanard Name	Code

ALDH2*2 Reference Stanard	CBPA0133
ALDH2*WT Reference Stanard	CBPA0131
CYP2C9*3 Reference Stanard	CBPA0012
CYP2C9*3 WT Reference Stanard	CBPA0130
PNPLA3 P.I148M Reference Stanard	CBPA0136
PNPLA3 WT Reference Stanard	CBPA0134
CYP2C19*1 Reference Stanard	CBPA0074
CYP2C19*2 Reference Stanard	CBPA0007
HBV C2 Reference Stanard	CBPK0002
HBV D3 Reference Stanard	CBPK0001
β-thalassemia -87(C>G)&IVS-I-110(G>A) double mutation	CBPD0003
β-thalassemia IVS-Ⅱ-1(G>A) mutation Reference Stanard	CBPD0006

Table 5 | Mismatch sequences used in Figures 2b, 2c and Supplementary Figures S2, S3.
The positions marked in red are the mismatch positions.

Name	Sequence
OsDEP1-spacer	CGTGTCTATCTCCGCCATTGCTT
OsDEP1-MM4	CGT**C**TCTATCTCCGCCATTGCTT
OsDEP1-MM7	CGTGTC**C**ATCTCCGCCATTGCTT
OsDEP1-MM14	CGTGTCTATCTCC**T**CCATTGCTT
OsDEP1-MM15	CGTGTCTATCTCCG**A**CATTGCTT
OsDEP1-MM16	CGTGTCTATCTCCGC**T**ATTGCTT
OsDEP1-MM17	CGTGTCTATCTCCGCC**C**TTGCTT
OsDEP1-MM18	CGTGTCTATCTCCGCCA**G**TGCTT
OsDEP1-MM19	CGTGTCTATCTCCGCCAT**A**GCTT
OsDEP1-MM20	CGTGTCTATCTCCGCCATT**T**CTT
OsDEP1-MM21	CGTGTCTATCTCCGCCATTG**A**TT
OsBADH2-spacer	GCAGCATATGTATATACTCTGTG
OsBADH2-MM4	GCA**C**CATATGTATATACTCTGTG
OsBADH2-MM7	GCAGCA**A**ATGTATATACTCTGTG
OsBADH2-MM14	GCAGCATATGTAT**T**TACTCTGTG
OsBADH2-MM15	GCAGCATATGTATA**A**ACTCTGTG
OsBADH2-MM16	GCAGCATATGTATAT**T**CTCTGTG
OsBADH2-MM17	GCAGCATATGTATATA**G**TCTGTG
OsBADH2-MM18	GCAGCATATGTATATAC**A**CTGTG
OsAAT-spacer	TCGGTTCAGCTCCTTCAGGTGCA
OsAAT-MM4	TCG**C**TTCAGCTCCTTCAGGTGCA
OsAAT-MM7	TCGGTT**A**AGCTCCTTCAGGTGCA
OsAAT-MM14	TCGGTTCAGCTCC**G**TCAGGTGCA
OsAAT-MM15	TCGGTTCAGCTCCT**C**CAGGTGCA

OsAAT-MM16	TCGGTTCAGCTCCTTAAGGTGCA
OsAAT-MM17	TCGGTTCAGCTCCTTCCGGTGCA
OsAAT-MM18	TCGGTTCAGCTCCTTCACGTGCA
OsACC1-spacer	GAATGCTTGTCGAATGATCCTTG
OsACC1-MM4	GAAAGCTTGTCGAATGATCCTTG
OsACC1-MM7	GAATGCATGTCGAATGATCCTTG
OsACC1-MM14	GAATGCTTGTCGATTGATCCTTG
OsACC1-MM15	GAATGCTTGTCGAAAGATCCTTG
OsACC1-MM16	GAATGCTTGTCGAATCATCCTTG
OsACC1-MM17	GAATGCTTGTCGAATGTTCCTTG
OsACC1-MM18	GAATGCTTGTCGAATGAACCTTG
HsRNF2-spacer	GAGTACAGGTGCACGCCACCATG
HsRNF2-MM4	GAGAACAGGTGCACGCCACCATG
HsRNF2-MM7	GAGTACTGGTGCACGCCACCATG
HsRNF2-MM14	GAGTACAGGTGCAGGCCACCATG
HsRNF2-MM15	GAGTACAGGTGCACCCCACCATG
HsRNF2-MM16	GAGTACAGGTGCACGGCACCATG
HsRNF2-MM17	GAGTACAGGTGCACGCGACCATG
HsRNF2-MM18	GAGTACAGGTGCACGCCTCCATG
OsALS-spacer	AGGTGTCACAGTTGTTGATATTG
OsALS-MM4	AGGAGTCACAGTTGTTGATATTG
OsALS-MM7	AGGTGTGACAGTTGTTGATATTG
OsALS-MM14	AGGTGTCACAGTTCTTGATATTG
OsALS-MM15	AGGTGTCACAGTTGATGATATTG
OsALS-MM16	AGGTGTCACAGTTGTAGATATTG
OsALS-MM17	AGGTGTCACAGTTGTTCATATTG
OsALS-MM18	AGGTGTCACAGTTGTTGTTATTG
OsEPSPS-spacer	CCACGAATGAGGGAGAGACCGAT
OsEPSPS-MM4	CCAGGAATGAGGGAGAGACCGAT
OsEPSPS-MM7	CCACGATTGAGGGAGAGACCGAT
OsEPSPS-MM14	CCACGAATGAGGGCGAGACCGAT
OsEPSPS-MM15	CCACGAATGAGGGACAGACCGAT
OsEPSPS-MM16	CCACGAATGAGGGAGCGACCGAT
OsEPSPS-MM17	CCACGAATGAGGGAGATACCGAT
OsEPSPS-MM18	CCACGAATGAGGGAGAGCCCGAT
HsVEGFA-spacer	CTGTGCCCAGCCCTGGGCTCTCT
HsVEGFA-MM4	CTGAGCCCAGCCCTGGGCTCTCT
HsVEGFA-MM7	CTGTGCGCAGCCCTGGGCTCTCT
HsVEGFA-MM14	CTGTGCCCAGCCCAGGGCTCTCT
HsVEGFA-MM15	CTGTGCCCAGCCCTCGGCTCTCT
HsVEGFA-MM16	CTGTGCCCAGCCCTGCGCTCTCT
HsVEGFA-MM17	CTGTGCCCAGCCCTGGCCTCTCT
HsVEGFA-MM18	CTGTGCCCAGCCCTGGGGTCTCT

HsDNMT1-spacer	GTCCAGAGATGGCAGTGGCCTGG
HsDNMT1-MM4	GTCGAGAGATGGCAGTGGCCTGG
HsDNMT1-MM7	GTCCAGTGATGGCAGTGGCCTGG
HsDNMT1-MM14	GTCCAGAGATGGCTGTGGCCTGG
HsDNMT1-MM15	GTCCAGAGATGGCACTGGCCTGG
HsDNMT1-MM16	GTCCAGAGATGGCAGAGGCCTGG
HsDNMT1-MM17	GTCCAGAGATGGCAGTCGCCTGG
HsDNMT1-MM18	GTCCAGAGATGGCAGTGCCCTGG
HsHEK3-spacer	TGAGCCTAGTGCTGAGGATACAG
HsHEK3-MM4	TGACCCTAGTGCTGAGGATACAG
HsHEK3-MM7	TGAGCCAAGTGCTGAGGATACAG
HsHEK3-MM14	TGAGCCTAGTGCTCAGGATACAG
HsHEK3-MM17	TGAGCCTAGTGCTGAGCATACAG
HsHEK4-spacer	AGGTGGGGAGACCTGCTGAGGGC
HsHEK4-MM4	AGGAGGGGAGACCTGCTGAGGGC
HsHEK4-MM7	AGGTGGCGAGACCTGCTGAGGGC
HsHEK4-MM14	AGGTGGGGAGACCAGCTGAGGGC
HsHEK4-MM15	AGGTGGGGAGACCTCCTGAGGGC
HsHEK4-MM16	AGGTGGGGAGACCTGGTGAGGGC
HsHEK4-MM17	AGGTGGGGAGACCTGCAGAGGGC
HsHEK4-MM18	AGGTGGGGAGACCTGCTCAGGGC
HsRUNX1-spacer	GACAGAGGACGGCTGCACAGCCG
HsRUNX1-MM14	GACAGAGGACGGCAGCACAGCCG
HsRUNX1-MM15	GACAGAGGACGGCTCCACAGCCG
HsRUNX1-MM16	GACAGAGGACGGCTGGACAGCCG
HsRUNX1-MM17	GACAGAGGACGGCTGCTCAGCCG
HsRUNX1-MM18	GACAGAGGACGGCTGCAGAGCCG

Table 6 | The Cas12a protein sequences used in this study.

Protein	Sequence
LbCas12a	MSKLEKFTNCYSLSKTLRFKAIPVGKTQ ENIDNKRLLVEDEKRAEDYKGVKKLLDR YYLSFINDVLHSIKLKNLNNYISLFRKKTR TEKENKELENLEINLRKEIAKAFKGNEGY KSLFKKDIIETILPEFLDDKDEIALVNSFN GFTTAFTGFFDNRENMFSEEAKSTSIAF RCINENLTRYISNMDIFEKVDAIFDKHEV QEIKEKILNSDYDVEDFFEGEFFNFVLTQ EGIDVYNAIIGGFVTESGEKIKGLNEYINL YNQKTKQKLPKFKPLYKQVLSDRESLSF YGEGYTSDEEVLEVFRNTLNKNSEIFSSI KKLEKLFKNFDEYSSAGIFVKNGPAISTIS

	KDIFGEWNVIRDKWNAEYDDIHLKKKAV VTEKYEDDRRKSFKKIGSFSLEQLQEYA DADLSVVEKLKEIIIQKVDEIYKVYGSSEK LFDADFVLEKSLKKNDAVVAIMKDLLDSV KSFENYIKAFFGEGKETNRDESFYGDFV LAYDILLKVDHIYDAIRNYVTQKPYSKDK FKLYFQNPQFMGGWDKDKETDYRATIL RYGSKYYLAIMDKKYAKCLQKIDKDDVN GNYEKINYKLLPGPNKMLPKVFFSKKW MAYYNPSEDIQKIYKNGTFKKGDMFNLN DCHKLIDFFKDSISRYPKWSNAYDFNFS ETEKYKDIAGFYREVEEQGYKVSFESAS KKEVDKLVEEGKLYMFQIYNKDFSDKSH GTPNLHTMYFKLLFDENNHGQIRLSGGA ELFMRRASLKKEELVVHPANSPIANKNP DNPKKTTTLSYDVYKDKRFSEDQYELHI PIAINKCPKNIFKINTEVRVLLKHDDNPYV IGIDRGERNLLYIVVVDGKGNIVEQYSLN EIINNFNGIRIKTDYHSLLDKKEKERFEAR QNWTSIENIKELKAGYISQVVHKICELVE KYDAVIALEDLNSGFKNSRVKVEKQVYQ KFEKMLIDKLNYMVDKKSNPCATGGALK GYQITNKFESFKSMSTQNGFIFYIPAWLT SKIDPSTGFVNLLKTKYTSIADSKKFISSF DRIMYVPEEDLFEFALDYKNFSRTDADYI KKWKLYSYGNRIRIFRNPKKNNVFDWEE VCLTSAYKELFNKYGINYQQGDIRALLCE QSDKAFYSSFMALMSLMLQMRNSITGR TDVDFLISPVKNSDGIFYDSRNYEAQEN AILPKNADANGAYNIARKVLWAIGQFKKA EDEKLDKVKIAISNKEWLEYAQTSVKHN LYFQGGSNSSSSLEHHHHHH*
seCas12a	MSKLEKFTNCYSLSKTLRFKAIPVGKTQ ENIDNKRLLVEDEKRAEDYKGVKKLLDR YYLSFINDVLHSIKLKNLNNYISLFRKKTR TEKENKELENLEINLRKEIAKAFKGNEGY KSLFKKDIIETILPEFLDDKDEIALVNSFN GFTTAFTGFFDNRENMFSEEAKSTSIAF KCINENLTRYISNMDIFEKVDAIFDKHEV QEIKEKILNSDYDVEDFFEGEFFNFVLTQ EGIDVYNAIIGGFVTESGEKIKGLNEYINL YNQKTKQKLPKFKPLYKQVLSDRESLSF YGEGYTSDEEVLEVFRNTLNKNSEIFSSI KKLEKLFKNFDEYSSAGIFVKNGPAISTIS

	KDIFGEWNVIRDKWNAEYDDIHLKKKAV VTEKYEDDRRKSFKKIGSFSLEQLQEYA DADLSVVEKLKEIIIQKVDEIYKVYGSSEK LFDADFVLEKSLKKNDAVVAIMKDLLDSV KSFENYIKAFFGEGKETNRDESFYGDFV LAYDILLKVDHIYDAIRNYVTQKPYSKDK FKLYFQNPQFMGGWDKDRETDYRATIL RYGSKYYLAIMDKKYAKCLQKIDKDDVN GNYEKINYKLLPGPNKMLPKVFFSKKW MAYYNPSEDIQKIYKNGTFKKGDMFNLN DCHKLIDFFKDSISRYPKWSNAYDFNFS ETEKYKDIAGFYREVEEQGYKVSFESAS KKEVDKLVEEGKLYMFQIYNKDFSDKSH GTPNLHTMYFKLLFDENNHGQIRLSGGA ELFMRRASLKKEELVVHPANSPIANKNP DNPKKTTTLSYDVYKDKRFSEDQYELHI PIAINKCPKNIFKINTEVRVLLKHDDNPYV IGIDRGERNLLYIVVVDGKGNIVEQYSLN EIINNFNGIRIKTDYHSLLDKKEKERFEAR QNWTSIENIKELKAGYISQVVHKICELVE KYDAVIALEDLNSGFKNSRVKVEKQVYQ KFEKMLIDKLNYMVDKKSNPCATGGALK GYQITNKFESFKSMSTQNGFIFYIPAWLT SKIDPSTGFVNLLKTKYTSIADSKKFISSF DRIMYVPEEDLFEFALDYKNFSRTDADYI KKWKLYSYGNRIRIFRNPKKNNVFDWEE VCLTSAYKELFNKYGINYQQGDIRALLCE QSDKAFYSSFMALMSLMLQMRNSITGR TDVDFLISPVKNSDGIFYDSRNYEAQEN AILPKNADANGAYNIARKVLWAIGQFKKA EDEKLDKVKIAISNKEWLEYAQTSVKHN LYFQGGSNSSSSLEHHHHHH*
LbCas12a-HF	MSKLEKFTNCYSLSKTLRFKAIPVGKTQ ENIDNKRLLVEDEKRAEDYKGVKKLLDR YYLSFINDVLHSIKLKNLNNYISLFRKKTR TEKENKELENLEINLRKEIAKAFKGNEGY KSLFKKDIIETILPEFLDDKDEIALVNSFN GFTTAFTGFFDNRENMFSEEAKSTSIAF RCINENLTRYISNMDIFEKVDAIFDKHEV QEIKEKILNSDYDVEDFFEGEFFNFVLTQ EGIDVYNAIIGGFVTESGEKIKGLNEYINL YNQKTKQKLPKFKPLYKQVLSDRESLSF YGEGYTSDEEVLEVFRNTLNKNSEIFSSI KKLEKLFKNFDEYSSAGIFVKNGPAISTIS

| | KDIFGEWNVIRDKWNAEYDDIHLKKKAV
VTEKYEDDRRKSFKKIGSFSLEQLQEYA
DADLSVVEKLKEIIIQKVDEIYKVYGSSEK
LFDADFVLEKSLKKNDAVVAIMKDLLDSV
KSFENYIKAFFGEGKETNRDESFYGDFV
LAYDILLKVDHIYDAIRNYVTQKPYSKDK
FKLYFQNPQFMGGWDKDKETDYRATIL
RYGSKYYLAIMDKKYAKCLQKIDKDDVN
GNYEKINYKLLPGPNKMLPKVFFSKKW
MAYYNPSEDIQKIYKNGTFKKGDMFNLN
DCHKLIDFFKDSISRYPKWSNAYDFNFS
ETEKYKDIAGFYREVEEQGYKVSFESAS
KKEVDKLVEEGKLYMFQIYNKDFSDKSH
GTPNLHTMYFKLLFDENNHGQIRLSGGA
ELFMRRASLKKEELVVHPANSPIANKNP
DNPKKTTTLSYDVYKDKRFSEDQYELHI
PIAINKCPKNIFKINTEVRVLLKHDDNPYV
IGIDRGERNLLYIVVVDGKGNIVEQYSLN
EIINNFNGIRIKTDYHSLLDKKEKERFEAR
QNWTSIENIKELKAGYISQVVHKICELVE
KYDAVIALEDLNSGFKNSRVKVEKQVYQ
KFEKMLIDKLNYMVDKKSNPCATGGALK
GYQITNKFESFESMSTQNGFIFYIPAWLT
SKIDPSTGFVNLLKTKYTSIADSKKFISSF
DRIMYVPEEDLFEFALDYKNFSRTDADYI
KKWKLYSYGNRIRIFRNPKKNNVFDWEE
VCLTSAYKELFNKYGINYQQGDIRALLCE
QSDKAFYSSFMALMSLMLQMRNSITGR
TDVDFLISPVKNSDGIFYDSRNYEAQEN
AILPKNADANGAYNIARKVLWAIGQFKKA
EDEKLDKVKIAISNKEWLEYAQTSVKHN
LYFQGGSNSSSSLEHHHHHH |
| | |

Table 7 | The RPA and RT-RPA primer sequences used in this study.

Name	Sequence
T7-COV-2 (T478K)-RPA-F	TAATACGACTCACTATAGGATCTCAAAC CTTTTGAGAGAGATATTTCAAC
T7-COV-2 (D614G)-RPA-F	TAATACGACTCACTATAGGAACACCAG GAACAAATACTTCTAACCAGGTT
T7-COV-2 (P681R)-RPA-F	TAATACGACTCACTATAGGCATACCCAT TGGTGCAGGTATATGCGCTAGT
SAS-COV-2 (T478K)-RPA-F	AACACCAGGAACAAATACTTCTAACCA GGTT

SAS-COV-2 (T478K)-RPA-R	AAACACGCCAAGTAGGAGTAAGTTGATCTGC
SAS-COV-2 (D614G)-RPA-F	AACACCAGGAACAAATACTTCTAACCAGGTT
SAS-COV-2 (D614G)-RPA-R	AAACACGCCAAGTAGGAGTAAGTTGATCTGC
SAS-COV-2 (P681R)-RPA-F	CATACCCATTGGTGCAGGTATATGCGCTAGT
SAS-COV-2 (P681R)-RPA-R	GTGACATAGTGTAGGCAATGATGGATTGACT
HsEGFR-RPA-F	CCCCACGTGTGCCGCCTGCTGGGCATCTGC
HsEGFR-RPA-R	ATATTGTCTTTGTGTTCCCGGACATAGTCC