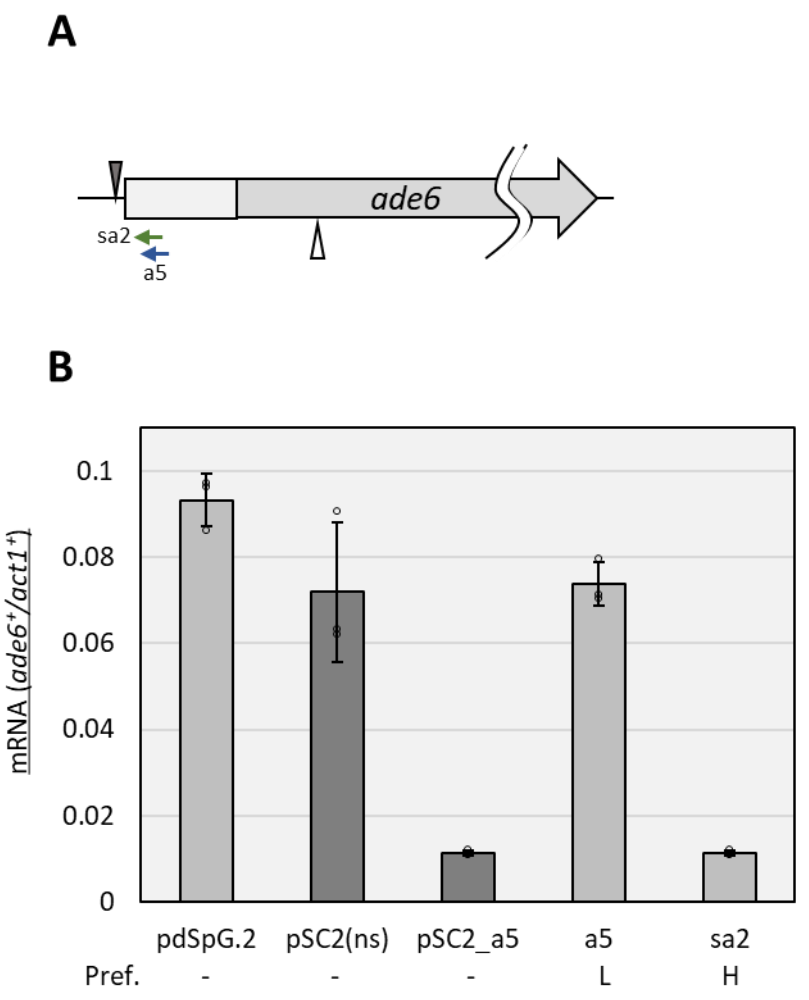

Fig. S1. An example of a targeting sequence that is effective with dCas9, but not with dSpG.
(A) Targeting sequences designed for the *ade6*$^{+}$ gene. Arrows indicate targeting sequences of sgRNAs that bind the non-template strand of the targeted DNA. Blue arrow is a targeting sequence suitable for dCas9. The green arrow is suitable for dSpG. PAM sequences are situated at the immediate 3'-side of the arrowheads (not shown in the diagram). A gray triangle indicates the TSS. A white triangle indicates the position of 90 bp downstream from the TSS. A light gray box indicates the 5'UTR.
(B) Quantification of *ade6*$^{+}$ mRNA. mRNA of *ade6*$^{+}$ and *act1*$^{+}$ was quantified by RT-qPCR. Relative mRNA amounts of *ade6*$^{+}$ normalized by that of *act1*$^{+}$ are presented. Dark gray bars indicate results of dCas9-mediated methods. Light bars indicate results of dSpG-mediated methods. Data show means +/- standard deviation from three biological replicates. Open circles indicate individual data points. Data of pSC2 (n.s.), pSC2_a5, pdSpG.2, and sa2 are identical to those presented in the main Figure 2.

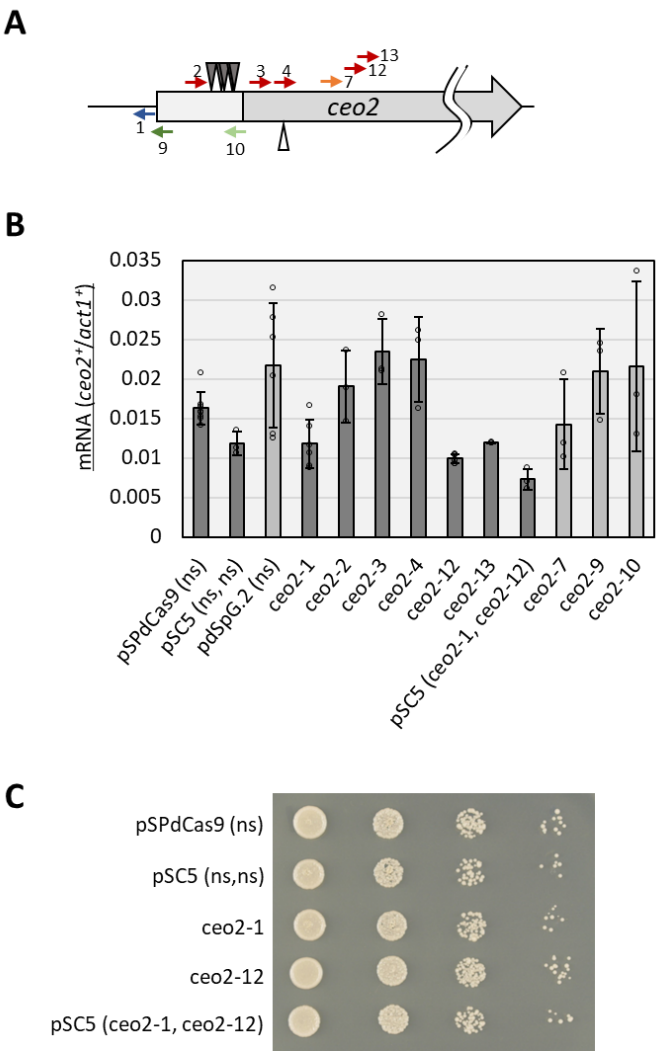

Fig. S2. Knockdown of *ceo2*$^+$ using CRISPRi methods.

(A) Targeting sequences designed for the *ceo2*$^+$ gene. Red and blue arrows indicate targeting sequences of sgRNAs that base-pair with the template and non-template strand of the targeted DNA respectively for the dCas9-mediated CRISPRi. Orange and green arrows indicate ones for dSpG-mediated CRISPRi (high preference, ceo2-9; moderate preference, ceo2-10, ceo2-7). PAM sequences are situated at the immediate 3'-side of the arrowheads (not shown in the diagram). Gray triangle, TSS; white triangle, the position of 90 bp downstream from the TSS; light gray box, 5'UTR

(B) Quantification of mRNA. mRNA of indicated gene and *act1*$^+$ was quantified by RT-qPCR. Relative mRNA amounts of target genes normalized by that of *act1*$^+$ are presented. Dark gray bars indicate results of dCas9-mediated methods. Light gray bars indicate results of dSpG-mediated methods. Data show means +/- standard deviation from at least three biological replicates (pSPdCas9 (ns), n = 8; pdSpG.2 (ns), n = 6; ceo2-1, n = 6; others, n = 3). ns, nonsense targeting sequence; open circle, individual data point

(C) Serial dilution (10-fold) spot test growth assays of fission yeast cells bearing CRISPRi plasmids with the indicated targeting sequences, on the EMM2 plate.

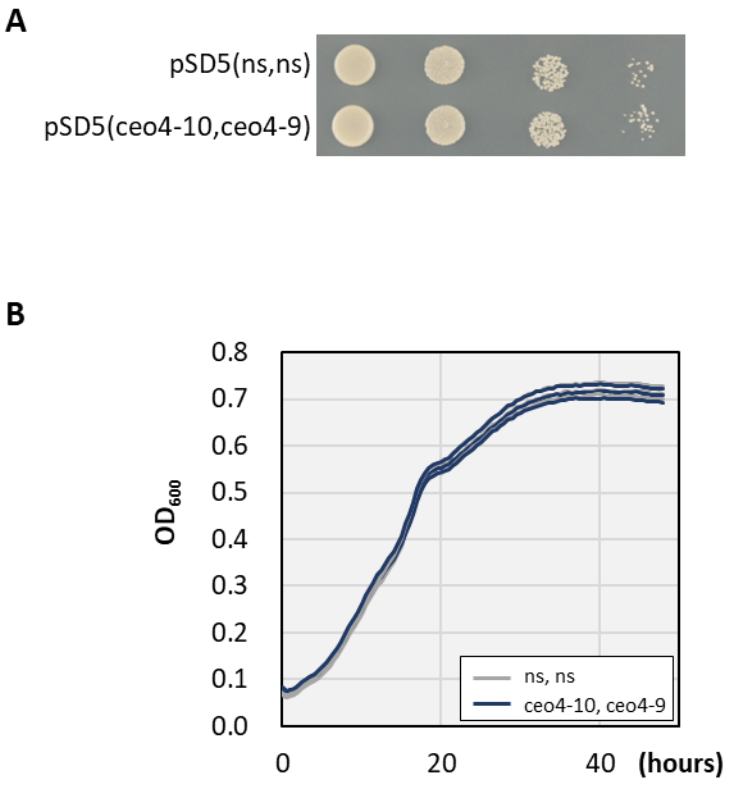

Fig. S3. Growth rate phenotype of the *ceo4*$^{+}$ knockdown strain.

(A) Serial dilution (10-fold) spot test growth assays of fission yeast cells bearing CRISPRi plasmids with the indicated targeting sequences, on an EMM2 plate.

(B) Time course measurement of OD_{600} after CRISPRi induction. Fission yeast cells carrying CRISPRi plasmids were grown in a microplate reader with OD_{600} measurements every 30 min after CRISPRi induction (see Materials and Methods for details). Results of three biological replicates are shown for each strain.

(C) Maximum growth rate (divisions/hour) calculated from results in the panel (B). Results show means +/- standard deviation from three biological replicates. Open circles indicate individual data points.

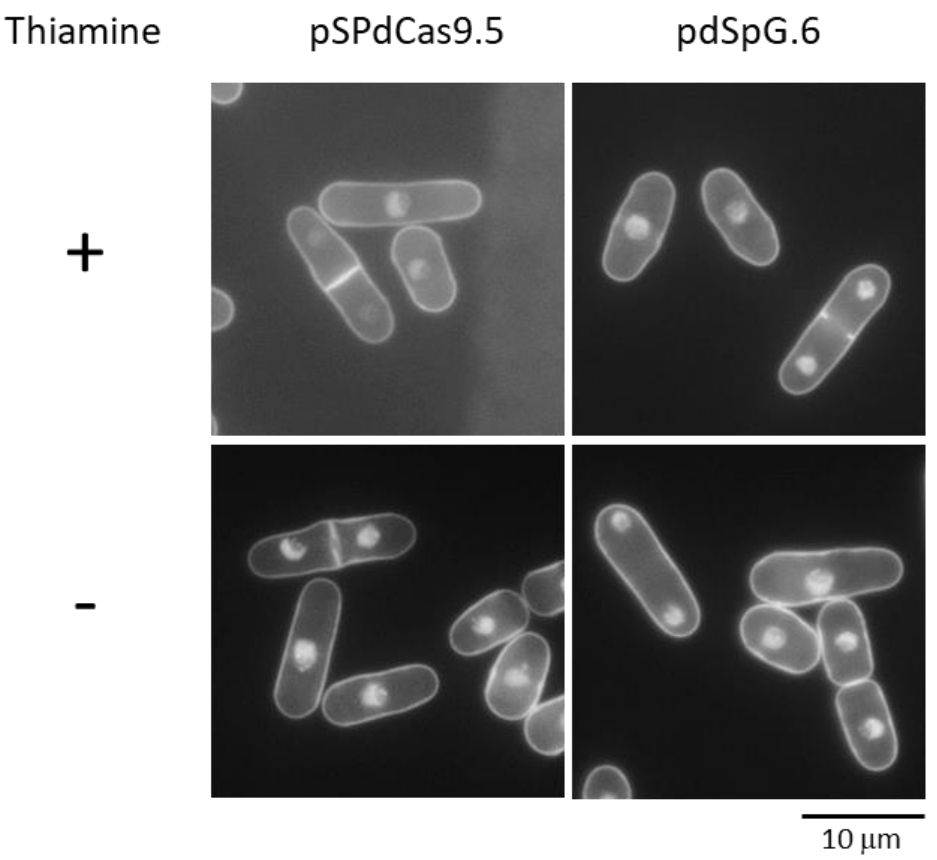

Fig. S4. Cell morphology of control strains for double sgRNA repression.
Fission yeast strains carrying control plasmids pSPdCas9.5 or pdSpG.6 were analyzed for cellular morphology. Fission yeast cells before (thiamine +) and after (thiamine -) 48 h of CRISPRi induction were fixed with 2.5% glutaraldehyde and stained with DAPI, followed by fluorescence microscopy (see Materials and Methods for details). A scale bar indicates 10 µm. The pdSpG.6 plasmid has nonsense targeting sequences of the BbsI cloning site (sgRNA1) and a random sequence (sgRNA2) instead of the PaqCI cloning site. pdSpG.6 was used instead of pdSpG.5, because pdSpG.5 inhibited cell proliferation in culture conditions of this experiment while pdSpG.6 did not affect cell proliferation.

Table S1. human orthologs of *ceo* genes are involved in human health

gene name	human ortholog	essential in human cancer cell lines	human diseases caused by mutation	molecular function	references
ceo1	TMEM97	-	-[c]	cellular cholesterol regulation	Wilcox et al., 2007
ceo2	PPA1, PPA2	KBM7, HAP1, K562, Jioye, Raji[a]	sudden cardiac failure	pyrophosphatase	Curbo et al., 2006 Guimier et al., 2016
ceo3	RDH14	-	intellectual disability, cerebellar atrophy	retinol reductase	Belyaeva et al., 2002 Pastore et al., 2021
ceo4	C2orf76	-	-	-	
ceo5	TTC27	KBM7, HAP1, K562, Jioye, Raji[a]	-	-	
ceo6	NCDN	-[b]	Neurodevelopmental disorder with infantile epileptic spasms	mGluR5 signaling regulation	Wang et l., 2009 Fatima et al., 2021
ceo7	ATXN10	KBM7, HAP1[a]	spinocerebellar ataxia type 10	-	Matsuura et al., 2000

a, (Wang et al., 2015; Blomen et al., 2015); b, predicted essential gene for humans (Georgi et al., 2013); c, related to cancer malignancy (Wilcox et al., 2007)

Table S2. oligo DNA list

ID	purpose	targeting sequence ID	sequence (5'-)
KI1240	pSPdCas9.3 construction	nonsense (PaqCI site)	cacc-TTCAGCAGGTGGACACCTGCCTTA
KI1241	pSPdCas9.3 construction	nonsense (PaqCI site)	aaac-TAAGGCAGGTGTCCACCTGCTGAA
KI1169	pSPdCas9.5 construction	NA	cgggatcc-GGCGACCATGGAAATAACTATATCC
KI1248	pSPdCas9.5 construction	NA	CAGGGAAATCATAACATAGTATAATAGGAA
KI1423	pdSpG.2 construction	NA	AAGGACGACTCCATCGACAAC
KI1424	pdSpG.2 construction	NA	AGCTGAGACAGGTCGATCC
KI1425	pdSpG.2 construction	NA	AGAGCATCACCGGCCTGTAC
KI1426	pdSpG.2 construction	NA	TTGTCGCTTCTGGTCAGCAC
KI1024	targeting seq.	a5	cacc-GATGAAGTATGTATATACCT
KI1025	targeting seq.	a5	aaac-AGGTATATACATACTTCATC
KI1046	targeting seq.	a10	cacc-AAACATCAAATGCATCATCT
KI1047	targeting seq.	a10	aaac-AGATGATGCATTTGATGTTT
KI1533	targeting seq.	sa1	cacc-CATTTACCATCTCATTAAGC
KI1534	targeting seq.	sa1	aaac-GCTTAATGAGATGGTAAATG
KI1535	targeting seq.	sa2	cacc-ACCTTGGCAGCTCAGCTTAA
KI1536	targeting seq.	sa2	aaac-TTAAGCTGAGCTGCCAAGGT
KI1537	targeting seq.	sa3	cacc-ATGAAGTATGTATATACCTT
KI1538	targeting seq.	sa3	aaac-AAGGTATATACATACTTCAT
KI1539	targeting seq.	sa4	cacc-TATACATACTTCATCGAATA
KI1540	targeting seq.	sa4	aaac-TATTCGATGAAGTATGTATA
KI1541	targeting seq.	sa5	cacc-CAATTGGGCCGAATGATGGT
KI1542	targeting seq.	sa5	aaac-ACCATCATTCGGCCCAATTG

KI1543	targeting seq.	sa6	cacc-TTGGGCCGAATGATGGTAGA
KI1544	targeting seq.	sa6	aaac-TCTACCATCATTCGGCCCAA
KI1545	targeting seq.	sa7	cacc-CCCATCGCTTAAACATCAAA
KI1546	targeting seq.	sa7	aaac-TTTGATGTTTAAGCGATGGG
KI1547	targeting seq.	sa8	cacc-AACATCAAATGCATCATCTT
KI1548	targeting seq.	sa8	aaac-AAGATGATGCATTTGATGTT
KI1703	targeting seq.	ceo1-9	cacc-ATATCTCACTACTATAAATG
KI1704	targeting seq.	ceo1-9	aaac-CATTTATAGTAGTGAGATAT
KI1705	targeting seq.	ceo1-10	cacc-TCCATGTGAAGGCGTGTGGT
KI1706	targeting seq.	ceo1-10	aaac-ACCACACGCCTTCACATGGA
KI1707	targeting seq.	ceo1-11	cacc-CCTATAACTGAATGGCTTGG
KI1708	targeting seq.	ceo1-11	aaac-CCAAGCCATTCAGTTATAGG
KI1709	targeting seq.	ceo1-12	cacc-GGCTCTTTAAGCTGTCTTTC
KI1710	targeting seq.	ceo1-12	aaac-GAAAGACAGCTTAAAGAGCC
KI1196	targeting seq.	ceo2-1	cacc-TATGAAGTATAAAGCGCTGA
KI1197	targeting seq.	ceo2-1	aaac-TCAGCGCTTTATACTTCATA
KI1198	targeting seq.	ceo2-2	cacc-AGATGGTGTATTACTTTAGT
KI1199	targeting seq.	ceo2-2	aaac-ACTAAAGTAATACACCATCT
KI1200	targeting seq.	ceo2-3	cacc-CAATTTCGGTCGAAAATCAC
KI1201	targeting seq.	ceo2-3	aaac-GTGATTTTCGACCGAAATTG
KI1202	targeting seq.	ceo2-4	cacc-CACTGGAAAACTAAATACGC
KI1203	targeting seq.	ceo2-4	aaac-GCGTATTTAGTTTTCCAGTG
KI1255	targeting seq.	ceo2-7	cacc-AAACCAATTTCATTCTTCCA
KI1256	targeting seq.	ceo2-7	aaac-TGGAAGAATGAAATTGGTTT
KI1683	targeting seq.	ceo2-9	cacc-TACCACATTATGAAGTATAA
KI1684	targeting seq.	ceo2-9	aaac-TTATACTTCATAATGTGGTA
KI1685	targeting seq.	ceo2-10	cacc-TCATCAATCAACTCTCTAGT
KI1686	targeting seq.	ceo2-10	aaac-ACTAGAGAGTTGATTGATGA
KI2409	targeting seq.	ceo2-12	cacc-TGTCCCATTGACATCTGATA
KI2410	targeting seq.	ceo2-12	aaac-TATCAGATGTCAATGGGACA
KI2411	targeting seq.	ceo2-13	cacc-TGATAAGGACACATTTAATA
KI2412	targeting seq.	ceo2-13	aaac-TATTAAATGTGTCCTTATCA

KI1265	targeting seq.	ceo3-1	cacc-GCTACATACCACTGACATTG
KI1266	targeting seq.	ceo3-1	aaac-CAATGTCAGTGGTATGTAGC
KI1267	targeting seq.	ceo3-2	cacc-CTGTTGATGGAGTTGGCAAA
KI1268	targeting seq.	ceo3-2	aaac-TTTGCCAACTCCATCAACAG
KI1269	targeting seq.	ceo3-3	cacc-GATTGCGGTTTCAACAATTG
KI1270	targeting seq.	ceo3-3	aaac-CAATTGTTGAAACCGCAATC
KI1271	targeting seq.	ceo3-4	cacc-CAATTGCGGCCTTTAAATTC
KI1272	targeting seq.	ceo3-4	aaac-GAATTTAAAGGCCGCAATTG
KI2413	targeting seq.	ceo3-5	cacc-ATGAGCATCTAATTACACAT
KI2414	targeting seq.	ceo3-5	aaac-ATGTGTAATTAGATGCTCAT
KI1655	targeting seq.	ceo4-5	cacc-TGATTGAGATGTGCACTAAG
KI1656	targeting seq.	ceo4-5	aaac-CTTAGTGCACATCTCAATCA
KI1657	targeting seq.	ceo4-6	cacc-TAAGCATAAAGGTGAGGCTC
KI1658	targeting seq.	ceo4-6	aaac-GAGCCTCACCTTTATGCTTA
KI1693	targeting seq.	ceo4-7	cacc-TTGATTAACACTCGAGTCAA
KI1694	targeting seq.	ceo4-7	aaac-TTGACTCGAGTGTTAATCAA
KI1695	targeting seq.	ceo4-8	cacc-AATGGTAACTTGTGTAGTAT
KI1696	targeting seq.	ceo4-8	aaac-ATACTACACAAGTTACCATT
KI1697	targeting seq.	ceo4-9	cacc-CACTCGAGTCAATGGTAACT
KI1698	targeting seq.	ceo4-9	aaac-AGTTACCATTGACTCGAGTG
KI1699	targeting seq.	ceo4-10	cacc-AAGCATAAAGGTGAGGCTCT
KI1700	targeting seq.	ceo4-10	aaac-AGAGCCTCACCTTTATGCTT
KI1701	targeting seq.	ceo4-11	cacc-AACGAAGCATTATAAATGAT
KI1702	targeting seq.	ceo4-11	aaac-ATCATTTATAATGCTTCGTT
KI1188	targeting seq.	ceo5-1	cacc-AGGAATTGAAGATTGGAGTT
KI1189	targeting seq.	ceo5-1	aaac-AACTCCAATCTTCAATTCCT
KI1190	targeting seq.	ceo5-2	cacc-CAGGAATTGAAGATTGGAGT
KI1191	targeting seq.	ceo5-2	aaac-ACTCCAATCTTCAATTCCTG
KI1192	targeting seq.	ceo5-3	cacc-CAGAAATTCCACTATTAGAC
KI1193	targeting seq.	ceo5-3	aaac-GTCTAATAGTGGAATTTCTG
KI1194	targeting seq.	ceo5-4	cacc-AGACGGGATAAATGCTTAAT
KI1195	targeting seq.	ceo5-4	aaac-ATTAAGCATTTATCCCGTCT

KI1257	targeting seq.	ceo6-1	cacc-CCGCTTATGCTGAGGCAAAA
KI1258	targeting seq.	ceo6-1	aaac-TTTTGCCTCAGCATAAGCGG
KI1261	targeting seq.	ceo6-3	cacc-TGAGTGGAATTTGAGGAAAA
KI1262	targeting seq.	ceo6-3	aaac-TTTTCCTCAAATTCCACTCA
KI1263	targeting seq.	ceo6-4	cacc-GAGGAAAAAGGTGAGAAGTT
KI1264	targeting seq.	ceo6-4	aaac-AACTTCTCACCTTTTTCCTC
KI2415	targeting seq.	ceo6-5	cacc-TTTAATTAATCAAGAAAAAT
KI2416	targeting seq.	ceo6-5	aaac-ATTTTTCTTGATTAATTAAA
KI2417	targeting seq.	ceo6-6	cacc-AAGTAGAAACATTTTTTTTC
KI2418	targeting seq.	ceo6-6	aaac-GAAAAAAAATGTTTCTACTT
KI1289	targeting seq.	ceo7-1	cacc-AGTATGTGTCGCAATATGGT
KI1290	targeting seq.	ceo7-1	aaac-ACCATATTGCGACACATACT
KI1291	targeting seq.	ceo7-2	cacc-ACATAGTATGTGTCGCAATA
KI1292	targeting seq.	ceo7-2	aaac-TATTGCGACACATACTATGT
KI1667	targeting seq.	ceo7-5	cacc-TACCTTCAAATAATTTGGGA
KI1668	targeting seq.	ceo7-5	aaac-TCCCAAATTATTTGAAGGTA
KI1689	targeting seq.	ceo7-6	cacc-ACAGAAGCAATGAAGGCTTA
KI1690	targeting seq.	ceo7-6	aaac-TAAGCCTTCATTGCTTCTGT
KI1691	targeting seq.	ceo7-7	cacc-AAATGGAATCAACTGAAGAA
KI1692	targeting seq.	ceo7-7	aaac-TTCTTCAGTTGATTCCATTT
KI915	qPCR (ade6)	NA	GGCGCTGGTATATATGGTGTAG
KI916	qPCR (ade6)	NA	ATGGTGTAGTGACCTGAATTGT
act1-Fw	qPCR (act1)	NA	CTTTCTACAACGAGCTTCGTGTTG
act1-Rv	qPCR (act1)	NA	GAGTCATCTTCTCACGGTTGGAT
KI1681	qPCR (ceo1)	NA	GGAGGCTCTTTAAGCTGTCTTT
KI1682	qPCR (ceo1)	NA	CCAAGGCGCAGGGATTAAA
KI1226	qPCR (ceo2)	NA	CGAGACTGGTTTGCCATTTAC
KI1227	qPCR (ceo2)	NA	GCTATTATGTCCAACGCATCAC
KI1335	qPCR (ceo3)	NA	ACTCAACCCGTCCTTGTAAAT
KI1336	qPCR (ceo3)	NA	CTTCATCAATTTGGGCATCGG
KI1675	qPCR (ceo4)	NA	CGATGAACGCATACAAACGG
KI1676	qPCR (ceo4)	NA	AGAATCCAATCATCGTGGTCTAA

KI1222	qPCR (ceo5)	NA	AGACTGTTGAGGGAGCTTTG
KI1223	qPCR (ceo5)	NA	GACCACACCACCCATTCTT
KI1331	qPCR (ceo6)	NA	ATTAGCGTTGCTCTCCCTTC
KI1332	qPCR (ceo6)	NA	TCGTCATAAACAACTTTCCATGC
KI1341	qPCR (ceo7)	NA	TTTAGTACTGCACCTGACTTGG
KI1342	qPCR (ceo7)	NA	GAGATTTCGCGGATATACGGATT
KI2995	nonsense control	random sequence 1	cacc-TCTGGATTGACTCTATGACG
KI2996	nonsense control	random sequence 1	aaac-CGTCATAGAGTCAATCCAGA

Table S3. plasmids list

ID	vector	targeting sequence ID (sgRNA2)	targeting sequence ID (sgRNA1)	CRISPRi effector	reference	comment
pSPdCas9	NA	No sgRNA2	nonsense (BbsI site)	dCas9	Ishikawa, *G3*, 2021	Figure 1A
pSPdCas9.2	NA	No sgRNA2	nonsense (BbsI site)	dCas9	This work	Figure 1A (A cloning site is inserted at the Sbf1 site)
pSPdCas9.3	NA	No sgRNA2	nonsense (PaqCI site)	dCas9	This work	See materials and methods section.
pSPdCas9.5	NA	nonsense (PaqCI site)	nonsense (BbsI site)	dCas9	This work	Figure 1B
pdSpG.2	NA	No sgRNA2	nonsense (BbsI site)	dSpG	This work	Figure 1C
pdSpG.5	NA	nonsense (PaqCI site)	nonsense (BbsI site)	dSpG	This work	Figure 1D
pDC2_a5	pSPdCas9.2	No sgRNA2	a5	dCas9	This work	Figure 2
pDC2_a10	pSPdCas9.2	No sgRNA2	a10	dCas9	This work	Figure 2
pSC5(a5, ns)	pSPdCas9.5	a5	nonsense (BbsI site)	dCas9	This work	Figure 2
pSC5(ns, a5)	pSPdCas9.5	nonsense (PaqCI site)	a5	dCas9	This work	Figure 2
pSC5(a5, a10)	pSPdCas9.5	a5	a10	dCas9	This work	Figure 2

pSC5(a10, a5)	pSPdCas9.5	a10	a5	dCas9	This work	Figure 2
pDS_sa1	pdSpG.2	No sgRNA2	sa1	dSpG	This work	Figure 2
pDS_sa2	pdSpG.2	No sgRNA2	sa2	dSpG	This work	Figure 2
pDS_sa3	pdSpG.2	No sgRNA2	sa3	dSpG	This work	Figure 2
pDS_sa4	pdSpG.2	No sgRNA2	sa4	dSpG	This work	Figure 2
pDS_sa5	pdSpG.2	No sgRNA2	sa5	dSpG	This work	Figure 2
pDS_sa6	pdSpG.2	No sgRNA2	sa6	dSpG	This work	Figure 2
pDS_sa7	pdSpG.2	No sgRNA2	sa7	dSpG	This work	Figure 2
pDS_sa8	pdSpG.2	No sgRNA2	sa8	dSpG	This work	Figure 2
pDC_ceo3-1	pSPdCas9	No sgRNA2	ceo3-1	dCas9	This work	Figure 3
pDC_ceo3-2	pSPdCas9	No sgRNA2	ceo3-2	dCas9	This work	Figure 3
pDC_ceo3-3	pSPdCas9	No sgRNA2	ceo3-3	dCas9	This work	Figure 3
pDC_ceo3-3	pSPdCas9	No sgRNA2	ceo3-3	dCas9	This work	Figure 3
pDC_ceo3-4	pSPdCas9	No sgRNA2	ceo3-4	dCas9	This work	Figure 3
pDC_ceo3-5	pSPdCas9	No sgRNA2	ceo3-5	dCas9	This work	Figure 3
pDC_ceo5-1	pSPdCas9	No sgRNA2	ceo5-1	dCas9	This work	Figure 3
pDC_ceo5-2	pSPdCas9	No sgRNA2	ceo5-2	dCas9	This work	Figure 3
pDC_ceo5-3	pSPdCas9	No sgRNA2	ceo5-3	dCas9	This work	Figure 3
pDC_ceo5-4	pSPdCas9	No sgRNA2	ceo5-4	dCas9	This work	Figure 3
pDC_ceo7-1	pSPdCas9	No sgRNA2	ceo7-1	dCas9	This work	Figure 3
pDC_ceo7-2	pSPdCas9	No sgRNA2	ceo7-2	dCas9	This work	Figure 3
pDC_ceo7-5	pSPdCas9	No sgRNA2	ceo7-5	dCas9	This work	Figure 3
pDC_ceo7-6	pSPdCas9	No sgRNA2	ceo7-6	dCas9	This work	Figure 3
pDC_ceo7-7	pSPdCas9	No sgRNA2	ceo7-7	dCas9	This work	Figure 3

pDC_ceo6-1	pSPdCas9	No sgRNA2	ceo6-1	dCas9	This work	Figure 4
pDC_ceo6-3	pSPdCas9	No sgRNA2	ceo6-3	dCas9	This work	Figure 4
pDC_ceo6-4	pSPdCas9	No sgRNA2	ceo6-4	dCas9	This work	Figure 4
pDC_ceo6-5	pSPdCas9	No sgRNA2	ceo6-5	dCas9	This work	Figure 4
pDC_ceo6-6	pSPdCas9	No sgRNA2	ceo6-6	dCas9	This work	Figure 4
pSC5(ceo6-1, ceo6-3)	pSPdCas9.5	ceo6-1	ceo6-3	dCas9	This work	Figure 4
pDC_ceo1-9	pSPdCas9	No sgRNA2	ceo1-9	dCas9	This work	Figure 4
pDC_ceo1-10	pSPdCas9	No sgRNA2	ceo1-10	dCas9	This work	Figure 4
pDC_ceo1-11	pSPdCas9	No sgRNA2	ceo1-11	dCas9	This work	Figure 4
pDC_ceo1-12	pSPdCas9	No sgRNA2	ceo1-12	dCas9	This work	Figure 4
pSC5(ceo1-9, ceo1-12)	pSPdCas9.5	ceo1-9	ceo1-12	dCas9	This work	Figure 4
pDC_ceo4-5	pSPdCas9	No sgRNA2	ceo4-5	dCas9	This work	Figure 5
pDC_ceo4-6	pSPdCas9	No sgRNA2	ceo4-6	dCas9	This work	Figure 5
pDC_ceo4-7	pSPdCas9	No sgRNA2	ceo4-7	dCas9	This work	Figure 5
pDS_ceo4-8	pSPdCas9	No sgRNA2	ceo4-8	dSpG	This work	Figure 5
pDS_ceo4-9	pdSpG.2	No sgRNA2	ceo4-9	dSpG	This work	Figure 5
pDS_ceo4-10	pdSpG.2	No sgRNA2	ceo4-10	dSpG	This work	Figure 5
pDS_ceo4-11	pdSpG.2	No sgRNA2	ceo4-11	dSpG	This work	Figure 5
pDS5(ceo4-10, ceo4-9)	pdSpG.5	ceo4-10	ceo4-9	dSpG	This work	Figure 5
pDS_a5	pdSpG.2	No sgRNA2	a5	dSpG	This work	Figure S1
pDC_ceo2-1	pSPdCas9	No sgRNA2	ceo2-1	dCas9	This work	Figure S2
pDC_ceo2-2	pSPdCas9	No sgRNA2	ceo2-2	dCas9	This work	Figure S2
pDC_ceo2-3	pSPdCas9	No sgRNA2	ceo2-3	dCas9	This work	Figure S2
pDC_ceo2-4	pSPdCas9	No sgRNA2	ceo2-4	dCas9	This work	Figure S2
pDC_ceo2-12	pSPdCas9	No sgRNA2	ce2-12	dCas9	This work	Figure S2
pDC_ceo2-13	pSPdCas9	No sgRNA2	ceo2-13	dCas9	This work	Figure S2
pDS_ceo2-7	pdSpG.2	No sgRNA2	ceo2-7	dSpG	This work	Figure S2
pDS_ceo2-9	pdSpG.2	No sgRNA2	ceo2-9	dSpG	This work	Figure S2
pDS_ceo2-10	pdSpG.2	No sgRNA2	ceo2-10	dSpG	This work	Figure S2
pSC5(ceo2-1, ceo2-12)	pSPdCas9.5	ceo2-1	ceo2-12	dCas9	This work	Figure S2
pdSpG.6	pdSpG.5	nonsense (random sequence 1)	nonsense (BbsI site)	dSpG	This work	Figure S4