

S3 Table. Key resources

Primer ID	Primer full name	Purpose	Primer sequence (5' -> 3', adapter sequence used for ligation)
#1	Mcnd1_5UTRf162_NotI	<i>MCMD1</i> somatic gene knockout	AGTTCTAGAGCGGCCG ATCTTGCTTTATCAATCATTATTG
#2	Mcnd1_5UTRr1061_N4		GTCAGGTGCGTGGTACCC TTGCTAACTTAGACAGAAATTCAG
#3	Mcnd1_3UTRf3866_N4		CTGACGTGCGACCATCCC GTGAAATAAACTTCTATTACCAAG
#4	Mcnd1_3UTRr4591_Not1		ACCGCGTGGCGGCCG TCTAAGTCAAGTCTTTCTCTAC
#5	891_5'fl FW	<i>PAMD1</i> somatic gene knockout	ctcgagtttttcagcaagat GGCTTGCTTGAATGAATG
#6	891_5'fl RV		cctgcagccc CTAATTTGAATCGACTTCTATAAGTTAC
#7	891_3'fl FW		aatgcagccc CTCCATCTCCTTCTTCTAAAAAATTTT
#8	891_3'fl RV		aggagatcttctagaagat GTGCTTTTATAGATCAATATTGTTG
#9	891_NEO4_Kaz_Fwd		ttcaaattag GGGCTGCAGGAATTCGATA
#10	891_NEO4_Kaz_Rev		ggagatggag GGGCTGCATTTTCCAGTAAAAATTTG
#11	pJet_Fwd		ATCTTTCTAGAAGATCTCCTAC
#12	pJet_Rev		ATCTTGCTGAAAACTCGAG
#13	Mcnd1_cdsf3099_SacG	Mcnd1 C-terminal HA tagging	ACTAAGGGAACAAAAGCTGGAGCTC ATTTCTTAAATAAGTTCCAAC
#14	Mcnd1_cdsr3840_BamHI		TCTTCACCCCTTAGAAACCTGGATCC TAGCTTATCTAAGTTAAGCTAA
#15	Mcnd1_3UTRf3866_XhoI		GCTTATCGATACCGTCGACCTCGAG GTGAAATAAACTTCTATTACCA
#16	Mcnd1_3UTRr4591_KpnI		CTCACTATAGGGCGAATTGGGTACC TCTAAGTCAAGTCTTTCTCTAC
#17	Chx_fw		TCCAGATCCCCGGGCTGCAG taccagcacctgacgg
#18	Chx_rv		AGTTTATTTTACCTCGAGGTGCAG atggtgacgctcagtttttcc
#19	Mcdp_CDSf2863_SacG	Pamd1 C-terminal HA tagging	ACTAAGGGAACAAAAGCTGGAGCTC TCAGTATTGCTTTAAAGGATTA
#20	Mcdp_CDSr3578_BamG		TCTTCACCCCTTAGAAACCTGGATCC AAATCTTATAAAATCTAAAATCT
#21	Mcdp_3UTRf3607_XhoG		GCTTATCGATACCGTCGACCTCGAG TAAGTTACTCAAAGATAAAACAGT
#22	Mcdp_3UTRr4321_KpnG		CTCACTATAGGGCGAATTGGGTACC TGCTTGAATGAATGAAGTAGG
#23	Mcnd1_KOckf3197	<i>MCMD1</i> knockout validation	ATCTGAATTAGTGCCTTAAGC
#24	Mcnd1_KOckr3628		TAATTTTTCTACCTGTTACTTCTTC
#25	Pamd1_KOckf3363	<i>PAMD1</i> knockout validation	ATTTTGTAGAGATTTAGACACAAAAG
#26	Pamd1_KOckr3563		TAAAATCTAATCTTAAATCTTCTCC
#27	Hop2_Cdsqf2194	<i>HOP2</i> knockout validation	ATGAAAATACTGATGAAAGTGATAG
#28	Hop2_Cdsqf2553		TTTAAGTTACTTTCAAGAGTAGTTG
#29	Twi1_CDSf3018	<i>TWI1</i> RT-PCR	TTTAGCAAGTTTATGAATAAGCTC
#30	Twi1_CDSr3574		TAATAGTGTAGTGAAGTAGGAGAAGC
#31	7610 5' coDel	<i>MCMD1</i> somatic gene knockout by using co-Deletion	CTTTATGTTATCATCTTATGACCCG gggtagctagaagagttc
#32	7610 3' coDel		CTCATCAAGTTGTAATGCTAAAATGCctgtctaagtaggaagc

Plasmids	Note	Source
pChx_Smal		Gao et al. Genes&Dev, 2013
pBluescript SK (-)	GenBank: X52324.1	Stratagene
pMcoDel		Noto et al. Mol Cell, 2015
pSGS1 RNAi		Lukaszewicz et al. Nucleic Acids Res, 2013
pNeo4	GenBank: EU606202.1	Mochizuki. Gene, 2008
pBluescript SK (+)	GenBank: X52325.1	Stratagene
pHA-neo4	GenBank: AB570108	Kataoka et al. Gene, 2010
pEGFP-neo4	GenBank: AB570109	Kataoka et al. Gene, 2010
pJET1.2 blunt		Thermo Fisher (Fermentas)

<i>T. thermophila</i> strains	Note	Source
B2086 II	Wild-type; Mating type II	Tetrahymena Stock Center; Strain ID: SD01625
CU428.2	Wild-type; Mating type IIV	Tetrahymena Stock Center; Strain ID: SD00178
hop2Δ B2086		Mochizuki. Gene, 2008