Table S1. Bacterial strains and plasmids.

Strains or plasmid	Relevant characteristics	Source or reference
E. coli K12		
JW0764-2	*moaA*753(del)::kan	Baba *et al.* (26)
JW0765-1	*moaB*754(del)::kan	Baba *et al.* (26)
JW0766-1	*moaC*755(del)::kan	Baba *et al.* (26)
JW0767-1	*moaD*756(del)::kan	Baba *et al.* (26)
JW0768-1	*moaE*757(del)::kan	Baba *et al.* (26)
JW0746-1	*modA*735(del)::kan	Baba *et al.* (26)
JW0747-1	*modB*736(del)::kan	Baba *et al.* (26)
JW0748-2	*modC*737(del)::kan	Baba *et al.* (26)
JW0008-5	*mog*-729(del)::kan	Baba *et al.* (26)
JW3901-1	*menA*789(del)::kan	Baba *et al.* (26)
JW2256-1	*menC*743(del)::kan	Baba *et al.* (26)
JW5374-5	*menD*746(del)::kan	Baba *et al.* (26)
JW2255-1	*menE*742(del)::kan	Baba *et al.* (26)
JW1328-1	*fnr*-771(del)::kan	Baba *et al.* (26)
JW5580-1	*tatB*780(del)::kan	Baba *et al.* (26)
JW3815-1	t*atC*781(del)::kan	Baba *et al.* (26)
JW2875-1	*ubiH*758(del)::kan	Baba *et al.* (26)
ECMOAC	JW0764-2 containing pECA27, Ap^r	This study
ECMODC	JW0746-1 containing pECD25, Ap^r	This study
ECMOGC	JW0008-5 containing pECG07, Ap^r	This study
Plasmids		
pCR2.1-TOPO	Cloning vector, Ap^r	Invitrogen
pECA27	2.7 kb *moaABCDE* PCR product cloned into pCR2.1-TOPO	This study
pECD25	2.5 kb *modABC* PCR product cloned into pCR2.1-TOPO	This study
pECG07	0.7 kb *mog* PCR product cloned into pCR2.1-TOPO	This study

Baba T, Ara T, Hasegawa M, Takai Y, Okumura Y, Baba M, Datsenko KA , Tomita M, Wanner BL, Mori H. 2006. Construction of *Escherichia coli* K-12 in-frame, single-gene knockout mutants: the Keio collection. Molecular systems biology **2**:2006.0008.