This is an electronic appendix to the paper by Ferenci *et al*. The influence of cellular physiology on the initiation of mutational pathways in *Escherichia coli* populations. *Proc. R. Soc. Lond.* B **270**, 843—848.

Electronic appendices are refereed with the text. However, no attempt is made to impose a uniform editorial style on the electronic appendices.

Electronic Appendix A Sequenced *mgl* mutations in four chemostats running at D = 0.1 h^{-1}

Isolates in population 1	Mutation	Isolates in population 2	Mutation	Isolates in population 3	Mutation	Isolates in population 4	Mutation
1Da1	A39D (C > A)	**2Da6**	V148G (T>G)	**3Da1**	MglO TCA/TTA)	**4Da1**	R326S (C>A)
1Da2	A252T (G > A)	**2Fa1**	V148G (T>G)	**3Da7**	MglO (TCA/TTA)	**4Da2**	R326S (C>A)
1Da5	H122Q (C>A)	**2Fa4**	S183F (C>T)	**3Da8**	H122Q (C>A)	**4Da3**	R326S (C>A)
1Da6	L111stop (T>G)	**2Fa5**	MglO (ATG/ATA)	**3Fa1**	MglO (TCA/TTA)	**4Da4**	R326S (C>A)
1Ea1	A80T (G>A)	**2Fa6**	V148G (T>G)	**3Fa2**	MglO (TCA/TTA)	**4Da6**	L298stop (T>G)
1Ea2	S328F (C>T)	**2Fa7**	V148G (T>G)	**3Fa3**	MglO (TCA/TTA)	**4Da7**	R326S (C>A)
1Ea3	L265stop (T>G)	**2Fa8**	A49A (C deletion)	**3Fa4**	MglO (TCA/TTA)	**4Fa1**	R326S (C>A)
1Ea4	L265stop (T>G)	**2Ga1**	T168K (C>A)	**3Fa5**	MglO (TCA/TTA)	**4Fa2**	R326S (C>A)
1Ea5	IS (750-800bp)	**2Ga2**	S183F (C>T)	**3Fa6**	MglO (TCA/TTA)	**4Fa3**	R326S (C>A)
1Ea6	A252T (G>A)	**2Ga5**	MglO (ATG/ATA)	**3Fa7**	IS (750-800bp)	**4Fa4**	R326S (C>A)
1Ea7	Y181N (T>A)	**2Ga6**	IS (approx 1300bp)	**3Fa8**	MglO (TCA/TTA)	**4Fa5**	R326S (C>A)
1Ea8	S183F (C>T)	**2Ha2**	MglO (ATG/ATA)	**3Ga1**	MglO (TCA/TTA)	**4Fa6**	R326S (C>A)
1Ja1	L172P (T>C)	**2Ha8**	IS (approx 1300bp)	**3Ga2**	MglO (TCA/TTA)	**4Fa7**	R326S (C>A)

1Ja3	MglO (CCG>CCT)					**4Fa8**	R326S (C>A)
1Ja4	IS (750-800bp)					**4Ha1**	R326S (C>A)
1Ka4	MglO (CCG>CCT)					**4Ha3**	R326S (C>A)
1Ka8	MglO (CCG>CCT)					**4Ha5**	R326S (C>A)

Electronic Appendix B Sequenced *mgl* mutations in four chemostats running at D = 0.6 h^{-1}

Isolates in population 5	**Mutation**	**Isolates in population 8**	**Mutation**	**Isolates in population 10**	**Mutation**	**Isolates in population 11**	**Mutation**
5U1	MglO (TCA/TTA)	**8Q8**	MglO (ATG/ATA)	**10S5**	IS (approx 1300bp)	**11L1**	R326C (C>T)
5U4	MglO (TCA/TTA)	**8S3**	MglO (ATG/ATA)	**10T1**	T342S (G insert) (ACA/AGC)	**11L3**	R326C (C>T)
5U8	MglO (TCA/TTA)	**8S6**	MglO (ATG/ATA)	**10T2**	IS (approx 1300bp)	**11L4**	R326C (C>T)
5V1	MglO (TCA/TTA)	**8V2**	MglO (ATG/ATA)	**10T4**	L231P (T>C)	**11M1**	R326C (C>T)
5V4	IS (750-800bp)	**8V3**	MglO (ATG/ATA)	**10T5**	Q305stop (C>T)	**11M2**	R326C (C>T)
5V5	MglO (TCA/TTA)	**8V6**	MglO (CCG/CAG)	**10T6**	IS (750-800bp)	**11M3**	R326C (C>T)
5V6	MglO (TCA/TTA)	**8V7**	MglO (ATG/ATA)	**10T7**	P283Q (C>A)	**11M4**	R326C (C>T)
5V7	A296E (C>A)	**8V8**	MglO (ATG/ATA)	**10U1**	IS (approx 1300bp)	**11M5**	R326C (C>T)
5V8	MglO (TCA/TTA)			**10U2**	P283Q (C>A)	**11M6**	R326C (C>T)
5W3	MglO (TCA/TTA)			**10U4**	IS (approx 1300bp)	**11M7**	R326C (C>T)

				10U5	MglO (CTT/CCT)	**11M8**	R326C (C>T)
				10U6	P283Q (C>A)		
				10U7	IS (approx 1300bp)		
				10U8	S19Y (C>A		