EMS-induced mutation frequency

rif^S ➔ rif^R = *# rif^R colonies/total cells plated for one plate* with 30-300 colonies*

***** last column use scientific notation: do not use %***

Initials	A. from NA plates: Viable cells/ml	B. #rifR colonies on single plate* with 30-300 colonies	C. # of cells plated on plate used in B (calculated from info in column A)	Mutation frequency** B ÷ C
RK/KH	$2.34*10^9$	186	$2.34*10^6$	$7.9*10^{-5}$
NB/KB	2.3x10^9	70	2.3x10^6	3.04 x 10^-5
AG/BF	4.9X10^9	201	4.9X10^6	4.14X10^-5
JB/GK	2.9X10^9	220	2.9X10^6	7.6X10^-5
JY/KAH	$4.1X10^9$	147	$4.1X10^6$	$3.5X10^{-5}$
GP/BK	2.41*10^9	284	2.41*10^6	1.18*10^-4
IO/KS	1.99x10^9	124	1.99x10^6	6.2x10^-5
TD/MO	2.38*10^9	189	2.38*10^6	$7.9*10^{-5}$

Spontaneous mutation frequency (untreated cells)

rif^S → rif^R = # rif^R colonies/total cells plated (both plates)

***** last column use scientific notation: do not use %***

Initials	A. from NA plates: Viable cells/ml	B. #rifR colonies on both plates	C. # of cells plated on both plates (calculated from info in column A)	Mutation frequency** B ÷ C
RK/KH	$5.2*10^9$	19	$2.08*10^9$	$9.1*10^{-9}$
NB/KB	6.7x10^9	34	2.68x10^9	1.3x10^-8
AG/BF	4.4X10^9	18	1.75X10^9	1.02X10^-8
JB/GK	2.8X10^9	34	1.15X10^9	2.94X10^-8
JY/KAH	$3.6X10^9$	35	$1.44X10^9$	$2.43X10^{-9}$
GP/BK	3.1*10^8	27	1.24*10^8	2.18*10^-7
IO/KS	4.4x10^9	40	1.8x10^9	2.3x10^-8
MO/TD	3.81*10^9	29	1.5*10^9	1.9*10^-8

EMS –induced mutation frequency

lac^+ ➔ lac^- = # white colonies/total colonies

Column B: Combine data from *all six Mac plate*

Column C: Calculate total number of cells plated

**** last column use scientific notation: do not use %***

Initials	A. from NA plates: Viable cells/ml	B. # white colonies on all six Mac plates	C. total # of cells plated on all six plates (calculated from info in column A)	Mutation frequency* B ÷ C
RK/KH	$2.34*10^9$	3	$7.7*10^3$	$3.9*10^{-4}$
NB/KB	2.3x10^9	3	7.5x10^3	3.9x10^-4
AG/BF	4.9X10^9	<1	1.61X10^4	<6.18X10^-5
JB/GK	2.9X10^9	2	9.5X10^3	2.1X10^-4
JY/KAH	$4.1X10^9$	5 confirmed, 1 maybe	$1.35X10^4$	$4.4X10^{-4}$
GP/BK	2.41*10^9	2	7953	2.5*10^-4
IO/KS	1.99x10^9	3	6.6x10^3	4.6x10^-4
TD/MO	2.38*10^9	1	7.9*10^3	1.27*10^-4

Spontaneous mutation frequency

lac^+ ➔ lac^- = # white colonies*/total colonies**

Column B: Combine data from *all six Mac plate*

Column C: Calculate total number of cells plated

**** last column use scientific notation: do not use %***

Initials	A. from NA plates: Viable cells/ml	B. # white colonies on all six Mac plates	C. total # of cells plated on all six plates (calculated from info in column A)	Mutation frequency* B ÷ C
RK/KH	$5.2*10^9$	<1	$1.7*10^4$	$<5.8*10^{-5}$
NB/KB	6.7x10^9	<1	2.2x10^4	<4.5x10^-5
AG/BF	4.4 X 10^9	<1	1.45 X 10^4	<6.89X10^-5
JB/GK	2.8X10^9	<1	9.4X10^3	<1.1X10-4
KH/JY	$3.6X10^9$	<1	$1.18X10^4$	$<8.4X10^{-5}$
GP/BK	3.10*10^8	<1	1023	<9.78*10^-4
IO/KS	4.4x10^9	<1	1.5x10^4	<6.9x10^-5
MO/TD	3.81*10^9	<1	1.26*10^4	<7.94*10^-5

Spontaneous mutation frequency lac- ➔ lac +

Initials	Viable cells per ml in	A. Calculate total # cells plated selective media	B total # lac+ colonies on selective media: if 0 state <1	Reversion freq B/A
Glk	5.1*10^9	2.4*10^9	9	3.7*10^-9
JRB	1.8X10^9	3.5X10^8	14	1.6x10^-9
KAH	7.8*10^9	3.9*10^9	3	7.69*10^-10
BLK	2.47*10^9	4.94*10^8	19	3.8*10^-8
AG	8.2*10^9	3.28810^9	4	1.2*10^-9
IO	1.03x10^10	3.09x 10^9	<1	<3.24x10^-10
JY	3.2X109	6.4X108	<1	<2X10-9
KS	3.5x109	7x108	13	5.71x10-9
TCD	7.3x109	2.92x109	5	1.7X10-9
KWH Lac- Lawn + distinct confirmed Lac+ colonies	5.5*109	3.2*109	2	6.25*10-10
NB	4.6 x 10^8 ?	1.38 x 10^8	240	1.7 x 10^-6
WTF Same lac- colony as MCO	3.2x109	6.4x108	Large – 280 Confirmed lac+ Small – 5600 Also confirmed lac+	Lg–4.4x10-7 Sm-9.0x10-6
KGB	4.9x109	1.9x109	58	3.05x10-8
GP	2.73*1010	5.46*107	2	3.66*10-8
RK	4.2*10-7	1.3*107	Small: 2,160 Not confirmed as lac+	1.7*10-4
MCO Same lac- colony as WTF	2.4E8	9.7E7	Small: 902 Large: 608	Sm: 9.3E-6 Lg: 6.3E-6