***EMS-induced* mutation frequency**

**rifS 🡺 rifR  = *# rifR 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\*109 | 186 | 2.34\*106 | 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 | 4.1X109 | 147 | 4.1X106 | 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)**

**rifS 🡺 rifR  = # rifR 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\*109 | 19 | 2.08\*109 | 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 | 3.6X109 | 35 | 1.44X109 | 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\*109 | 3 | 7.7\*103 | 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 | 4.1X109 | 5 confirmed, 1 maybe | 1.35X104 | 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\*109 | <1 | 1.7\*104 | <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 | 3.6X109 | <1 | 1.18X104 | <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 |