

Supplementary Material

Table 4. Microarray data analysis - Maximum likelihood estimates and their asymptotic standard error for Esscher transformed Laplace, Laplace and Normal distributions.

	Swirl.2	Swirl.4	Ecoli.3	Ecoli.4	Ecoli.5	Ecoli.6	Tumor.1	Tumor.2	Tumor.4	Tumor.6
Esscher										
θ	0.01 (0.0119)	-0.06 (0.0133)	-0.06 (0.0128)	-0.02 (0.0149)	-0.03 (0.0129)	-0.03 (0.0154)	-0.06 (0.0067)	0.01 (0.0053)	-0.06 (0.0072)	0.03 (0.0064)
σ	0.21 (0.0023)	0.25 (0.0027)	0.37 (0.0052)	0.35 (0.0049)	0.36 (0.0051)	0.34 (0.0047)	0.73 (0.0040)	0.66 (0.0035)	0.74 (0.0040)	0.78 (0.0042)
μ	-0.01 (0.0038)	0.02 (0.0054)	0.04 (0.0061)	0.01 (0.0078)	0.02 (0.0060)	0.02 (0.0080)	0.09 (0.0080)	-0.003 (0.0050)	0.09 (0.0090)	-0.04 (0.0081)
Laplace										
μ	-0.002 (0.0030)	-0.002 (0.0029)	0.02 (0.0056)	0.01 (0.0058)	0.01 (0.0051)	0.01 (0.0065)	0.03 (0.0043)	0.002 (0.0039)	0.03 (0.0047)	-0.01 (0.0048)
σ	0.21 (0.0023)	0.25 (0.0027)	0.37 (0.0052)	0.35 (0.0049)	0.36 (0.0051)	0.34 (0.0047)	0.73 (0.0039)	0.66 (0.0036)	0.74 (0.0040)	0.78 (0.0042)
Gaussian										
μ	-0.001 (0.0031)	-0.01 (0.0038)	0.002 (0.0080)	0.002 (0.0070)	0.002 (0.0079)	0.002 (0.0068)	0.005 (0.0055)	0.005 (0.0049)	0.005 (0.0056)	0.005 (0.0058)
σ	0.08 (0.0012)	0.12 (0.0019)	0.33 (0.0065)	0.25 (0.0050)	0.32 (0.0063)	0.24 (0.0047)	1.05 (0.0079)	0.85 (0.0064)	1.08 (0.0082)	1.15 (0.0087)

Table 5. Comparison of AIC and BIC of Esscher transformed Laplace, Laplace and Normal distributions.

	Swirl.2		Swirl.4		Ecoli.3		Ecoli.4		Ecoli.5		Ecoli.6	
	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC
Esscher	2018	2040	5099	5120	7270	7289	6575	6595	6941	6961	6251	6270
Laplace	2017	2031	5119	5133	7282	7295	6574	6587	6942	6955	6253	6266
Gaussian	2698	2712	6102	6116	8821	8834	7527	7541	8676	8689	7219	7232

	Tumor.1		Tumor.2		Tumor.4		Tumor.6	
	AIC	BIC	AIC	BIC	AIC	BIC	AIC	BIC
Esscher	96087	96112	88948	88973	96733	96758	100575	100600
Laplace	96164	96181	88947	88964	96802	96818	100589	100606
Gaussian	100214	100231	92779	92796	101219	101236	103449	103466

Fig. 10. Left panel: Histogram of Swirl.2 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

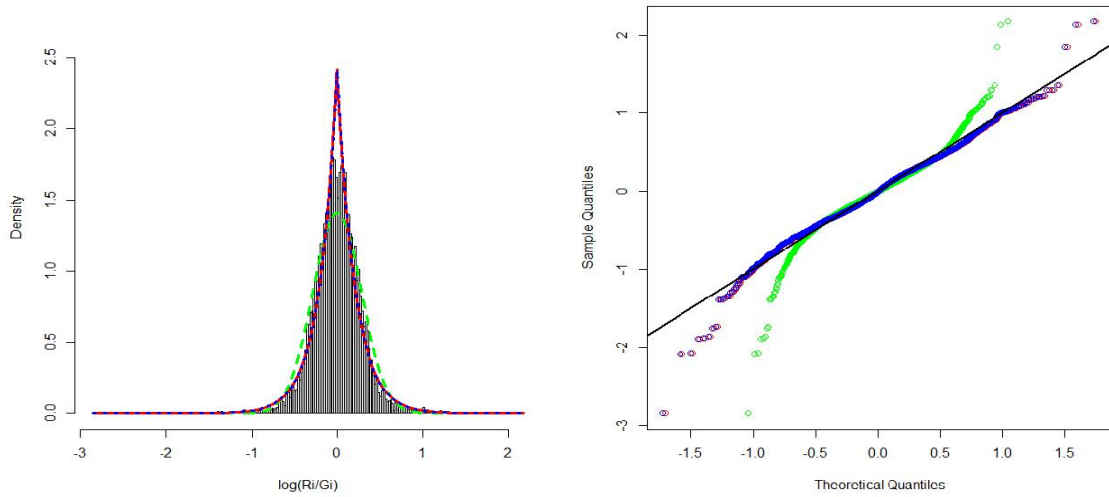


Fig. 11. Left panel: Histogram of Swirl.4 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

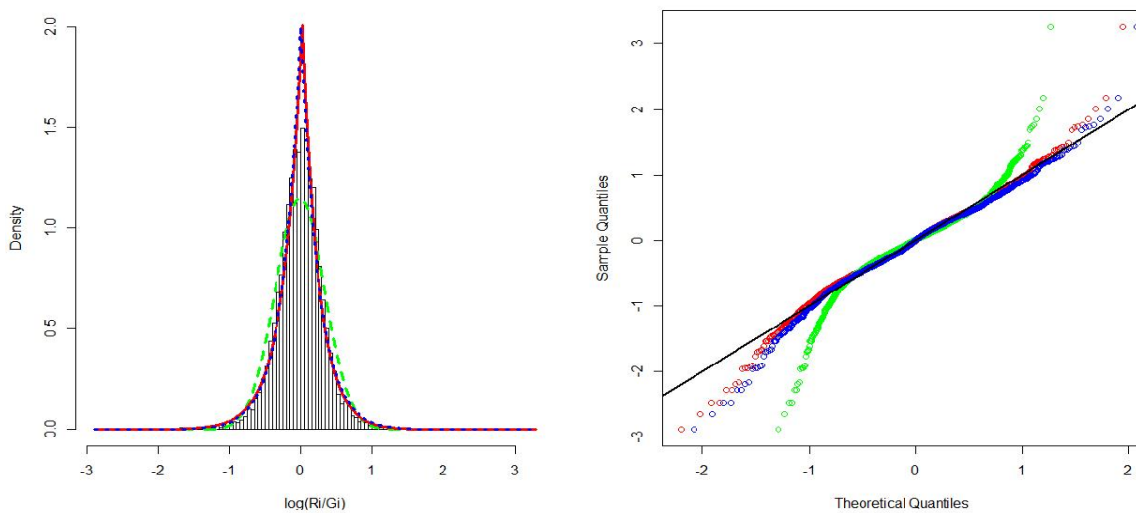


Fig. 12. Left panel: Histogram of Ecoli.3 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

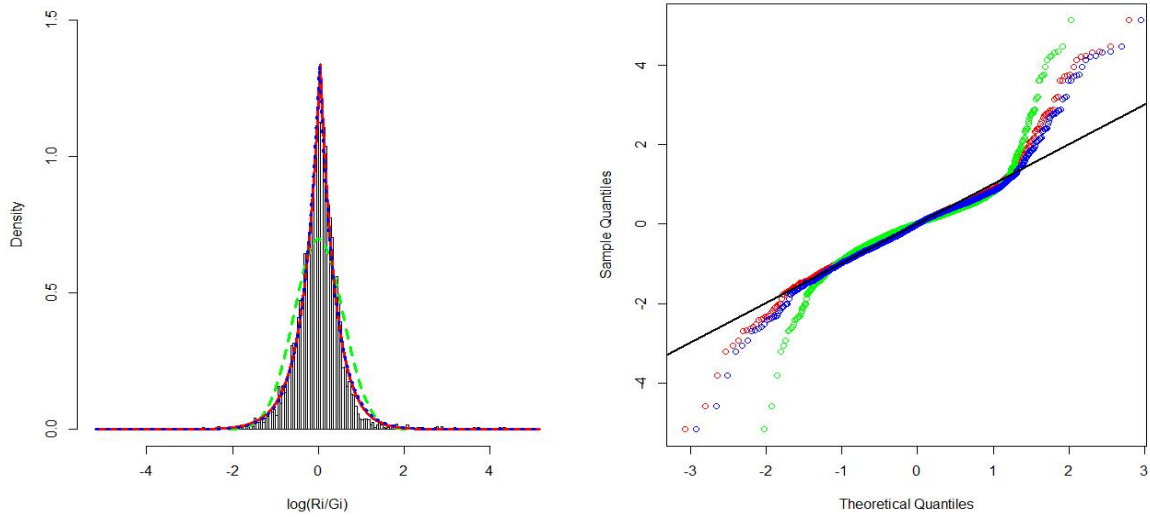


Fig. 13. Left panel: Histogram of Ecoli.4 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

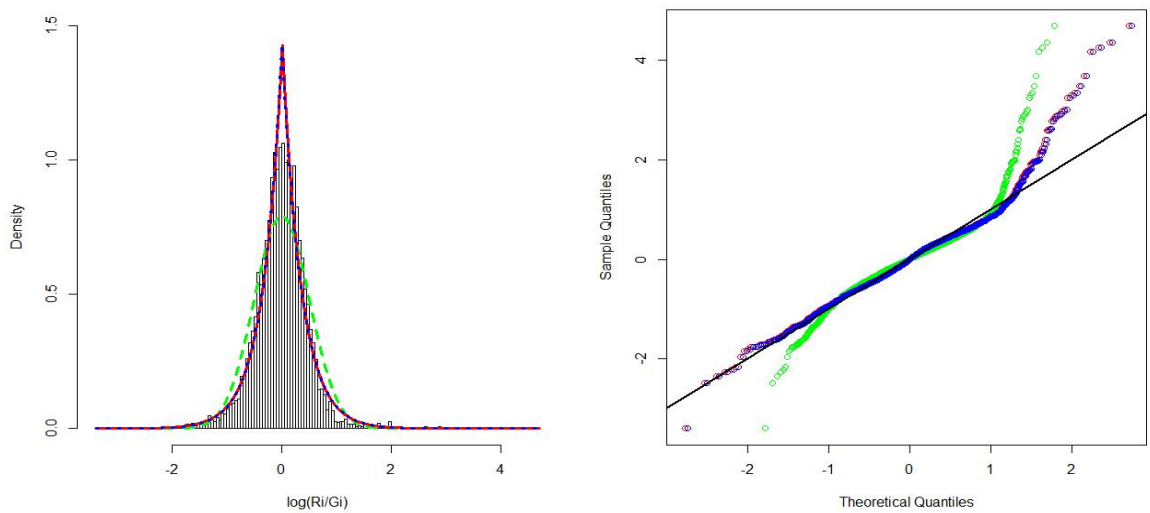


Fig. 14. Left panel: Histogram of Ecoli.5 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

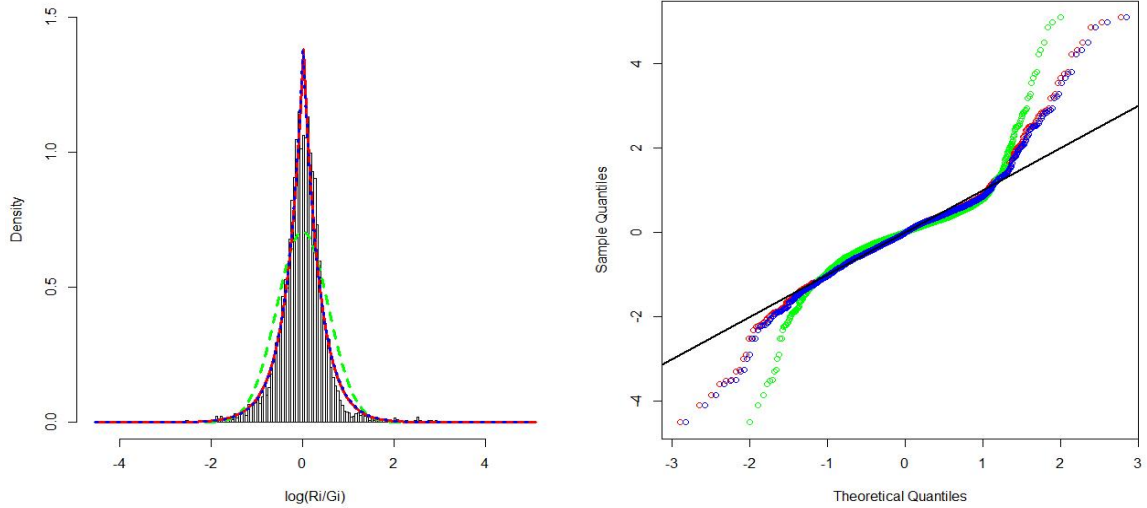


Fig. 15. Left panel: Histogram of Ecoli.6 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

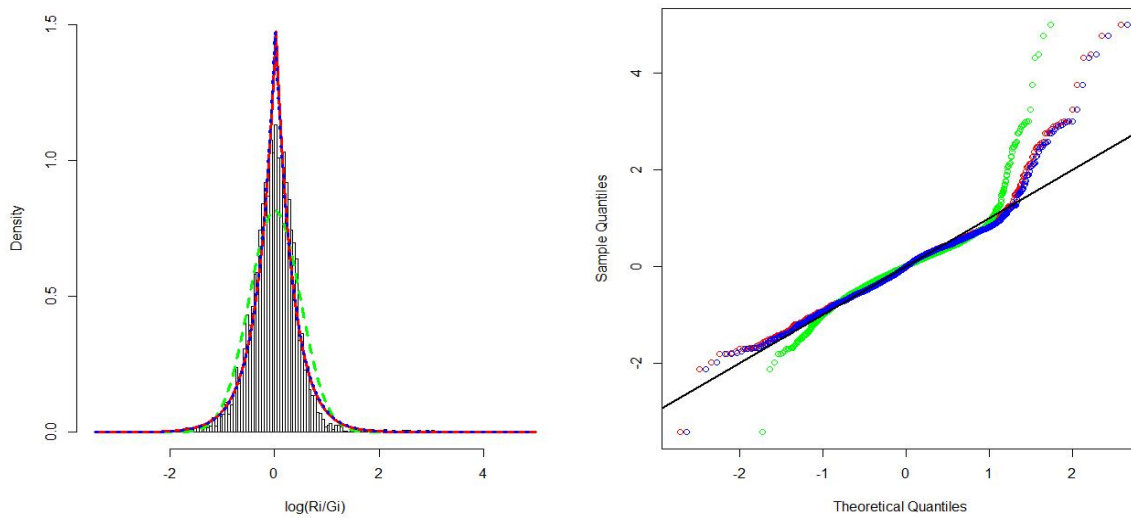


Fig. 16. Left panel: Histogram of Tumor.1 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

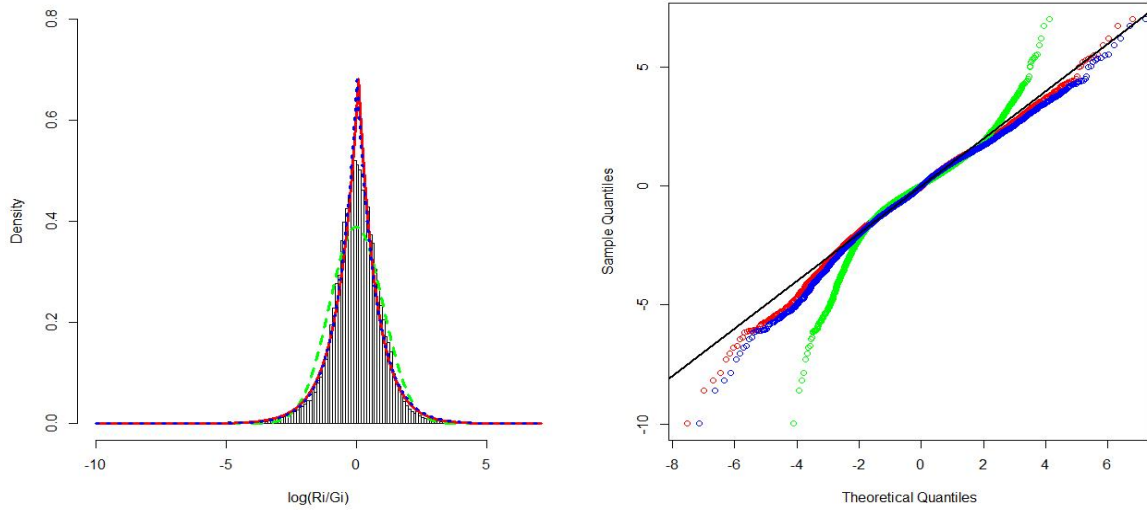


Fig. 17. Left panel: Histogram of Tumor.2 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

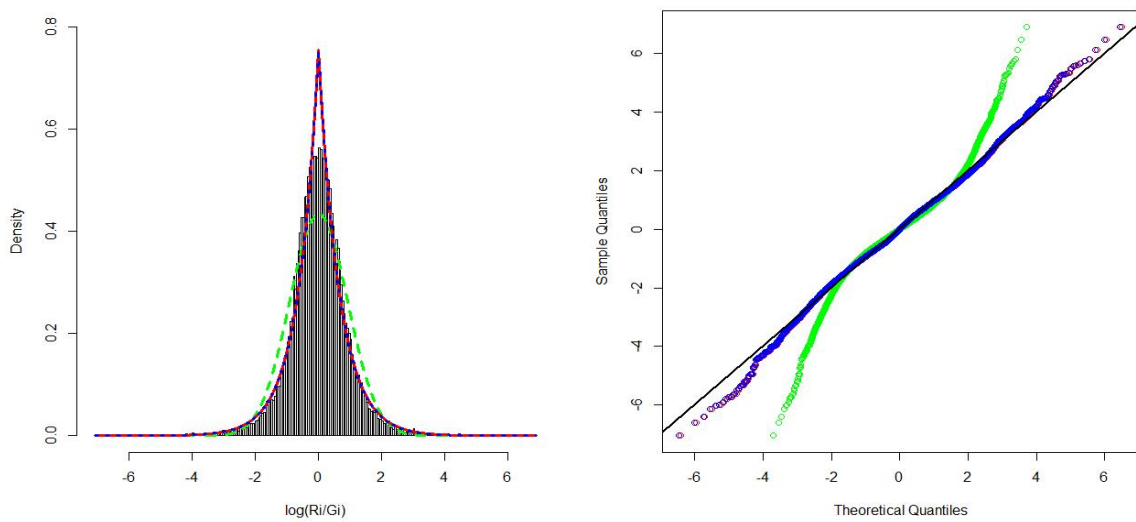


Fig. 18. Left panel: Histogram of Tumor.4 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

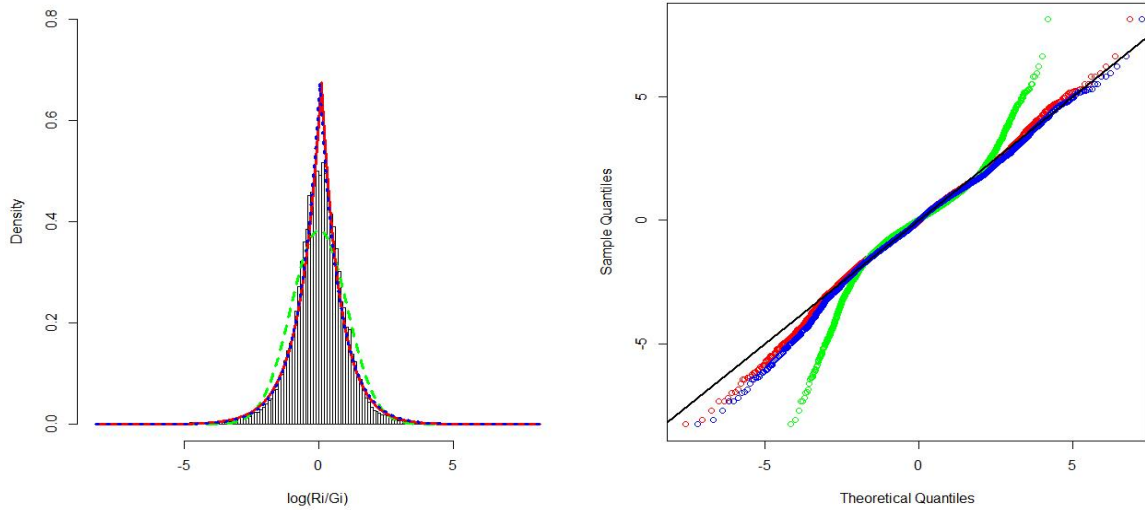


Fig. 19. Left panel: Histogram of Tumor.6 superimposed with Esscher transformed Laplace (red line), Laplace (blue dotted) and Normal (green dashed) distributions. Right panel: Q-Q plot of Esscher transformed Laplace (red), Laplace (blue) and Normal (green) distributions.

