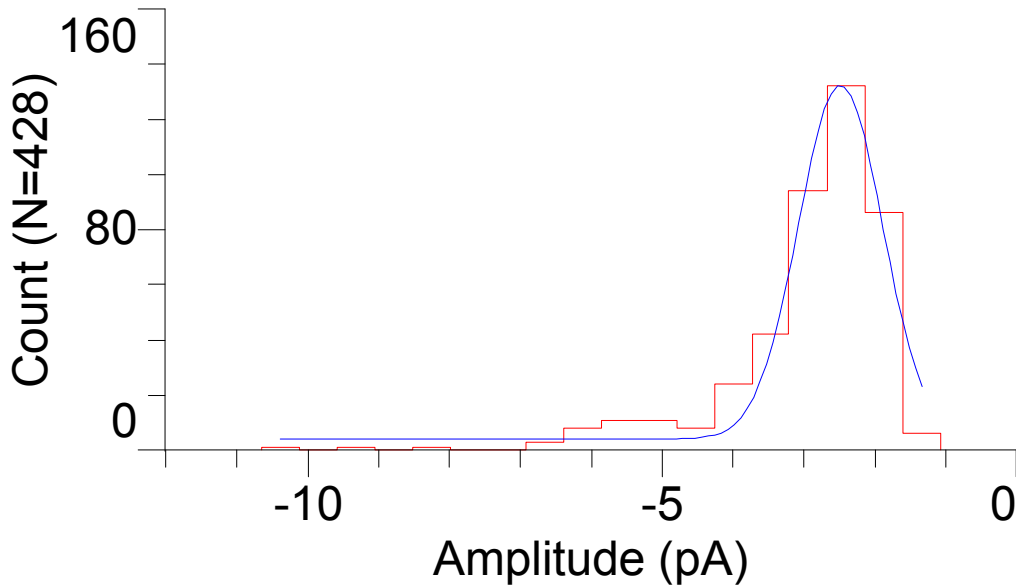**Legends for figures on the supplementary materials section:**

Figure 1: **Ion channel current and mean open channel time histograms and statistics.** Each histogram shows the total number of events recorded in planar bilayer assays from individual experiments for each detergent correlated to the ion channel current (amplitude) or mean open channel time (dwell time) values of each individual event, along with statistical data for each histogram. (**1a**) Sodium cholate ion channel current histogram and statistics, (**1b**) Sodium cholate mean open channel time histogram and statistics, (**1c**) CHAPS ion channel current histogram and statistics, (**1d**) CHAPS mean open channel time histogram and statistics, (**1e**) FC-12 ion channel current histogram and statistics, (**1f**) FC-12 mean open channel time histogram and statistics, (**1g**) Anapoe-$C_{12}E_9$ ion channel current histogram and statistics, (**1h**) Anapoe-$C_{12}E_9$ mean open channel time histogram and statistics, (**1i**) BigCHAP ion channel current histogram and statistics and (**1j**) BigCHAP mean open channel time histogram and statistics.
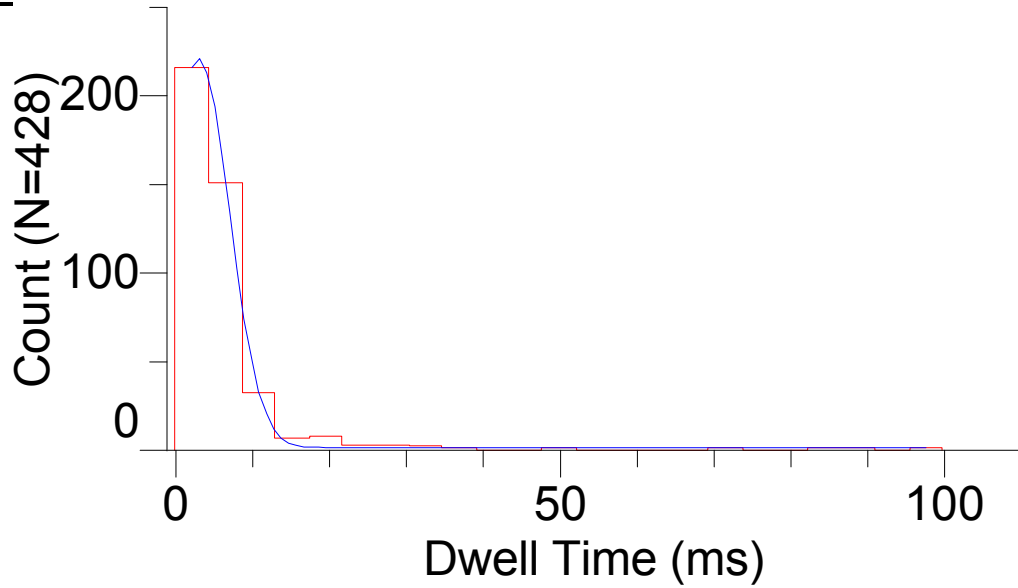
Figure 1a:

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\Cholate-BTX-030207\cholate\Cholate Final Results.rlt

Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

_____

Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.0589646	-2.4831 ± 0.0334507	0.59066 ± 0.0357906	4.09387 ± 2.03411

Y(x=o) Intercept = 4.11251
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 12.
Correlation coefficient = 0.84462.
Standard deviation = 7.19124.
Sum of squared errors = 879.136.
Sum of data squared = 36414.
Points fitted = 0.
Fitted area = 224.666.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 12.
Number of SSE calls = 12.
Number of times lambda increased = 0.

Figure 1b:

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\Cholate-BTX-030207\cholate\Cholate Final Results.rlt

Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

_____

Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.0242553	3.02517 ± 0.10773	3.96126 ± 0.110252	1.31696 ± 0.431848

Y(x=o) Intercept = 165.53
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 10.
Correlation coefficient = 0.966198.
Standard deviation = 1.91512.
Sum of squared errors = 80.6893.
Sum of data squared = 70622.
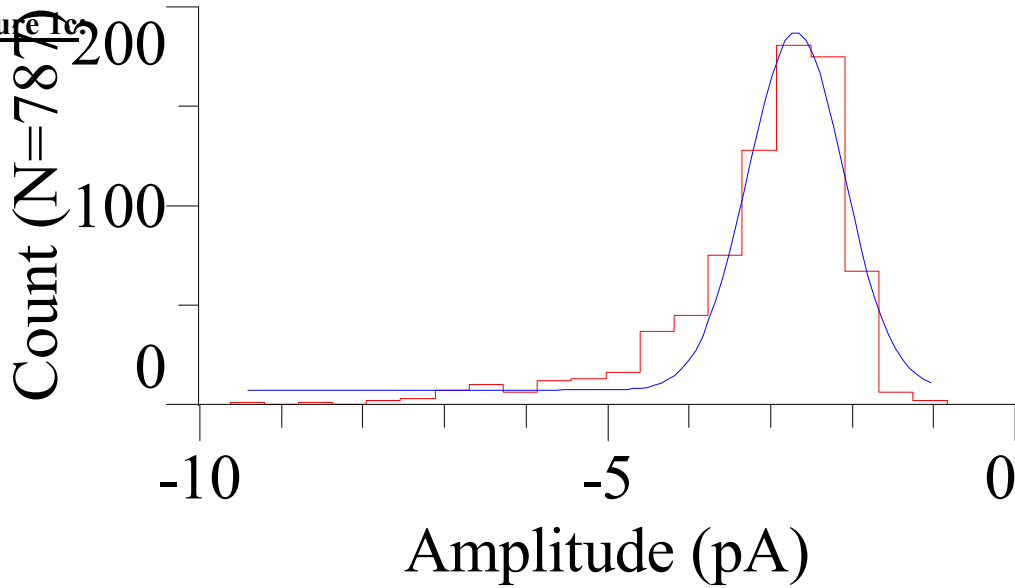Points fitted = 0.
Fitted area = 1851.09.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 10.
Number of SSE calls = 10.
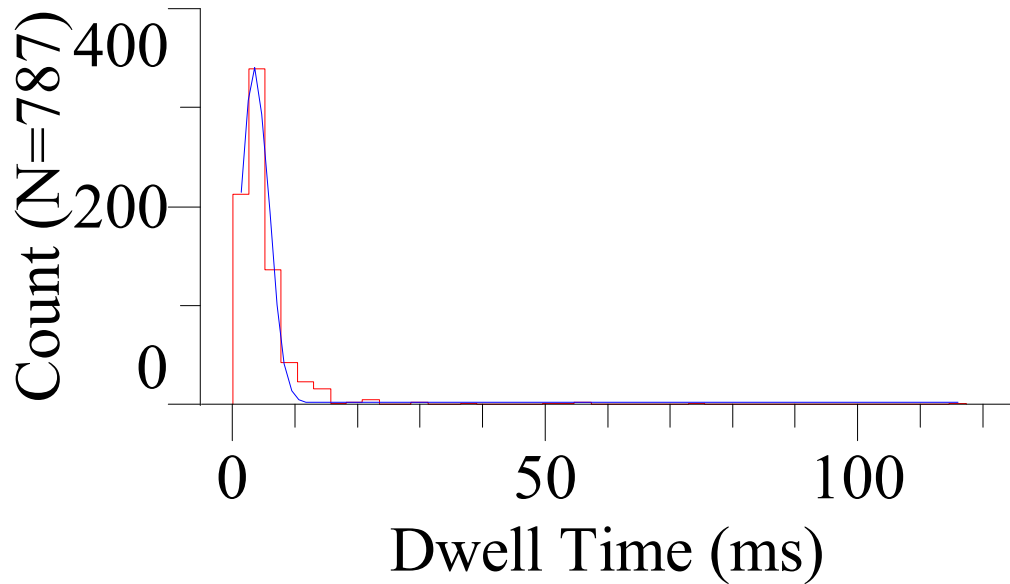Number of times lambda increased = 0.

Figure 1c.

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\020607-CHAPS\251006_0016\CHAPS-final-corrected-072307.rlt

Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

_____

Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.0657902	-2.69 ± 0.0359702	0.588186 ± 0.0390393	7.30333 ± 3.32958

Y(x=o) Intercept = 7.3085
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 14.
Correlation coefficient = 0.820908.
Standard deviation = 12.2836.
Sum of squared errors = 3017.73.
Sum of data squared = 94087.
Points fitted = 21.
Fitted area = 328.546.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 14.
Number of SSE calls = 14.
Number of times lambda increased = 0.

Figure 1d:

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\020607-CHAPS\251006_0016\CHAPS-final-corrected-072307.rlt
Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

_____

Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.0181304	3.50989 ± 0.0449253	2.28664 ± 0.0484544	1.75955 ± 0.872301

Y(x=o) Intercept = 106.327
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 15.
Correlation coefficient = 0.912739.
Standard deviation = 5.61303.
Sum of squared errors = 1386.27.
Sum of data squared = 182057.
Points fitted = 0.
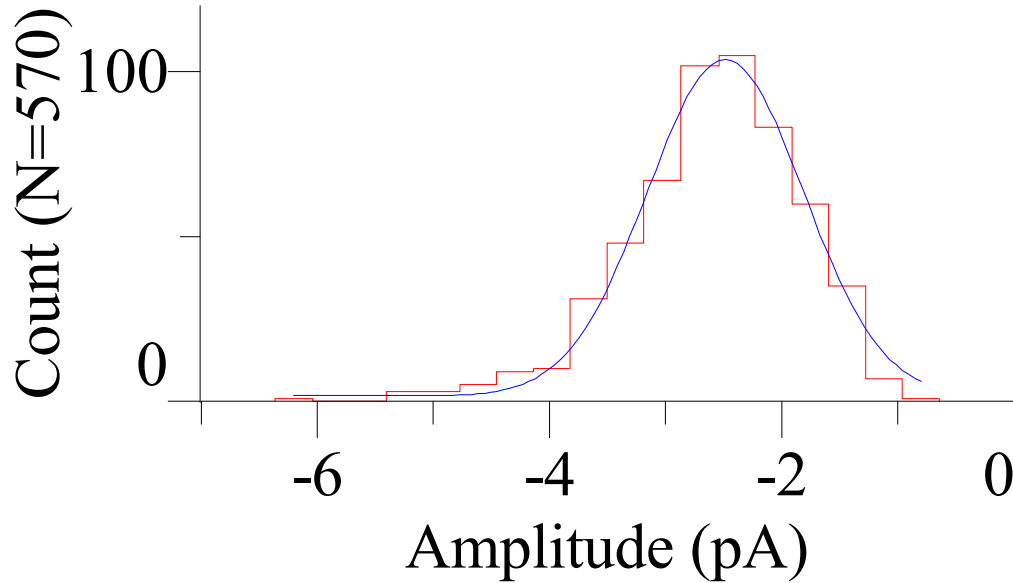Fitted area = 2049.31.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 13.
Number of SSE calls = 15.
Number of times lambda increased = 0.

Figure 1e:

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\Bilayer traces-042007\-70_all_data.rlt
Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
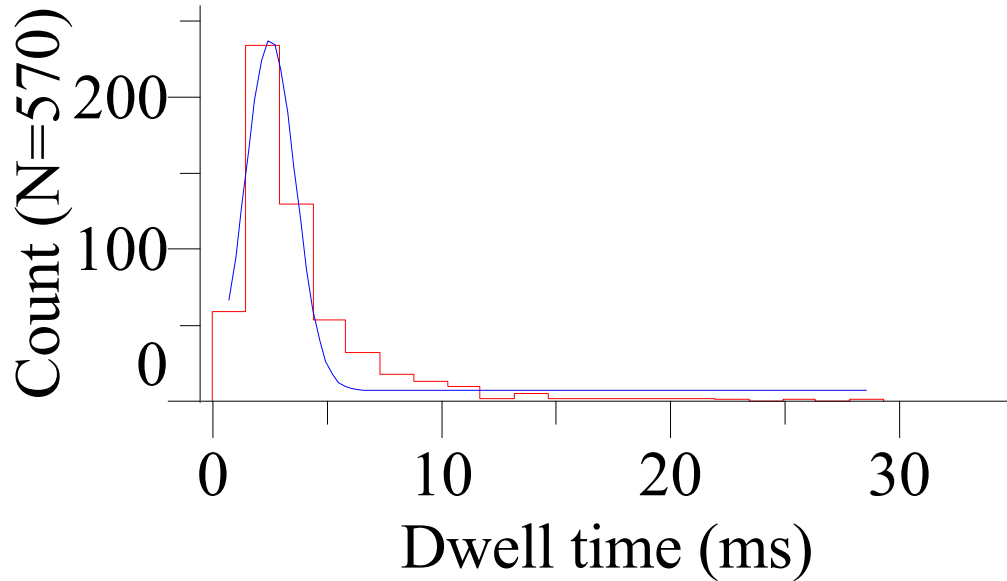Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

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Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.0406827	-2.48392 ± 0.0198939	0.673055 ± 0.0242344	1.69237 ± 1.54479

Y(x=o) Intercept = 1.8048
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

‾‾‾‾‾‾
Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 10.
Correlation coefficient = 0.916157.
Standard deviation = 4.12616.
Sum of squared errors = 289.428.
Sum of data squared = 41172.
Points fitted = 18.
Fitted area = 180.898.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 10.
Number of SSE calls = 10.
Number of times lambda increased = 0.

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical
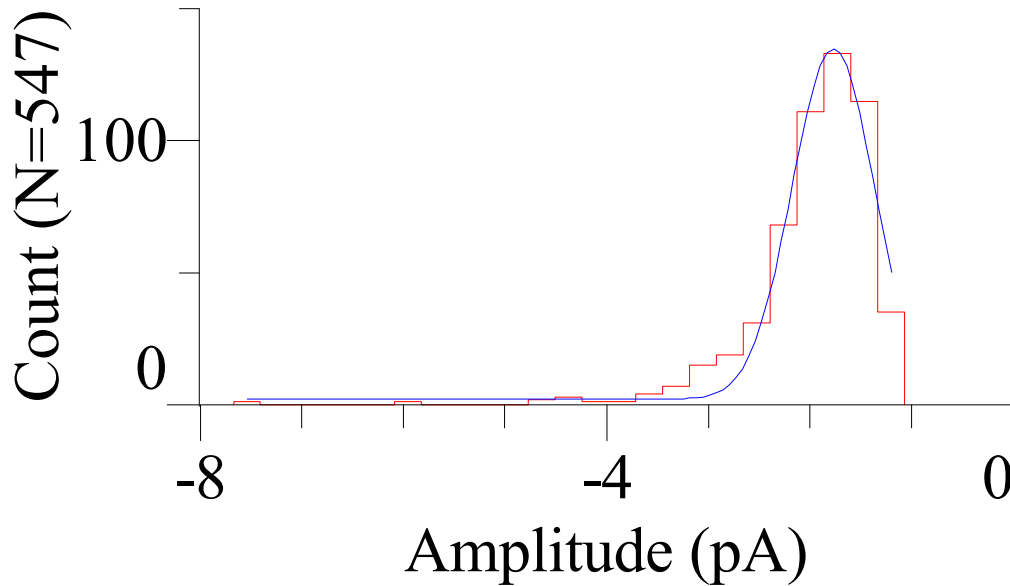data\Bilayer data\2007 Controls\Bilayer traces-042007\-70_all_data.rlt
Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

_____

Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.058707	2.52102 ± 0.068237	1.08633 ± 0.0681921	7.18427 ± 2.83169

Y(x=o) Intercept = 22.8013
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 16.
Correlation coefficient = 0.823252.
Standard deviation = 11.449.
Sum of squared errors = 2490.5.
Sum of data squared = 79722.
Points fitted = 20.
Fitted area = 833.329.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 16.
Number of SSE calls = 16.
Number of times lambda increased = 0.

Figure 1g:

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\c12e9\251006_0041\Results\-70 mV-final.rlt
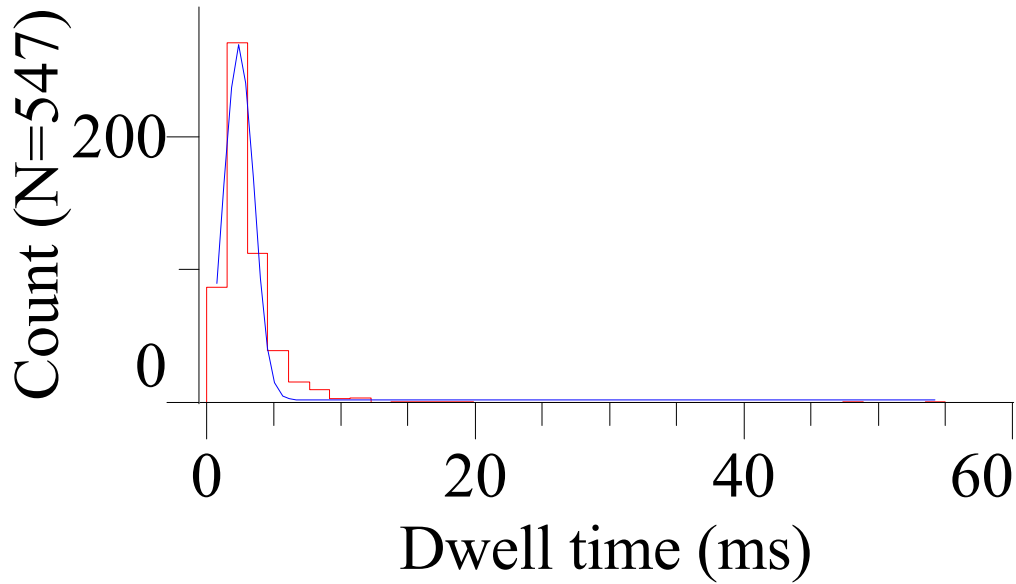Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

_____
Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.0403379	-1.76737 ± 0.0158877	0.405455 ± 0.0176916	2.25953 ± 1.3747

Y(x=o) Intercept = 2.26946
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____
Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 11.
Correlation coefficient = 0.871983.
Standard deviation = 5.88464.
Sum of squared errors = 831.097.
Sum of data squared = 50713.
Points fitted = 25.
Fitted area = 135.42.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 11.
Number of SSE calls = 11.
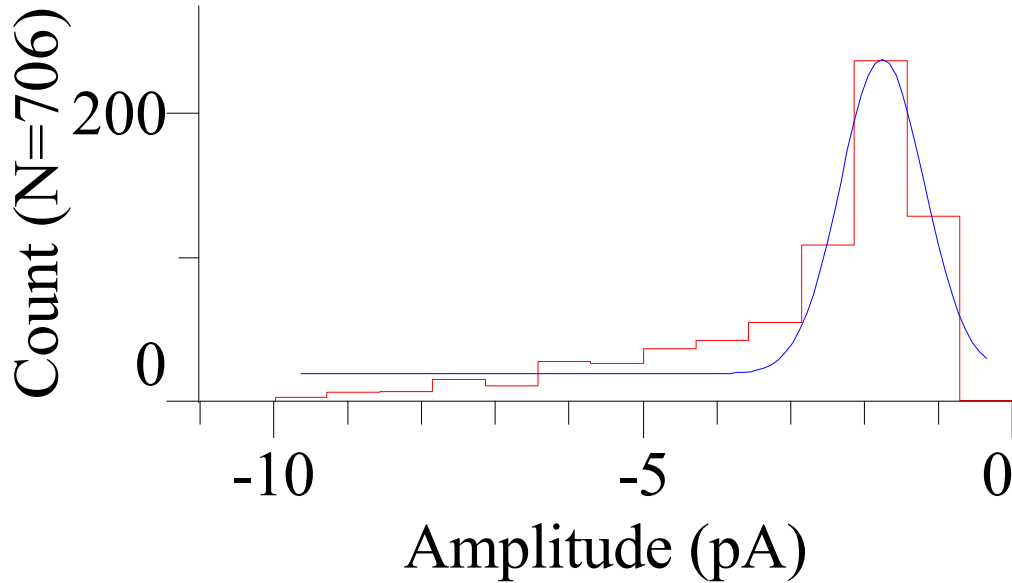Number of times lambda increased = 0.

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\c12e9\251006_0041\Results\-70 mV-final.rlt

Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

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Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.02556	2.40205 ± 0.0332079	1.09686 ± 0.0275963	1.97081 ± 1.06203

Y(x=o) Intercept = 26.2343
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 13.
Correlation coefficient = 0.883526.
Standard deviation = 6.06564.
Sum of squared errors = 1287.72.
Sum of data squared = 94921.
Points fitted = 36.
Fitted area = 834.397.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 12.
Number of SSE calls = 13.
Number of times lambda increased = 0.

Figure 1i:

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\020607-BigCHAP\Big_CHAP.rlt

Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
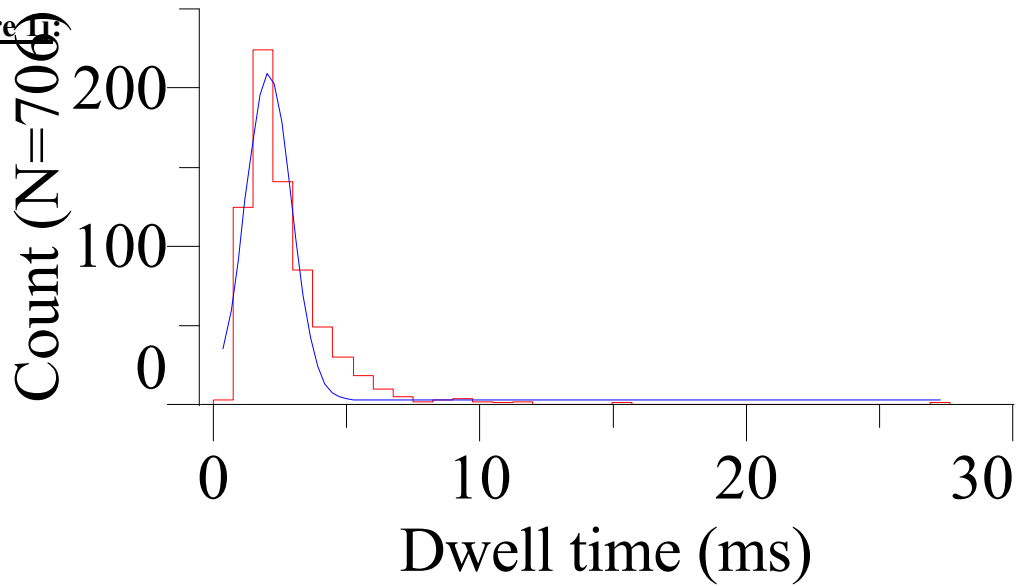Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

_____

Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.0870057	-1.7602 ± 0.049851	0.565647 ± 0.0470225	19.4048 ± 5.00095

Y(x=o) Intercept = 21.1291
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 9.
Correlation coefficient = 0.813228.
Standard deviation = 15.776.
Sum of squared errors = 3235.46.
Sum of data squared = 92750.
Points fitted = 14.
Fitted area = 502.544.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 9.
Number of SSE calls = 9.
Number of times lambda increased = 0.

Figure 11:

FITTING RESULTS for C:\Documents and Settings\gasmar.ks\My Documents\2007\Torpedo biophysical data\Bilayer data\2007 Controls\020607-BigCHAP\Big_CHAP.rlt

Fit status = Successful.
Function = Gaussian.
Number of terms = 1.
Search method = Levenberg-Marquardt.
Minimization = Sum of squared errors.
Weighting = None.
Number of parameters = 4.

_____

Fitted Function Parameters

A ± S.E.	mu ± S.E.	sigma ± S.E.	C ± S.E.
1 ± 0.0519677	2.05149 ± 0.0479004	0.870935 ± 0.0496291	2.89302 ± 2.06177

Y(x=o) Intercept = 15.7846
Cursor 1 intercept = 0
Cursor 2 intercept = 0

_____

Precision = 1e-006.
Degrees of freedom = 4.
Iterations to convergence = 23.
Correlation coefficient = 0.77758.
Standard deviation = 11.5279.
Sum of squared errors = 4784.11.
Sum of data squared = 96706.
Points fitted = 37.
Fitted area = 526.86.
Goodness of fit = 1.
Number of parameters converged = 4.
Number of derivative calls = 22.
Number of SSE calls = 23.
Number of times lambda increased=0.