



## Nothing Fits a Curve Like Brendan's 5PL

StatLIA software features a weighted 5 parameter logistic curve fitting model that has been used to compute assays daily in many of the most regulated, demanding laboratories for years. Brendan's scientists and mathematicians have perfected the mathematics and algorithms over the years to develop the most robust, highly accurate 5PL; one that consistently defines the best possible curve (global minimum) every assay -- even with ill-behaved data.

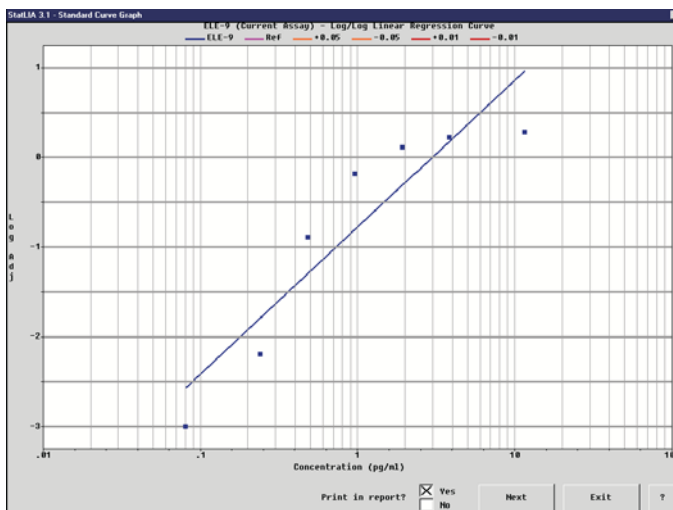
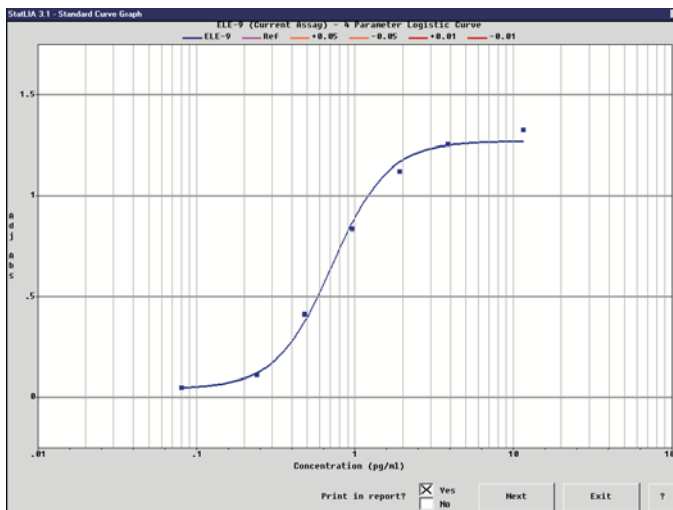
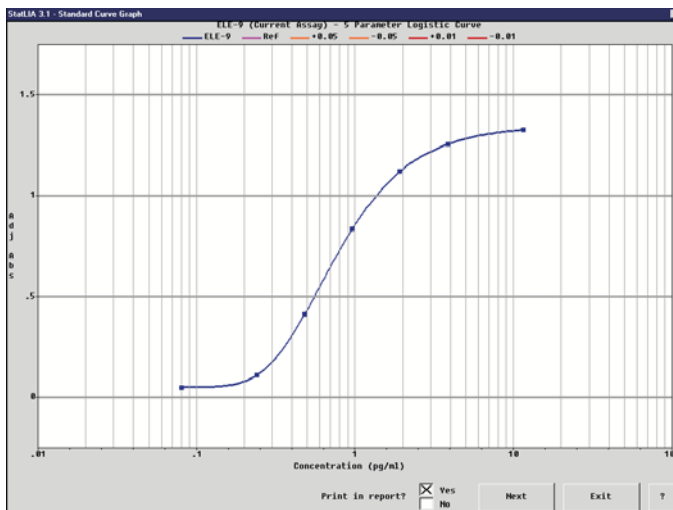
### Improves Accuracy, Range

- \* Unlike other curve fits, a 5PL allows the top half of the curve to be different than the bottom half. By comparison, a 4PL forces the top half to match the bottom half, and linear regression transformations (such as Log/Log) impose a straight line fit on non-linear data;
- \* StatLIA's 5PL eliminates the need to reduce the reportable range to accommodate the curve fitting routine;
- \* It extends the reportable range that can be reliably measured;
- \* And, using well constructed search routines and robust mathematics, StatLIA's 5PL consistently computes the optimal standard curve, assay after assay, year after year.

### Customized Weighting

- \* StatLIA software incorporates 1 of 8 different weighting algorithms to compute the optimal curve fit for your data;
- \* Better weighting improves accuracy.

**Res Var, Fit Prob, R<sup>2</sup>, Residual Variance.** Curve fit metric for logistic models.  
**Fit Probability.** Statistical evaluation of residual variance to determine acceptability. The closer the number is to 1.0 the better.  
**R<sup>2</sup>.** Curve fit metric (for linear regression models).



### 5 Parameter Logistic

Response	Std Conc	Backfit	%Diff
50	.08	.08	+0.0
111	.24	.24	+0.0
412	.48	.48	+0.0
834	.96	.959	-0.1
1120	1.92	1.925	+0.3
1255	3.84	3.828	-0.3
1327	11.52	11.526	-0.1

Residual Variance: 0.355  
Fit Probability: 0.701

### 4 Parameter Logistic

Response	Std Conc	Backfit	%Diff
50	.08	.90	+12.5
111	.24	.226	-5.8
412	.48	.509	+6.0
834	.96	.919	-4.3
1120	1.92	1.614	-15.9
1255	3.84	4.381	+14.1
1327	11.52	-----	-----

Residual Variance: 4491.72  
Fit Probability: 0.0001

### Log/Log Linear Regr.

Response	Std Conc	Backfit	%Diff
50	.08	.044	-45.0
111	.24	.136	-43.3
412	.48	.856	+78.3
834	.96	2.308	+140.4
1120	1.92	3.494	+82.0
1255	3.84	4.100	+6.8
1327	11.52	4.434	-61.5

R<sup>2</sup>: 0.849