

WinNonlin Compartmental Modeling Analysis

Version 4.0.1 Build 200210171634

User-defined ASCII model:

```
MODEL
remark *****
remark Developer: Pravin Jadhav
remark Model Date: 08-07-2006
remark Model Version: 1.0
remark *****
remark
remark - define model-specific commands
COMMANDS
  NFUNCTIONS 1
  NPARAMETERS 2
  P NAMES 'Emax', 'EC50'
END
remark - define temporary variables
TEMPORARY
  Emax=P(1)
  EC50=P(2)
  CONC=X
END
remark - define algebraic functions
FUNCTION 1
  F= Emax*CONC/(EC50+CONC)
END
remark - define any secondary parameters
remark - end of model
EOM
```

Settings for analysis:

Input Workbook: C:\Data\misc\ACCP_2006\Data\WNLdata\EMAX.pwo
Input Worksheet: Sheet1
Input Sort Keys: [none]
Gauss-Newton (Levenberg and Hartley) method used
Convergence criteria of 0.0001 used during minimization process
50 maximum iterations allowed during minimization process

Input data:

CONC (ng/mL)	EFF ({units})
0	0.44
0	0.27
0	0.16
0	0.1
0	0.06
0	0.04
0	0.02
0	0.36
0	0.22
0	0.43
0.01	1.1
0.01	0.7
0.01	0.92
0.01	0.58
0.01	1.1
0.01	0.7
0.01	1.02
0.02	1.7
0.02	1.44
0.02	1.69
0.02	1.58
0.03	2.52
0.03	2.17
0.03	2.51
0.03	2.36
0.05	3.13
0.05	3.37
0.06	3.57
0.06	3.56
0.08	4.29
0.08	4.56
0.09	4.78
0.09	4.77
0.12	5.53
0.14	5.8
0.15	6.02
0.15	6.01
0.2	6.71
0.23	6.95
0.25	7.13
0.25	7.13
0.34	7.71
0.38	7.9
0.41	8.04
0.41	8.03
0.56	8.47
0.62	8.61
0.67	8.71
0.68	8.71
0.92	9.02
1.02	9.11
1.11	9.17
1.12	9.18
1.51	9.38
1.68	9.44
1.83	9.48
1.84	9.48
2.49	9.61

2.78	9.65
3.02	9.68
3.03	9.68
4.1	9.76
4.58	9.79
4.98	9.8
6.77	9.85
7.55	9.87
8.21	9.88
11.16	9.91
12.45	9.92
13.53	9.93
18.39	9.95
20.52	9.95
22.31	9.96
30.33	9.97
33.83	9.97
36.79	9.97
55.78	9.98
60.65	9.98
91.97	9.99
151.63	9.99

Output data:

Initial Parameters

Parameter	Value	Lower	Upper
EMAX	10	0	100
EC50	0.1	0	1

Minimization Process

Iteration	Weighted_SS	Emax	EC50
0	1.28239	10	0.1
1	1.27404	10	0.1008
1	1.27393	10	0.1008

Final Parameters

Ema x	Ema x_St dErr or	Ema x_C V%	Ema x_U niva rCl_ Low er	Ema x_U niva rCl_ Upp er	Ema x_PI anar CI_L ower	Ema x_PI anar CI_U pper	EC5 0	EC5 0_St dErr or	EC5 0_C V%	EC5 0_U niva rCl_ Low er	EC5 0_U niva rCl_ Upp er	EC5 0_PI anar CI_L ower	EC5 0_PI anar CI_U pper
10.00	0.024	0.24	9.955	10.05	9.942	10.06	0.100	0.001	1.32	0.098	0.103	0.097	0.104
3632	118		616	1648	981	4283	850	332		198	502	500	200

Correlation Matrix

Parameter	Emax	EC50
EMAX	1	
EC50	0.542365	1

Eigenvalues

Number	Value
1	1.31E+04
2	28.05

Condition Numbers

Iteration	Rank	Condition
0	2	6.579125
1	2	6.589707

Variance-Covariance Matrix

Parameter	Emax	EC50
EMAX	5.82E-04	
EC50	1.74E-05	1.77E-06

Summary Table

CONC_obs (ng/mL)	EFF_obs ({units})	CONC (ng/mL)	EFF ({units})	Predicted ({units})	Residual ({units})	Weight	SE_Yhat	Standard_Res
0	0.44	0.0000	0.4400	0.0000	0.4400	1.0000	Missing	Missing
0	0.27	0.0000	0.2700	0.0000	0.2700	1.0000	Missing	Missing
0	0.16	0.0000	0.1600	0.0000	0.1600	1.0000	Missing	Missing
0	0.1	0.0000	0.1000	0.0000	0.1000	1.0000	Missing	Missing
0	0.06	0.0000	0.0600	0.0000	0.0600	1.0000	Missing	Missing
0	0.04	0.0000	0.0400	0.0000	0.0400	1.0000	Missing	Missing
0	0.02	0.0000	0.0200	0.0000	0.0200	1.0000	Missing	Missing
0	0.36	0.0000	0.3600	0.0000	0.3600	1.0000	Missing	Missing
0	0.22	0.0000	0.2200	0.0000	0.2200	1.0000	Missing	Missing
0	0.43	0.0000	0.4300	0.0000	0.4300	1.0000	Missing	Missing
0.01	1.1	0.0100	1.1000	0.9024	0.1976	1.0000	0.0098	1.5504
0.01	0.7	0.0100	0.7000	0.9024	-0.2024	1.0000	0.0098	-1.5888
0.01	0.92	0.0100	0.9200	0.9024	0.0176	1.0000	0.0098	0.1377
0.01	0.58	0.0100	0.5800	0.9024	-0.3224	1.0000	0.0098	-2.5306
0.01	1.1	0.0100	1.1000	0.9024	0.1976	1.0000	0.0098	1.5504
0.01	0.7	0.0100	0.7000	0.9024	-0.2024	1.0000	0.0098	-1.5888
0.01	1.02	0.0100	1.0200	0.9024	0.1176	1.0000	0.0098	0.9226
0.02	1.7	0.0200	1.7000	1.6555	0.0445	1.0000	0.0164	0.3507
0.02	1.44	0.0200	1.4400	1.6555	-0.2155	1.0000	0.0164	-1.7007
0.02	1.69	0.0200	1.6900	1.6555	0.0345	1.0000	0.0164	0.2718
0.02	1.58	0.0200	1.5800	1.6555	-0.0755	1.0000	0.0164	-0.5961
0.03	2.52	0.0300	2.5200	2.2935	0.2265	1.0000	0.0209	1.7961
0.03	2.17	0.0300	2.1700	2.2935	-0.1235	1.0000	0.0209	-0.9798

0.03	2.51	0.0300	2.5100	2.2935	0.2165	1.0000	0.0209	1.7168
0.03	2.36	0.0300	2.3600	2.2935	0.0665	1.0000	0.0209	0.5271
0.05	3.13	0.0500	3.1300	3.3158	-0.1858	1.0000	0.0258	-1.4841
0.05	3.37	0.0500	3.3700	3.3158	0.0542	1.0000	0.0258	0.4334
0.06	3.57	0.0600	3.5700	3.7315	-0.1615	1.0000	0.0271	-1.2934
0.06	3.56	0.0600	3.5600	3.7315	-0.1715	1.0000	0.0271	-1.3735
0.08	4.29	0.0800	4.2900	4.4252	-0.1352	1.0000	0.0283	-1.0845
0.08	4.56	0.0800	4.5600	4.4252	0.1348	1.0000	0.0283	1.0818
0.09	4.78	0.0900	4.7800	4.7175	0.0625	1.0000	0.0284	0.5019
0.09	4.77	0.0900	4.7700	4.7175	0.0525	1.0000	0.0284	0.4217
0.12	5.53	0.1200	5.5300	5.4355	0.0945	1.0000	0.0279	0.7575
0.14	5.8	0.1400	5.8000	5.8149	-0.0149	1.0000	0.0272	-0.1190
0.15	6.02	0.1500	6.0200	5.9818	0.0382	1.0000	0.0268	0.3054
0.15	6.01	0.1500	6.0100	5.9818	0.0282	1.0000	0.0268	0.2253
0.2	6.71	0.2000	6.7100	6.6502	0.0598	1.0000	0.0247	0.4766
0.23	6.95	0.2300	6.9500	6.9543	-0.0043	1.0000	0.0236	-0.0344
0.25	7.13	0.2500	7.1300	7.1281	0.0019	1.0000	0.0229	0.0148
0.25	7.13	0.2500	7.1300	7.1281	0.0019	1.0000	0.0229	0.0148
0.34	7.71	0.3400	7.7100	7.7152	-0.0052	1.0000	0.0205	-0.0410
0.38	7.9	0.3800	7.9000	7.9055	-0.0055	1.0000	0.0198	-0.0439
0.41	8.04	0.4100	8.0400	8.0288	0.0112	1.0000	0.0193	0.0890
0.41	8.03	0.4100	8.0300	8.0288	0.0012	1.0000	0.0193	0.0099
0.56	8.47	0.5600	8.4700	8.4770	-0.0070	1.0000	0.0182	-0.0554
0.62	8.61	0.6200	8.6100	8.6041	0.0059	1.0000	0.0180	0.0468
0.67	8.71	0.6700	8.7100	8.6949	0.0151	1.0000	0.0180	0.1196
0.68	8.71	0.6800	8.7100	8.7116	-0.0016	1.0000	0.0180	-0.0128
0.92	9.02	0.9200	9.0200	9.0154	0.0046	1.0000	0.0183	0.0366
1.02	9.11	1.0200	9.1100	9.1035	0.0065	1.0000	0.0185	0.0511
1.11	9.17	1.1100	9.1700	9.1704	-0.0004	1.0000	0.0187	-0.0035
1.12	9.18	1.1200	9.1800	9.1773	0.0027	1.0000	0.0187	0.0216
1.51	9.38	1.5100	9.3800	9.3773	0.0027	1.0000	0.0195	0.0211
1.68	9.44	1.6800	9.4400	9.4371	0.0029	1.0000	0.0198	0.0228
1.83	9.48	1.8300	9.4800	9.4811	-0.0011	1.0000	0.0201	-0.0090
1.84	9.48	1.8400	9.4800	9.4838	-0.0038	1.0000	0.0201	-0.0303
2.49	9.61	2.4900	9.6100	9.6142	-0.0042	1.0000	0.0209	-0.0336
2.78	9.65	2.7800	9.6500	9.6534	-0.0034	1.0000	0.0212	-0.0273
3.02	9.68	3.0200	9.6800	9.6804	-0.0004	1.0000	0.0214	-0.0029
3.03	9.68	3.0300	9.6800	9.6814	-0.0014	1.0000	0.0214	-0.0111
4.1	9.76	4.1000	9.7600	9.7635	-0.0035	1.0000	0.0220	-0.0276
4.58	9.79	4.5800	9.7900	9.7881	0.0019	1.0000	0.0222	0.0151
4.98	9.8	4.9800	9.8000	9.8051	-0.0051	1.0000	0.0223	-0.0403
6.77	9.85	6.7700	9.8500	9.8568	-0.0068	1.0000	0.0228	-0.0541
7.55	9.87	7.5500	9.8700	9.8718	-0.0018	1.0000	0.0229	-0.0141
8.21	9.88	8.2100	9.8800	9.8822	-0.0022	1.0000	0.0230	-0.0178
11.16	9.91	11.1600	9.9100	9.9140	-0.0040	1.0000	0.0233	-0.0322
12.45	9.92	12.4500	9.9200	9.9232	-0.0032	1.0000	0.0234	-0.0259
13.53	9.93	13.5300	9.9300	9.9296	0.0004	1.0000	0.0234	0.0030
18.39	9.95	18.3900	9.9500	9.9491	0.0009	1.0000	0.0236	0.0074
20.52	9.95	20.5200	9.9500	9.9547	-0.0047	1.0000	0.0237	-0.0375
22.31	9.96	22.3100	9.9600	9.9586	0.0014	1.0000	0.0237	0.0110
30.33	9.97	30.3300	9.9700	9.9705	-0.0005	1.0000	0.0238	-0.0038
33.83	9.97	33.8300	9.9700	9.9739	-0.0039	1.0000	0.0238	-0.0311
36.79	9.97	36.7900	9.9700	9.9763	-0.0063	1.0000	0.0239	-0.0501
55.78	9.98	55.7800	9.9800	9.9856	-0.0056	1.0000	0.0239	-0.0444
60.65	9.98	60.6500	9.9800	9.9870	-0.0070	1.0000	0.0240	-0.0560
91.97	9.99	91.9700	9.9900	9.9927	-0.0027	1.0000	0.0240	-0.0213
151.63	9.99	151.6300	9.9900	9.9970	-0.0070	1.0000	0.0241	-0.0556

Diagnostics

Function	Item	Value
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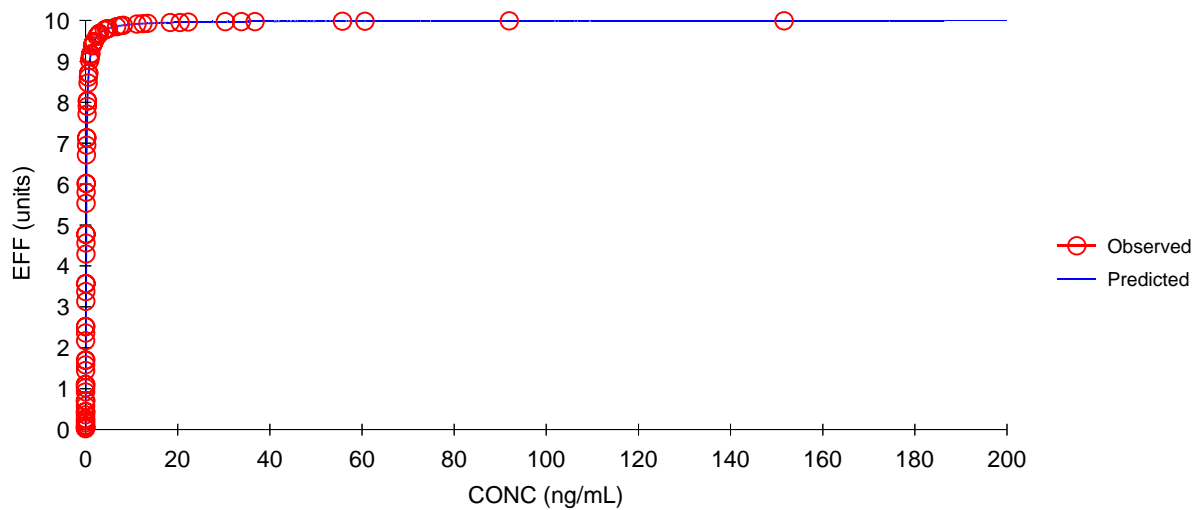
1	CSS	1162.05
1	WCSS	1162.05
1	SSR	1.27393
1	WSSR	1.27393
1	S	0.127798
1	DF	78
1	CORR_(OBS,PRED)	0.9995
1	AIC	23.36861
1	SBC	28.13266

Partial Derivatives

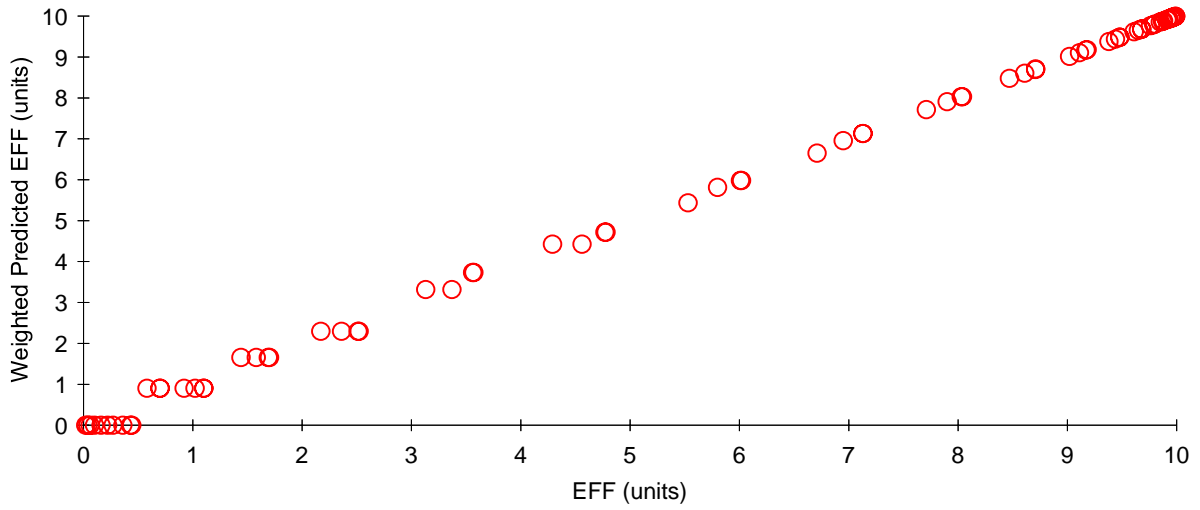
Function	Time (ng/mL)	E _{max}	EC ₅₀
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	0	0.00000000	0.00000000
1	1.00E-02	0.09021207	-8.13377247
1	1.00E-02	0.09021207	-8.13377247
1	1.00E-02	0.09021207	-8.13377247
1	1.00E-02	0.09021207	-8.13377247
1	1.00E-02	0.09021207	-8.13377247
1	1.00E-02	0.09021207	-8.13377247
1	1.00E-02	0.09021207	-8.13377247
1	1.00E-02	0.09021207	-8.13377247
1	2.00E-02	0.16549453	-13.68777046
1	2.00E-02	0.16549453	-13.68777046
1	2.00E-02	0.16549453	-13.68777046
1	2.00E-02	0.16549453	-13.68777046
1	3.00E-02	0.22927030	-17.51448849
1	3.00E-02	0.22927030	-17.51448849
1	3.00E-02	0.22927030	-17.51448849
1	3.00E-02	0.22927030	-17.51448849
1	5.00E-02	0.33145527	-21.96581426
1	5.00E-02	0.33145527	-21.96581426
1	6.00E-02	0.37301853	-23.18435729
1	6.00E-02	0.37301853	-23.18435729
1	8.00E-02	0.44235574	-24.45507211
1	8.00E-02	0.44235574	-24.45507211
1	9.00E-02	0.47157474	-24.70511216
1	9.00E-02	0.47157474	-24.70511216
1	0.12	0.54335542	-24.60062810
1	0.14	0.58127485	-24.13297846
1	0.15	0.59796711	-23.83671883
1	0.15	0.59796711	-23.83671883
1	0.2	0.66478330	-22.09745964
1	0.23	0.69517926	-21.01314795
1	0.25	0.71255539	-20.31094542
1	0.25	0.71255539	-20.31094542
1	0.34	0.77123753	-17.49668431
1	0.38	0.79026737	-16.43732471
1	0.41	0.80258406	-15.71336429
1	0.41	0.80258406	-15.71336429
1	0.56	0.84739361	-12.82548454
1	0.62	0.86009582	-11.93435449
1	0.67	0.86917049	-11.27810239

1	0.68	0.87084596	-11.15514947
1	0.92	0.90120985	-8.83036866
1	1.02	0.91002371	-8.12126861
1	1.11	0.91671146	-7.57292894
1	1.12	0.91739368	-7.51649371
1	1.51	0.93739335	-5.82099607
1	1.68	0.94336978	-5.29892476
1	1.83	0.94776916	-4.91008575
1	1.84	0.94803827	-4.88617544
1	2.49	0.96107458	-3.71069823
1	2.78	0.96499300	-3.35078090
1	3.02	0.96768511	-3.10173612
1	3.03	0.96778833	-3.09215921
1	4.1	0.97599297	-2.32411067
1	4.58	0.97845479	-2.09104989
1	4.98	0.98015097	-1.92977064
1	6.77	0.98532206	-1.43456119
1	7.55	0.98681847	-1.29026693
1	8.21	0.98786527	-1.18906259
1	11.16	0.99104420	-0.88039115
1	12.45	0.99196469	-0.79063729
1	13.53	0.99260135	-0.72846119
1	18.39	0.99454596	-0.53805085
1	20.52	0.99510932	-0.48274726
1	22.31	0.99549995	-0.44436380
1	30.33	0.99668593	-0.32764271
1	33.83	0.99702778	-0.29394694
1	36.79	0.99726626	-0.27042634
1	55.78	0.99819527	-0.17869378
1	60.65	0.99833994	-0.16439291
1	91.97	0.99890465	-0.10853233
1	151.63	0.99933534	-0.06588625

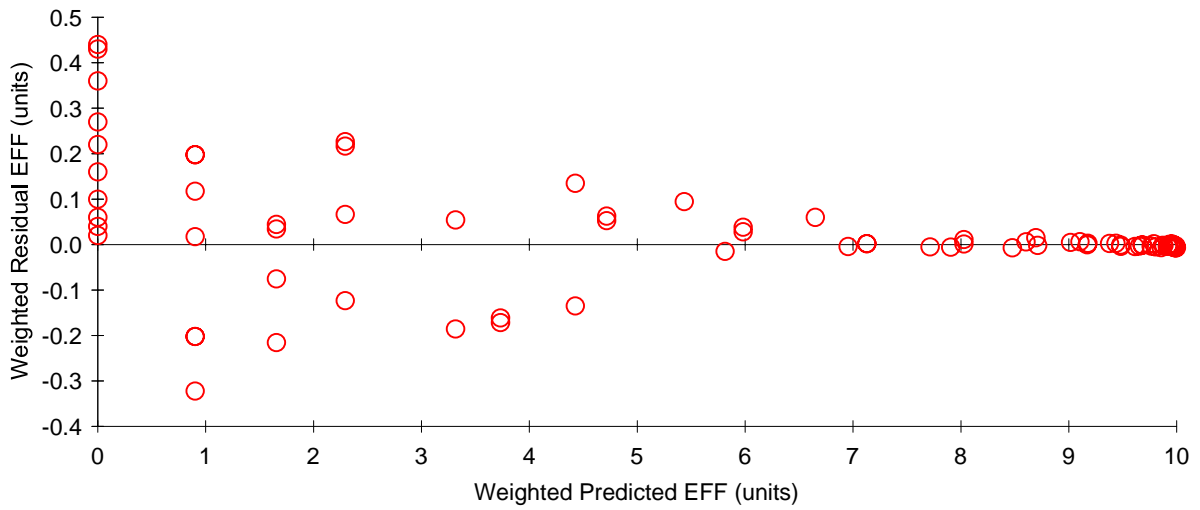
X vs. Observed Y and Predicted Y



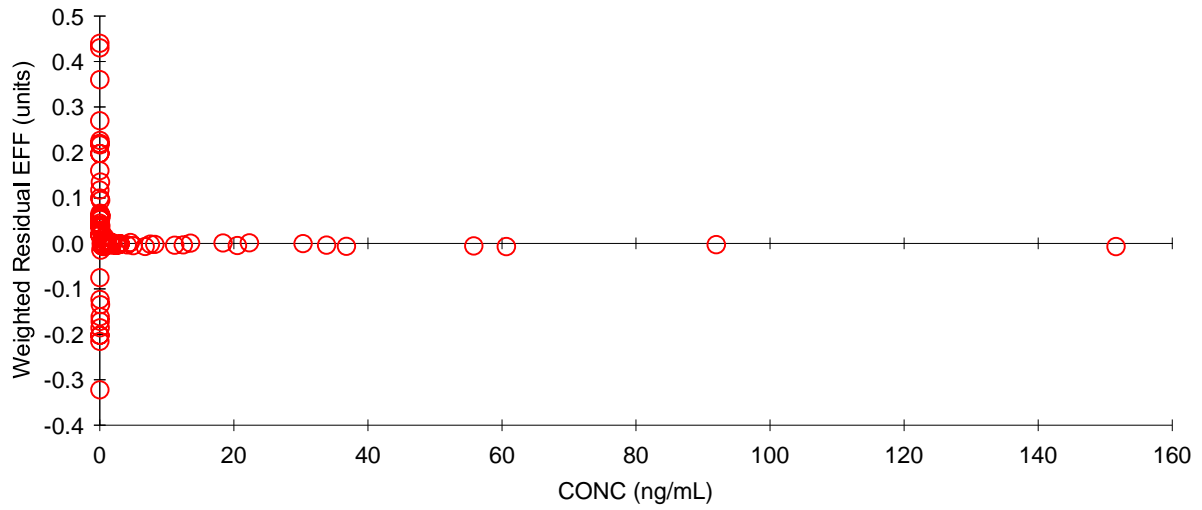
Observed Y vs. Weighted Predicted Y



Weighted Predicted Y vs. Weighted Residual Y



X vs. Weighted Residual Y



Partial Derivatives

