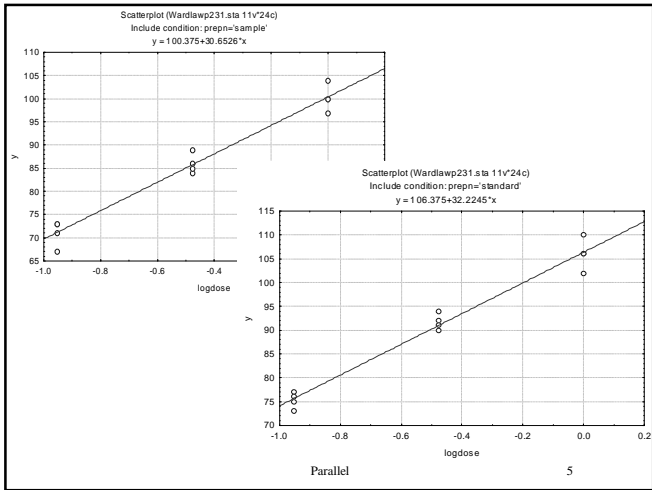
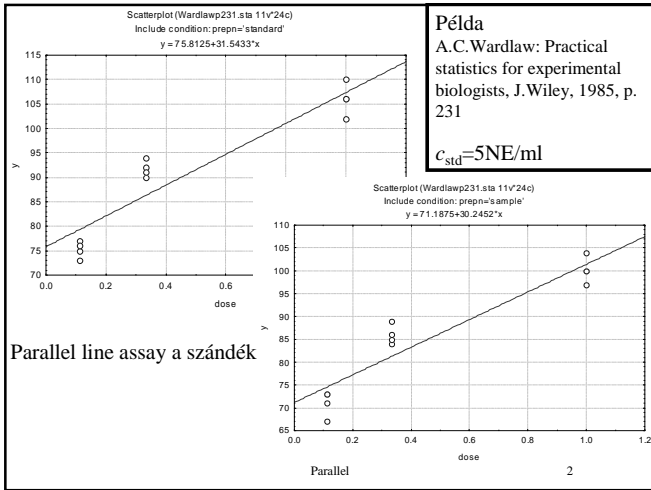


Test of Lack of Fit (Wardlawp231.sta)								
Include condition: prepn='standard'								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
y	49.50000	9	5.500000	191.1635	1	191.1635	34.75699	0.000230

Test of Lack of Fit (Wardlawp231.sta)								
Include condition: prepn='sample'								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
y	62.75000	9	6.972222	145.4712	1	145.4712	20.86439	0.001351

Parallel 4



	1	2	3	4	5	6
	prepn	dilution	dose	logdose	rept	y
1	standard	9	0.1111	-0.95424	1	77
2	standard	9	0.1111	-0.95424	2	75
3	standard	9	0.1111	-0.95424	3	76
4	standard	9	0.1111	-0.95424	4	73
5	standard	3	0.3333	-0.47712	1	92
6	standard	3	0.3333	-0.47712	2	94
7	standard	3	0.3333	-0.47712	3	90
8	standard	3	0.3333	-0.47712	4	91
9	standard	1	1.0000	0	1	110
10	standard	1	1.0000	0	2	102
11	standard	1	1.0000	0	3	106
12	standard	1	1.0000	0	4	106
13	sample	9	0.1111	-0.95424	1	73
14	sample	9	0.1111	-0.95424	2	71
15	sample	9	0.1111	-0.95424	3	73
16	sample	9	0.1111	-0.95424	4	67
17	sample	3	0.3333	-0.47712	1	84
18	sample	3	0.3333	-0.47712	2	85
19	sample	3	0.3333	-0.47712	3	86
20	sample	3	0.3333	-0.47712	4	89
21	sample	1	1.0000	0	1	100
22	sample	1	1.0000	0	2	104
23	sample	1	1.0000	0	3	97
24	sample	1	1.0000	0	4	100

Parallel 3

Test of Lack of Fit (Wardlawp231.sta)								
Include condition: prepn='sample'								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
y	62.75000	9	6.972222	0.375000	1	0.375000	0.053785	0.821791

Parameter Estimates (Wardlawp231.sta)					
Sigma-restricted parameterization					
Include condition: prepn='sample'					
Effect	y Param.	y Std. Err	y t	y p	
Intercept	100.3750	1.146780	87.52769	0.000000	
logdose	30.6526	1.861774	16.46418	0.000000	

Test of Lack of Fit (Wardlawp231.sta)								
Include condition: prepn='standard'								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
y	49.50000	9	5.500000	3.375000	1	3.375000	0.613636	0.453542

Parameter Estimates (Wardlawp231.sta)					
Sigma-restricted parameterization					
Include condition: prepn='standard'					
Effect	y Param.	y Std. Err	y t	y p	
Intercept	106.3750	1.049553	101.3526	0.000000	
logdose	32.2245	1.703929	18.9119	0.000000	

Parallel 6

Statistics>Advanced Linear/Nonlinear Models>
>General Linear Models>Separate slopes

$$y_{ijk} = \alpha_i + \beta_j x_{ij} + \varepsilon_{ijk}$$

Univariate Tests of Significance for y (Wardlawp231.sta) Over-parameterized model Type III decomposition; Std. Error of Estimate: 2.408318					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	102589.4	1	102589.35	17687.82	0.000000
prepn*logdose	3602.3	2	1801.13	310.54	0.000000
prepn	86.4	1	86.40	14.90	0.000977
Error	116.0	20	5.80		

Test of Lack of Fit (Wardlawp231.sta)								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	
y	112.2500	18	6.236111	3.750000	2	1.875000	0.300668	0.743970

Parallel 7

$$\hat{Y} = a + b \ln c = a + b \lg \frac{c_0}{h} = a + b \lg c_0 - b \lg h = a + b \lg c_0 + b \lg x$$

b a meredekség,
 x a dózis, $\lg x$ a dózis logaritmus,
 h a hígítás,
 c_0 a készítmény hígítás előtti koncentrációja
 a a tengelymetszet közös része,
 $b \lg c_0$ a készítményre jellemző rész ($b \lg c_{0\text{minta}}$ ill. $b \lg c_{0\text{std}}$)
Ismert $c_{0\text{std}}$, kérdés $c_{0\text{minta}}$

$$\hat{Y}_{\text{minta}} - \hat{Y}_{\text{std}} = b(\lg c_{\text{minta}} - \lg c_{\text{std}})$$

$$\lg c_{0\text{minta}} = \frac{\hat{Y}_{\text{minta}} - \hat{Y}_{\text{std}}}{b} + \lg c_{0\text{std}} = \frac{a_{\text{minta}} - a_{\text{std}}}{b} + \lg c_{0\text{std}}$$

$$\lg c_{0\text{minta}} - \lg c_{0\text{std}} = \frac{a_{\text{minta}} - a_{\text{std}}}{b} \quad \frac{c_{0\text{minta}}}{c_{0\text{std}}} = 10^{\frac{a_{\text{minta}} - a_{\text{std}}}{b}}$$

Parallel 10

$$y_{ijk} = \mu + \alpha_i + \beta_j x_{ij} + (\alpha\beta)_{ij} x_{ij} + \varepsilon_{ijk}$$

Statistics>Advanced Linear/Nonlinear Models>
>General Linear Models>
>Homogeneity-of-slopes

Univariate Tests of Significance for y Sigma-restricted parameterization Std. Error of Estimate: 2.408318					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	102589.3	1	102589.3	17687.82	0.000000
prepn	86.4	1	86.4	14.90	0.000977
logdose	3600.0	1	3600.0	620.69	0.000000
prepn*logdose	2.3	1	2.3	0.39	0.540427
Error	116.0	20	5.8		

Parallel 11

$$\frac{c_{0\text{minta}}}{c_{0\text{std}}} = 10^{\frac{a_{\text{minta}} - a_{\text{std}}}{b}} = 10^{\frac{-5.25}{31.4385}} = 0.68$$

$$c_{0\text{minta}} = 0.68 c_{0\text{std}} = 0.68 \cdot 5 = 3.4 \text{ NE/ml}$$

Parallel 11

Statistics>Advanced Linear/Nonlinear Models>
>General Linear Models>
>Analysis of Covariance

$$y_{ijk} = \mu + \alpha_i + \beta_j x_{ij} + \varepsilon_{ijk}$$

Univariate Tests of Significance for y (Wardlawp231.sta) Sigma-restricted parameterization Effective hypothesis decomposition					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	102589.3	1	102589.3	18218.83	0.000000
logdose	3600.0	1	3600.0	639.32	0.000000
prepn	165.4	1	165.4	29.37	0.000022
Error	118.2	21	5.6		

Parameter Estimates (Wardlawp231.sta) Sigma-restricted parameterization						
Effect	Level of Effect	Column Param.	y Param.	Std.Err	t	p
Intercept		1	103.3750	0.765870	134.9771	0.000000
logdose		2	31.4385	1.243375	25.2848	0.000000
prepn	standard	3	2.6250	0.484379	5.4193	0.000022

Parameter Estimates (Wardlawp231.sta) (*Zeroed predictors failed tolerance check) Over-parameterized model					
Effect	Level of Effect	Column Comment (B/Z/P)	y Param.	Std.Err	p
Intercept		1	100.7500	0.906190	
logdose		2	31.4385	1.243375	
prepn	standard	3	Biased	5.2500	0.968758
prepn	sample	4	Zeroed	0.0000	

Parallel 9

Példa
Biotechnológiai készítmény titerét kívánták meghatározni az ismert aktivitású nemzetközi standardhoz képest. Az analitikai jel a spektrofotometriás abszorbancia volt.

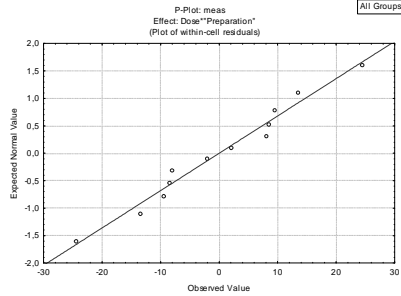
parall1.sta

	1	2	3	4	5
	Dose	Preparation	meas	logdose	logmeas
1	100	standard	929	2	2.968016
2	100	standard	978	2	2.990335
3	50	standard	636	1.69897	2.803457
4	50	standard	655	1.69897	2.816241
5	25	standard	428	1.39794	2.631444
6	25	standard	445	1.39794	2.64836
7	100	minta	972	2	2.987666
8	100	minta	999	2	2.999565
9	50	minta	638	1.69897	2.804821
10	50	minta	654	1.69897	2.815572
11	25	minta	428	1.39794	2.631444
12	25	minta	424	1.39794	2.627366

Parallel 12

Az abszorbanca- adatok igényelnek-e valamilyen transzformációt?

Tests of Homogeneity of Variances (parall1.sta)					
Effect: Dose*Preparation					
	Hartley F-max	Cochran C	Bartlett Chi-Sqr.	df	p
meas	150.0625	0.5925473	4.86854	5	0.625378



Parallel

13

Statistics>Advanced Linear/Nonlinear Models>
>General Linear Models>Separate slopes

$$y_{ijk} = \alpha_i + \beta_j x_{ij} + \epsilon_{ijk}$$

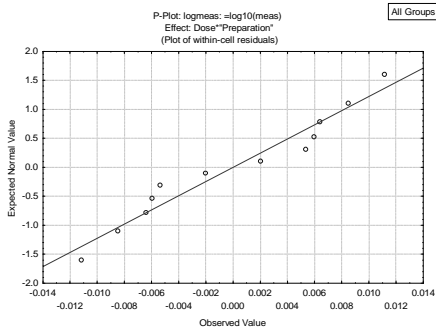
Univariate Tests of Significance for logmeas (parall1.sta)					
Over-parameterized model					
Type III decomposition; Std. Error of Estimate: .0087560					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0.812863	1	0.812863	10602.34	0.000000
Preparation*logdose	0.247757	2	0.123879	1615.78	0.000000
Preparation	0.000292	1	0.000292	3.81	0.086663
Error	0.000613	8	0.000077		

Test of Lack of Fit (parall1.sta)								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
logmeas	0.000611	6	0.000102	0.000002	2	0.000001	0.011883	0.988210

Parallel

16

Tests of Homogeneity of Variances (parall1.sta)					
Effect: Dose*Preparation					
	Hartley F-max	Cochran C	Bartlett Chi-Sqr.	df	p
logmeas	29.96642	0.4078421	1.741484	5	0.883633



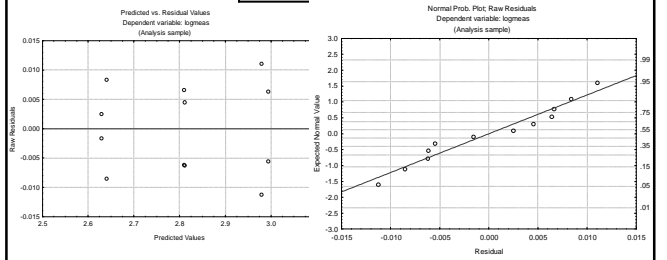
Parallel

14

$$y_{ijk} = \mu + \alpha_i + \beta_j x_{ij} + (\alpha\beta)_{ij} + \epsilon_{ijk}$$

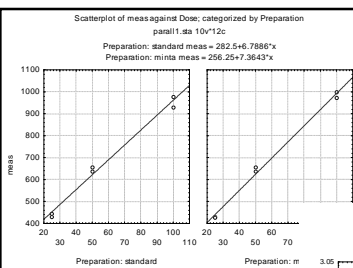
Statistics>Advanced Linear/Nonlinear Models>
>General Linear Models>
>Homogeneity-of-slopes

Univariate Tests of Significance for logmeas					
Sigma-restricted parameterization					
Std. Error of Estimate: .0087560					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0.8129	1	0.8129	10602.34	0.00000
Preparation	0.0003	1	0.0003	3.81	0.08666
logdose	0.2474	1	0.2474	3227.50	0.00000
Preparation*logdose	0.0003	1	0.0003	4.06	0.07882
Error	0.0006	8	0.0001		

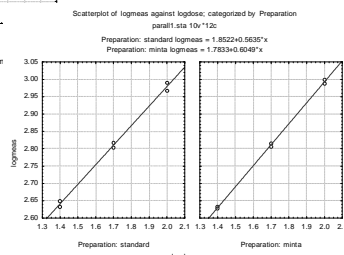


Parallel

17



Az abszorbanciát ill. a dózist indokolt-e transzformálni a függvény linearitása szempontjából?



Parallel

15

Univariate Tests of Significance for logmeas					
Sigma-restricted parameterization					
Effective hypothesis decomposition;					
Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0.812863	1	0.812863	7915.4	0.0000
logdose	0.247447	1	0.247447	2409.6	0.0000
Preparation	0.000006	1	0.000006	0.1	0.8123
Error	0.000924	9	0.000103		

Statistics>Advanced Linear/Nonlinear Models>
>General Linear Models>
>Analysis of Covariance

$$y_{ijk} = \mu + \alpha_i + \beta_j x_{ij} + \epsilon_{ijk}$$

Parameter Estimates (parall1.sta)						
Sigma-restricted parameterization						
Effect	Level of Effect	Column	logmeas Param.	logmeas Std.Err	logmeas t	logmeas p
Intercept		1	1.817764	0.020431	88.96876	0.000000
logdose		2	0.584233	0.011902	49.08735	0.000000
Preparation	standard	3	-0.000715	0.002925	-0.24450	0.812326

α a vonatkozósi egyenes tengelymetszete

Parameter Estimates (parall1.sta)							
(*Zeroed predictors failed tolerance check)							
Over-parameterized model							
Effect	Level of Effect	Column	Comment (B/Z/P)	logmeas Param.	logmeas Std.Err	logmeas t	logmeas p
Intercept		1		1.818478	0.020640		
logdose		2		0.584233	0.011902		
Preparation	standard	3	Biased	-0.001431	0.005851		
Preparation	minta	4	Zeroed	0.000000			

$$y_{ijk} = \alpha + (\alpha_i - \alpha) + \beta_j x_{ij} + \epsilon_{ijk}$$

Test of Lack of Fit (parall1.sta)								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
logmeas	0.000611	6	0.000102	0.000313	3	0.000104	1.025700	0.445230

A minta aktivitásának számítása

$$\hat{Y} = a + b \ln c = a + b \lg \frac{c_0}{h} = a + b \lg c_0 - b \lg h = a + b \lg c_0 + b \lg x$$

Ismert a standard hígítás előtti c_0 koncentrációja, kérdés a vizsgálandó készítmény hígítás előtti c_x koncentrációja

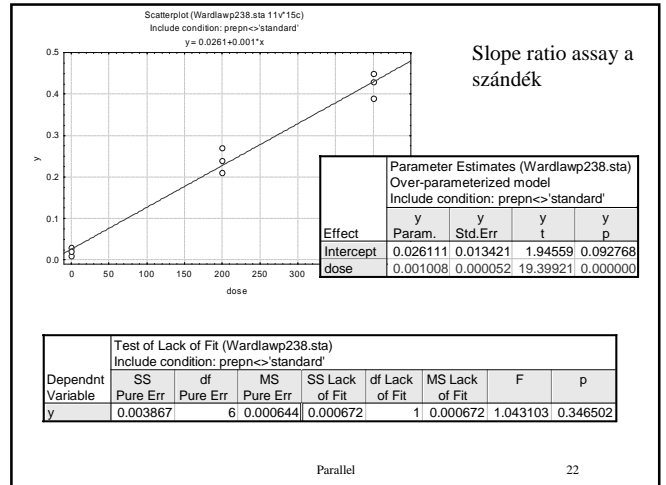
$$\hat{Y}_{minta} - \hat{Y}_{std} = b(\lg c_{minta} - \lg c_{std})$$

$$\lg c_{0minta} - \lg c_{0std} = \frac{a_{minta} - a_{std}}{b}$$

Az azonos hatást (abszorbanciát) adó log dózis értékek közötti különbség.

$$x_{std} - x_{minta} = \frac{a_{minta} - a_{std}}{b} = \frac{1.8184 - 1.8170}{0.5842} = 0.00245$$

Az aktivitás (relative potency) ennek antilogaritmus: 1.0056.



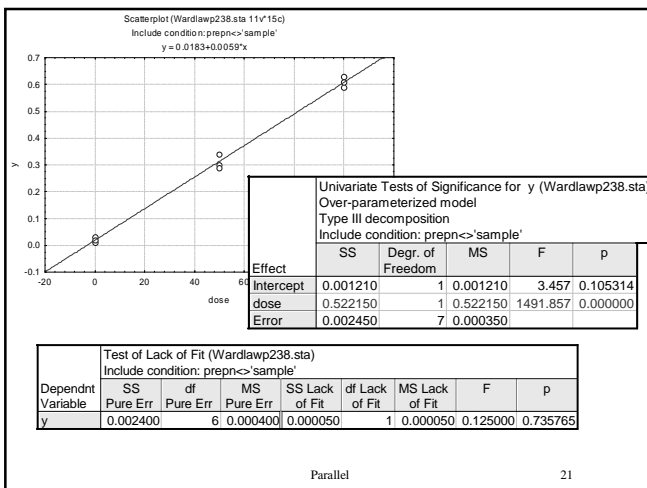
Példa

A.C. Wardlaw: Practical statistics for experimental biologists, J. Wiley, 1985, p. 238
Wardlawp238.sta

	1 prepn	2 dose	3 rept	4 y
1	standard	50	1	0.3
2	standard	50	2	0.34
3	standard	50	3	0.29
4	standard	100	1	0.59
5	standard	100	2	0.61
6	standard	100	3	0.63
7	sample	200	1	0.27
8	sample	200	2	0.24
9	sample	200	3	0.21
10	sample	400	1	0.43
11	sample	400	2	0.39
12	sample	400	3	0.45
13	blank	0	1	0.03
14	blank	0	2	0.01
15	blank	0	3	0.02

Effect	SS	Degr. of Freedom	MS	F	p
Intercept	0.002381	1	0.002381	4.1574	0.064106
dosesstd	0.558451	1	0.558451	975.1215	0.000000
dosesampl	0.270561	1	0.270561	472.4318	0.000000
Error	0.006872	12	0.000573		

Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
y	0.006067	10	0.000607	0.000806	2	0.000403	0.664050	0.536061



	1 prepn	2 dose	3 rept	4 y	5 dosesstd	6 dosesampl
1	standard	50	1	0.3	50	0
2	standard	50	2	0.34	50	0
3	standard	50	3	0.29	50	0
4	standard	100	1	0.59	100	0
5	standard	100	2	0.61	100	0
6	standard	100	3	0.63	100	0
7	sample	200	1	0.27	0	200
8	sample	200	2	0.24	0	200
9	sample	200	3	0.21	0	200
10	sample	400	1	0.43	0	400
11	sample	400	2	0.39	0	400
12	sample	400	3	0.45	0	400
13	blank	0	1	0.03	0	0
14	blank	0	2	0.01	0	0
15	blank	0	3	0.02	0	0

$$\hat{Y} = a + b_{minta} x_{minta} \qquad \hat{Y} = a + b_{std} x_{std}$$

Parameter Estimates (Wardlawp238.sta)									
Over-parameterized model									
Effect	y	y	y	y					
	Param.	Std.Err	t	p					
dosestd	0.006120	0.000138	44.42113	0.000000					
dosesampl	0.001087	0.000034	31.54965	0.000000					

Test of Lack of Fit (Wardlawp238.sta)								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
y	0.006067	10	0.000607	0.003187	3	0.001062	1.750916	0.219806

$$\hat{Y} = a + b_{std} x_{std}$$

$$\hat{Y} = a + b_{minta} x_{minta}$$

$$\hat{Y}_{std} = \hat{Y}_{minta} \text{ helyen}$$

$$b_{minta} x_{minta} = b_{std} x_{std}$$

Parallel 25

Példa
3 készítmény standardhoz viszonyított titerét kívánták meghatározni. Az analitikai jel a spektrofotometriás abszorbancia volt.

	1	2	3	4
	prepn	dose	rept	y
1	standard	50	1	0.3
2	standard	50	2	0.34
3	standard	50	3	0.29
4	standard	100	1	0.59
5	standard	100	2	0.61
6	standard	100	3	0.63
7	sample	200	1	0.27
8	sample	200	2	0.24
9	sample	200	3	0.21
10	sample	400	1	0.43
11	sample	400	2	0.39
12	sample	400	3	0.45
13	blank	0	1	0.03
14	blank	0	2	0.01
15	blank	0	3	0.02

Parallel 28

Slope ratio assay a szándék

Parameter Estimates (Wardlawp238.sta)					
Sigma-restricted parameterization					
Effect	y	y	y	y	
	Param.	Std.Err	t	p	
Intercept	0.023810	0.011677	2.03898	0.064106	
dosestd	0.005834	0.000187	31.22694	0.000000	
dosesampl	0.001015	0.000047	21.73550	0.000000	

$$b_{sample} x_{sample} = b_{std} x_{std}$$

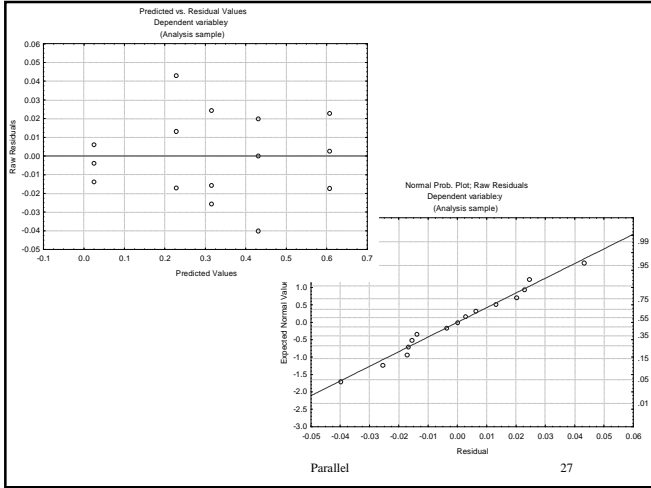
$$x_{sample} = \frac{b_{std} x_{std}}{b_{sample}} = \frac{0.005834 \cdot 100}{0.001015} = 5.75 \mu\text{l}/\text{ng}$$

$$c_{sample} = \frac{1}{5.75} = 0.174 \text{ ng}/\mu\text{l} = 174 \text{ ng}/\text{ml}$$

Parallel 26

	1	2	3	4	5
	Prepn	Dilut	dose	Indose	Absorb
1	1	10	0.1	-2.30259	2.691
2	1	10	0.1	-2.30259	2.334
3	1	20	0.05	-2.99573	1.524
4	1	20	0.05	-2.99573	1.402
5	1	40	0.025	-3.68888	1.089
6	1	40	0.025	-3.68888	1.001
7	2	20	0.05	-2.99573	2.536
8	2	20	0.05	-2.99573	2.659
9	2	40	0.025	-3.68888	1.513
10	2	40	0.025	-3.68888	1.819
11	2	80	0.0125	-4.38203	1.03
12	2	80	0.0125	-4.38203	0.837
13	3	40	0.025	-3.68888	2.633
14	3	40	0.025	-3.68888	2.819
15	3	80	0.0125	-4.38203	1.551
16	3	80	0.0125	-4.38203	1.759
17	3	160	0.00625	-5.07517	0.82
18	3	160	0.00625	-5.07517	0.918
19	std	1350	0.000741	-7.20786	2.82
20	std	1350	0.000741	-7.20786	2.663
21	std	2700	0.00037	-7.90101	1.863
22	std	2700	0.00037	-7.90101	1.554
23	std	5400	0.000185	-8.59415	1.006
24	std	5400	0.000185	-8.59415	0.976

Parallel 29



Parameter Estimates (parall2.sta)									
(*Zeroed predictors failed tolerance check)									
Over-parameterized model									
Effect	Level of Column	Comment (B/Z/P)	Absorb Param.	Absorb Std.Err	Absorb t	Absorb p	-95.00% Cnf.Lmt	+95.00% Cnf.Lmt	
Intercept			0.475	0.1296	3.661	0.0021	0.200	0.749	
Prepn*dose	1	2	19.770	1.9596	10.089	0.0000	15.616	23.924	
Prepn*dose	2	3	43.357	3.9192	11.063	0.0000	35.049	51.666	
Prepn*dose	3	4	97.131	7.8385	12.392	0.0000	80.515	113.748	
Prepn*dose	4	5	3099.214	264.5479	11.715	0.0000	2538.398	3660.031	
Prepn	1	6	Biased	0.046	0.1833	0.250	0.8061	-0.343	0.434
Prepn	2	7	Biased	-0.007	0.1833	-0.037	0.9711	-0.395	0.382
Prepn	3	8	Biased	-0.141	0.1833	-0.769	0.4530	-0.530	0.248
Prepn	std	9	Zeroed	0.000					

Test of Lack of Fit (parall2.sta)								
Dependent Variable	SS Pure Err	df Pure Err	MS Pure Err	SS Lack of Fit	df Lack of Fit	MS Lack of Fit	F	p
Absorb	0.252293	12	0.021024	0.106116	4	0.026529	1.261817	0.337791

Parallel 30

	1 Prepn	2 Dilut	3 dose	4 Indose	5 Absorb	6 ve1	7 ve2	8 ve3	9 ve4	10 ve1d	11 ve2d	
1	1	10	0.1	-2.30259	2.691	1	0	0	0	0	0.1	0
2	1	10	0.1	-2.30259	2.334	1	0	0	0	0	0.1	0
3	1	20	0.05	-2.99573	1.524	1	0	0	0	0	0.05	0
4	1	20	0.05	-2.99573	1.402	1	0	0	0	0	0.05	0
5	1	40	0.025	-3.68888	1.089	1	0	0	0	0	0.025	0
6	1	40	0.025	-3.68888	1.001	1	0	0	0	0	0.025	0
7	2	20	0.05	-2.99573	2.536	0	1	0	0	0	0	0.05
8	2	20	0.05	-2.99573	2.659	0	1	0	0	0	0	0.05
9	2	40	0.025	-3.68888	1.513	0	1	0	0	0	0	0.025
10	2	40	0.025	-3.68888	1.819	0	1	0	0	0	0	0.025
11	2	80	0.0125	-4.38203	1.03	0	1	0	0	0	0	0.0125
12	2	80	0.0125	-4.38203	0.837	0	1	0	0	0	0	0.0125
13	3	40	0.025	-3.68888	2.633	0	0	1	0	0	0	0
14	3	40	0.025	-3.68888	2.819	0	0	1	0	0	0	0
15	3	80	0.0125	-4.38203	1.551	0	0	1	0	0	0	0
16	3	80	0.0125	-4.38203	1.759	0	0	1	0	0	0	0
17	3	160	0.00625	-5.07517	0.82	0	0	1	0	0	0	0
18	3	160	0.00625	-5.07517	0.918	0	0	1	0	0	0	0
19 std		1350	0.000741	-7.20786	2.82	0	0	0	1	0	0	0
20 std		1350	0.000741	-7.20786	2.663	0	0	0	1	0	0	0
21 std		2700	0.00037	-7.90101	1.863	0	0	0	1	0	0	0
22 std		2700	0.00037	-7.90101	1.554	0	0	0	1	0	0	0
23 std		5400	0.000185	-8.59415	1.006	0	0	0	1	0	0	0
24 std		5400	0.000185	-8.59415	0.976	0	0	0	1	0	0	0

Parallel 31

Statistics>Advanced Linear/Nonlinear Models>
General Regression Models>Multiple regression

Effect	Parameter Estimates (parall2_ve.sta) Sigma-restricted parameterization					
	Absorb Param.	Absorb Std.Err	Absorb t	Absorb p	-95.00% Cnf.Lmt	+95.00% Cnf.Lmt
Intercept	0.449	0.0616	7.29101	0.000001	0.320	0.578
ve1d	20.720	1.2020	17.23835	0.000000	18.204	23.236
"ve2d"	43.857	2.4039	18.24384	0.000000	38.826	48.889
"ve3d"	90.971	4.8079	18.92129	0.000000	80.908	101.034
"ve4d"	3145.114	162.2662	19.38244	0.000000	2805.487	3484.741

Parallel 34

Statistics>Advanced Linear/Nonlinear Models>
Nonlinear Estimation>>User-specified regression, custom loss function
Function to be estimated, loss function:
v5=a+(bstd*v9+b1*v6+b2*v7+b3*v8)*v3

Model: v5=a+(bstd*v9+b1*v6+b2*v7+b3*v8)*v3 (parall2_ve.sta)					
Dep. var: Absorb Loss: (OBS-PRED)**2					
Final loss: .384299643 R= .98379 Variance explained: 96.785%					
N=24	a	bstd	b1	b2	b3
Estimate	0.449000	3145.114	20.72000	43.85714	90.97143
Std.Err.	0.061583	162.266	1.20197	2.40394	4.80789
t(19)	7.291007	19.382	17.23835	18.24384	18.92129
p-level	0.000001	0.000	0.00000	0.00000	0.00000

Parallel 32

A minta aktivitásának számítása

$$\hat{Y} = a' + b_{std} \cdot x_{std}$$

A nem hígított standard 25NE/ml koncentrációjú, az 1 nagyságú dózis jelentően ugyanezt a koncentrációt, a 0.1-es dózis 2.5NE/ml koncentrációnak felel meg.

$$\hat{Y} = a' + b_{minta} \cdot x_{minta}$$

Vegyünk a standardból és a készítményből olyan dózisokat, hogy az y abszorbancia egyenlő legyen

$$b_{minta} \cdot x_{minta} = b_{std} \cdot x_{std} \quad \frac{x_{std}}{x_{minta}} = \frac{b_{minta}}{b_{std}}$$

Parallel 35

