

Nonlinear Regression

segunda-feira, março 02, 2015, 20:32:15

Data Source: Octil e Derivados CERTO in Octil, PEI e Treolase Cinética**Equation:** Single Substrate; Michaelis-Menten in enzyme kinetics

$$v = V_{\max} * S / (K_m + S)$$

R	Rsqr	Adj Rsqr	Standard Error of Estimate
0,9911	0,9822	0,9797	0,0481

	Coefficient	Std. Error	t	P
Vmax	2,7911	0,6766	4,1250	0,0044
Km	1,6618	0,5606	2,9645	0,0210

Analysis of Variance:

	DF	SS	MS
Regression	2	3,3391	1,6696
Residual	7	0,0162	0,0023
Total	9	3,3553	0,3728

Corrected for the mean of the observations:

	DF	SS	MS	F	P
Regression	1	0,8926	0,8926	386,5755	<0,0001
Residual	7	0,0162	0,0023		
Total	8	0,9088	0,1136		

Statistical Tests:
Normality Test (Shapiro-Wilk) Passed (P = 0,3529)

W Statistic= 0,9151 Significance Level = <0,0001

Constant Variance Test Passed (P = 0,0200)
Fit Equation Description:

[Variables]

S = col(10)

V = col(11)

' Weighting Functions

reciprocal_V = if(V <= 0; 0/0; 1/V)

reciprocal_Vsquare = if(V <= 0; 0/0; 1/V^2)

[Parameters]

Vmax = max(V)*2 "Auto {{previous: 2,79107}}

Km = x50(S;V;0,1) "Auto {{previous: 1,66179}}

[Equation]

v = Vmax*S/(Km+S)

fit v to V

"fit v to V with weight reciprocal_V

"fit v to V with weight reciprocal_Vsquare

[Constraints]

Vmax > 0

Km > 0

[Options]
tolerance=0,00001
stepsize=1
iterations=200

Number of Iterations Performed = 9