

**Nonlinear Regression**

segunda-feira, março 02, 2015, 20:22:23

**Data Source:** Data 2 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
0,9913	0,9827	0,9802	0,0474

	Coefficient	Std. Error	t	P
Vmax	2,4794	0,4997	4,9621	0,0016
Km	1,3578	0,4017	3,3798	0,0118

**Analysis of Variance:**

	DF	SS	MS
Regression	2	3,4896	1,7448
Residual	7	0,0157	0,0022
Total	9	3,5053	0,3895

Corrected for the mean of the observations:

	DF	SS	MS	F	P
Regression	1	0,8920	0,8920	397,5430	<0,0001
Residual	7	0,0157	0,0022		
Total	8	0,9077	0,1135		

**Statistical Tests:**
**Normality Test (Shapiro-Wilk)** Passed (P = 0,0021)

W Statistic= 0,7140 Significance Level = &lt;0,0001

**Constant Variance Test** Passed (P = 0,0583)
**Fit Equation Description:**

[Variables]

S = col(1)

V = col(2)

' Weighting Functions

reciprocal\_V = if(V &lt;= 0; 0/0; 1/V)

reciprocal\_Vsquare = if(V &lt;= 0; 0/0; 1/V^2)

[Parameters]

Vmax = max(V)\*2 "Auto {{previous: 2,47936}}

Km = x50(S;V;0,1) "Auto {{previous: 1,35781}}

[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 &gt; 0

Km &gt; 0

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

Number of Iterations Performed = 9