

NOTEBOOK NO. 108
ISSUED TO Zhe Zhong
ON 4-02-2008 2008
DEPARTMENT _____
RETURNED _____ 20

SCIENTIFIC NOTEBOOK COMPANY
2831 LAWRENCE AVENUE
STEVENSVILLE, MICHIGAN 49127
(800) 537-3028 - <http://www.snco.com>

TITLE Ricin ELISA pH4.5

Project No. _____

Book No. _____

From Page No. _____

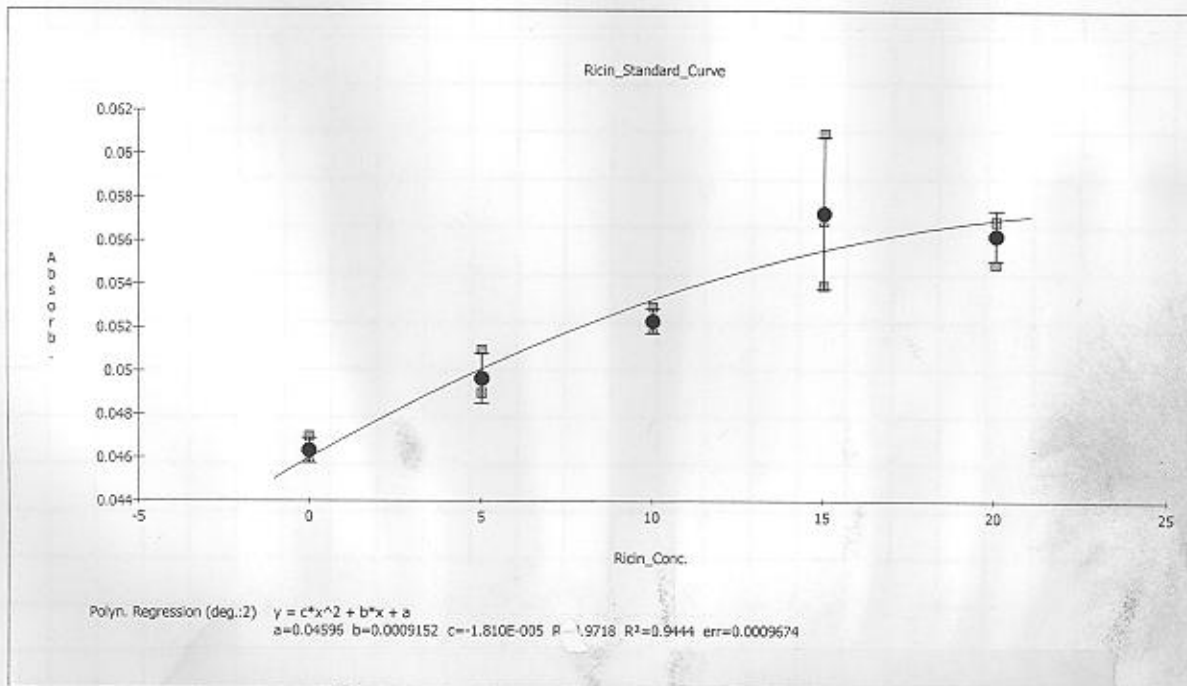
Experiment. No.

pH4.5 85°C 0~4min 2ppm 1st plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.047	0.046	0.046	0.049	0.049	0.051	0.053	0.052	0.052	0.054	0.057	0.061
B												
C	0.057	0.055	0.057	0.071	0.070	0.069	0.069	0.073	0.070	0.071	0.067	0.068
D												
E	0.072	0.069	0.071	0.066	0.069	0.070	0.067	0.068	0.067	0.067	0.067	0.068
F												
G	0.072	0.071	0.069	0.069	0.068	0.067	0.068	0.067	0.066	0.065	0.065	0.068
H												

STANDARD CURVE



To Page No. _____

Witnessed & Understood by me,

张程

Date

11/04/07

Invented by:

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Project No. _____

Book No. _____

TITLE _____

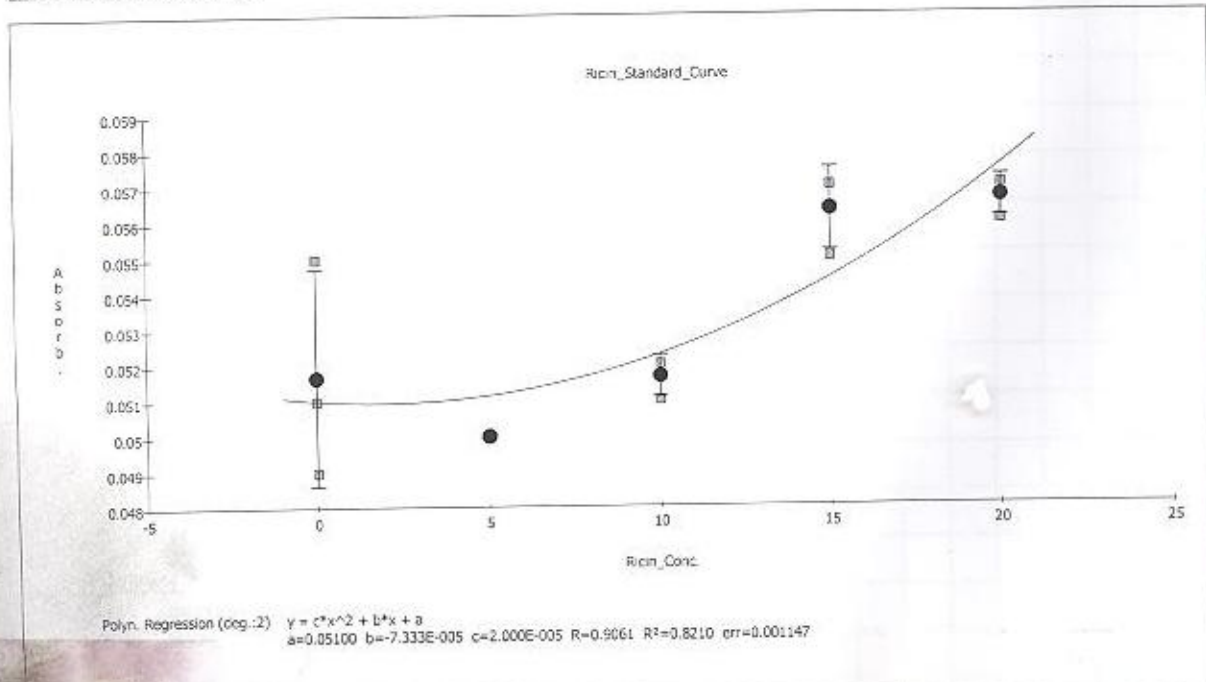
From Page No. _____

pH 4.5 85°C 0~4min 2ppm 2nd plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.055	0.051	0.049	0.050	0.050	0.050	0.052	0.051	0.052	0.057	0.055	0.057
B												
C	0.057	0.057	0.056	0.069	0.070	0.192	0.071	0.072	0.070	0.073	0.072	0.075
D												
E	0.079	0.072	0.070	0.070	0.073	0.086	0.090	0.073	0.072	0.072	0.073	0.127
F												
G	0.075	0.072	0.069	0.068	0.241	0.075	0.072	0.074	0.074	0.066	0.068	0.072
H												

STANDARD CURVE



Plates were left outside of the fridge. Expired plates are disposed. The results of this experiment won't be taken into the final ANOVA analysis.

To Page No. _____

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張哲

Date

11/04/07

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Recorded by:

Date

TITLE Ricin ELISA pH4.5

Project No. _____

Book No. _____

From Page No. _____

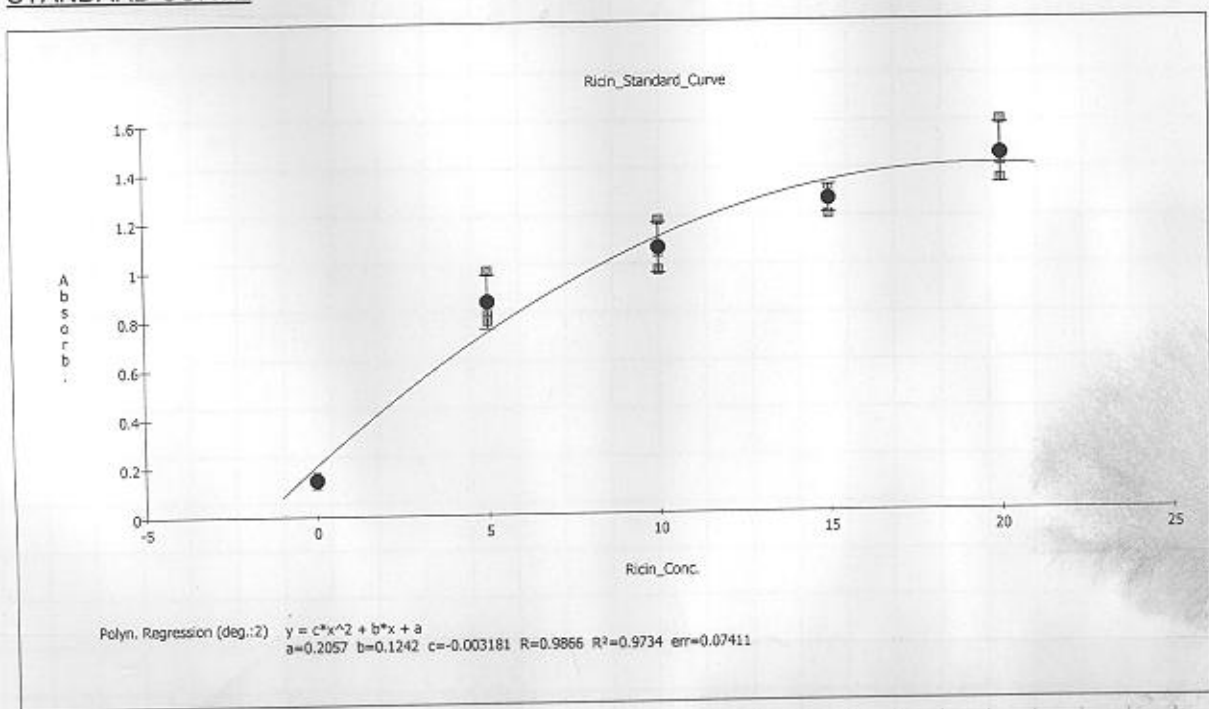
Experiment No.

pH4.5 85°C 0.4min 1ppm 1st plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.164	0.151	0.134	0.824	0.796	0.989	1.069	1.200	0.996	1.311	1.218	1.318
B												
C	1.595	1.356	1.428	1.894	1.930	1.902	1.950	1.976	1.824	1.953	1.773	2.104
D												
E	2.065	1.979	1.838	1.907	1.895	1.854	1.951	2.010	1.992	1.923	1.933	1.816
F												
G	1.616	1.900	1.699	1.846	1.538	1.524	1.617	1.766	1.667	1.574	1.643	1.694
H												

STANDARD CURVE



Dil. = 10/3 Concentrations were too high to fit in the standard curve.

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3A4E

Date

12/03/07

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TITLE _____

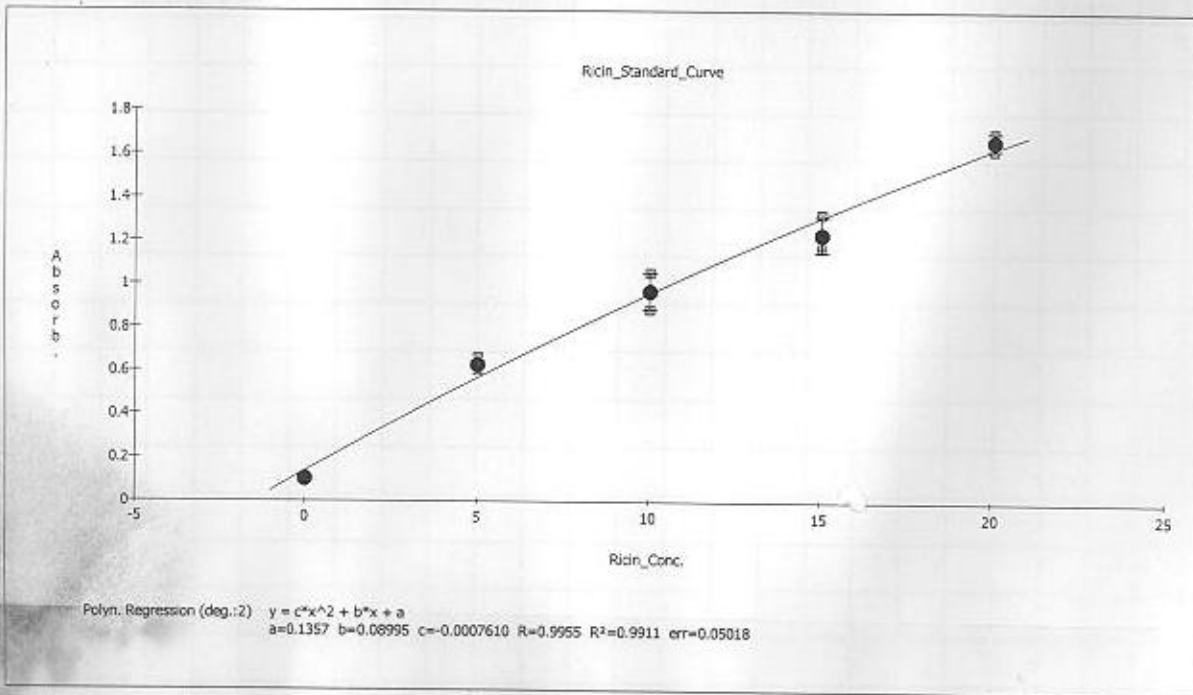
From Page No. _____

PH4.5 85°C 0~4min 1ppm 2nd plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.108	0.099	0.101	0.664	0.615	0.606	1.058	0.989	0.887	1.177	1.198	1.331
B												
C	1.710	1.664	1.628	2.020	2.019	1.870	1.691	1.685	1.795	1.740	1.792	1.992
D												
E	2.143	1.924	1.993	1.890	1.856	1.668	1.856	1.747	1.802	1.779	1.806	1.750
F												
G	2.218	2.060	1.989	1.951	1.990	1.623	1.808	1.579	1.733	1.544	1.435	1.595
H												

STANDARD CURVE



Dil. = 10/3 Concentrations out of Curve.

Data will be processed using suitable standard curve before.

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TITLE Ricin ELISA PH4.5 Project No. _____
 Book No. _____

From Page No. _____

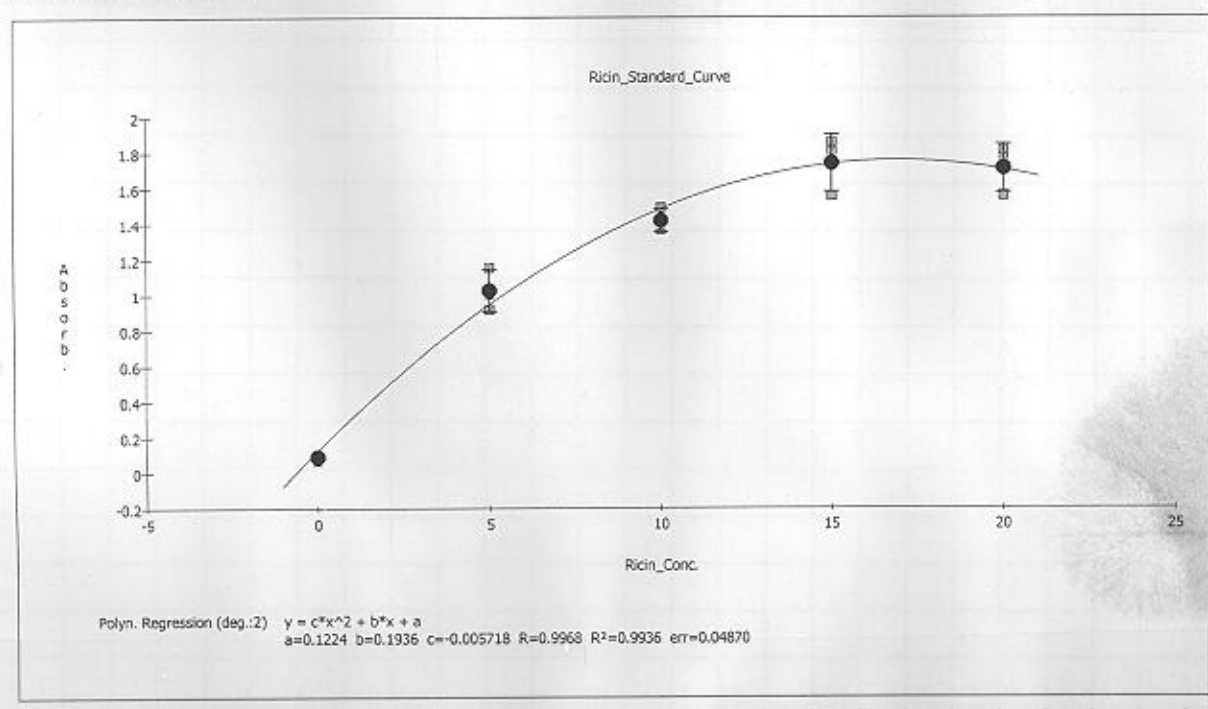
Experiment No. _____

PH4.5 85°C on 4min 1ppm 1st plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.102	0.104	0.071	0.921	1.158	1.008	1.374	1.394	1.497	1.807	1.562	1.864
B												
C	1.815	1.770	1.561	0.905	0.815	0.914	0.824	1.044	0.983	0.749	0.835	0.826
D												
E	0.897	0.734	0.753	0.645	0.853	0.727	0.853	0.600	0.740	0.751	0.679	0.823
F												
G	0.619	0.562	0.631	0.612	0.732	0.857	0.717	0.834	0.638	0.590	0.612	0.507
H												

STANDARD CURVE



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Date
12/05/07

Invented by:

Date

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Book No. _____

TITLE _____

From Page No. _____

STATISTICS - Concentrations x Dil.

Well ID	Name	Conc\Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	0	2.5000	C4	4.6936	11.734	3	11.265	0.9552	8.4796
			C5	4.0663	10.166				
SPL2	15	2.5000	C6	4.7580	11.895	3	12.603	2.0616	16.358
			C7	4.1277	10.319				
			C8	5.7310	14.327				
SPL3	30	2.5000	C9	5.2644	13.161	3	9.9747	0.7933	7.9531
			C10	3.6252	9.0630				
			C11	4.2030	10.508				
SPL4	45	2.5000	C12	4.1414	10.354	3	9.8457	1.5195	15.434
			E1	4.6364	11.591				
			E2	3.5269	8.8173				
SPL5	60	2.5000	E3	3.6515	9.1287	3	7.8735	0.7216	9.1645
			E4	2.9583	7.3957				
			E5	3.0085	7.5212				
SPL6	90	2.5000	E6	3.4814	8.7035	3	8.8108	2.0619	23.402
			E7	4.3274	10.818				
			E8	2.6794	6.6985				
SPL7	120	2.5000	E9	3.5662	8.9155	3	9.1100	1.1852	13.010
			E10	3.6383	9.0957				
			E12	4.1209	10.302				
SPL8	150	2.5000	E11	3.1728	7.9319	3	6.7629	0.5643	8.3442
			G1	2.7965	6.9913				
			G2	2.4481	6.1202				
SPL9	180	2.5000	G3	2.8709	7.1772	3	8.8519	2.0033	22.632
			G4	2.7532	6.8830				
			G5	3.5139	8.7848				
SPL10	210	2.5000	G6	4.3552	10.888	3	8.7726	1.6144	18.403
			G7	3.4164	8.5411				
			G8	4.1961	10.490				
SPL11	240	2.5000	G9	2.9146	7.2864	3	6.2425	0.8342	13.364
			G10	2.6182	6.5454				
			G11	2.7532	6.8830				
			G12	2.1197	5.2991				

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TITLE Ricin ELISA PH4.5

From Page No. _____

Experiment No. _____

PH4.5

85°C

0.24min

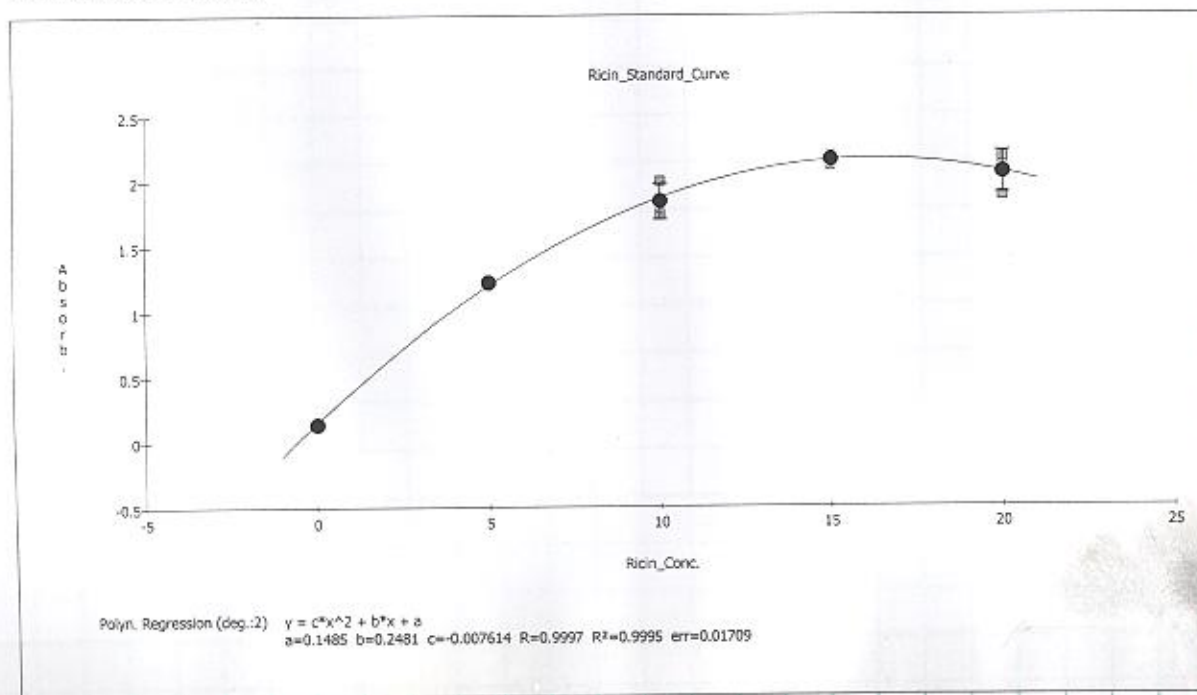
1ppm

1st plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.145	0.147	0.125	1.204	1.232	1.242	1.736	1.795	2.001	2.119	2.192	2.178
B												
C	2.134	2.185	1.882	0.682	0.657	0.714	0.870	0.789	0.855	0.849	0.885	0.847
D												
E	0.722	0.635	0.625	0.709	0.693	0.774	0.805	0.669	0.805	0.689	0.761	0.808
F												
G	0.624	0.635	0.636	0.602	0.628	0.604	0.821	0.796	0.650	0.495	0.503	0.588
H												

STANDARD CURVE



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12/06/07

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TITLE _____

From Page No. _____

STATISTICS - Concentrations x Dil.

Well ID	Name	Conc/Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	0	2.5000	C4	2.3144	5.7859	3	5.8145	0.3361	5.7799
			C5	2.1975	5.4936				
			C6	2.4656	6.1640				
SPL2	15	2.5000	C7	3.2273	8.0682	3	7.7132	0.5613	7.2772
			C8	2.8264	7.0661				
			C9	3.2021	8.0053				
SPL3	30	2.5000	C10	3.1222	7.8055	3	7.9477	0.2682	3.3749
			C11	3.3028	8.2571				
			C12	3.1122	7.7805				
SPL4	45	2.5000	E1	2.5036	6.2590	3	5.5402	0.6252	11.285
			E2	2.0953	5.2383				
			E3	2.0492	5.1231				
SPL5	60	2.5000	E4	2.4418	6.1045	3	6.3012	0.5131	8.1422
			E5	2.3662	5.9156				
			E6	2.7534	6.8835				
SPL6	90	2.5000	E7	2.9046	7.2616	3	6.7190	0.9398	13.987
			E8	2.2535	5.6338				
			E9	2.9046	7.2616				
SPL7	120	2.5000	E10	2.3474	5.8684	3	6.6311	0.7198	10.855
			E12	2.9194	7.2985				
			E11	2.6906	6.7265				
SPL8	150	2.5000	G1	2.0446	5.1116	3	5.2038	0.07984	1.5343
			G2	2.1000	5.2499				
			G3	2.1000	5.2499				
SPL9	180	2.5000	G4	1.9436	4.8590	3	4.9662	0.1662	3.3468
			G5	2.0631	5.1577				
			G6	1.9528	4.8519				
SPL10	210	2.5000	G7	2.9833	7.4581	3	6.6739	1.1033	16.531
			G8	2.8605	7.1513				
			G9	2.1650	5.4124				
SPL11	240	2.5000	G10	1.4621	3.6552	3	4.0327	0.5788	14.352
			G11	1.4976	3.7439				
			G12	1.8796	4.6990				

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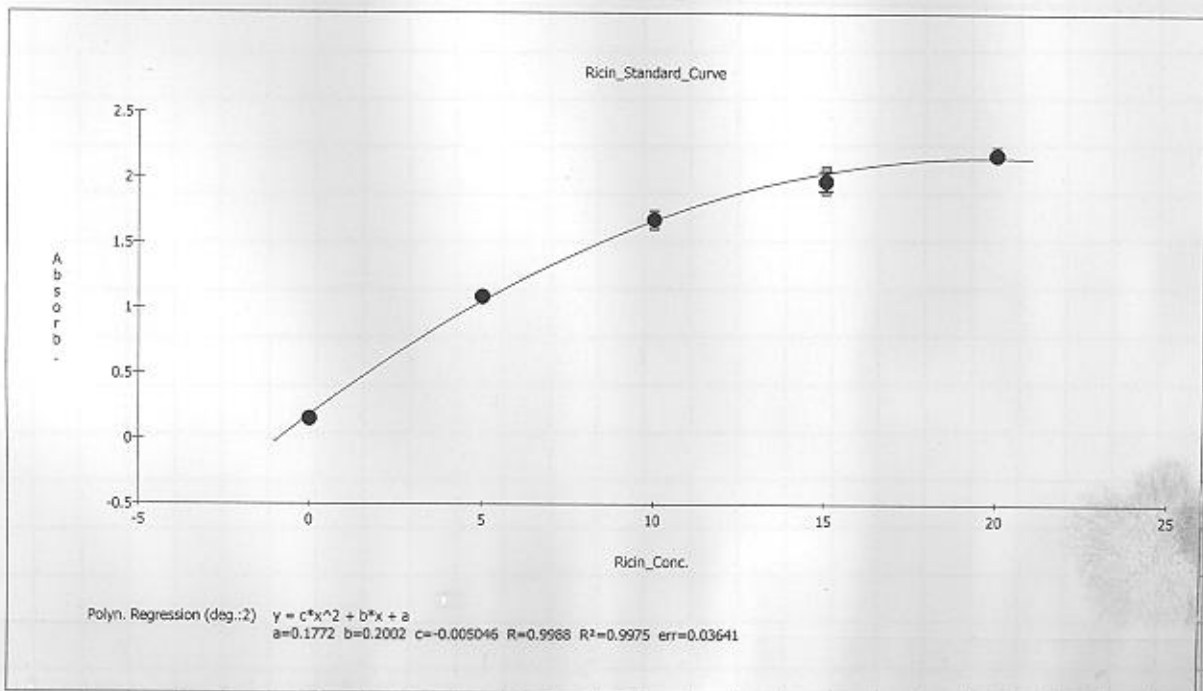
From Page No. _____

PH 4.5 85°C 0~4 min 1ppm 2nd plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.165	0.149	0.149	1.093	1.075	1.112	1.644	1.693	1.727	1.918	1.972	2.066
B												
C	2.222	2.177	2.172	0.804	0.617	0.805	0.799	0.748	0.806	0.782	0.789	0.800
D												
E	0.767	0.667	0.762	0.751	0.745	0.744	0.736	0.697	0.733	0.661	0.651	0.690
F												
G	0.702	0.588	0.603	0.624	0.660	0.603	0.749	0.654	0.770	0.486	0.456	0.271
H												

STANDARD CURVE



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From Page No. _____

STATISTICS - Concentrations x Dil.

Well ID	Name	Conc/Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	0	2.5000	C4	3.4268	8.5670	3	8.6377	0.1095	1.2681
			C5	3.5055	8.7639				
			C6	3.4329	8.5822				
SPL2	15	2.5000	C7	3.3967	8.4918	3	8.2731	0.4731	5.7182
			C8	3.0921	7.7303				
			C9	3.4389	8.5973				
SPL3	30	2.5000	C10	3.2945	8.2364	3	8.3615	0.1363	1.6305
			C11	3.3365	8.3414				
			C12	3.4027	8.5068				
SPL4	45	2.5000	E1	3.2049	8.0123	3	7.4997	0.8243	10.991
			E2	2.6196	6.5489				
			E3	3.1752	7.9380				
SPL5	60	2.5000	E4	3.1099	7.7748	3	7.7107	0.05600	0.7262
			E5	3.0744	7.6860				
			E6	3.0685	7.6713				
SPL6	90	2.5000	E7	3.0213	7.5533	3	7.3484	0.3175	4.3201
			E8	2.7931	6.9827				
			E9	3.0036	7.5091				
SPL7	120	2.5000	E10	2.5851	6.4627	3	6.5543	0.2918	4.4527
			E12	2.7524	6.8809				
			E11	2.5277	6.3192				
SPL8	150	2.5000	G1	2.8222	7.0554	3	6.0401	0.8856	14.662
			G2	2.1708	5.4270				
			G3	2.2551	5.6378				
SPL9	180	2.5000	G4	2.3739	5.9347	3	6.0070	0.4101	6.8263
			G5	2.5793	6.4483				
			G6	2.2551	5.6378				
SPL10	210	2.5000	G7	3.0980	7.7451	3	8.3770	0.8390	10.015
			G8	3.7316	9.3289				
			G9	3.2228	8.0571				
SPL11	240	2.5000	G10	1.6077	4.0193	3	2.9395	1.5322	52.124
			G11	1.4453	3.6133				
			G12	0.4743	1.1859				

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Date

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Invented by:

Date

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TITLE ELISA Ricin OJ & CB

Project No. _____

Book No. _____

Page No. _____ Experiment No. _____

Purpose: To determine the damage to ricin protein under room temperature in orange juice with Tetracore ricin ELISA kits

Material & Equipment:

ELISA kits for ricin, ricin stock solution, Minute Maid® OJ (pH = 3.75 ~ 3.80)

Comparative Phosphate buffer w/Tween 20® (pH 3.50 adjusted to pH 3.77 ~ 3.78)

Incubator in Room 316 Bldg 90

Sample Preparation

1 Sample sub-stock solutions

Solution As (250 µg/ml): 50 µl of ricin stock solution (5 mg/ml) into 950 µl OJ

Solution Bs (10.0 µg/ml): 40 µl of solution As into 960 µl OJ

Sample (0.08 µg/ml): 40 µl solution Bs into 4960 µl OJ

2 Comparative Buffer sub-stock solutions

Solution Ac (250 µg/ml): 50 µl of ricin stock solution (5 mg/ml) into 950 µl PBT

Solution Bc (10.0 µg/ml): 40 µl of solution Ac into 960 µl PBT

Comparative Buffer (0.08 µg/ml): 40 µl solution Bc into 4960 µl PBT

3 Sampling chart

Put the sample in incubator Temp. 25°C

	Time/Date/Day	Smpl No.
22	16:45 / 12.12 / 10	1
22	14:45 / 12.13 / 1	2
22	12:45 / 12.14 / 2	3
22	13:10 / 12.15 / 3	4
22	14:05 / 12.16 / 4	5
22	09:10 / 12.17 / 5	6

4 Put samples into freezer to terminate the reaction

5 100 µl treated sample + 900 µl PBST (Dil. = 5.00) 10.00

7 Analyze using ELISA kit the last day of sampling

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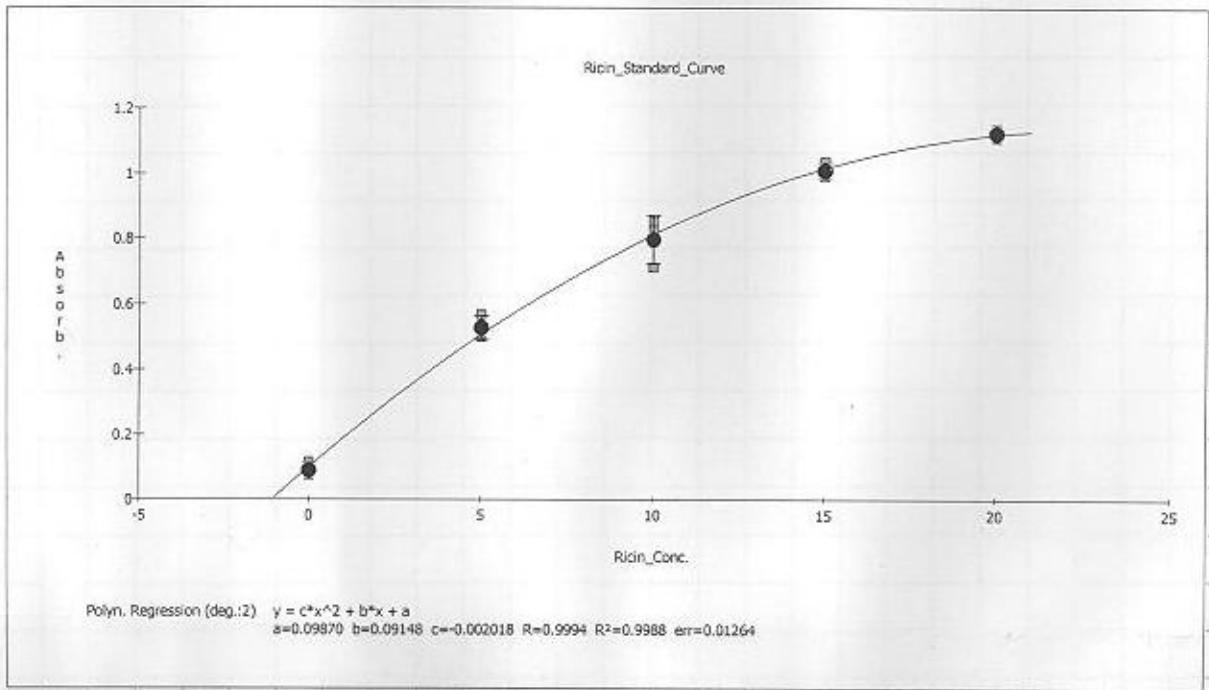
TITLE _____

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M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.116	0.077	0.076	0.502	0.569	0.513	0.714	0.827	0.855	1.038	0.994	1.003
B												
C	1.124	1.140	1.113	0.630	0.431	0.750	0.600	0.699	0.635	0.625	0.609	0.614
D												
E	0.694	0.633	0.625	0.566	0.551	0.528	0.566	0.627	0.605	0.557	0.545	0.616
F												
G	0.557	0.500	0.519	0.073	0.067	0.065	0.498	0.537	0.582	0.703	0.735	0.873
H												

STANDARD CURVE



OJ & CB Day 0 ~ Day 5

Soppb (Day 0 Initial) 25°C 1st plate

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STATISTICS - Concentrations x Dil.

Well ID	Name	Conc/Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	OJ D0	5.0000	C4	6.8405	34.203	2	27.058	10.104	37.342
			C5	3.9827	19.913				
SPL2	CS D0	5.0000	C6	8.8466	44.233	1	44.233		
SPL3	OJ D1	5.0000	C7	6.3776	31.888	3	35.429	4.0226	11.354
			C8	7.9606	39.803				
			C9	6.9191	34.595				
SPL4	CS D1	5.0000	C11	6.5150	32.575	3	33.116	0.6331	1.9118
			C10	6.7625	33.812				
			C12	6.5920	32.960				
SPL5	OJ D2	5.0000	E1	7.8766	39.383	3	35.878	3.0517	8.5057
			E2	6.8876	34.438				
			E3	6.7625	33.312				
SPL6	CS D2	5.0000	E4	5.8683	29.342	3	28.056	1.3882	4.9478
			E5	5.6485	28.242				
			E6	5.3168	26.584				
SPL7	OJ D3	5.0000	E7	5.8683	29.342	3	31.860	2.3405	7.3463
			E8	6.7937	33.968				
			E9	6.4539	32.269				
SPL8	CS D3	5.0000	E10	5.7360	28.680	3	29.867	2.8457	9.5278
			E11	5.5614	27.807				
			E12	6.6228	33.114				
SPL9	OJ D4	5.0000	G1	5.7360	28.680	3	26.410	2.0762	7.8615
			G3	5.1887	25.944				
			G2	4.9214	24.607				
SPL10	CS D4	5.0000	G5	<0	<0	0			
			G4	<0	<0				
			G6	<0	<0				
SPL11	OJ D5	5.0000	G7	4.8935	24.468	3	27.409	3.0353	11.074
			G8	5.4459	27.229				
			G9	6.1060	30.530				
SPL12	CS D5	5.0000	G10	8.0282	40.141	3	46.453	8.6536	18.629
			G11	8.5803	42.902				
			G12	11.264	56.318				

Day 4 comparative buffer's data missing.

Dilution miss calculated. Data will be processed later.

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Date

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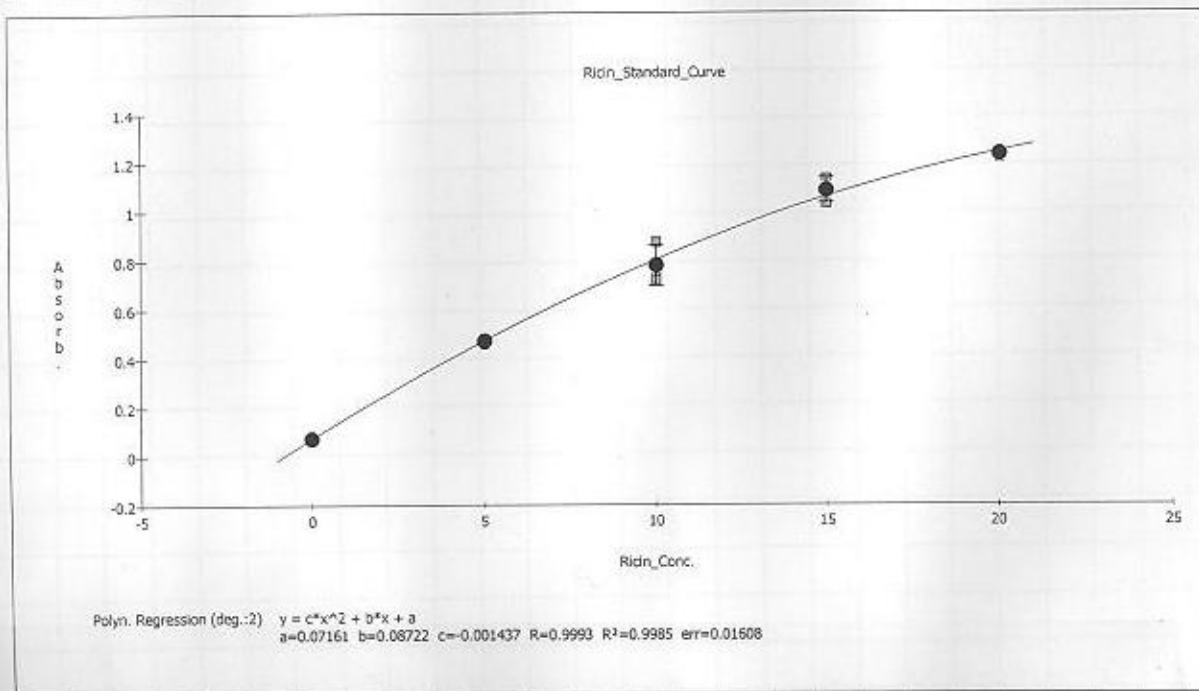
TITLE _____

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M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.075	0.074	0.075	0.480	0.460	0.478	0.744	0.719	0.874	1.131	1.029	1.091
B												
C	1.217	1.238	1.238	0.680	0.622	0.634	0.616	0.585	0.638	0.545	0.602	0.674
D												
E	0.704	0.650	0.678	0.599	0.599	0.557	0.586	0.628	0.560	0.546	0.472	0.511
F												
G	0.670	0.595	0.576	0.076	0.073	0.069	0.641	0.547	0.598	0.775	0.688	0.751
H												

STANDARD CURVE



Dilution miss-calculated.

Witnessed & Understood by me, _____

Date

(2/17/07)

Invented by: _____

Date

To Page No. _____

Recorded by: _____

Project No. _____

Book No. _____

TITLE _____

From Page No. _____

STATISTICS - Concentrations x Dil.

Well ID	Name	Conc/Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	OJ D0	10.000 ² 5.0000	C4	8.0412	40.206	2	37.988	3.1365	8.2566
			C5	7.1540	35.770				
SPL2	CB D0	5.0000	C6	7.3348	36.674	1	36.674	1.9833	5.6491
SPL3	OJ D1	5.0000	C7	7.0641	35.321	3	35.108		
			C8	6.6054	33.027				
SPL4	CB D1	5.0000	C9	7.3953	36.976	3	34.716	4.8186	13.880
			C11	6.8558	34.279				
			C10	6.0262	30.131				
SPL5	OJ D2	5.0000	C12	7.9477	39.739	3	40.011	2.1021	5.2539
			E1	8.4187	42.094				
			E2	7.5780	37.890				
SPL6	CB D2	5.0000	E3	8.0100	40.050	3	33.036	1.7696	5.3566
			E4	6.8115	34.057				
			E5	6.8115	34.057				
SPL7	OJ D3	5.0000	E6	6.1985	30.992	3	33.510	2.5311	7.5533
			E7	6.6200	33.100				
			E8	7.2442	36.221				
SPL8	CB D3	5.0000	E9	6.2418	31.209	3	27.647	2.5939	9.3820
			E10	6.0405	30.203				
			E11	5.0033	25.017				
SPL9	OJ D4	5.0000	E12	5.5445	27.723	3	35.187	3.7390	10.626
			G1	7.8857	39.429				
			G3	6.4739	32.369				
SPL10	CB D4	5.0000	G2	6.7524	33.762	2	0.1660	0.1218	73.371
			G5	0.01598	0.07989				
			G4	0.05043	0.2522				
SPL11	OJ D5	5.0000	G6	<0	<0	3	33.575	3.4767	10.355
			G7	7.4409	37.204				
			G8	6.0548	30.274				
SPL12	CB D5	5.0000	G9	6.6494	33.247	3	44.867	3.6336	8.0987
			G10	9.5760	47.880				
			G11	8.1663	40.831				
			G12	9.1777	45.888				

Not long enough for half time determination.

To Page No. _____

Witnessed & Understood by me,

Date

12/17/07

Invented by:

Date

Recorded by:

Experiment #36

Date 01/08/08

Purpose: To determine the damage to ricin protein under room temperature in orange juice with Tetracore ricin ELISA kit

Material & Methods:

- ELISA kit for ricin----Tetracore ELISA kit (TC-4002-02 ELISA kit for ricin, precoated,+/-)
- ricin stock solution----5mg/ml
- Minute Maid® orange juice (pH 3.75-3.80)
- Phosphate Buffer w/ Tween20® (pH 3.77-3.78)
- Incubator in Room 316 Bldg 90

Sample Preparation

1 Sample sub-stock solutions

- Solution As (250µg/ml): 50µl of ricin stock solution (5mg/ml) into 950µl OJ
- Solution Bs (10.0µg/ml): 40µl of solution As into 960µl OJ

Sample (0.08µg/ml): 40µl solution Bs into 4960µl OJ

2 Comparative Buffer sub-stock solutions

- Solution Ac (250µg/ml): 50µl of ricin stock solution (5mg/ml) into 950µl PBT
- Solution Bc (10.0µg/ml): 40µl of solution Ac into 960µl PBT

Comparative Buffer (0.08µg/ml): 40µl solution Bc into 4960µl PBT

3 Sampling chart

Put the sample in incubator Temp. 25°C

Time/Date/Day	Smpl No.	Time/Date/Day	Smpl No.	Time/Date/Day	Smpl No.
22 8:30 01.08/0	1	22 2:10 01.15/7	8	22 12:20 01.22/14	15
22 12:00 01.09/1	2	22 12:00 01.16/8	9	22 4:30 01.23/15	16
22 1:10 01.10/2	3	22 2:05 01.17/9	10	22 12:20 01.24/16	17
22 12:05 01.11/3	4	22 12:05 01.18/10	11	01.25/17	18
01.12/4	5	22 9:00 01.19/11	12	01.26/18	19
22 12:10 01.13/5	6	22 13:25 01.20/12	13	01.27/19	20
22 12:30 01.14/6	7	22 12:55 01.21/13	14		

4 Put samples into freezer to terminate the reaction

5 100µl treated sample + 900µl PBST (Dil. = 5.00) (Dil. = 10.00)

7 Analyze using ELISA kit the last day of sampling

From Page No. Experiment No. 36

0.797 0.870 1.454 0.079 3 0.624 0.782 0.977 0.085 3 0.725 0.717 1.359 0.070 3 14/08

Project No. _____

Book No. _____

TITLE Ricin ELISA OJ & CB

From Page No. _____

Experiment No. 36

OJ & CB

Initial Concentration: 80 ppb

Temp. 25°C (Incubator)

Experiment period: 01/08/08 — 01/24/08

Test Date: 01/14/08, 01/23/08, 01/24/08

M 405 01/14/08 1st plate

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.115	0.096	0.099	0.629	0.661	0.670	1.000	1.028	1.061	1.464	1.560	1.621
B												
C	1.530	1.358	1.401	0.997	1.028	1.065	0.924	0.900	0.894	0.869	0.905	1.050
D												
E	0.888	0.715	0.821	0.605	0.766	0.831	0.738	0.726	0.713	0.779	0.720	0.878
F												
G	0.699	0.718	0.685	0.618	0.624	0.696	0.819	0.633	0.611	0.806	0.652	0.768
H												

M 405 01/23/08 1st plate

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.091	0.089	0.084	0.515	0.538	0.543	0.840	0.859	0.850	1.039	1.135	1.091
B												
C	1.396	1.321	1.354	0.872	0.900	0.915	0.845	0.883	0.954	0.906	0.750	0.953
D												
E	0.788	0.805	0.786	0.895	0.875	0.911	0.791	0.919	0.887	0.840	0.835	0.898
F												
G	0.717	0.635	0.655	0.637	0.672	0.679	0.853	0.764	0.726	0.685	0.776	0.731
H												

A	0.097	0.106	0.091	0.575	0.614	0.559	1.086	1.052	1.174	1.240	1.424	1.390
B												
C	1.440	1.502	1.376	0.985	0.869	0.996	0.891	0.952	0.896	0.937	0.999	1.027
D												
E	1.057	0.885	0.933	0.840	0.936	0.948	0.852	0.877	0.781	0.937	0.983	0.940
F												
G	0.900	0.776	0.751	0.791	0.765	0.837	0.896	1.001	0.913			
H												

Witness

Page No. _____

Project No. _____

TITLE _____

Book No. _____

From Page No. _____

M 405

01/14/08 2nd plate

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.086	0.079	0.070	0.556	0.569	0.651	1.094	1.013	1.079	1.518	1.459	1.581
B												
C	1.431	1.498	1.358	0.972	1.017	0.976	0.779	0.935	1.013	0.923	0.927	1.160
D												
E	0.927	0.769	0.717	0.705	0.786	0.818	0.785	0.808	0.858	0.845	0.862	1.026
F												
G	0.831	0.48	0.725	0.828	0.663	0.604	0.682	0.596	0.604	0.685	0.752	0.838
H												

M 405

01/23/08 2nd plate

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.096	0.090	0.085	0.440	0.457	0.448	0.759	0.763	0.822	1.046	1.088	1.108
B												
C	1.122	0.989	0.977	0.784	0.830	0.779	0.833	0.828	0.859	0.857	0.968	0.979
D												
E	0.692	0.805	0.782	0.710	0.722	0.798	0.747	0.761	0.801	0.747	0.783	0.828
F												
G	0.758	0.480	0.624	0.704	0.573	0.552	0.648	0.610	0.622	0.538	0.731	0.690
H												

M 405

01/24/08 2nd plate

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.106	0.076	0.079	0.557	0.600	0.626	1.112	1.056	1.023	1.296	1.382	1.335
B												
C	1.568	1.461	1.454	0.911	0.932	0.928	0.873	0.905	0.897	0.871	0.943	0.922
D												
E	1.089	0.929	0.870	0.866	0.900	0.860	0.876	0.713	0.776	0.817	0.889	0.849
F												
G	0.701	0.867	0.797	0.770	0.761	0.802	0.638	0.770	0.807			
H												

To Page No. _____

Witnessed & Understood by me,

Date

01/25/08

Invented by:

Date

Recorded by:

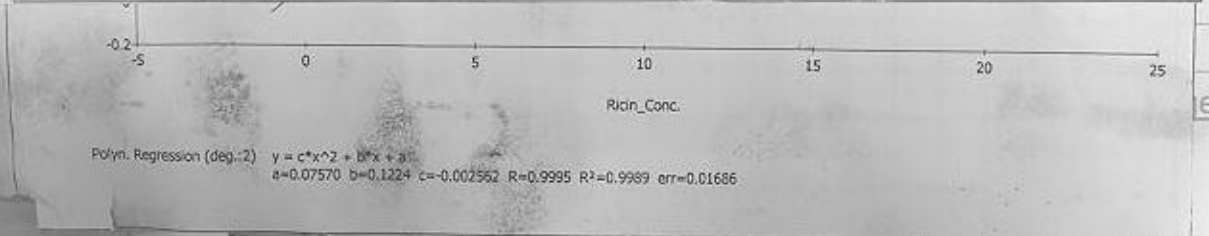
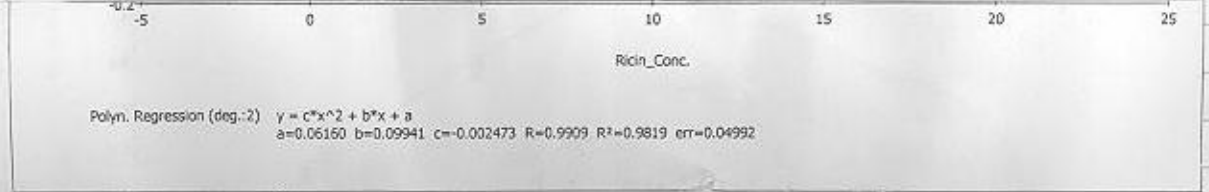
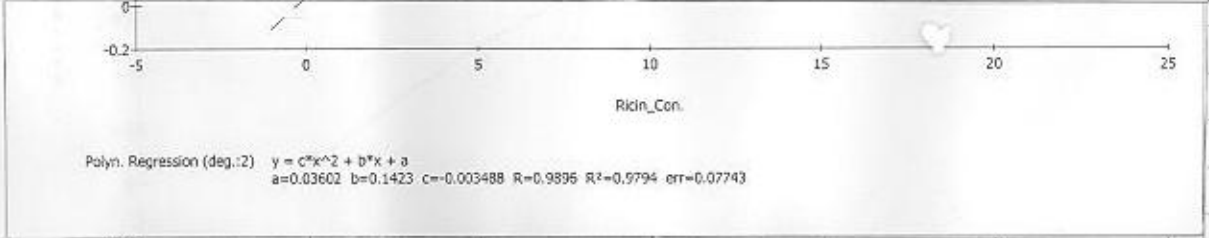
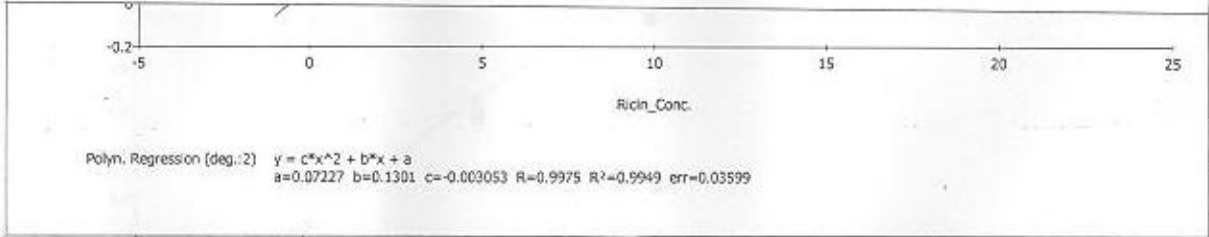
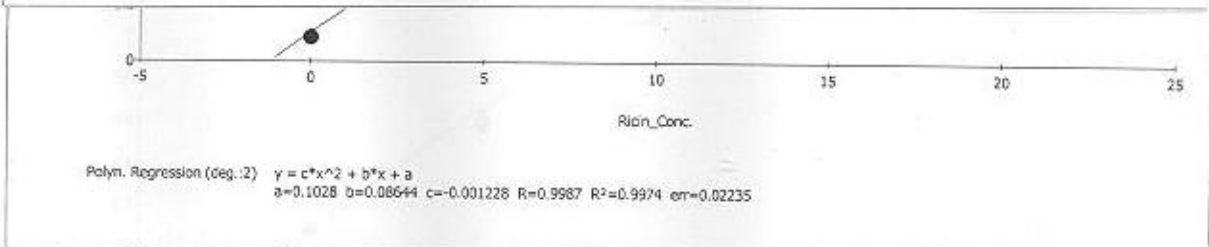
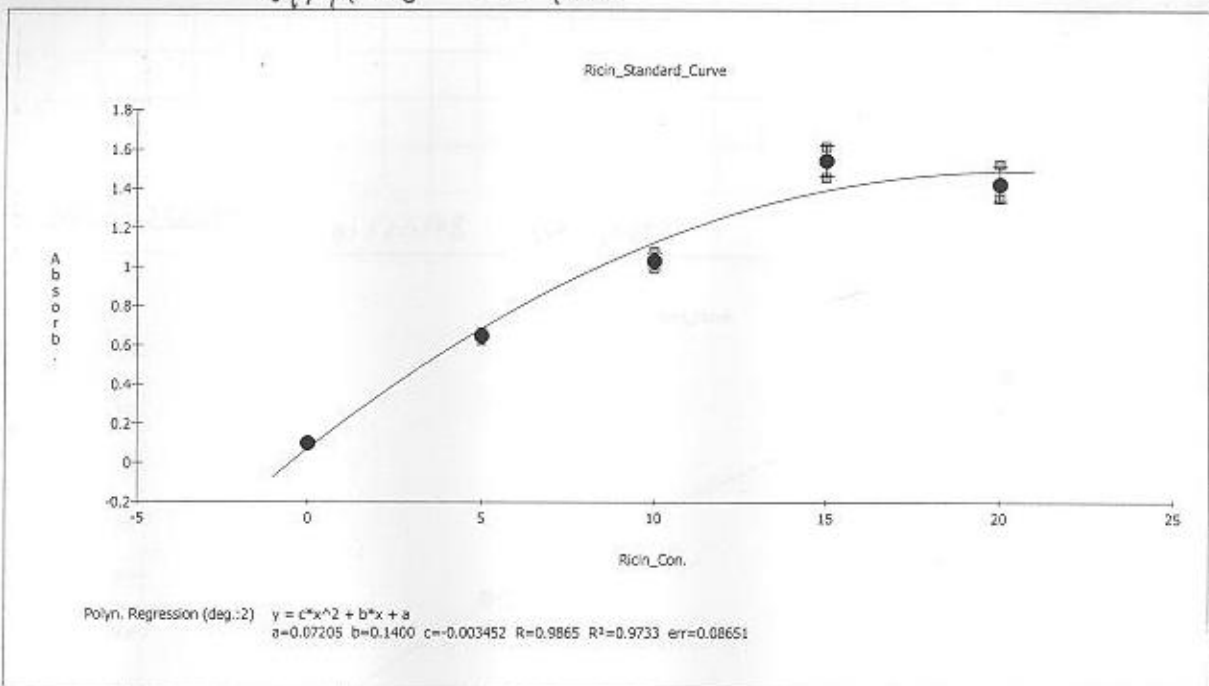
Project No. _____

Book No. _____

TITLE _____

From Page No. _____

STANDARD CURVE 01/14/08 1st plate



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Project No. _____

Book No. _____

TITLE _____

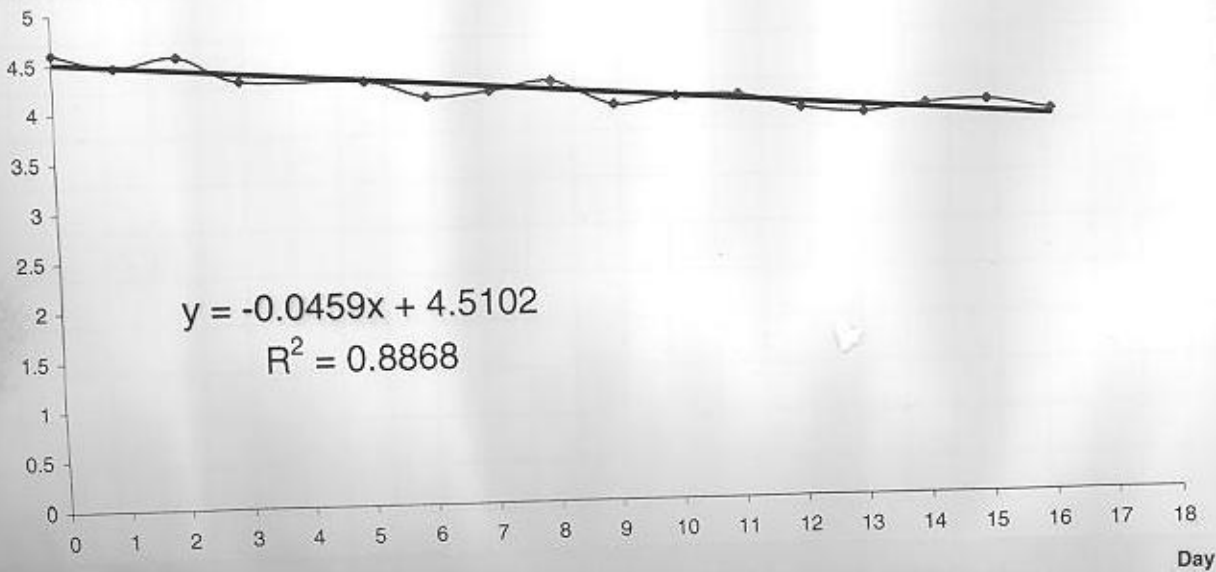
from Page No. _____

Buffer

Day	Group 1 Conc.	Group 2	Ratio		LN		Ave.
0	174.422	168.738	100.000	100.000	4.605	4.605	4.605
1	145.110	151.274	83.195	89.650	4.421	4.496	4.459
2	153.748	174.018	88.147	103.129	4.479	4.636	4.557
3	123.138	128.682	70.598	76.261	4.257	4.334	4.296
5	122.684	121.202	70.337	71.829	4.253	4.274	4.264
6	108.450	97.989	62.177	58.072	4.130	4.062	4.096
7	108.270	106.600	62.074	63.175	4.128	4.146	4.137
8	104.520	131.230	59.924	77.771	4.093	4.354	4.223
9	91.834	91.035	52.650	53.951	3.964	3.988	3.976
10	108.110	87.955	61.982	52.125	4.127	3.954	4.040
11	103.620	92.620	59.408	54.890	4.084	4.005	4.045
12	85.043	84.079	48.757	49.828	3.887	3.909	3.898
13	79.480	80.100	45.568	47.470	3.819	3.860	3.840
14	89.023	82.656	51.039	48.985	3.933	3.892	3.912
15	85.464	89.583	48.998	53.090	3.892	3.972	3.932
16	79.034	78.111	45.312	46.291	3.814	3.835	3.824

Comparative Buffer

Ln % ricin residual



to Page No. _____

Witnessed & Understood by me,

Date

01/27/08

Invented by:

Date

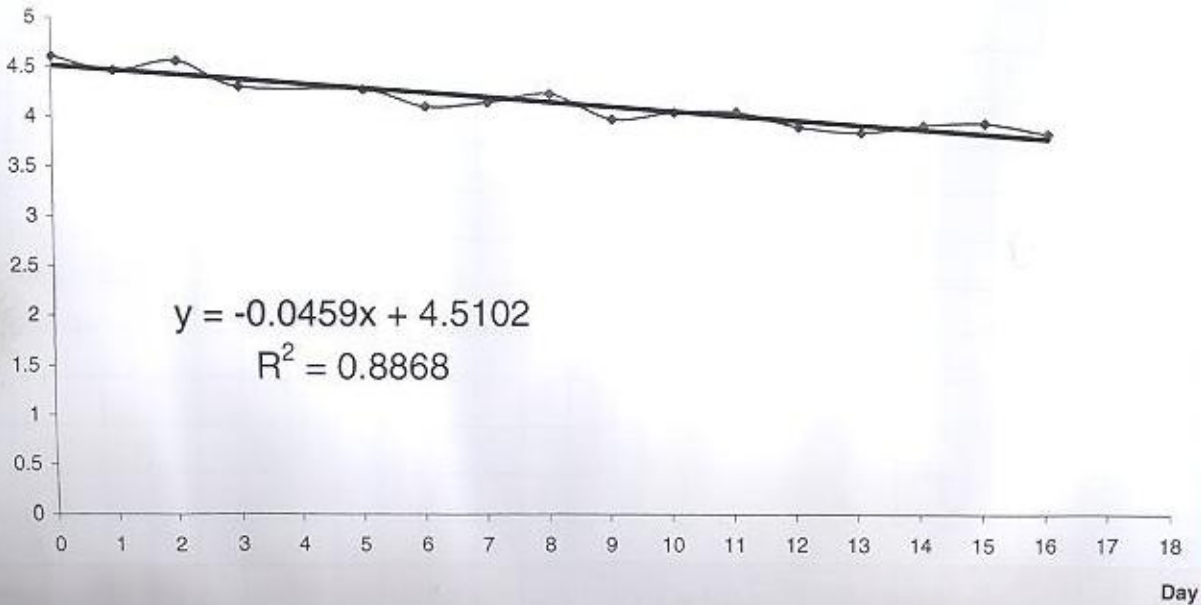
Recorded by:

Buffer

Day	Group 1 Conc.	Group 2	Ratio	LN	Ave.
0	174.422	168.738	100.000	100.000	4.605
1	145.110	151.274	83.195	89.650	4.421
2	153.748	174.018	88.147	103.129	4.479
3	123.138	128.682	70.598	76.261	4.257
5	122.684	121.202	70.337	71.829	4.253
6	108.450	97.989	62.177	58.072	4.130
7	108.270	106.600	62.074	63.175	4.128
8	104.520	131.230	59.924	77.771	4.093
9	91.834	91.035	52.650	53.951	3.964
10	108.110	87.955	61.982	52.125	4.127
11	103.620	92.620	59.408	54.890	4.084
12	85.043	84.079	48.757	49.828	3.887
13	79.480	80.100	45.568	47.470	3.819
14	89.023	82.656	51.039	48.985	3.933
15	85.464	89.583	48.998	53.090	3.892
16	79.034	78.111	45.312	46.291	3.814

Comparative Buffer

Ln % ricin residual



Witnessed & Understood by me,

Date
01/27/08

Invented by:

Date

Recorded by:

TITLE ELISA Ricin pH7.5

Project No. _____

Book No. _____

From Page No. _____

pH7.5 75°C ~40min 2 ppm 1st plate

- 3 Put samples into ice water to terminate the reaction
- 4 Sample 1 to 4: 100µl (100µl Sample+900µl PBST) +900µl PBST (Dil.=100)
- Sample 5 to 6: 100µl (200µl Sample+800µl PBST) +900µl PBST (Dil.=50)
- Sample 7: 100µl Sample+900µl PBST (Dil.=10)
- Sample 8: 200µl Sample+800µl PBST (Dil.=5)
- Sample 9 to 10: 500µl Sample+500µl PBST (Dil.=2)
- 5 Analyze using ELISA kit

ELISA Protocol

- 1 Block plate. 150µl each well. Incubate for 1hr at 37°C. Wash plate.
- 2 Add standard and samples prepared as above. 100µl each well. Incubate for 1hr at 37°C. Wash plate.
- 3 Add detector antibody. 55µl of antibody solution (2mg/ml) into 1045µl blocking buffer (1:20). 150µl solution above into 14850µl blocking buffer (1:100). 100µl each well. Incubate for 1hr at 37°C. Wash plate.
- 4 Add conjugate antibody. 5µl of antibody solution into 245µl blocking buffer (1:50). 150µl of solution above into 14850µl buffer (1:100). 100µl each well. Incubate for 1hr at 37°C. Wash plate.
- 5 Add substrate. 6ml component A + 6ml component B. 100µl each well. Incubate for 300min at 37°C.
- 6 Read at 405nm. Wash plate.

Witnessed & Understood by me,

Date

03/24/08

Invented by:

Recorded by:

Date

To Page No. _____

Project No. _____

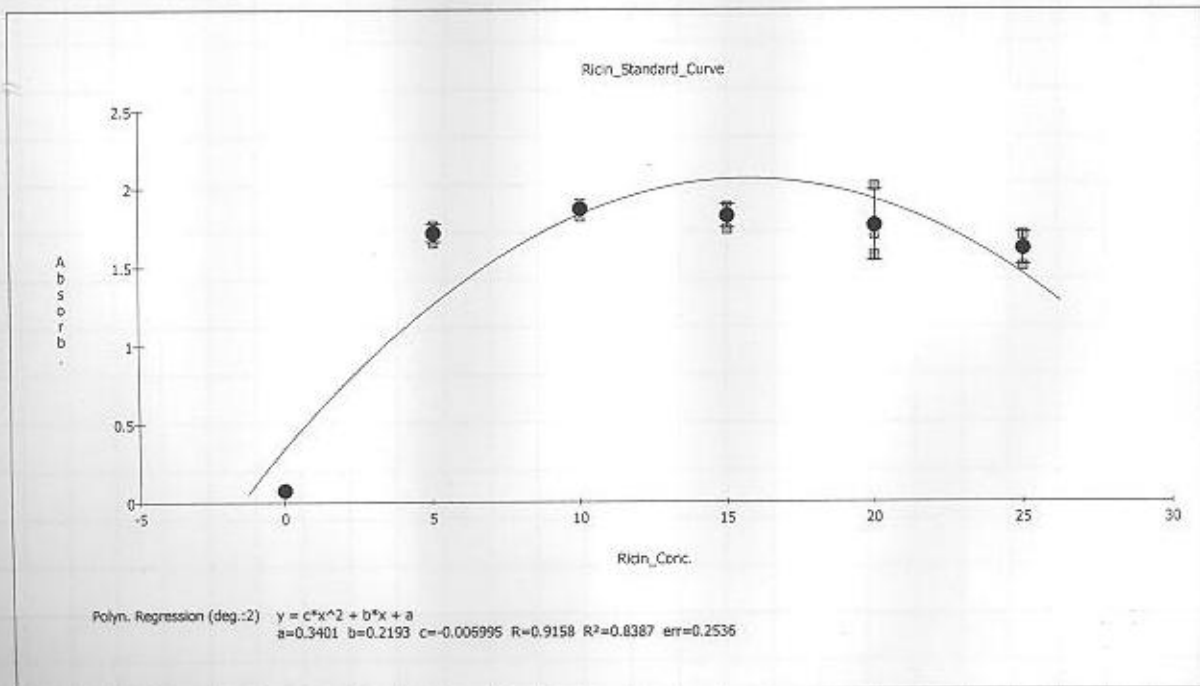
Book No. _____

TITLE _____

Page No. _____

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.096	0.064	0.073	1.732	1.766	1.656	1.820	1.886	1.906	1.740	1.853	1.882
B												
C	2.012	1.703	1.574	1.502	1.642	1.703	0.425	0.448	0.428	0.354	0.375	0.446
D												
E	0.355	0.280	0.255	0.224	0.229	0.247	0.185	0.192	0.176	0.139	0.130	0.146
F												
G	0.194	0.168	0.136	0.123	0.137	0.131	0.268	0.312	0.293	0.215	0.239	0.278
H												

STANDARD CURVE



To Page No. _____

Witnessed & Understood by me,

Date

03/26/08

Invented by:

Date

Recorded by:

Project No. _____

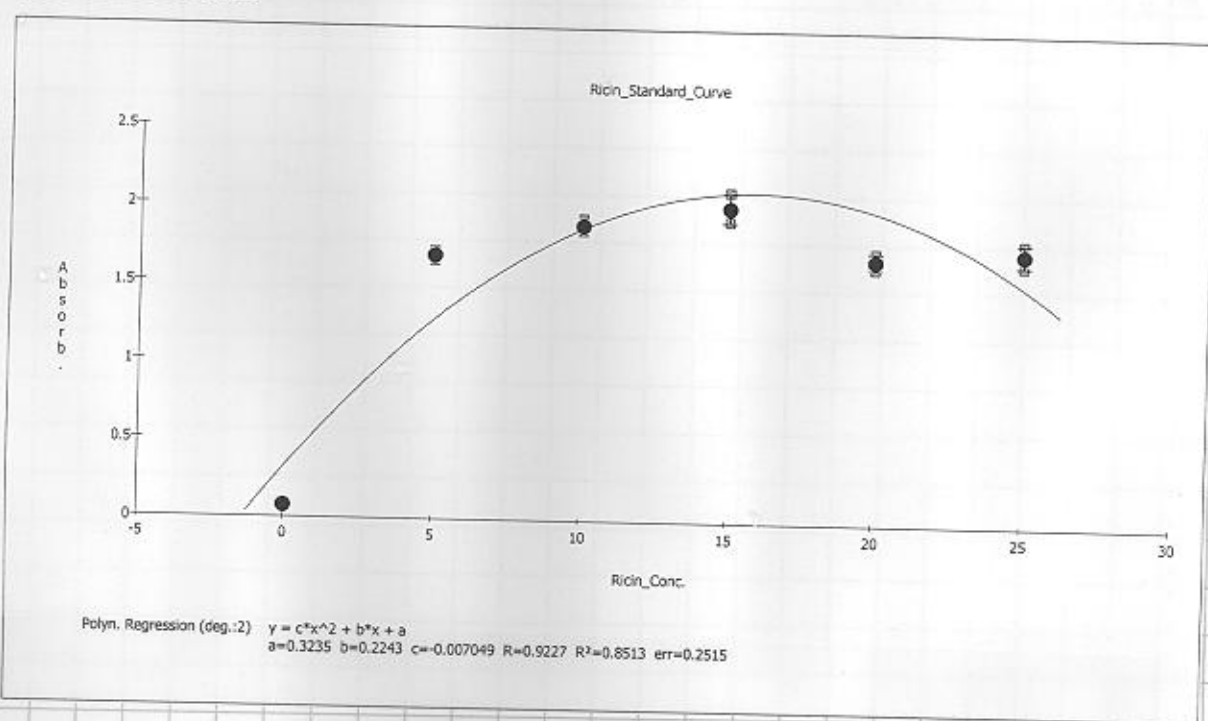
Book No. _____

From Page No. PH 7.5 75°C orxomin 2nd plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.086	0.073	0.074	1.686	1.652	1.714	1.850	1.857	1.930	1.992	1.926	2.112
B												
C	1.681	1.634	1.739	1.809	1.735	1.665	0.414	0.421	0.460	0.428	0.408	0.455
D												
E	0.281	0.274	0.290	0.215	0.256	0.232	0.186	0.201	0.183	0.134	0.141	0.145
F												
G	0.159	0.158	0.157	0.150	0.135	0.127	0.298	0.286	0.281	0.236	0.248	0.230
H												

STANDARD CURVE



Observed & Understood by me,

Date

03/24/08

Invented by:

Recorded by:

Date

To Page No. _____

Project No. _____

Book No. _____

TITLE ELISA Ricin p17.5

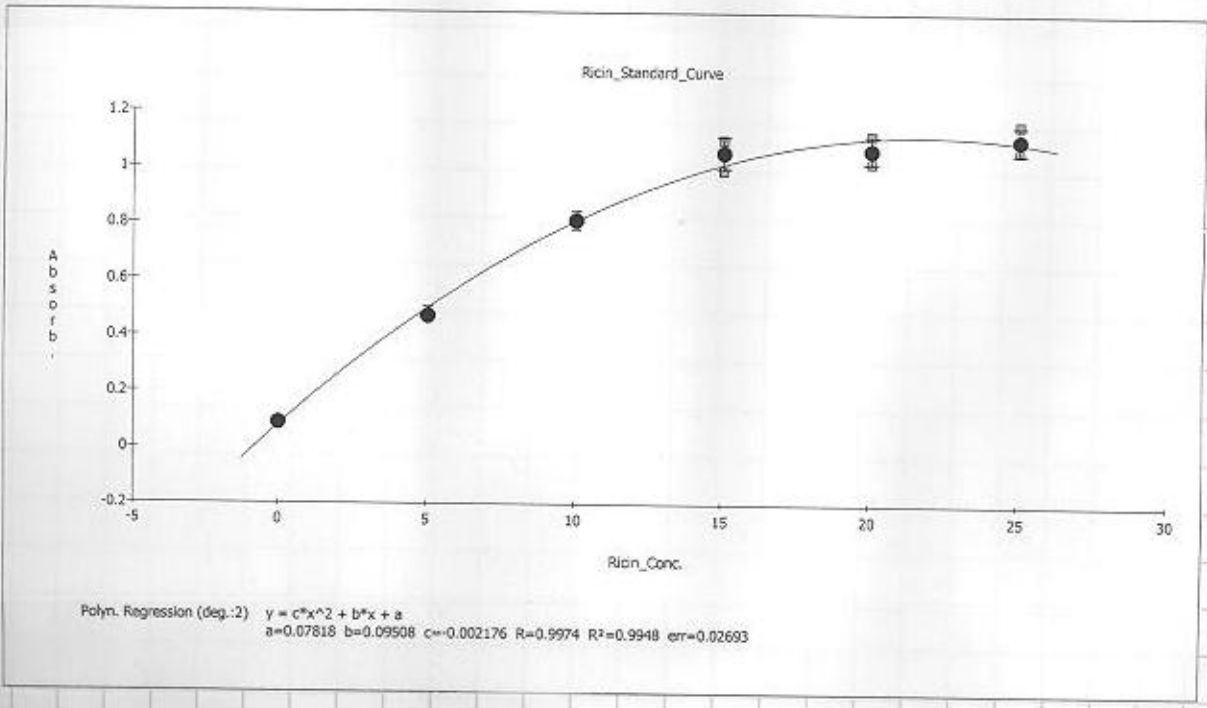
From Page No. _____

Experiment No. 38
p17.5 75°C onyxmin 2ppm 1st plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.097	0.084	0.086	0.466	0.462	0.491	0.797	0.809	0.835	0.995	1.072	1.104
B												
C	1.122	1.060	1.025	1.163	1.087	1.070	0.653	0.596	0.642	0.523	0.537	0.581
D												
E	0.432	0.378	0.377	0.256	0.259	0.277	0.359	0.397	0.346	0.281	0.278	0.281
F												
G	0.216	0.152	0.164	0.135	0.104	0.110	0.726	0.803	0.749	0.401	0.418	0.384
H												

STANDARD CURVE



Witnessed & Understood by me, _____

Date

03/25/08

Invented by: _____

Date

Recorded by: _____

To Page No. _____

Project No. _____

Book No. _____

FILE _____

Page No. _____

STATISTICS - Concentrations x Dil.

Well ID	Name	Conc\Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	0	100.00	C7	7.2477	724.77	3	690.00	46.136	6.6863
			C8	6.3766	637.66				
			C9	7.0756	707.56				
SPL2	1	100.00	C10	5.3280	532.80	3	566.91	43.244	7.6280
			C11	5.5238	552.38				
			C12	6.1555	615.55				
SPL3	2	100.00	E1	4.1074	410.74	3	364.58	39.979	10.966
			E2	3.4212	342.12				
			E3	3.4088	340.88				
SPL4	4	100.00	E4	1.9580	195.80	3	205.09	13.201	6.4367
			E5	1.9927	199.27				
			E6	2.2020	220.20				
SPL5	7	50.000	E7	3.1857	159.29	3	164.53	16.472	10.012
			E8	3.6597	182.99				
			E9	3.0263	151.32				
SPL7	10	50.000	E10	2.2489	112.45	3	111.86	1.0166	0.9088
			E11	2.2137	110.69				
			E12	2.2489	112.45				
SPL7	15	50.000	G1	1.5011	75.055	3	53.567	18.896	35.276
			G2	0.7908	39.539				
			G3	0.9221	46.107				
SPL8	20	50.000	G4	0.6061	30.306	3	20.280	8.8294	43.538
			G5	0.2733	13.664				
			G6	0.3374	16.869				
SPL9	30	2.0000	G7	8.4457	16.891	3	18.086	1.4338	7.9276
			G8	9.8382	19.676				
			G9	8.8459	17.692				
SPL10	40	3.0000	G10	3.7102	11.131	3	11.133	0.6462	5.8038
			G12	3.4962	10.489				
			G11	3.9270	11.781				

PM 7.5 75°C on 40 min 2ppm 2nd plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.187	0.091	0.087	0.543	0.516	0.540	0.782	0.823	0.864	1.155	1.158	1.231
B												
C	1.217	1.259	1.065	1.124	1.093	1.086	0.655	0.630	0.695	0.551	0.570	0.633
D												
E	0.425	0.419	0.395	0.268	0.269	0.271	0.338	0.381	0.371	0.260	0.388	0.314
F												
G	0.187	0.156	0.170	0.137	0.124	0.114	0.830	0.767	0.756	0.379	0.431	0.442
H												

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Date

03/25/08

Invented by:

Date

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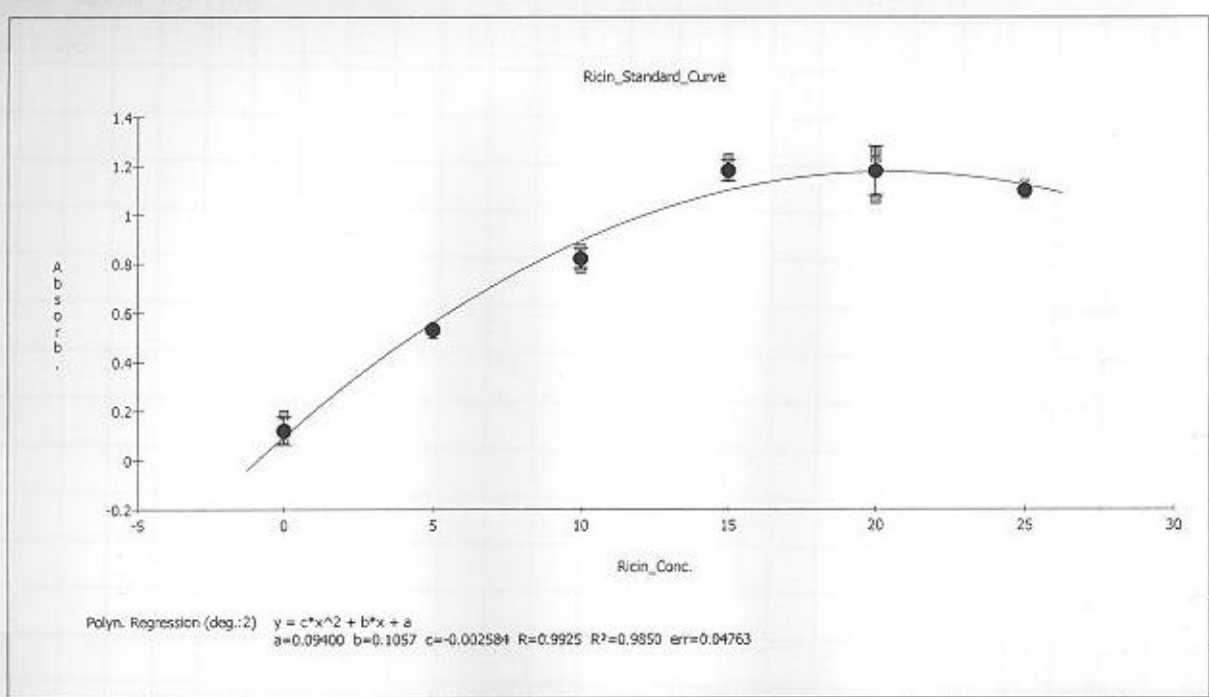
Project No. _____

Book No. _____

TITLE _____

From

STANDARD CURVE



STATISTICS - Concentrations x Dil.

Well ID	Name	Conc\Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	0	100.00	C7	6.2662	626.62	3	634.40	45.874	7.2311
			C8	5.9292	592.92				
			C9	6.8367	683.67				
SPL2	1	100.00	C10	4.9126	491.26	3	534.43	55.420	10.370
			C11	5.1510	515.10				
			C12	5.9693	596.93				
SPL3	2	100.00	E1	3.4162	341.62	3	328.11	17.838	5.4365
			E2	3.3482	334.82				
			E3	3.0789	307.89				
SPL4	4	100.00	E4	1.7181	171.81	3	173.19	1.5776	0.9109
			E5	1.7284	172.84				
			E6	1.7491	174.91				
SPL5	7	50.000	E7	2.4554	122.77	3	136.55	12.244	8.9669
			E8	2.9237	146.18				
			E9	2.8137	140.69				
SPL6	10	50.000	E10	1.6356	81.780	3	113.93	34.311	30.115
			E11	3.0011	150.06				
			E12	2.1992	109.96				
SPL7	15	50.000	G1	0.8996	44.978	3	37.114	7.6216	20.536
			G2	0.5952	29.761				
			G3	0.7321	36.604				
SPL8	20	50.000	G4	0.4109	20.543	3	14.781	5.5336	37.438
			G5	0.2858	14.290				
			G6	0.1902	9.5087				
SPL9	30	2.0000	G7	8.8960	17.792	3	16.333	1.2749	7.8059
			G8	7.8856	15.771				
			G9	7.7174	15.435				
SPL10	40	3.0000	G10	2.9016	8.7047	3	9.9963	1.1344	11.348
			G12	3.6103	10.831				
			G11	3.4845	10.453				

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Date

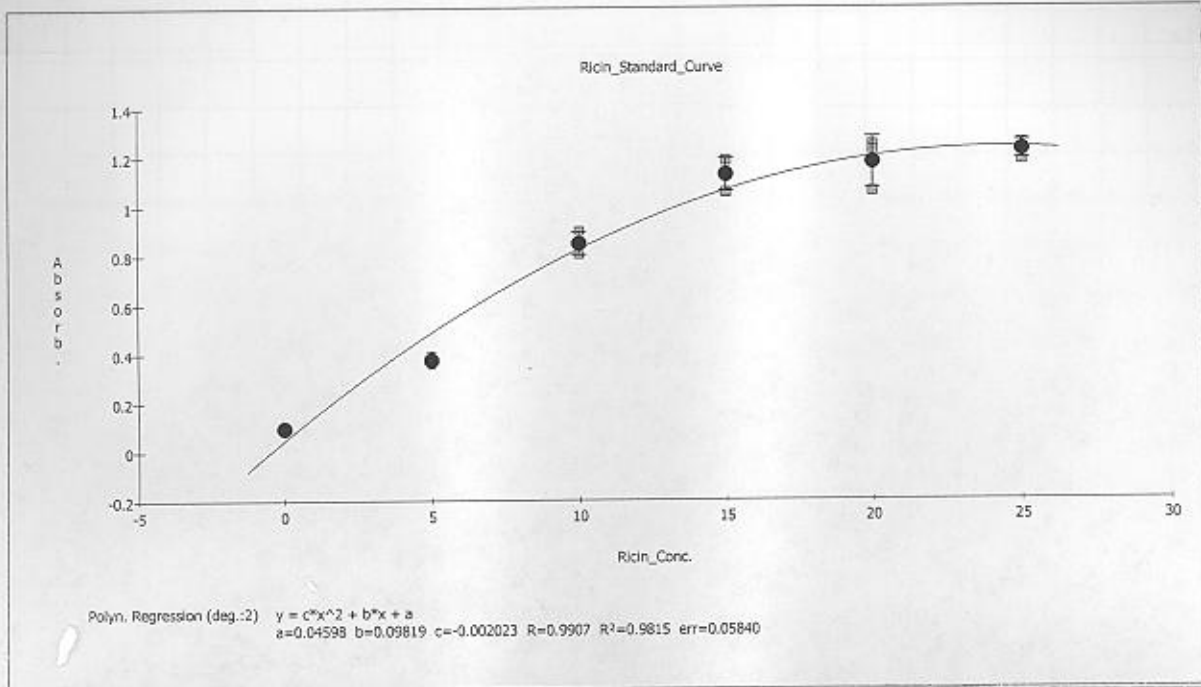
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Well ID	Name	ConcdDil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	0	50.000	C7	7.6251	381.25	3	385.50	8.0036	2.0762
			C8	7.8946	394.73				
			C9	7.6102	380.51				
SPL2	1	50.000	C10	5.5292	276.46	3	276.68	2.9758	1.0755
			C11	5.5953	279.77				
			C12	5.4766	273.83				
SPL3	2	50.000	E1	5.8889	294.44	3	266.28	29.752	11.173
			E2	4.7032	235.16				
			E3	5.3846	269.23				
SPL4	4	50.000	E4	3.1948	159.74	3	174.56	13.252	7.5914
			E5	3.7053	185.27				
			E6	3.5735	178.67				
SPL5	7	50.000	E7	2.4683	123.42	3	136.39	11.939	8.7537
			E8	2.9383	146.92				
			E9	2.7767	138.83				
SPL6	10	50.000	E10	2.1867	109.34	3	110.46	2.4448	2.2133
			E11	2.2653	113.26				
			E12	2.1755	108.78				
SPL7	15	50.000	G1	1.5033	75.163	3	90.521	13.404	14.807
			G2	1.9973	99.865				
			G3	1.9307	96.535				
SPL8	20	50.000	G4	1.4816	74.081	3	74.081	0.5415	0.7309
			G5	1.4708	73.539				
			G6	1.4924	74.622				
SPL9	30	10.000	G7	2.6162	26.162	3	27.655	1.4398	5.2065
			G8	2.7767	27.777				
			G9	2.9035	29.035				
SPL10	40	5.0000	G10	3.9837	19.918	3	19.880	0.7921	3.9845
			G11	3.8138	19.069				
			G12	4.1304	20.652				

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Date

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TITLE _____

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STATISTICS - Concentrations x Dil.

Well ID	Name	Conc\Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	0	50.000	C7	9.5592	477.96	3	432.43	40.142	9.2830
			C8	8.0431	402.16				
			C9	8.3432	417.16				
SPL2	1	50.000	C10	5.8166	290.83	3	306.27	26.228	8.5638
			C11	5.8285	291.43				
			C12	6.7311	336.55				
SPL3	2	50.000	E1	5.7928	289.64	3	270.94	17.613	6.5008
			E2	5.0933	254.67				
			E3	5.3700	268.50				
SPL4	4	50.000	E4	3.5206	176.03	3	183.68	10.616	5.7795
			E5	3.5841	179.21				
			E6	3.9160	195.80				
SPL5	7	50.000	E7	2.7924	139.62	3	136.39	2.9000	2.1262
			E8	2.6802	134.01				
			E9	2.7108	135.54				
SPL6	10	50.000	E10	2.2870	114.35	3	124.27	12.711	10.228
			E11	2.3972	119.86				
			E12	2.7719	138.60				
SPL7	15	50.000	G1	1.5885	79.425	3	84.457	7.4932	8.8722
			G2	1.8614	93.068				
			G3	1.6175	80.877				
SPL8	20	50.000	G4	1.3859	69.294	3	71.701	3.0059	4.1923
			G5	1.4148	70.738				
			G6	1.5014	75.070				
SPL9	30	10.000	G7	3.0496	30.496	3	28.918	1.4982	5.1808
			G8	2.8744	28.744				
			G9	2.7515	27.515				
SPL10	40	5.0000	G10	3.9052	19.526	3	19.850	0.3245	1.6346
			G11	4.0350	20.175				
			G12	3.9700	19.850				

pit 7.5 75°C orkomin 2ppm 2nd plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.107	0.094	0.095	0.371	0.362	0.393	0.844	0.899	0.808	1.187	1.056	1.141
B												
C	1.227	1.247	1.056	1.245	1.185	1.254	0.677	0.695	0.676	0.527	0.532	0.523
D												
E	0.554	0.463	0.516	0.339	0.382	0.371	0.276	0.317	0.303	0.251	0.258	0.250
F												
G	0.189	0.234	0.228	0.187	0.185	0.188	0.289	0.303	0.314	0.405	0.391	0.417
H												

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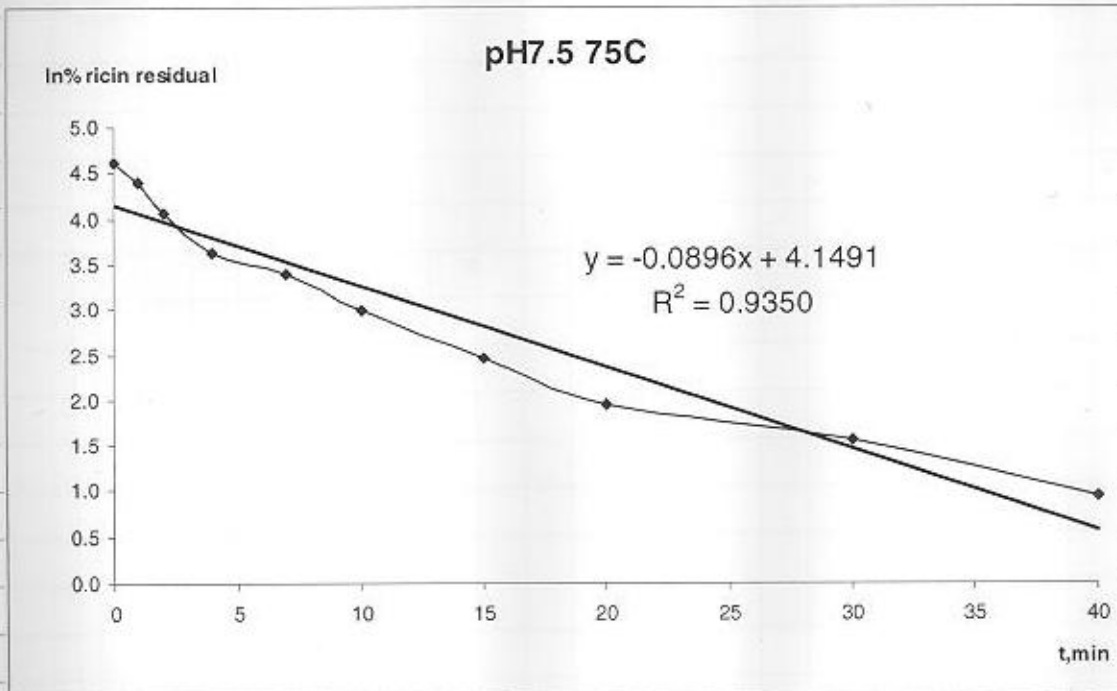
Invented by:

Date

27/27/08

Recorded by:

Discussion: Experiment No. 37, 38, 39.



$$\ln 50 = -0.0896x + 4.1491$$

$$x = 2.6 \text{ min}$$

As the temperature falls, the rate of decreasing (damage) should be slower than the rate under higher temperature. There must be some factors causing the fast drop of ricin residual in pH 7.5 buffer system.

Suggest: Remake the buffer system, re-run the test under the same condition as 85°C pH 7.5 except the water bath temperature (75°C).

TITLE ELISA Ricin pH7.5

Project No. _____

Book No. _____

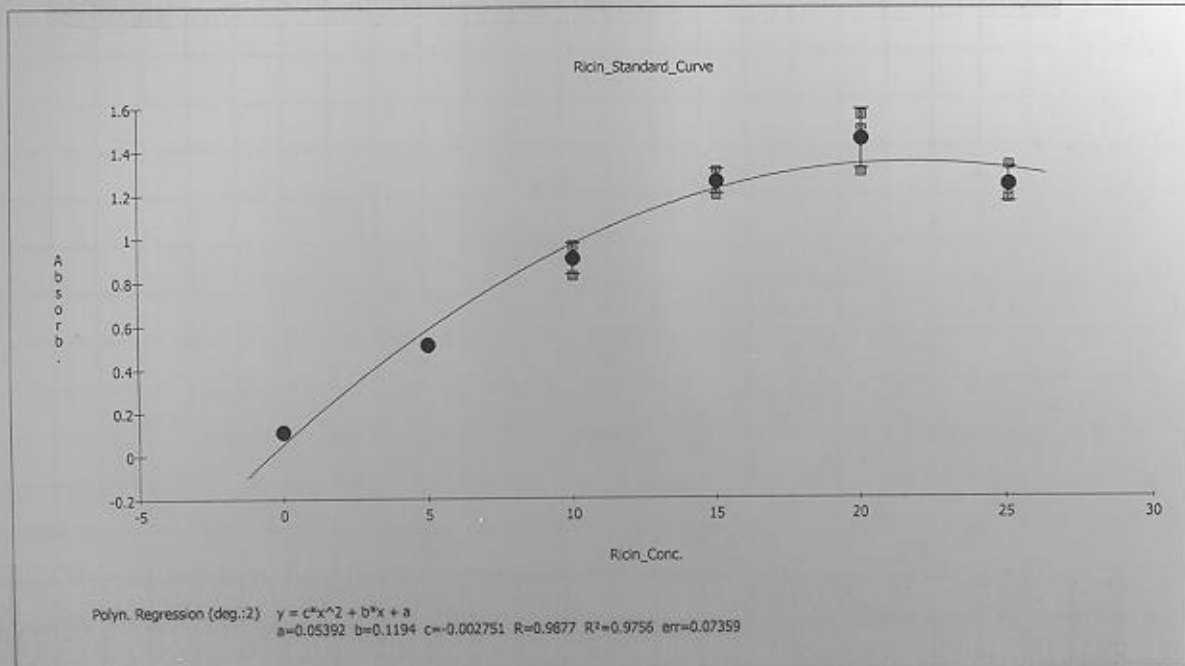
From Page No. _____ Experiments No. 40

pH 7.5 75°C 0.40 min 2ppm 1st plate

M 405

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.109	0.108	0.118	0.518	0.508	0.514	0.828	0.967	0.924	1.309	1.200	1.276
B												
C	1.500	1.568	1.304	1.184	1.336	1.220	0.670	0.720	0.710	0.615	0.631	0.753
D												
E	0.602	0.541	0.535	0.725	0.711	0.631	0.417	0.428	0.447	0.395	0.410	0.458
F												
G	0.296	0.322	0.259	0.198	0.201	0.197	0.349	0.376	0.398	0.467	0.525	0.524
H												

STANDARD CURVE



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Date _____

Invented by: _____

Date _____

Recorded by: _____

Project No. _____

Book No. _____

TITLE 2.5mg 1019 1205

From Page No. _____

STATISTICS - Concentrations x Dil.

Well ID	Name	Conc\Dil	Well	Concentr.	Concentr. x Dil.	Nb	Mean	Std Dev	CV (%)
SPL1	0	100.00	C7	5.9845	598.45	3	633.74	31.141	4.9139
			C8	6.5737	657.37				
			C9	6.4540	645.40				
SPL2	1	100.00	C10	5.3609	536.09	3	595.87	88.505	14.853
			C11	5.5398	553.98				
			C12	6.9755	697.55				
SPL3	2	100.00	E1	5.2170	521.70	3	475.63	40.024	8.4149
			E2	4.5576	455.76				
			E3	4.4942	449.42				
SPL4	4	50.000	E4	6.6338	331.69	3	310.66	29.457	9.4822
			E5	6.4659	323.30				
			E6	5.5398	276.99				
SPL5	7	50.000	E7	3.2901	164.50	3	171.29	7.5521	4.4089
			E8	3.3990	169.95				
			E9	3.5885	179.43				
SPL6	10	50.000	E10	3.0742	153.71	3	166.58	16.343	9.8108
			E11	3.2211	161.06				
			E12	3.6993	184.97				
SPL7	15	50.000	G1	2.1322	106.61	3	104.98	14.660	13.965
			G2	2.3751	118.75				
			G3	1.7914	89.570				
SPL8	20	50.000	G4	1.2422	62.109	3	62.407	0.9269	1.4853
			G5	1.2689	63.446				
			G6	1.2333	61.665				
SPL9	30	10.000	G7	2.6306	26.306	3	28.746	2.3681	8.2379
			G8	2.8897	28.897				
			G9	3.1035	31.035				
SPL10	40	5.0000	G10	3.7905	18.952	3	20.930	1.7126	8.1828
			G11	4.3889	21.944				
			G12	4.3784	21.892				

To Page No _____

Witnessed & Understood by me,

Date

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03/28