

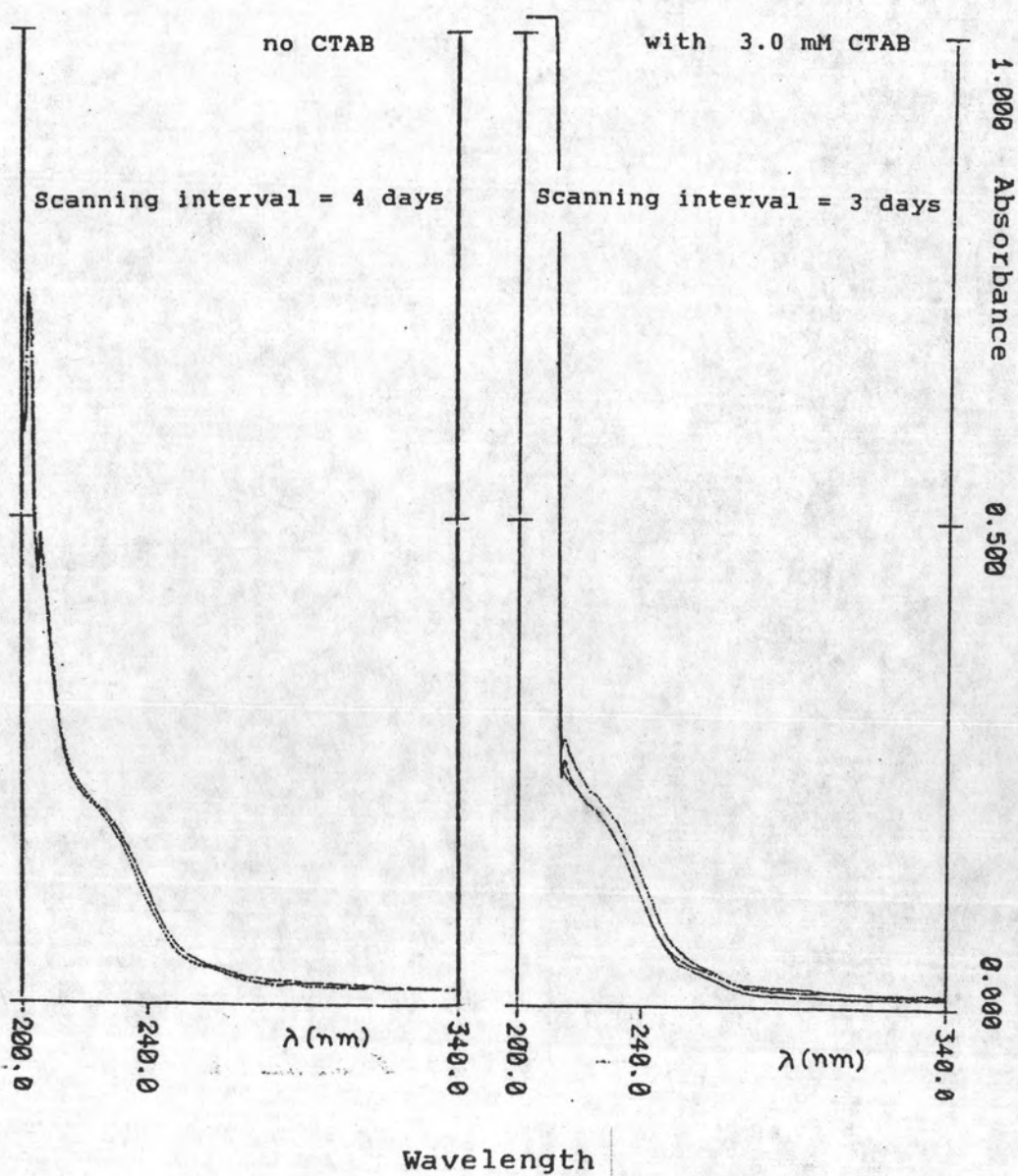
APPENDIX I

The UV-spectrum of carbamate No.II and VI

The UV spectrum of carbamate No.II

Condition : pH 11.5

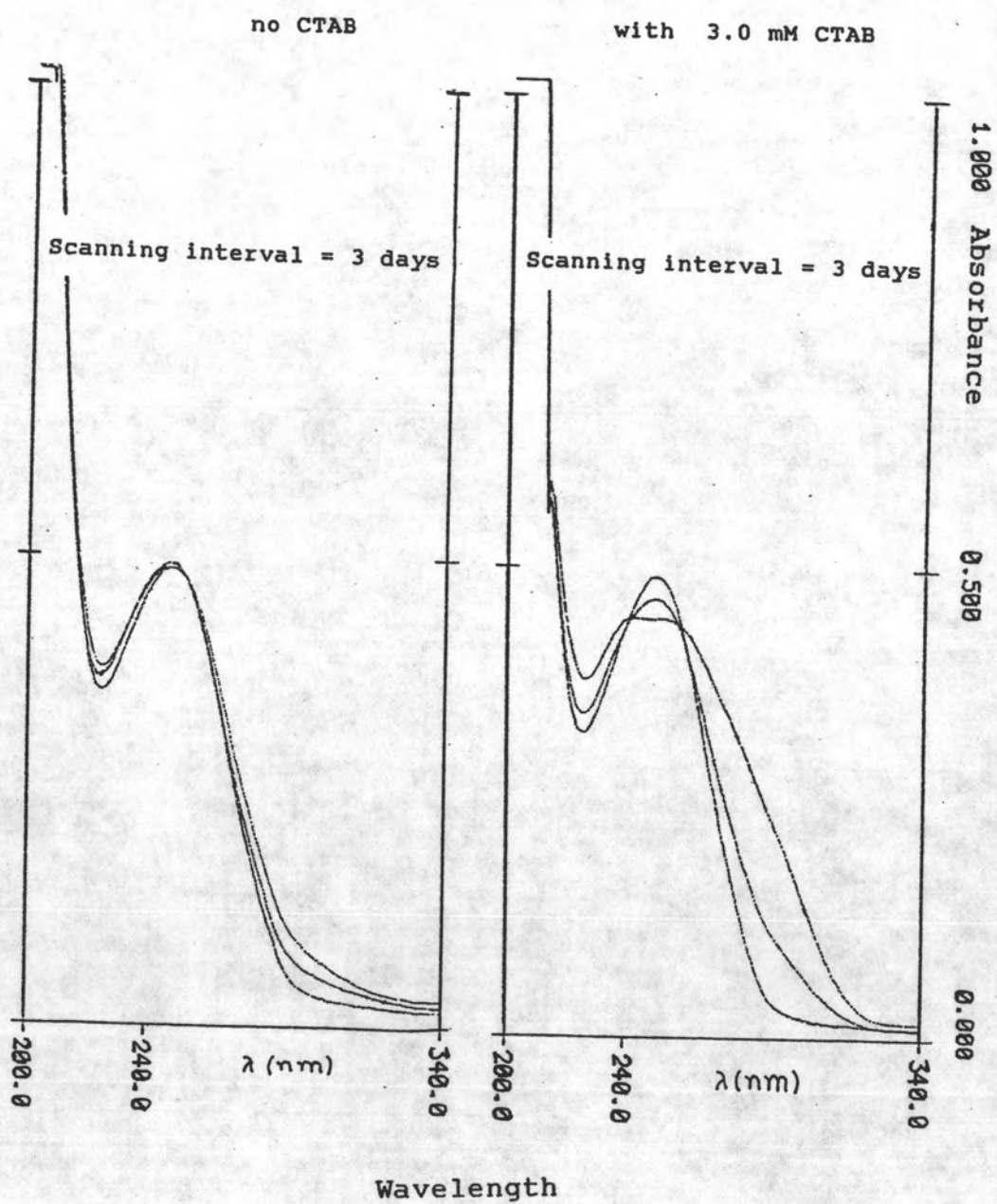
: temperature 25°C



The UV spectrum of carbamate No.VI

Condition : pH 11.5

: temperature 25 °C



APPENDIX II

The multiple linear regression program
for
Apple II+ computer

```
10 PRINT "MULTIPLE LINEAR REGRESSION"
20 PRINT
30 DIM X(9),S(9),T(9),A(9,19)
40 PRINT "NUMBER OF KNOWN POINTS";
50 INPUT N
60 PRINT "NUMBER OF INDEPENDENT VARIABLES";
70 INPUT V
80 X(1) = 1
90 FOR I = 1 TO N
100 PRINT "POINT ";I
110 FOR J = 1 TO V
120 PRINT " VARIABLE ";J;
130 INPUT X(J + 1)
140 NEXT J
150 PRINT " DEPENDENT VARIABLE";
160 INPUT X(V + 2)
170 FOR K = 1 TO V + 1
180 FOR L = 1 TO V + 2
190 A(K,L) = A(K,L) + X(K) * X(L)
200 S(K) = A(K,V + 2)
210 NEXT L
220 NEXT K
230 S(V + 2) = S(V + 2) + X(V + 2) ^ 2
240 NEXT I
250 FOR I = 2 TO V + 1
260 T(I) = A(1,I)
270 NEXT I
280 FOR I = 1 TO V + 1
290 FOR J = I TO V + 1
300 IF A(J,I) < > 0 THEN 340
310 NEXT J
320 PRINT "NO UNIQUE SOLUTION"
330 GOTO 810
340 FOR K = 1 TO V + 2
350 B = A(I,K)
```

```
360 A(I,K) = A(J,K)
370 A(J,K) = B
380 NEXT K
390 Z = 1 / A(I,I)
400 FOR K = 1 TO V + 2
410 A(I,K) = Z * A(I,K)
420 NEXT K
430 FOR J = 1 TO V + 1
440 IF J = I THEN 490
450 Z = - A(J,I)
460 FOR K = 1 TO V + 2
470 A(J,K) = A(J,K) + Z * A(I,K)
480 NEXT K
490 NEXT J
500 NEXT I
510 PRINT
520 PRINT "EQUATION COEFFICIENTS:"
525 PRINT "      CONSTANT:";A(1,V + V)
530 FOR I = 2 TO V + 1
540 PRINT "VARIABLE("I - 1"):"A(I,V + 2)
550 NEXT I
560 P = 0
570 FOR I = 2 TO V + 1
580 P = P + A(I,V + 2) * (S(I) - T(I) * S(1) / N)
590 NEXT I
600 R = S(V + 2) - S(1) ^ 2 / N
610 Z = R - P
620 L = N - V - 1
630 I = P / V
640 PRINT
650 I = P / R
660 PRINT "COEFFICIENT OF DETERMINATION (R^2) = ";I
670 PRINT "COEFFICIENT OF MULTIPLE CORRELATION = "; SQR (I)
680 PRINT "STANDARD ERROR OF ESTIMATE "; SQR ( ABS (Z / L))
690 PRINT
700 PRINT "INTERPOLATION: (ENTER 0 TO END PROGRAM)"
710 P = A(1,V + 2)
720 FOR J = 1 TO V
730 PRINT "VARIABLE ";J;
740 INPUT X
750 IF X = 0 THEN 810
760 P = P + A(J + 1,V + 2) * X
770 NEXT J
780 PRINT "DEPENDENT VARIABLE = "P
790 PRINT
800 GOTO 710
810 END
```


Carbamate : I
 CTAB concentration (C): 0.1 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	2
0	0.067	0.054
120	0.302	0.359
240	0.406	0.452
360	0.472	0.498
480	0.528	0.528
600	0.565	0.550
infinity(A _∞)	0.647	0.628
Slope :	1.375x10 ⁻³	1.370x10 ⁻³
Correlation :	0.9976	0.9729
k (slope x 2.303) : obs	3.166x10 ⁻³	3.156x10 ⁻³
Average k : obs	3.161x10 ⁻³	sec ⁻¹

Carbamate : I
 CTAB concentration (C): 0.3 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.023	0.023
120	0.181	0.174
240	0.259	0.246
360	0.303	0.285
480	0.330	0.310
600	0.349	0.327
720	0.363	0.338
840	0.374	0.347
infinity(A _∞)	0.388	0.358
Slope	1.610x10 ⁻³	1.692x10 ⁻³
Correlation :	0.9983	0.9985
k (slopex2.303) :	3.708x10 ⁻³	3.898x10 ⁻³
obs		
Average k :	3.803x10 ⁻³	sec ⁻¹
obs		

Carbamate : I
 CTAB concentration (C): 0.5 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.042	0.046
60	0.264	0.308
120	0.371	0.426
180	0.428	0.490
240	0.465	0.529
300	0.489	0.556
360	0.506	0.574
420	0.519	0.587
480	0.528	0.598
540	0.535	0.608
infinity(A _∞)	0.544	0.618
Slope :	2.999x10 ⁻³	2.923x10 ⁻³
Correlation :	0.9970	0.9949
k (slopex2.303) : obs	6.907x10 ⁻³	6.732x10 ⁻³
Average k : obs	6.819x10 ⁻³	sec ⁻¹

Carbamate : I
 CTAB concentration (C): 0.7 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.035	0.039
40	0.114	0.119
80	0.166	0.171
120	0.201	0.207
160	0.228	0.234
200	0.249	0.255
infinity(A _∞)	0.317	0.322
Slope :	3.055x10 ⁻³	3.097x10 ⁻³
Correlation :	0.9990	0.9992
k (slopex2.303) : obs	7.036x10 ⁻³	7.132x10 ⁻³
Average k : obs	7.084x10 ⁻³	sec ⁻¹

Carbamate : I
 CTAB concentration (C): 1.0 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.051	0.044
40	0.204	0.228
80	0.283	0.331
120	0.323	0.394
160	0.351	0.431
200	0.373	0.456
infinity(A _∞)	0.391	0.480
Slope :	6.137x10 ⁻³	6.192x10 ⁻³
Correlation :	0.9968	0.9986
k (slope x 2.303) : obs	14.134x10 ⁻³	14.260x10 ⁻³
Average k : obs	14.197x10 ⁻³	sec ⁻¹

Carbamate : I
 CTAB concentration (C): 1.5 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.104	0.068
5	0.190	0.145
10	0.267	0.229
15	0.327	0.293
20	0.369	0.339
25	0.400	0.366
30	0.421	0.387
infinity(A _∞)	0.466	0.435
Slope :	30.509x10 ⁻³	29.892x10 ⁻³
Correlation :	0.9986	0.9977
k (slopex2.303) : obs	70.263x10 ⁻³	69.567x10 ⁻³
Average k : obs	69.915x10 ⁻³	sec ⁻¹

Carbamate : I
 CTAB concentration (C): 2.0 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	2
0	0.215	0.206
1	0.267	0.256
2	0.317	0.297
3	0.361	0.332
4	0.397	0.369
5	0.424	0.400
6	0.446	0.423
infinity(A _∞)	0.566	0.533
Slope :	79.052x10 ⁻³	79.100x10 ⁻³
Correlation :	0.9997	0.9984
k (slopesx2.303) : obs	182.057x10 ⁻³	182.167x10 ⁻³
Average k : obs	182.112x10 ⁻³	sec ⁻¹

Carbamate : I
 CTAB concentration (C): 3.0 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.387	0.375
1	0.418	0.437
2	0.447	0.493
3	0.477	0.531
4	0.503	0.559
5	0.519	0.581
6	0.533	0.598
7	0.544	0.612
8	0.553	0.623
9	0.560	0.632
infinity(A _∞)	0.595	0.682
Slope :	88.327x10 ⁻³	87.444x10 ⁻³
Correlation :	0.9993	0.9976
k (slopex2.303) : obs	203.417x10 ⁻³	201.383x ⁻³
Average k : obs	202.400x10 ⁻³	sec ⁻¹

Carbamate : I
 CTAB concentration (C): 4.0 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 285 nm

time(sec)	Absorbance (A)	
	1	2
0	0.467	0.390
1	0.516	0.444
2	0.551	0.492
3	0.589	0.521
4	0.617	0.543
5	0.637	0.560
infinity(A _∞)	0.724	0.645
Slope :	95.023x10 ⁻³	96.019x10 ⁻³
Correlation :	0.9993	0.9973
k (slopesx2.303) : obs	218.838x10 ⁻³	221.132x10 ⁻³
Average kobs :	219.985x10 ⁻³	sec ⁻¹

Carbamate : I
 CTAB concentration (C): 5.0 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 285 nm



time(sec)	Absorbance (A)	
	1	2
0	0.426	0.475
1	0.479	0.528
2	0.514	0.580
3	0.552	0.618
4	0.576	0.641
5	0.596	0.658
6	0.610	0.673
7	0.621	0.683
infinity(A _∞)	0.672	0.737
Slope :	98.807x10 ⁻³	99.515x10 ⁻³
Correlation :	0.9992	0.9968
k (slopex2.303) : obs	227.553x10 ⁻³	229.184x10 ⁻³
Average k : obs	228.725x10 ⁻³	sec ⁻¹

Carbamate : III
 CTAB concentration : 0
 Temperature : 10^o C
 pH : 11.2
 Wave length : 318 nm

time(sec)	Absorbance (A)	
	1	2
0	0.035	0.064
120	0.086	0.117
240	0.116	0.158
360	0.142	0.194
480	0.167	0.224
600	0.186	0.250
720	0.200	0.272
840	0.212	0.290
960	0.222	0.305
1080	0.230	0.318
infinity(A _∞)	0.280	0.382
Slope :	6.360x10 ⁻³	6.420x10 ⁻³
Correlation :	0.9988	0.9999
k (slopex2.303) : obs	1.465x10 ⁻³	1.479x10 ⁻³
Average k : obs	1.472x10 ⁻³	sec ⁻¹

Carbamate : III
 CTAB concentration (C): 0.1 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 318 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.077	0.056
120	0.135	0.103
240	0.180	0.139
360	0.217	0.170
480	0.249	0.195
600	0.275	0.214
720	0.296	0.231
840	0.313	0.246
960	0.326	0.258
1080	0.338	0.268
infinity(A _∞)	0.405	0.318
Slope :	6.400x10 ⁻⁴	6.610x10 ⁻⁴
Correlation :	0.9995	0.9999
k (slopesx2.303) : obs	1.474x10 ⁻³	1.523x10 ⁻³
Average k : obs	1.499x10 ⁻³	sec ⁻¹

Carbamate : III
 CTAB concentration (C): 0.2 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 318 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.087	0.070
120	0.161	0.133
240	0.209	0.179
360	0.245	0.210
480	0.271	0.235
600	0.291	0.251
720	0.307	0.267
840	0.321	0.277
960	0.330	0.284
1080	0.338	0.292
infinity(A _∞)	0.375	0.323
Slope :	8.150x10 ⁻⁴	8.33x10 ⁻⁴
Correlation :	0.9982	0.9977
k (slopex2.303) : obs	1.877x10 ⁻³	1.904x10 ⁻³
Average k : obs	1.898x10 ⁻³	sec ⁻¹

Carbamate : III
 CTAB concentration (C): 0.3 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 318 nm

time(sec)	Absorbance (A)	
	1	2
0	0.090	0.128
60	0.125	0.176
120	0.155	0.206
180	0.176	0.237
240	0.197	0.260
300	0.208	0.280
360	0.222	0.294
420	0.234	0.303
480	0.246	0.315
540	0.255	0.329
infinity(A_{∞})	0.323	0.416

Slope :	9.690×10^{-4}	9.310×10^{-4}
Correlation :	0.9985	0.9957
k_{obs} (slopex2.303) :	2.232×10^{-3}	2.144×10^{-3}
Average k_{obs} :	2.188×10^{-3}	sec ⁻¹

Carbamate no : III
 CTAB concentration (C): 0.5 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 319 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.107	0.044
60	0.182	0.132
120	0.229	0.189
180	0.277	0.232
240	0.309	0.267
300	0.334	0.293
360	0.353	0.313
420	0.365	0.328
480	0.375	0.340
540	0.382	0.350
infinity(A _∞)	0.411	0.390
Slope :	1.920x10 ⁻³	1.719x10 ⁻³
Correlation :	0.9993	0.9992
k (slopex2.303) :	4.422x10 ⁻³	3.958x10 ⁻³
obs		
Average k :	4.190x10 ⁻³	sec ⁻¹
obs		

Carbamate : III
 CTAB concentration (C): 0.7 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 319 nm

time(sec)	Absorbance (A)	
	1	2
0	0.074	0.095
30	0.134	0.161
60	0.179	0.197
90	0.219	0.235
120	0.250	0.267
150	0.270	0.290
180	0.286	0.307
210	0.299	0.319
240	0.308	0.328
270	0.315	0.335
infinity(A _∞)	0.361	0.386
Slope :	2.997x10 ⁻³	2.852x10 ⁻³
Correlation :	0.9967	0.9963
k (slopesx2.303) : obs	6.902x10 ⁻³	6.568x10 ⁻³
Average k : obs	6.735x10 ⁻³	sec ⁻¹

Carbamate no. : III
 CTAB concentration (C): 0.8 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 319 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.046	0.055
30	0.162	0.166
60	0.249	0.251
90	0.309	0.314
120	0.352	0.362
150	0.384	0.396
180	0.406	0.422
210	0.425	0.441
240	0.440	0.457
270	0.452	0.468
infinity(A _∞)	0.486	0.499
Slope :	4.049x10 ⁻³	4.223x10 ⁻³
Correlation :	0.9996	0.9999
k (slopesx2.303) : obs	9.352x10 ⁻³	9.726x10 ⁻³
Average k : obs	9.526x10 ⁻³	sec ⁻¹

Carbamate D : III
 CTAB concentration (C): 1.0 mM
 Temperature : 10°C
 pH : 11.2
 Wave length : 319 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.088	0.081
30	0.181	0.177
60	0.241	0.245
90	0.287	0.293
120	0.306	0.326
150	0.319	0.351
180	0.332	0.366
210	0.341	0.378
infinity(A _∞)	0.366	0.406
Slope :	4.919x10 ⁻³	5.076x10 ⁻³
Correlation :	0.9956	0.9999
k (slope x 2.303) : obs	11.328x10 ⁻³	11.690x10 ⁻³
Average k : obs	11.509x10 ⁻³	sec ⁻¹

Carbamate : III
 CTAB concentration (C): 1.2 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 319 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.071	0.046
20	0.179	0.156
40	0.252	0.234
60	0.303	0.296
80	0.347	0.331
100	0.379	0.366
120	0.398	0.391
140	0.415	0.405
infinity(A _∞)	0.471	0.462
Slope :	6.101x10 ⁻³	6.217x10 ⁻¹
Correlation :	0.9994	0.9993
k (slopesx2.303) : obs	14.050x10 ⁻³	14.318x10 ⁻³
Average k : obs	14.184x10 ⁻³	sec ⁻¹

Carbamate : III
 CTAB concentration (C): 1.5 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 319 nm

time(sec)	Absorbance (A)	
	1	2
0	0.033	0.036
30	0.153	0.147
60	0.239	0.221
90	0.295	0.271
120	0.340	0.309
150	0.371	0.336
180	0.390	0.356
210	0.404	0.369
240	0.414	0.379
270	0.420	0.387
infinity(A _∞)	0.441	0.401

Slope :	4.999x10 ⁻³	5.014x10 ⁻³
Correlation :	0.9998	0.9999
k _{obs} (slopex2.303) :	11.512x10 ⁻³	11.547x10 ⁻³
Average k _{obs} :	11.530x10 ⁻³	sec ⁻¹

Carbamate : III
 CTAB concentration (CD): 2.0 mM
 Temperature : 10°C
 pH : 11.2
 Wave length : 319 nm

time(sec)	Absorbance (A)	
	1	2
0	0.056	0.046
30	0.168	0.120
60	0.241	0.179
90	0.291	0.224
120	0.326	0.258
150	0.352	0.281
180	0.375	0.296
210	0.392	0.318
240	0.404	0.341
270	0.414	0.354
infinity(A _∞)	0.457	0.373
Slope :	3.694x10 ⁻³	3.606x10 ⁻³
Correlation :	0.9980	0.9987
k (slopex2.303) : obs	8.508x10 ⁻³	8.304x10 ⁻³
Average k : obs	8.406x10 ⁻³	sec ⁻¹

Carbamate : IV
 CTAB concentration (C): 0
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.101	0.024
60	0.310	0.182
120	0.428	0.269
180	0.506	0.326
240	0.557	0.368
300	0.590	0.401
360	0.615	0.429
420	0.635	0.454
480	0.651	-
540	0.664	-
infinity(A _∞)	0.725	0.533
Slope :	1.810x10 ⁻³	1.847x10 ⁻³
Correlation :	0.9911	0.9971
k (slopesx2.303) :	4.168x10 ⁻³	4.249x10 ⁻³
obs		
Average k :	4.209x10 ⁻³	sec ⁻¹
obs		

Carbamate : IV
 CTAB concentration (C): 0.1 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	2
0	0.053	0.041
120	0.451	0.354
240	0.589	0.479
360	0.654	0.554
480	0.691	0.602
600	0.720	0.636
720	0.736	0.660
840	0.750	0.688
infinity(A _∞)	0.775	0.721
Slope :	1.634x10 ⁻³	1.609x10 ⁻³
Correlation :	0.9938	0.9930
k (slopesx2.303) : obs	3.764x10 ⁻³	3.706x10 ⁻³
Average k : obs	3.735x10 ⁻³	sec ⁻¹

Carbamate : IV
 CTAB concentration (C): 0.3 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	2
0	0.052	0.042
60	0.340	0.240
120	0.478	0.362
180	0.557	0.437
240	0.605	0.477
300	0.638	0.509
360	0.660	0.535
420	0.676	0.556
480	0.689	0.573
540	0.699	0.588
infinity(A _∞)	0.725	0.612

Slope :	2.506x10 ⁻³	2.391x10 ⁻³
Correlation :	0.9946	0.9972
k (slopex2.303) : obs	5.772x10 ⁻³	5.507x10 ⁻³
Average k : obs	5.640x10 ⁻³	sec ⁻¹

Carbamate : IV
 CTAB concentration (C): 0.5 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.123	0.098
20	0.415	0.376
40	0.492	0.453
60	0.537	0.517
80	0.574	0.552
100	0.600	0.572
120	0.627	0.594
140	0.645	0.613
160	0.657	0.627
infinity(A _∞)	0.681	0.649
Slope :	7.841x10 ⁻³	7.977x10 ⁻³
Correlation :	0.9931	0.9932
k (slope x 2.303) :	18.058x10 ⁻³	18.371x10 ⁻³
obs		
Average k :	18.215x10 ⁻³	sec ⁻¹
obs		

Carbamate : IV
 CTAB concentration (C): 0.7 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	2
0	0.155	0.128
5	0.331	0.292
10	0.395	0.381
15	0.460	0.431
20	0.507	0.471
25	0.539	0.497
30	0.564	0.521
35	0.586	0.537
40	0.609	0.551
infinity(A _∞)	0.716	0.652

Slope :	17.608x10 ⁻³	17.108x10 ⁻³
Correlation :	0.9924	0.9844
k (slopesx2.303) : obs	39.17x10 ⁻³	39.399x10 ⁻³
Average k : obs	39.285x10 ⁻³	sec ⁻¹

Carbamate : IV
 CTAB concentration (C): 1.0 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	2
0	0.187	0.166
5	0.307	0.323
10	0.401	0.416
15	0.450	0.478
20	0.498	0.510
25	0.530	0.541
30	0.553	-

infinity(A_∞) 0.628 0.647

Slope : 25.577x10⁻³ 25.951x10⁻³
 Correlation : 0.9992 0.9941
 k (slopex2.303) : 58.904x10⁻³ 59.765x10⁻³
 obs
 Average k : 59.335x10⁻³
 obs

Carbamate : IV
 CTAB concentration (C): 2.0 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	2
0	0.324	0.375
2	0.428	0.477
4	0.520	0.552
6	0.577	0.598
8	0.615	0.634
10	0.642	0.660
12	0.663	0.680
14	0.679	0.697
infinity(A _∞)	0.756	0.765
Slope :	53.759x10 ⁻³	53.715x10 ⁻³
Correlation :	0.9955	0.9975
k (slopex2.303) : obs	123.808x10 ⁻³	123.706x10 ⁻³
Average k : obs	123.757x10 ⁻³	sec ⁻¹



Carbamate : IV
 CTAB concentration (C): 3.0 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	2
0	0.397	0.446
1	0.462	0.497
2	0.516	0.533
3	0.563	0.572
4	0.595	0.603
5	0.620	0.630
6	0.641	0.651
7	0.658	0.669
infinity(A _∞)	0.807	0.799

Slope : 63.130x10⁻³ 62.385x10⁻³
 Correlation : 0.9957 0.9997
 k_{obs} (slopesx2.303) : 145.389x10⁻³ 143.672x10⁻³
 Average k_{obs} : 144.531x10⁻³ sec⁻¹

Carbamate : IV
 CTAB concentration (C): 4.0 mM
_D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 295 nm

time(sec)	Absorbance (A)	
	1	2
0	0.449	0.422
1	0.509	0.491
2	0.552	0.545
3	0.584	0.588
4	0.619	0.621
5	0.648	0.648
6	0.669	0.669
7	0.688	0.688
infinity(A _∞)	0.803	0.817
Slope :	69.381x10 ⁻³	69.101x10 ⁻³
Correlation :	0.9996	0.9978
k (slopex2.303) :	159.784x10 ⁻³	159.139x10 ⁻³
obs		
Average k :	159.462x10 ⁻³	sec ⁻¹
obs		

Carbamate : V
 CTAB concentration (C): 0
 Temperature : ^D 10 °C
 pH : 11.2
 Wave length : 290 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.094	0.088
30	0.196	0.186
60	0.276	0.257
90	0.334	0.310
120	0.378	0.351
150	0.412	0.381
180	0.437	0.402
210	0.456	0.419
240	0.472	0.433
270	0.483	0.445
infinity(A _∞)	0.520	0.475
Slope :	3.926x10 ⁻³	4.039x10 ⁻³
Correlation :	0.9999	0.9997
k (slopex2.303) : obs	9.041x10 ⁻³	9.302x10 ⁻³
Average k : obs	9.172x10 ⁻³	sec ⁻¹

Carbamate : V
 CTAB concentration (C): 0.1 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 290 nm

time(sec)	Absorbance (A)	
	1	2
0	0.092	0.093
30	0.186	0.194
60	0.260	0.271
90	0.322	0.327
120	0.352	0.371
150	0.387	0.403
180	0.413	0.427
210	0.433	0.445
infinity(A _∞)	0.490	0.507
Slope :	3.977x10 ⁻³	3.938x10 ⁻³
Correlation :	0.9994	0.9999
k (slope x 2.303) : obs	9.159x10 ⁻³	9.069x10 ⁻³
Average k : obs	9.114x10 ⁻³	sec ⁻¹

Carbamate : V
 CTAB concentration (C): 0.5 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 290 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.104	0.094
20	0.179	0.169
40	0.244	0.231
60	0.296	0.279
80	0.339	0.319
100	0.373	0.351
120	0.401	0.376
140	0.424	0.397
160	0.455	0.413
infinity(A _∞)	0.515	0.485
Slope :	4.684x10 ⁻³	4.608x10 ⁻³
Correlation :	0.9999	0.9999
k (slope x 2.303) : obs	10.787x10 ⁻³	10.613x10 ⁻³
Average k : obs	10.700x10 ⁻³	sec ⁻¹

Carbamate CO_2 : V
 CTAB concentration (C): 1.0 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 290 nm

time(sec)	Absorbance (A)	
	1	2
0	0.092	0.084
20	0.169	0.158
40	0.232	0.223
60	0.280	0.279
80	0.318	0.315
100	0.347	0.349
120	0.370	0.372
140	0.387	0.386
160	0.401	0.396
infinity(A_∞)	0.451	0.447
Slope :	5.364×10^{-3}	5.517×10^{-3}
Correlation :	0.9999	0.9986
k (slope $\times 2.303$) :	12.353×10^{-3}	12.706×10^{-3}
obs		
Average k :	12.530×10^{-3}	sec ⁻¹
obs		

Carbamate : V
 CTAB concentration (C): 2.0 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 290 nm

time(sec)	Absorbance (A)	
	1	t 2
0	0.092	0.079
20	0.191	0.163
40	0.263	0.221
60	0.314	0.263
80	0.352	0.295
100	0.379	0.319
120	0.399	0.336
140	0.414	0.349
infinity(A _∞)	0.452	0.382
Slope :	6.950x10 ⁻³	6.838x10 ⁻³
Correlation :	0.9999	0.9999
k (slopesx2.303) :	16.007x10 ⁻³	15.747x10 ⁻³
obs		
Average k :	15.877x10 ⁻³	sec ⁻¹
obs		

Carbamate (C) : V
 CTAB concentration (C) : 4.0 mM
 D
 Temperature : 10 °C
 pH : 11.2
 Wave length : 290 nm

time(sec)	Absorbance (A)	
	1	2
0	0.154	0.086
10	0.229	0.171
20	0.289	0.241
30	0.336	0.293
40	0.375	0.336
50	0.405	0.371
60	0.429	0.398
70	0.449	0.423
80	0.464	0.439
90	0.476	0.454
infinity(A _∞)	0.522	0.512
Slope :	10.045x10 ⁻³	9.603x10 ⁻³
Correlation :	0.9999	0.9999
k (slope x 2.303) : obs	23.134x10 ⁻³	22.115x10 ⁻³
Average k : obs	22.322x10 ⁻³	sec ⁻¹

Carbamate : V
 CTAB concentration (C): 6.0 mM
 D
 Temperature : 10°C
 pH : 11.2
 Wave length : 290 nm

time(sec)	Absorbance (A)	
	1	2
0	0.099	0.091
10	0.158	0.148
20	0.210	0.197
30	0.250	0.237
40	0.282	0.268
50	0.309	0.293
60	0.331	0.315
70	0.348	0.331
80	0.362	0.345
90	0.373	0.356
infinity(A _∞)	0.412	0.393

Slope :	10.049x10 ⁻³	10.098x10 ⁻³
Correlation :	0.9997	0.9996
k (slope x 2.303) : obs	23.144x10 ⁻³	23.255x10 ⁻³
Average k : obs	23.199x10 ⁻³	sec ⁻¹

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