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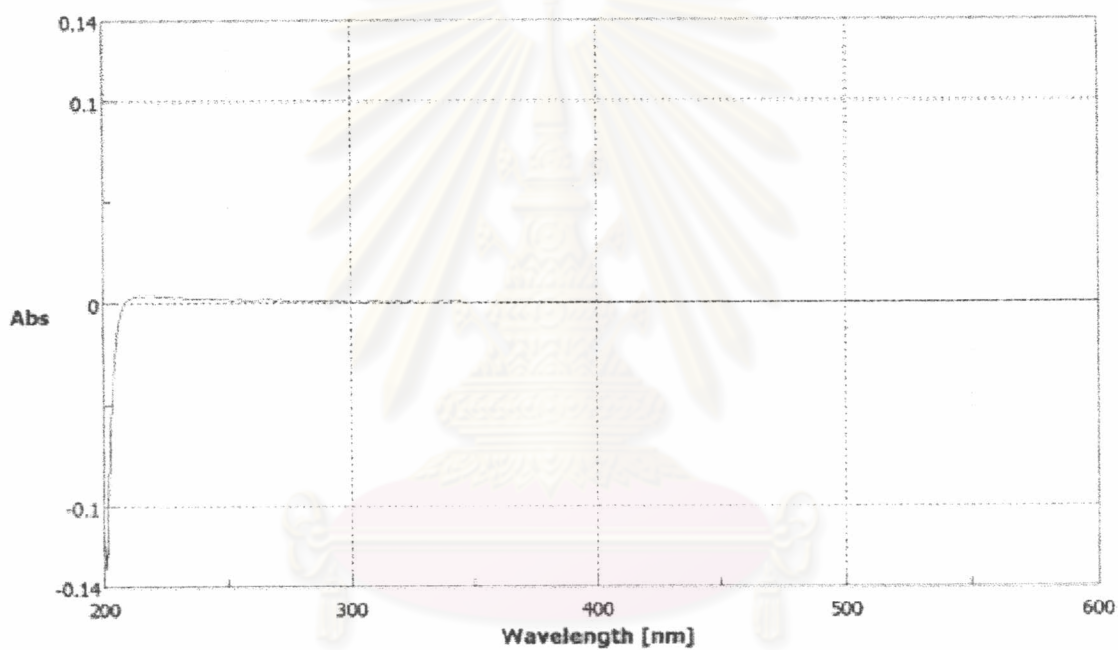


APPENDICES

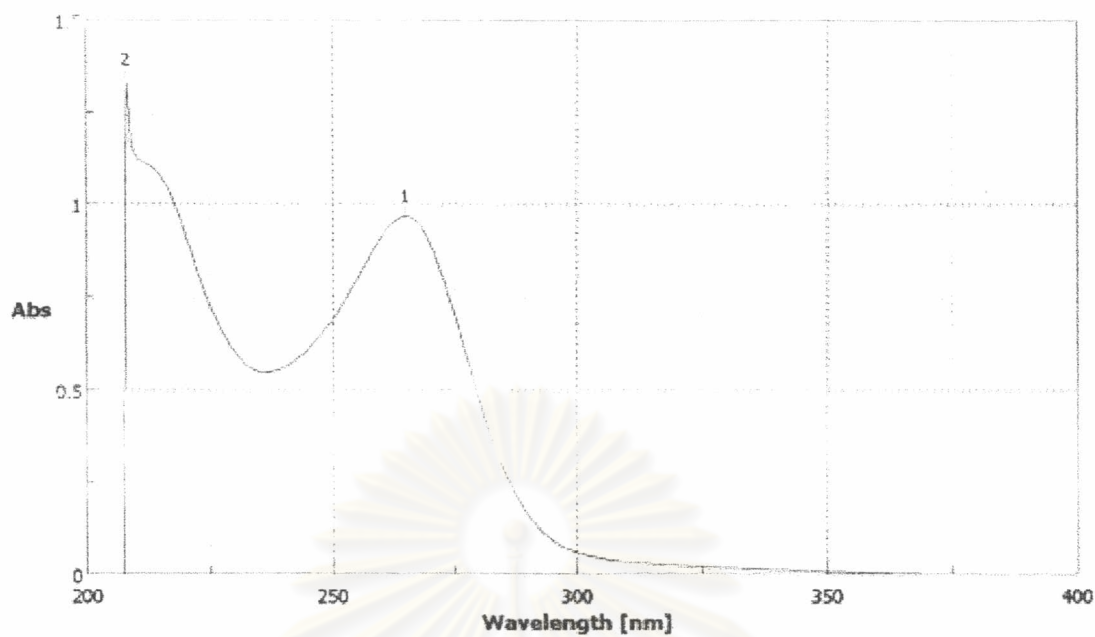
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Appendix 1 Percent Yield of VS and VJM.

No.	VS (%Yield)	VJM (% Yield)
1	41.59	85.71
2	40.60	75.69
3	38.32	77.05
Average (SD)	40.17 (1.68)	79.48 (5.44)



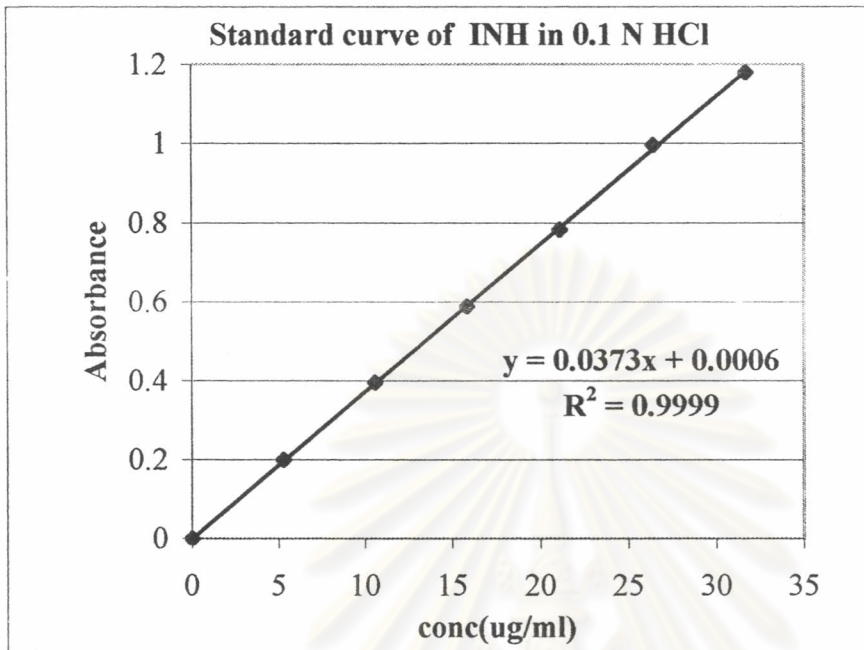
Appendix 2 UV spectrum of placebo tablet in assay of INH.



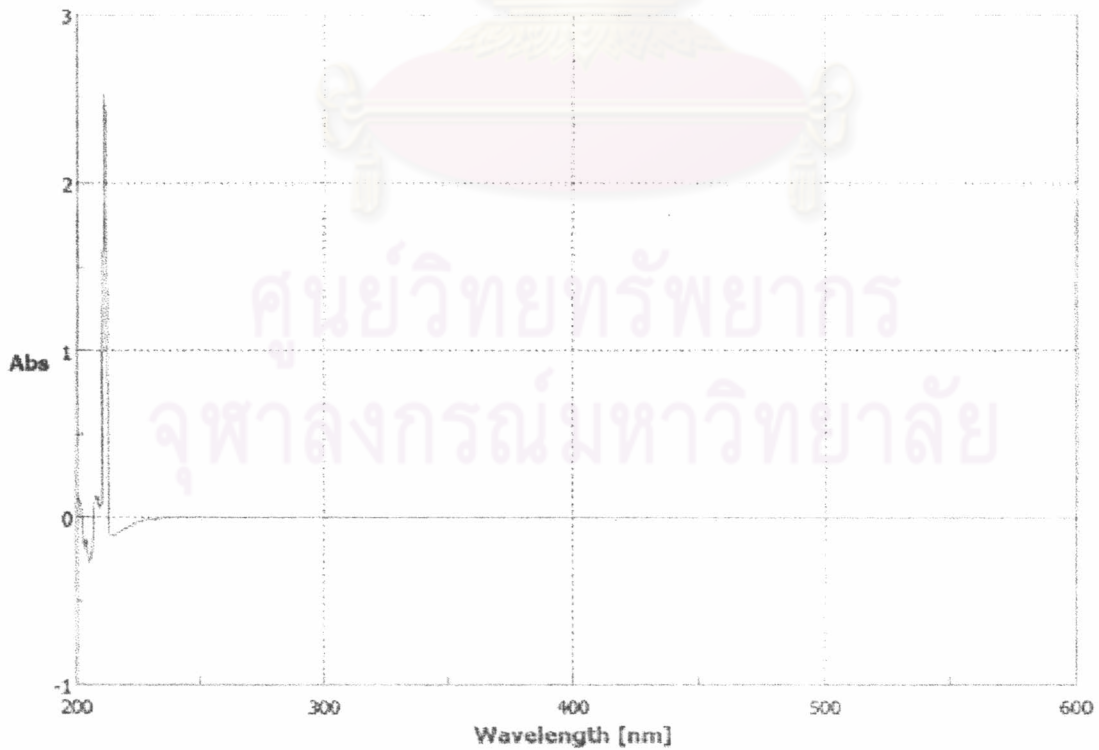
Appendix 3 UV spectrum of INH in 0.1 N HCl at 265 nm.

Appendix 4 Standard concentration absorbance of INH in 0.1 N HCl.

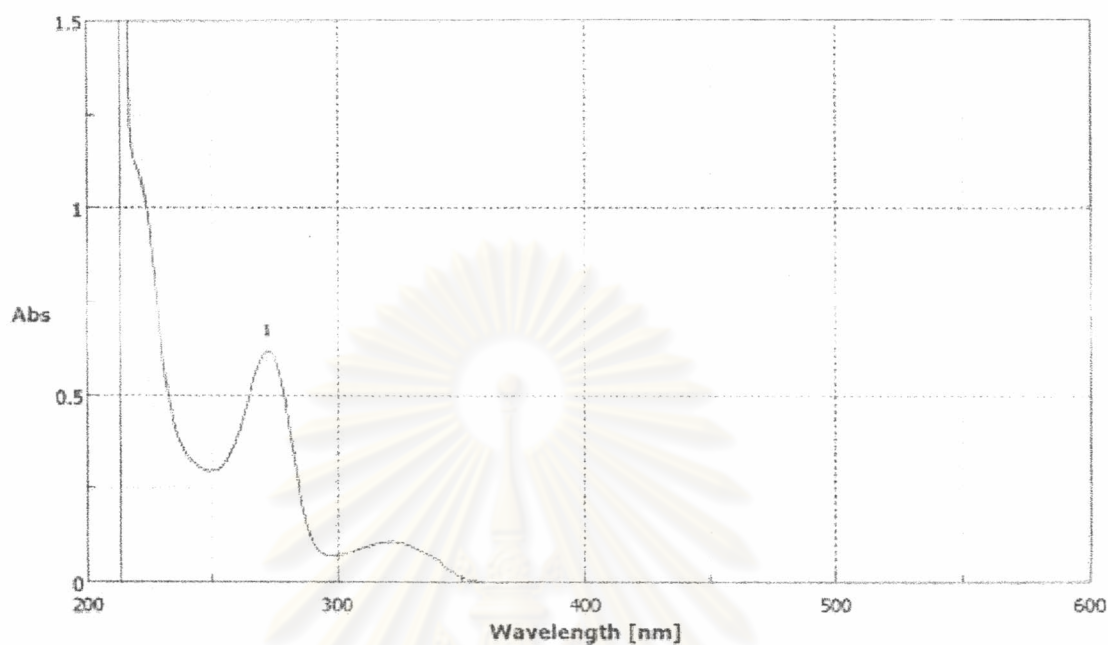
Concentration ($\mu\text{g/ml}$)	Absorbance
0	0
5.28	0.1991
10.56	0.3958
15.84	0.5898
21.12	0.7828
26.40	0.9960
31.6	1.1790



Appendix 5 Standard curve of INH in 0.1 N HCl.



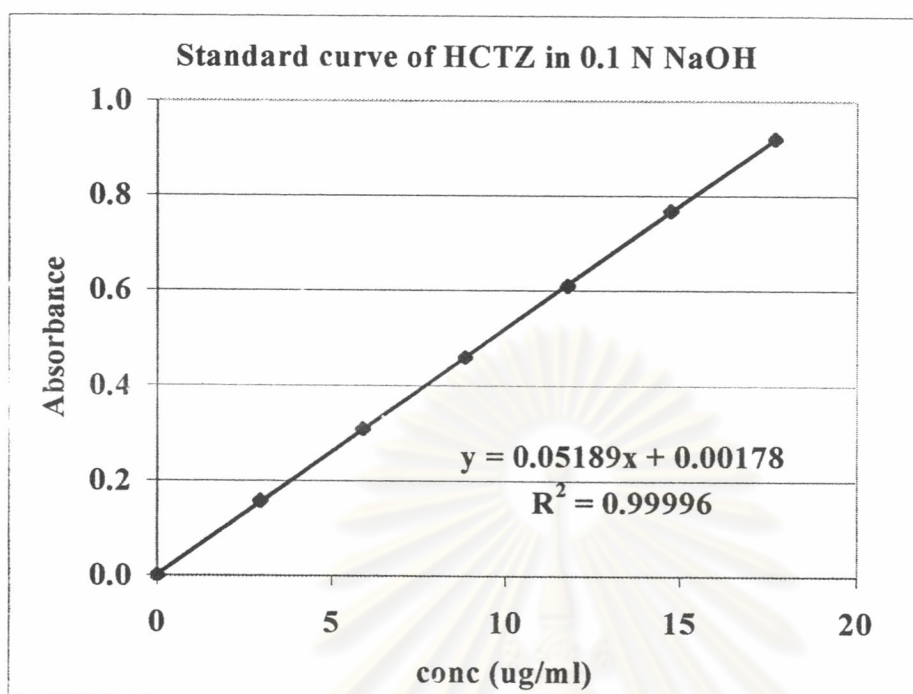
Appendix 6 UV spectrum of placebo tablet in assay of HCTZ.



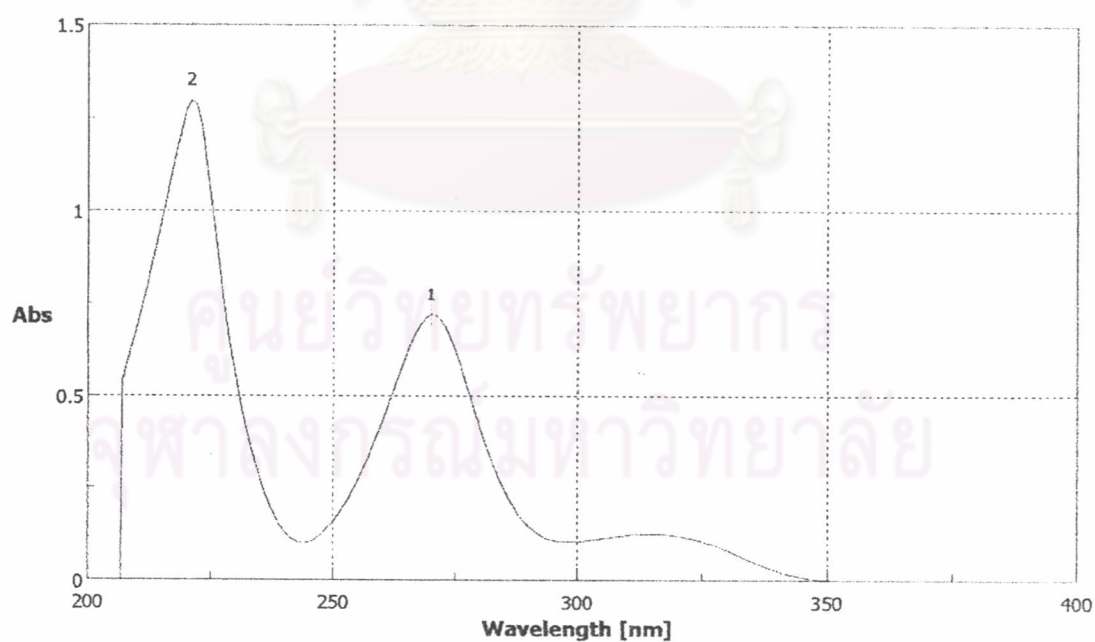
Appendix 7 UV spectrum of HCTZ in 0.1 NaOH at 272 nm.

Appendix 8 Standard concentration absorbance of HCTZ in 0.1 N NaOH.

Concentration ($\mu\text{g/ml}$)	Absorbance
0	0
2.95	0.1576
5.90	0.3087
8.85	0.4603
11.80	0.6111
14.75	0.7687
17.70	0.9204



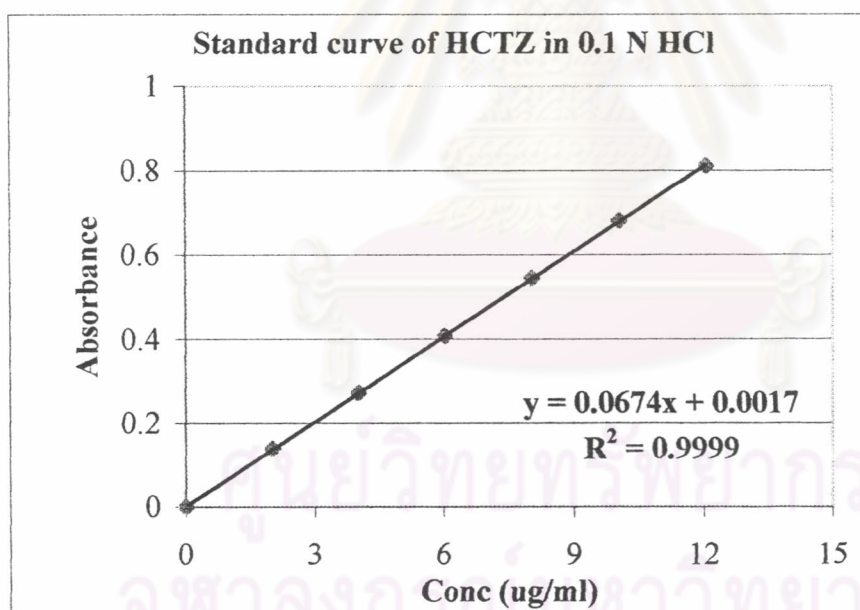
Appendix 9 Standard curve of HCTZ in 0.1 N NaOH.



Appendix 10 UV spectrum of HCTZ in 0.1 N HCl at 270 nm.

Appendix 11 Standard concentration absorbance of HCTZ in 0.1 N HCl.

Concentration ($\mu\text{g/ml}$)	Absorbance
0	0
2.01	0.1387
4.02	0.2725
6.03	0.4068
8.04	0.5462
10.05	0.6810
12.06	0.8114



Appendix 12 Standard curve of HCTZ in 0.1 N HCl.

Appendix 13 Effect of magnesium stearate concentration on physical properties of tablets using Vivapur[®] as direct compression diluent.

MgSt (%)	CF (kN)	Weight variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
0.25%	1	248.07 (2.61)	9.51 (0.00)	4.24 (0.01)	39.1 (2.51)	0.24	10.08 (1.79)
	3	246.46 (1.33)	9.50 (0.00)	3.27 (0.01)	116.1 (4.18)	0.06	> 60 ¹
	5	248.49 (1.38)	9.49 (0.00)	2.96 (0.01)	182.5 (4.99)	0.00	> 60
	7	250.80 (1.31)	9.48 (0.00)	2.80 (0.01)	229.7 (7.44)	0.00	> 60
0.50%	1	257.06 (2.90)	9.50 (0.00)	4.37 (0.01)	41.1 (0.99)	0.23	13.69 (1.50)
	3	257.13 (1.80)	9.50 (0.00)	3.43 (0.01)	121.3 (5.42)	0.06	> 60 ¹
	5	257.34 (1.41)	9.48 (0.00)	3.05 (0.01)	185.4 (4.48)	0.00	> 60
	7	257.79 (1.93)	9.48 (0.00)	2.89 (0.02)	235.5 (4.09)	0.00	> 60
0.75%	1	251.45 (4.22)	9.50 (0.00)	4.33 (0.01)	36.5 (1.84)	0.30	8.54 (1.43)
	3	249.99 (1.10)	9.49 (0.00)	3.29 (0.01)	114.7 (3.89)	0.14	> 60 ¹
	5	251.70 (2.02)	9.48 (0.00)	2.98 (0.01)	172.7 (7.39)	0.02	> 60
	7	250.38 (1.08)	9.47 (0.00)	2.80 (0.01)	216.7 (7.29)	0.00	> 60
1.00%	1	246.98 (2.33)	9.50 (0.00)	4.04 (0.01)	39.2 (1.69)	0.28	12.35 (2.60)
	3	248.50 (2.61)	9.49 (0.00)	3.30 (0.00)	105.3 (5.08)	0.18	> 60 ¹
	5	247.28 (1.62)	9.49 (0.01)	2.85 (0.00)	162.4 (7.12)	0.04	> 60
	7	247.34 (1.87)	9.47 (0.00)	2.74 (0.02)	202.7 (5.81)	0.00	> 60
1.50%	1	257.51 (1.09)	9.51 (0.00)	4.19 (0.01)	24.2 (1.03)	1.37	5.69 (0.76)
	3	261.80 (0.99)	9.50 (0.00)	3.29 (0.01)	76.1 (2.51)	0.25	35.00 (12.17)
	5	258.68 (0.81)	9.49 (0.00)	2.95 (0.01)	125.8 (3.29)	0.06	> 60 ¹
	7	256.81 (1.01)	9.48 (0.00)	2.80 (0.00)	155.1 (3.78)	0.02	> 60

Note : 1 = small pieces of tablet remained in the basket after disintegration test

Appendix 14 Effect of magnesium stearate concentration on physical properties of tablets using RS/MCC as direct compression diluent.

MgSt (%)	CF (kN)	Weight variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
0.25%	3	250.34 (0.54)	9.56 (0.01)	3.77 (0.01)	28.4 (0.84)	3.86	1.65 (0.19)
	5	250.16 (0.46)	9.54 (0.00)	3.34 (0.01)	67.4 (2.32)	0.34	1.63 (0.15)
	7	250.00 (0.46)	9.51 (0.00)	3.07 (0.01)	113.3 (3.20)	0.22	1.60 (0.25)
	9	252.46 (0.51)	9.50 (0.00)	2.94 (0.01)	146.1 (3.78)	0.20	1.96 (0.29)
0.50%	3	252.06 (0.48)	9.58 (0.01)	3.91 (0.01)	25.9 (0.99)	2.58	1.89 (0.22)
	5	252.42 (0.28)	9.56 (0.00)	3.44 (0.03)	60.7 (3.89)	0.32	1.95 (0.11)
	7	252.20 (0.26)	9.54 (0.00)	3.21 (0.01)	95.4 (3.17)	0.28	1.92 (0.19)
	9	251.96 (0.22)	9.52 (0.00)	3.01 (0.01)	136.7 (6.18)	0.16	2.24 (0.22)
0.75%	3	251.45 (0.80)	9.55 (0.00)	3.88 (0.01)	20.8 (0.63)	2.42	2.04 (0.14)
	5	253.67 (0.52)	9.54 (0.00)	3.41 (0.01)	52.2 (0.92)	0.51	1.85 (0.40)
	7	254.04 (0.56)	9.54 (0.00)	3.16 (0.01)	83.7 (2.06)	0.35	1.65 (0.24)
	9	252.65 (0.82)	9.51 (0.01)	2.96 (0.01)	121.2 (2.15)	0.26	2.06 (0.12)
1.00%	3	251.97 (0.68)	9.58 (0.01)	3.79 (0.01)	10.3 (2.50)	3.93	1.79 (0.22)
	5	251.85 (0.57)	9.55 (0.00)	3.41 (0.01)	44.0 (1.05)	0.83	1.74 (0.18)
	7	252.07 (0.44)	9.53 (0.00)	3.21 (0.01)	68.1 (2.33)	0.30	1.81 (0.16)
	9	252.17 (0.51)	9.52 (0.00)	3.03 (0.02)	98.6 (2.19)	0.26	1.83 (0.15)
1.50%	3	250.30 (0.64)	*	*	*	5.58	2.17 (0.21)
	5	250.02 (0.58)	9.58 (0.00)	3.36 (0.01)	30.5 (1.18)	1.51	1.93 (0.37)
	7	250.41 (0.45)	9.55 (0.00)	3.14 (0.01)	54.8 (2.10)	0.47	1.88 (0.32)
	9	250.56 (0.57)	9.53 (0.00)	2.97 (0.01)	84.1 (2.42)	0.28	1.97 (0.37)

Note : * = can not be measured

Appendix 15 Effect of magnesium stearate concentration on physical properties of tablets using Eratab[®] as direct compression diluent.

MgSt (%)	CF (kN)	Weight variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
0.25%	3	254.10 (0.66)	9.56 (0.00)	3.74 (0.01)	21.4 (1.43)	1.82	1.69 (0.16)
	5	253.80 (0.55)	9.53 (0.00)	3.32 (0.01)	46.3 (2.83)	0.22	1.80 (0.10)
	7	254.00 (0.51)	9.51 (0.00)	3.12 (0.01)	64.4 (4.27)	0.20	1.87 (0.11)
	9	252.78 (0.53)	9.50 (0.00)	3.01 (0.01)	86.4 (4.79)	0.10	1.72 (0.43)
0.50%	3	252.16 (0.42)	9.55 (0.00)	3.69 (0.01)	24.2 (1.03)	1.59	1.64 (0.15)
	5	252.28 (0.24)	9.52 (0.01)	3.24 (0.02)	43.8 (3.55)	0.20	1.78 (0.10)
	7	252.20 (0.35)	9.50 (0.00)	3.03 (0.01)	55.0 (4.64)	0.14	1.80 (0.05)
	9	251.67 (0.37)	9.48 (0.00)	2.89 (0.01)	69.1 (5.38)	0.10	1.95 (0.26)
0.75%	3	252.29 (0.44)	9.57 (0.00)	3.73 (0.01)	8.9 (2.60)	4.06	1.83 (0.13)
	5	252.30 (0.55)	9.53 (0.00)	3.27 (0.010)	35.1 (1.20)	0.76	1.83 (0.10)
	7	252.06 (0.49)	9.51 (0.01)	3.08 (0.01)	49.6 (2.76)	0.38	1.98 (0.15)
	9	251.56 (0.50)	9.50 (0.01)	2.95 (0.01)	57.2 (3.16)	0.30	1.98 (0.18)
1.00%	3	250.32 (0.48)	9.55 (0.00)	3.61 (0.00)	9.1 (3.84)	3.71	1.87 (0.12)
	5	249.29 (0.66)	9.54 (0.00)	3.28 (0.01)	23.3 (4.50)	1.33	1.84 (0.20)
	7	248.26 (0.50)	9.52 (0.00)	3.09 (0.01)	39.1 (1.85)	0.55	2.05 (0.11)
	9	249.40 (0.33)	9.50 (0.00)	2.99 (0.00)	50.9 (3.59)	0.36	2.03 (0.20)
1.50%	3	248.96 (0.54)	*	*	*	all tablets were broken	1.66 (0.13)
	5	248.00 (0.65)	9.54 (0.00)	3.29 (0.01)	13.4 (4.99)	2.04	1.85 (0.19)
	7	247.58 (0.36)	9.52 (0.00)	3.04 (0.01)	35.8 (0.79)	0.93	2.13 (0.20)
	9	251.04 (0.30)	9.51 (0.00)	2.96 (0.01)	45.0 (1.12)	0.56	1.99 (0.10)

Note : * = can not be measured

Appendix 16 Effect of magnesium stearate concentration on physical properties of tablets using Tablettose® as direct compression diluent.

MgSt (%)	CF (kN)	Weight variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
0.50%	3	250.16 (0.76)	*	*	*	*	5.36 (0.93)
	5	249.47 (1.14)	9.52 (0.01)	2.96 (0.02)	8.6 (2.32)	all tablets were broken	9.40 (0.87)
	7	249.31 (0.58)	9.52 (0.01)	2.88 (0.02)	10.9 (1.91)	all tablets were broken	9.08 (1.58)
	9	248.26 (0.68)	9.53 (0.00)	2.79 (0.01)	23.5 (5.87)	all tablets were broken	10.97 (1.17)
0.75%	3	251.11 (2.09)	*	*	*	*	18.64 (0.77)
	5	247.53 (1.05)	9.52 (0.01)	2.94 (0.01)	8.1 (1.79)	all tablets were broken	19.87 (0.62)
	7	248.79 (0.62)	9.54 (0.04)	2.86 (0.01)	12.4 (5.10)	all tablets were broken	20.13 (1.42)
	9	249.91 (0.63)	9.54 (0.03)	2.82 (0.01)	20.2 (6.58)	18.03	18.43 (1.52)
1.00%	3	251.66 (0.97)	*	*	*	*	16.18 (1.56)
	5	255.35 (1.61)	9.53 (0.02)	3.06 (0.02)	7.5 (0.71)	all tablets were broken	17.21 (1.07)
	7	261.72 (1.56)	9.52 (0.00)	2.88 (0.00)	11.4 (1.71)	1 tablet was broken	19.47 (1.80)
	9	251.90 (2.11)	9.53 (0.01)	2.81 (0.01)	19.4 (4.56)	1.11	20.46 (2.37)
1.50%	3	258.00 (2.66)	*	*	*	*	35.23 (2.45)
	5	255.18 (0.67)	9.51 (0.00)	2.98 (0.02)	7.1 (0.32)	all tablets were broken	33.59 (4.47)
	7	253.04 (0.54)	9.54 (0.03)	2.89 (0.02)	10.4 (1.51)	all tablets were broken	32.73 (2.54)
	9	249.62 (0.69)	9.54 (0.02)	2.78 (0.01)	19.7 (4.42)	all tablets were broken	35.61 (2.83)

Note : * = can not be measured

Appendix 17 Effect of magnesium stearate concentration on physical properties of tablets using Cellactose® as direct compression diluent.

MgSt (%)	CF (kN)	Weight variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
0.50%	3	252.11 (0.63)	9.52 (0.00)	3.37 (0.00)	20.6 (0.70) ¹	5.90	0.16 (0.02)
	5	254.60 (1.77)	9.51 (0.01)	3.16 (0.02)	37.6 (1.51) ²	0.15	0.19 (0.01)
	7	257.25 (2.76)	9.51 (0.01)	3.03 (0.04)	56.7 (2.98) ³	0.02	0.26 (0.02)
	9	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴	-- ⁴
0.75%	3	252.95 (0.91)	9.52 (0.00)	3.43 (0.02)	17.6 (0.97) ¹	2.64	0.19 (0.02)
	5	249.76 (1.56)	9.52 (0.01)	3.11 (0.01)	35.8 (2.49) ¹	0.21	0.20 (0.02)
	7	249.38 (1.76)	9.51 (0.00)	2.92 (0.01)	50.9 (1.85) ¹	0.18	0.25 (0.02)
	9	249.98 (1.09)	9.51 (0.01)	2.83 (0.01)	65.7 (3.43) ¹	0.15	0.38 (0.01)
1.00%	3	250.50 (0.94)	9.52 (0.00)	3.31 (0.01)	19.9 (0.88)	1.20	0.19 (0.01)
	5	261.27 (1.80)	9.51 (0.00)	3.18 (0.01)	40.4 (2.17)	0.31	0.19 (0.01)
	7	261.98 (1.50)	9.51 (0.00)	3.02 (0.02)	53.4 (1.71)	0.19	0.24 (0.01)
	9	257.99 (2.68)	9.50 (0.00)	2.86 (0.02)	73.1 (2.98)	0.10	0.36 (0.02)
1.50%	3	249.90 (0.62)	9.51 (0.01)	3.29 (0.01)	14.5 (1.27)	2.25	1.37 (0.59)
	5	253.25 (1.61)	9.51 (0.00)	3.06 (0.01)	34.7 (1.49)	0.19	0.56 (0.08)
	7	254.28 (0.87)	9.50 (0.00)	2.91 (0.02)	52.1 (2.73)	0.04	0.50 (0.03)
	9	251.41 (0.79)	9.50 (0.00)	2.79 (0.00)	64.2 (2.99)	0.04	0.65 (0.04)

- Note : 1 = binding
 2 = binding increased
 3 = binding increased
 4 = excessive binding and had friction sound of the machine

Paracetamol (%)	CF (kN)	Weight Variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
10	1	253.1 (2.86)	9.49 (0.01)	4.46 (0.03)	23.3 (2.21)	0.91	6.02 (1.47)
	3	257.1 (1.57)	9.50 (0.00)	3.44 (0.03)	82.3 (3.09)	0.04	36.72 (10.58)
	5	249.2 (2.32)	9.50 (0.01)	2.97 (0.01)	132.7 (3.68)	0.00	> 60
	7	249.1 (1.09)	9.49 (0.00)	2.80 (0.01)	165.5 (9.08)	0.02	> 60
15	1	257.1 (1.92)	9.50 (0.00)	4.14 (0.01)	27.9 (1.91)	0.76	5.44 (1.17)
	3	256.5 (1.87)	9.51 (0.01)	3.34 (0.03)	73.8 (2.62)	0.10	15.30 (2.50)
	5	257.4 (1.41)	9.49 (0.00)	3.02 (0.00)	119.6 (5.46)	0.06	29.50 (6.10)
	7	256.0 (1.81)	9.49 (0.00)	2.81 (0.02)	154.1 (7.03)	0.06	> 60
20	1	253.4 (3.61)	9.50 (0.00)	4.20 (0.02)	21.1 (1.60)	1.51	4.55 (1.53)
	3	250.4 (2.17)	9.51 (0.00)	3.41 (0.01)	60.2 (3.99)	0.22	21.15 (2.14)
	5	249.5 (1.22)	9.50 (0.00)	3.05 (0.00)	99.6 (3.06)	0.14	22.26 (4.49)
	7	251.9 (1.10)	9.50 (0.01)	2.91 (0.01)	132.7 (4.67)	0.08	> 60
25	1	246.9 (2.80)	9.49 (0.01)	4.02 (0.04)	18.9 (1.10)	1.84	2.42 (0.65)
	3	248.7 (2.50)	9.50 (0.00)	3.31 (0.01)	56.9 (2.92)	0.12	7.43 (2.17)
	5	246.0 (1.81)	9.50 (0.00)	2.97 (0.01)	91.0 (3.94)	0.04	24.62 (15.23)
	7	249.3 (2.38)	9.49 (0.00)	2.84 (0.01)	121.1 (3.48)	0.06	> 60 ¹
30	1	245.2 (4.27)	9.47 (0.01)	4.15 (0.00)	14.0 (1.70)	4.44	1.34 (0.47)
	3	245.5 (2.37)	9.51 (0.00)	3.29 (0.02)	47.6 (2.46)	0.25	6.59 (2.51)
	5	244.5 (1.98)	9.50 (0.00)	2.99 (0.04)	77.5 (2.51)	0.14	28.28 (4.94)
	7	244.9 (1.73)	9.50 (0.00)	2.83 (0.02)	103.4 (3.84)	0.10	20.35 (6.57) ²
35	1	249.7 (5.78)	9.47 (0.01)	4.12 (0.03)	13.2 (1.93)	4.86	1.44 (0.26)
	3	251.7 (2.35)	9.51 (0.00)	3.41 (0.00)	39.6 (3.31)	0.32	6.92 (2.11)
	5	253.4 (2.35)	9.51 (0.00)	3.15 (0.03)	70.0 (2.79)	0.01	18.25 (5.07)
	7	251.5 (3.72)	9.50 (0.00)	2.94 (0.03)	94.6 (4.48)	0.04	18.32 (7.43)

Note : 1 = small pieces of tablet remained in the basket after disintegration test

2 = average from 5 determinations, small pieces of one tablet remained in the basket until 60 minutes

Paracetamol (%)	CF (kN)	Weight Variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
10	3	249.7 (0.83)	9.56 (0.00)	3.67 (0.01)	25.5 (0.97)	2.56	2.00 (0.12)
	5	250.6 (1.13)	9.55 (0.00)	3.35 (0.01)	49.3 (3.30)	0.34	1.95 (0.19)
	7	250.0 (0.78)	9.53 (0.00)	3.11 (0.01)	79.1 (2.23)	0.20	1.71 (0.43)
	9	250.8 (0.81)	9.53 (0.00)	2.88 (0.01)	100.3 (4.08)	0.08	2.02 (0.39)
15	3	250.6 (1.15)	9.56 (0.01)	3.60 (0.01)	21.3 (0.67)	3.27	1.91 (0.13)
	5	250.3 (0.94)	9.56 (0.01)	3.26 (0.01)	43.6 (1.17)	0.42	2.02 (0.19)
	7	251.4 (0.77)	9.55 (0.00)	3.07 (0.01)	66.6 (2.67)	0.16	1.51 (0.37)
	9	250.9 (0.90)	9.53 (0.01)	2.93 (0.01)	88.8 (1.81)	0.06	1.99 (0.19)
20	3	249.5 (1.84)	9.57 (0.00)	3.60 (0.01)	17.8 (0.63)	4.47	1.40 (0.11)
	5	250.3 (1.42)	9.56 (0.00)	3.29 (0.01)	39.0 (2.21)	0.88	1.59 (0.14)
	7	252.3 (1.56)	9.54 (0.01)	3.09 (0.01)	62.2 (2.90)	0.36	1.47 (0.23)
	9	252.5 (0.90)	9.53 (0.00)	2.97 (0.01)	82.9 (4.56)	0.22	1.68 (0.40)
25	3	249.0 (1.69)	9.57 (0.01)	3.70 (0.01)	10.3 (3.40)	6.97	1.49 (0.07)
	5	249.0 (0.77)	9.56 (0.00)	3.30 (0.00)	29.3 (1.42)	1.67	1.52 (0.10)
	7	251.6 (0.75)	9.56 (0.01)	3.15 (0.02)	48.5 (1.78)	0.44	1.61 (0.25)
	9	250.6 (0.91)	9.54 (0.01)	3.05 (0.01)	67.3 (3.86)	0.22	1.65 (0.16)
30	3	250.9 (0.95)	9.56 (0.01)	3.72 (0.02)	7.6 (3.06)	7.20	1.18 (0.12)
	5	248.8 (1.33)	9.56 (0.01)	3.37 (0.00)	25.1 (1.79)	2.09	1.41 (0.12)
	7	250.4 (0.80)	9.55 (0.00)	3.06 (0.01)	43.9 (1.20)	0.60	1.44 (0.14)
	9	249.5 (0.59)	9.54 (0.00)	3.02 (0.01)	62.8 (1.03)	0.24	1.27 (0.42)
35	3	244.9 (1.59)	*	*	*	9 tablets were broken	1.27 (0.07)
	5	250.6 (1.65)	9.57 (0.01)	3.41 (0.01)	18.9 (3.67)	3.37	1.19 (0.21)
	7	249.9 (0.99)	9.55 (0.01)	3.21 (0.01)	35.5 (1.58)	1.18	1.28 (0.23)
	9	251.0 (0.80)	9.53 (0.01)	3.06 (0.02)	51.4 (2.55)	0.46	1.11 (0.32)

Note : * = can not be measured

Appendix 20 Physical properties of Eratab[®] tablets in dilution potential study.

Paracetamol (%)	CF (kN)	Weight Variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
10	3	253.5 (1.01)	9.55 (0.00)	3.63 (0.01)	20.8 (0.92)	2.91	1.53 (0.11)
	5	249.0 (1.89)	9.55 (0.01)	3.24 (0.02)	36.3 (1.49)	0.77	1.66 (0.19)
	7	251.3 (0.66)	9.53 (0.01)	3.07 (0.01)	58.4 (3.50)	0.38	1.85 (0.13)
	9	252.8 (0.62)	9.52 (0.01)	2.97 (0.00)	76.0 (2.40)	0.32	1.92 (0.17)
15	3	250.9 (0.88)	9.55 (0.01)	3.58 (0.03)	10.1 (3.75)	4.93	1.67 (0.07)
	5	251.1 (0.48)	9.54 (0.00)	3.24 (0.01)	31.5 (1.27)	0.92	1.91 (0.15)
	7	251.1 (0.43)	9.52 (0.00)	3.09 (0.01)	50.6 (1.35)	0.30	1.84 (0.10)
	9	250.9 (1.05)	9.51 (0.00)	2.90 (0.01)	59.5 (1.72)	0.28	1.95 (0.16)
20	3	247.0 (1.49)	9.53 (0.00)	3.56 (0.01)	3.10 (5.09)	1 tablet was broken	1.45 (0.17)
	5	252.2 (1.54)	9.54 (0.00)	3.24 (0.02)	28.7 (1.64)	1.45	1.77 (0.13)
	7	249.7 (1.21)	9.53 (0.01)	3.03 (0.01)	42.3 (1.49)	0.28	1.80 (0.19)
	9	252.0 (1.27)	9.51 (0.00)	2.94 (0.02)	53.5 (2.95)	0.24	1.79 (0.14)
25	3	246.6 (2.58)	*	*	*	6 tablets were broken	1.49 (0.07)
	5	251.5 (1.99)	9.54 (0.00)	3.28 (0.01)	22.9 (1.20)	2.29	1.64 (0.17)
	7	253.3 (2.59)	9.53 (0.01)	3.11 (0.01)	36.7 (1.06)	0.40	1.70 (0.20)
	9	252.3 (0.78)	9.51 (0.00)	2.97 (0.01)	48.1 (1.66)	0.24	1.66 (0.19)
30	3	249.1 (1.70)	*	*	*	5 tablets were broken	1.31 (0.10)
	5	248.9 (1.23)	9.56 (0.01)	3.29 (0.01)	23.3 (1.06)	2.62	1.55 (0.11)
	7	249.3 (1.33)	9.56 (0.01)	3.11 (0.01)	34.5 (1.78)	0.76	1.59 (0.13)
	9	253.4 (0.93)	9.53 (0.01)	3.04 (0.01)	50.2 (1.23)	0.41	1.65 (0.23)
35	3	247.8 (0.73)	*	*	*	all tablets were broken	1.23 (0.17)
	5	248.1 (0.72)	9.57 (0.01)	3.31 (0.00)	10.6 (1.96)	4.14	1.55 (0.11)
	7	249.5 (0.59)	9.56 (0.01)	3.13 (0.01)	27.9 (2.02)	1.45	1.64 (0.14)
	9	249.6 (0.74)	9.54 (0.01)	2.99 (0.01)	38.4 (1.84)	0.70	1.54 (0.15)

Note : * = can not be measured

Appendix 21 Physical properties of Tablettose® tablets in dilution potential study.

Paracetamol (%)	CF (kN)	Weight Variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
5	3	256.4 (1.15)	*	*	*	all tablets were broken	6.73 (2.19)
	5	255.5 (0.45)	9.51 (0.00)	2.97 (0.01)	8.3 (1.06)	all tablets were broken	13.86 (2.23)
	7	253.3 (0.68)	9.53 (0.01)	2.88 (0.01)	11.5 (1.72)	14 tablets were broken	17.10 (1.70)
	9	252.5 (0.48)	9.53 (0.01)	2.80 (0.01)	18.0 (5.89)	1 tablet was broken	20.94 (1.00)
10	3	255.4 (0.65)	*	*	*	all tablets were broken	1.22 (0.40)
	5	252.6 (0.64)	9.51 (0.00)	2.95 (0.01)	7.9 (0.57)	all tablets were broken	7.56 (2.81)
	7	252.8 (0.61)	9.52 (0.01)	2.88 (0.01)	10.1 (1.52)	17 tablets were broken	15.30 (1.93)
	9	253.3 (0.52)	9.53 (0.00)	2.83 (0.01)	14.0 (1.33)	3 tablets were broken	16.42 (2.88)

Note : * = can not be measured

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Appendix 22 Physical properties of Cellactose® tablets in dilution potential study.

Paracetamol (%)	CF (kN)	Weight Variation (mg) average (SD)	Diameter (mm) average (SD)	Thickness (mm) average (SD)	Hardness (N) average (SD)	Friability (%)	DT (min) average (SD)
10	3	255.9 (1.72)	9.51 (0.01)	3.36 (0.01)	16.0 (0.67)	3.23	0.17 (0.01)
	5	252.7(0.72)	9.52 (0.00)	3.10 (0.01)	26.6 (1.17)	0.63	0.23 (0.02)
	7	253.3 (0.85)	9.52 (0.01)	2.95 (0.00)	40.5 (1.58)	0.27	0.30 (0.07)
	9	251.2 (0.47)	9.51 (0.00)	2.85 (0.01)	49.9 (1.60)	0.20	0.34 (0.02)
15	3	256.0 (0.73)	9.50 (0.01)	3.43 (0.01)	12.1 (0.88)	5.80	0.20 (0.02)
	5	252.0 (0.81)	9.52 (0.00)	3.12 (0.01)	23.5 (0.71)	0.90	0.24 (0.05)
	7	252.5 (0.49)	9.52 (0.00)	2.98 (0.01)	35.6 (0.84)	0.49	0.31 (0.03)
	9	251.7 (0.67)	9.51 (0.00)	2.87 (0.00)	46.6 (1.51)	0.36	0.38 (0.03)
20	3	249.8 (0.76)	*	*	*	8.36	0.21 (0.02)
	5	250.5 (0.63)	9.52 (0.00)	3.06 (0.01)	21.7 (0.67)	1.56	0.29 (0.06)
	7	251.4 (0.60)	9.52 (0.00)	2.93 (0.01)	32.9 (0.88)	0.52	0.38 (0.05)
	9	250.6 (0.57)	9.51 (0.01)	2.86 (0.01)	41.6 (1.58)	0.39	0.52 (0.07)
25	3	249.6 (1.70)	*	*	*	1 tablet was broken	0.24 (0.01)
	5	248.6 (1.27)	9.52 (0.00)	3.07 (0.02)	20.5 (0.71)	1.51	0.42 (0.07)
	7	251.3 (0.74)	9.52 (0.00)	2.96 (0.01)	31.3 (1.16)	0.58	0.50 (0.12)
	9	252.1 (0.59)	9.52 (0.00)	2.90 (0.01)	40.6 (1.65)	0.32	0.68 (0.08)
30	3	247.4 (2.19)	*	*	*	3 tablets were broken	0.25 (0.03)
	5	247.5 (1.01)	9.52 (0.00)	3.07 (0.01)	19.3 (1.06)	2.03	0.37 (0.04)
	7	248.8 (1.30)	9.52 (0.00)	2.97 (0.01)	27.8 (0.79)	0.74	0.58 (0.16)
	9	249.5 (0.68)	9.52 (0.00)	2.91 (0.01)	37.2 (0.92)	0.40	0.90 (0.21)
35	3	248.3 (1.44)	*	*	*	12 tablets were broken	0.31 (0.03)
	5	248.4 (0.45)	9.52 (0.00)	3.11 (0.00)	16.7 (0.48)	3.03	0.36 (0.05)
	7	249.7 (0.45)	9.52 (0.01)	3.00 (0.01)	24.3 (1.16)	1.21	0.73 (0.15)
	9	249.6 (0.43)	9.53 (0.01)	2.94 (0.01)	31.4 (1.07)	0.62	1.06 (0.49)

Note : * = can not be measured

Appendix 23 % Released of INH of tablets made from various DC diluents.

Time (min)	% Drug released average (SD) ¹			
	Vivapur [®]	RS/MCC	Eratab [®]	Cellactose [®]
0	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
3	62.75 (8.39)	46.44 (19.19)	12.25 (3.97)	96.01 (4.73)
6	79.39 (6.26)	88.50 (3.06)	40.50 (10.83)	96.38 (3.49)
9	87.02 (2.91)	98.43 (1.43)	64.73 (8.92)	96.85 (3.31)
12	93.75 (3.96)	99.28 (1.58)	86.54 (5.46)	96.43 (3.52)
15	95.02 (3.39)	99.38 (1.56)	98.17 (3.08)	96.82 (3.41)
18	98.27 (3.47)	99.67 (1.62)	102.47 (1.72)	97.11 (3.85)
20	99.13 (2.52)	99.73 (1.46)	103.71 (1.47)	97.78 (3.76)
25	100.32 (2.48)	99.67 (1.12)	103.81 (1.71)	97.19 (3.05)
30	100.55 (2.34)	99.50 (1.02)	103.37 (2.82)	97.10 (1.90)
45	100.20 (2.34)	99.34 (1.45)	103.83 (1.99)	97.61 (1.15)

Note : 1 = average and SD from six determinations

Appendix 24 % Released of HCTZ of tablets made from various DC diluents.

Time (min)	% Drug released average (SD) ¹			
	Vivapur [®]	RS/MCC	Eratab [®]	Cellactose [®]
0	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
3	5.24 (1.08)	18.59 (2.82)	4.97 (1.89)	34.11 (1.79)
6	10.39 (1.50)	40.52 (1.90)	16.43 (5.76)	52.65 (1.60)
9	18.14 (2.36)	61.52 (1.98)	46.66 (6.34)	70.48 (1.65)
12	25.45 (3.10)	74.59 (2.26)	66.40 (3.99)	80.72 (2.13)
15	31.45 (3.98)	82.55 (2.41)	78.22 (2.76)	86.48 (2.56)
18	36.75 (4.73)	87.17 (2.29)	85.47 (2.10)	90.26 (2.58)
20	41.54 (5.27)	90.45 (2.43)	89.82 (1.58)	93.11 (2.60)
25	49.16 (6.03)	93.60 (1.89)	94.58 (1.52)	95.16 (2.39)
30	55.78 (6.99)	94.83 (1.88)	96.69 (1.21)	97.09 (2.35)
45	62.36 (7.74)	95.92 (1.94)	97.70 (1.09)	97.53 (2.15)

Note : 1 = average and SD from six determinations

Appendix 25 Data derived from Heckel analysis of various DC diluents.

DC Diluents	Part I r^2	Part II			P_y	D_A	D_o	D_B
		Slope	Intercept	r^2				
Vivapur®	0.9882	0.0155	0.6204	0.9993	64.52	0.4623	0.2111	0.2512
	0.9863	0.0144	0.6407	0.9977	69.44	0.4731	0.2109	0.2622
	0.9884	0.0143	0.6367	0.9972	69.93	0.4710	0.2100	0.2610
	0.9858	0.0143	0.6374	0.9986	69.93	0.4713	0.2089	0.2624
	0.9853	0.0142	0.6398	0.9978	70.42	0.4726	0.2086	0.2640
	0.9859	0.0148	0.6333	0.9984	67.57	0.4692	0.2114	0.2578
average	0.9867	0.0146	0.6347	0.9982	68.64	0.4699	0.2102	0.2598
SD	0.00	0.00	0.01	0.00	2.25	0.00	0.00	0.01

DC Diluents	Part I r^2	Part II			P_y	D_A	D_o	D_B
		Slope	Intercept	r^2				
RS/MCC	0.9828	0.0162	0.5796	0.9926	61.73	0.4399	0.3065	0.1334
	0.9819	0.0152	0.6136	0.9967	65.79	0.4586	0.3056	0.1530
	0.9826	0.0156	0.5990	0.9965	64.10	0.4506	0.3062	0.1444
	0.9806	0.0152	0.6060	0.9948	65.79	0.4545	0.3058	0.1487
	0.9869	0.0155	0.5900	0.9944	64.52	0.4457	0.3059	0.1398
	0.9823	0.0152	0.5996	0.9968	65.79	0.4510	0.3058	0.1452
average	0.9829	0.0155	0.5980	0.9953	64.62	0.4500	0.3060	0.1441
SD	0.00	0.00	0.01	0.00	1.60	0.01	0.00	0.01

Appendix 26 Data derived from Heckel analysis of various DC diluents (cont.).

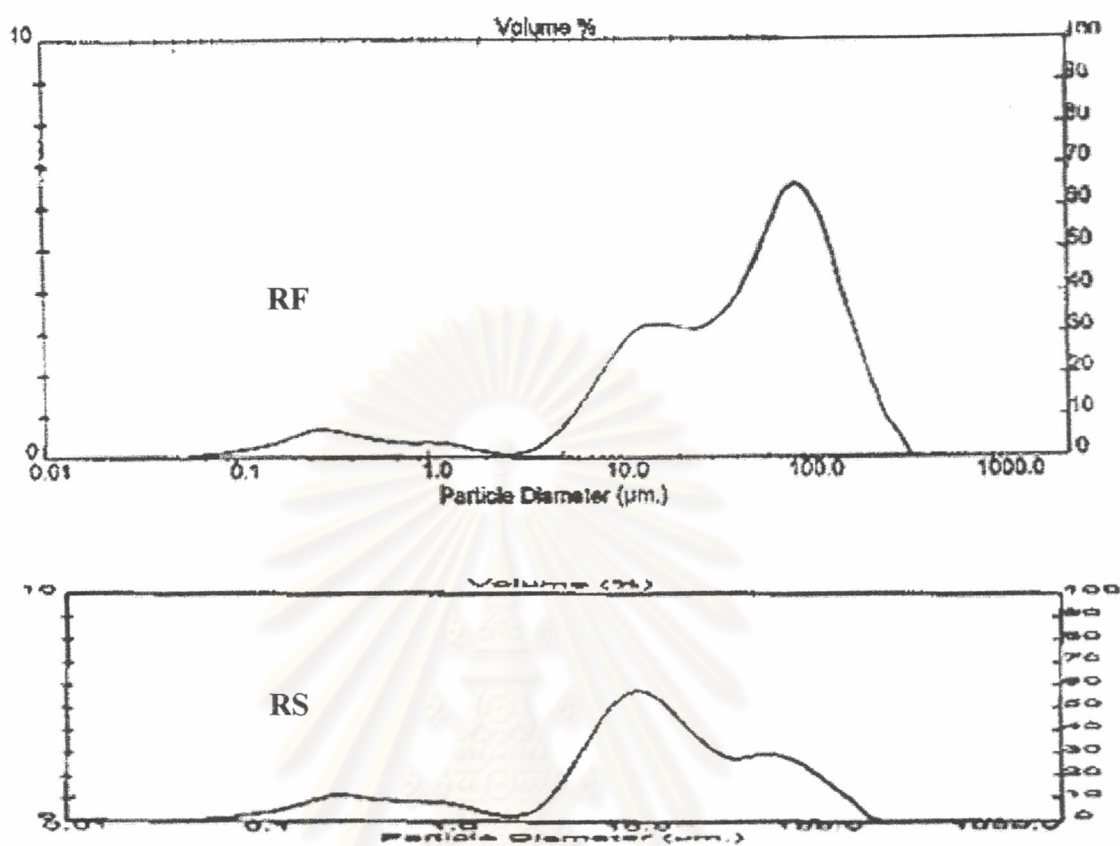
DC Diluents	Part I r^2	Part II			P_y	D_A	D_o	D_B
		Slope	Intercept	r^2				
Eratab [®]	0.9861	0.0152	0.6465	0.9976	65.79	0.4761	0.3856	0.0905
	0.9856	0.0154	0.638	0.9986	64.94	0.4717	0.3857	0.0860
	0.9811	0.0153	0.6457	0.9985	65.36	0.4757	0.3859	0.0898
	0.9844	0.0153	0.6408	0.9965	65.36	0.4731	0.3860	0.0871
	0.9886	0.015	0.6448	0.9969	66.67	0.4752	0.3860	0.0892
	0.9838	0.0153	0.6446	0.9975	65.36	0.4751	0.3862	0.0889
average	0.9849	0.01525	0.6434	0.9976	65.58	0.4745	0.3859	0.0886
SD	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00

DC Diluents	Part I r^2	Part II			P_y	D_A	D_o	D_B
		Slope	Intercept	r^2				
Tabletose [®]	0.9603	0.0095	1.0049	0.9975	105.26	0.6339	0.5299	0.1040
	0.9659	0.0099	0.9962	0.9983	101.01	0.6307	0.5366	0.0941
	0.9631	0.0100	1.0309	0.9962	100.00	0.6433	0.5371	0.1062
	0.9666	0.0101	1.0261	0.9971	99.01	0.6416	0.5384	0.1032
	0.9697	0.0097	1.0305	0.9957	103.09	0.6432	0.5430	0.1002
	0.9634	0.0098	0.9988	0.9945	102.04	0.6317	0.5430	0.0887
average	0.9648	0.0098	1.0146	0.9966	101.74	0.6374	0.5380	0.0994
SD	0.00	0.00	0.02	0.00	2.25	0.01	0.01	0.01

Appendix 27 Data derived from Heckel analysis of various DC diluents (cont.).

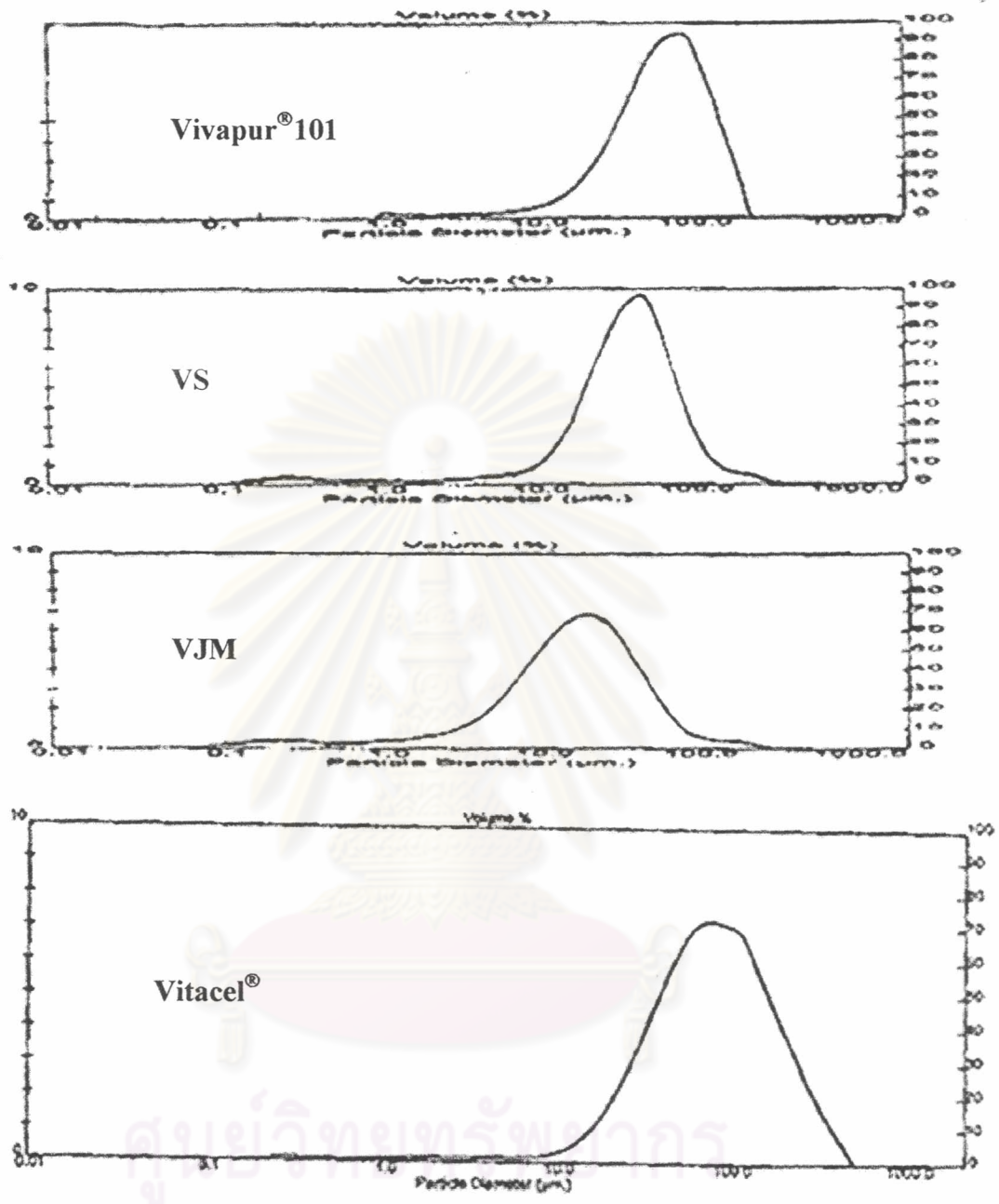
DC Diluents	Part I r^2	Part II			P_y	D_A	D_o	D_B
		Slope	Intercept	r^2				
Cellactose®	0.9711	0.0111	0.7745	0.9965	90.09	0.5391	0.3165	0.2226
	0.9718	0.0108	0.7696	0.9969	92.59	0.5368	0.3166	0.2202
	0.9730	0.0107	0.7666	0.9961	93.46	0.5354	0.3168	0.2186
	0.9712	0.0104	0.7766	0.9958	96.15	0.5400	0.3169	0.2231
	0.9724	0.0103	0.7742	0.9945	97.09	0.5389	0.3170	0.2219
	0.9678	0.0104	0.7701	0.9971	96.15	0.5370	0.3175	0.2195
average	0.9712	0.0106	0.7719	0.9962	94.26	0.5379	0.3169	0.2210
SD	0.00	0.00	0.00	0.00	2.68	0.00	0.00	0.00

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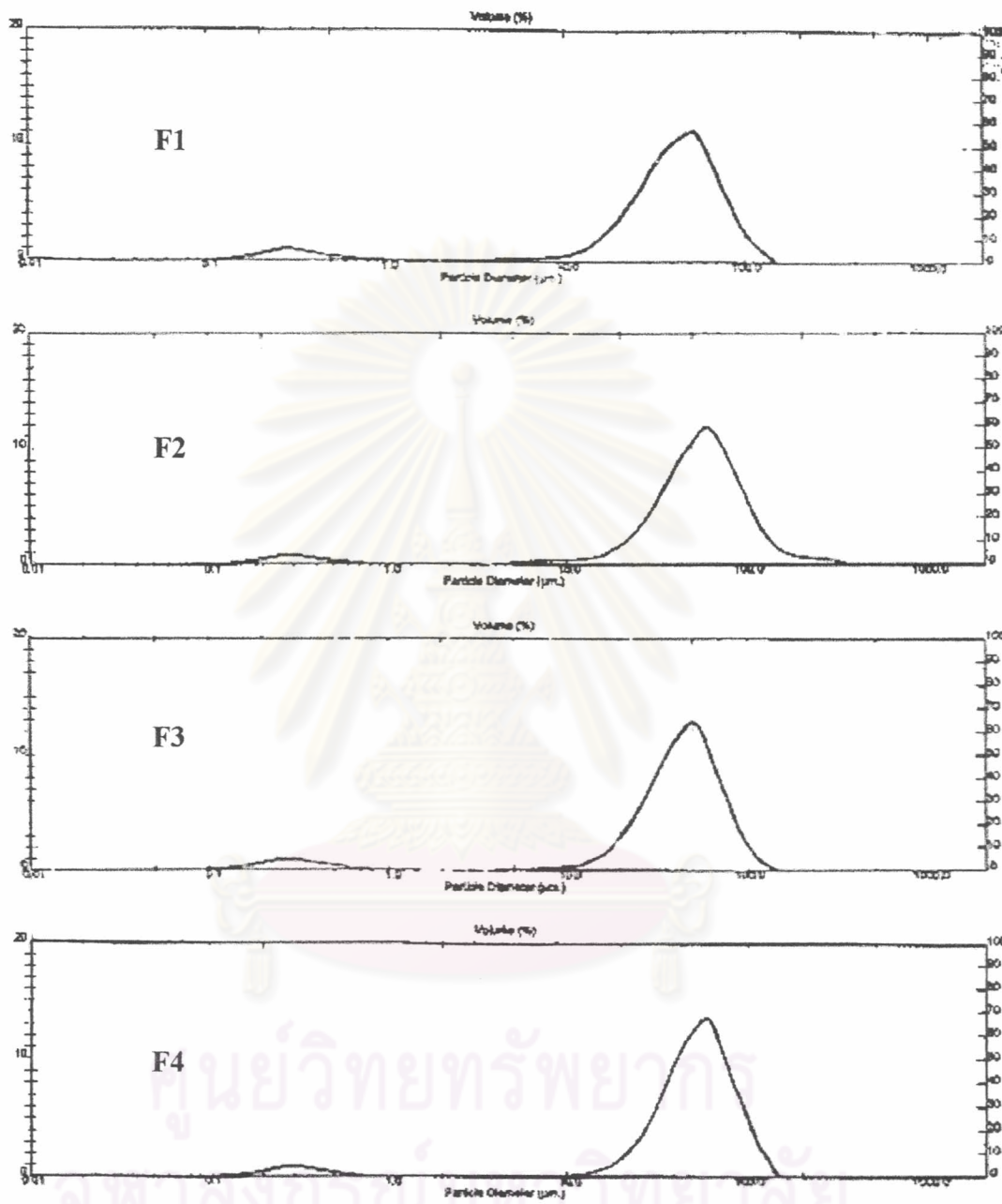


Appendix 28 Particle size distribution curve of RF and RS.

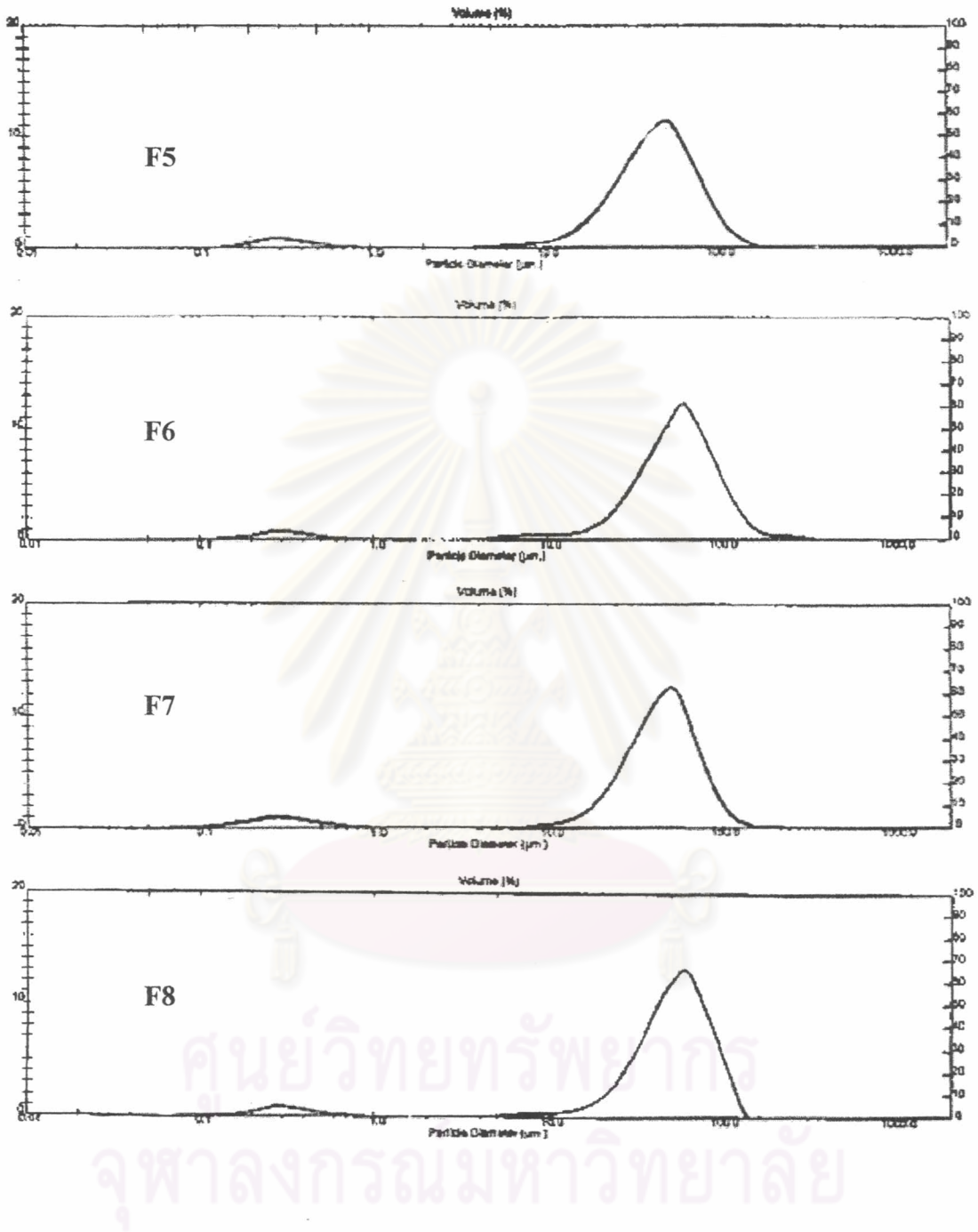
ศูนย์วิทยทรัพยากร
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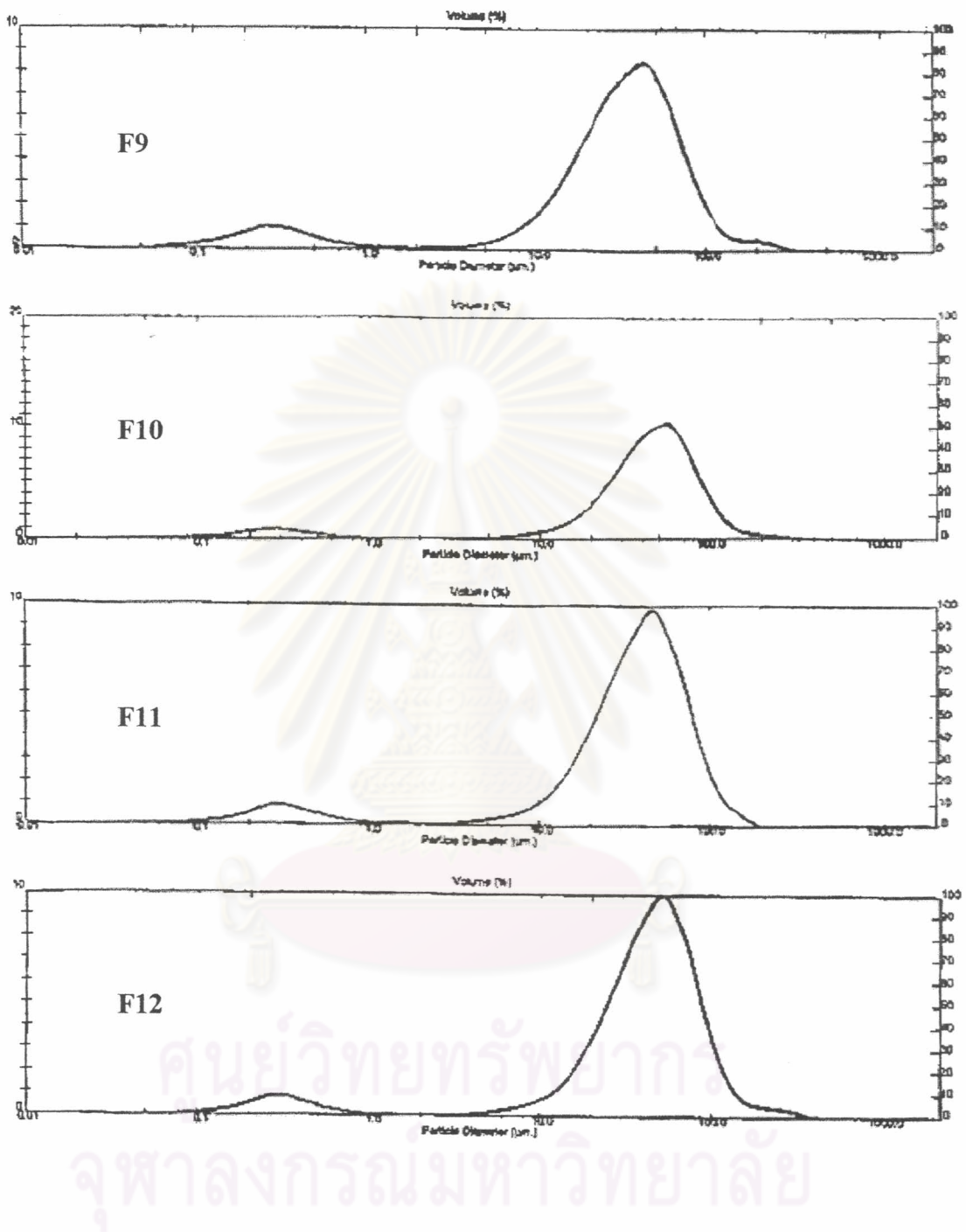
Appendix 29 Particle size distribution curve of Vivapur®101, VS, VJM, and Vitacel®.



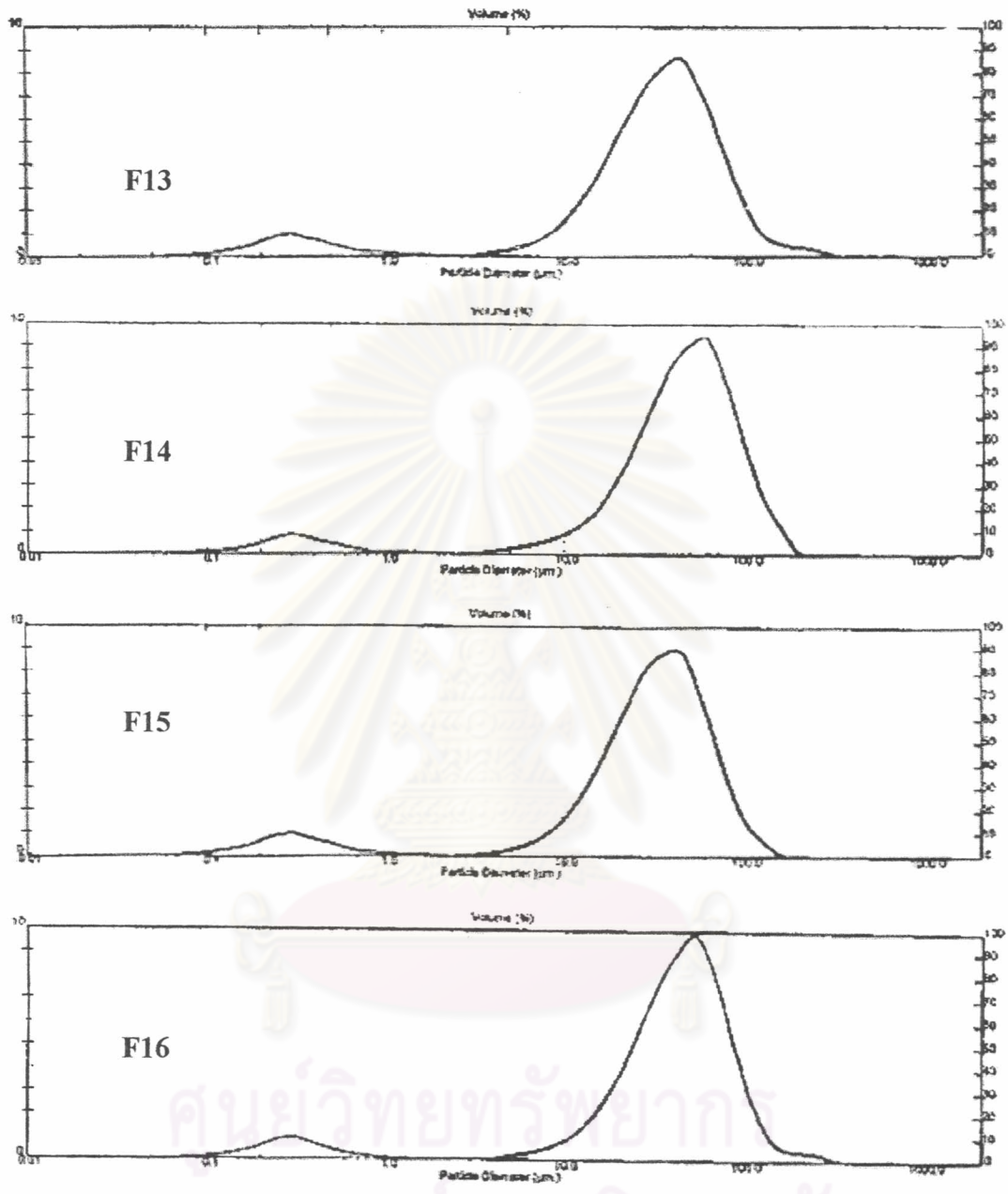
Appendix 30 Particle size distribution curve of F1-F4.



Appendix 31 Particle size distribution curve of F5-F8.

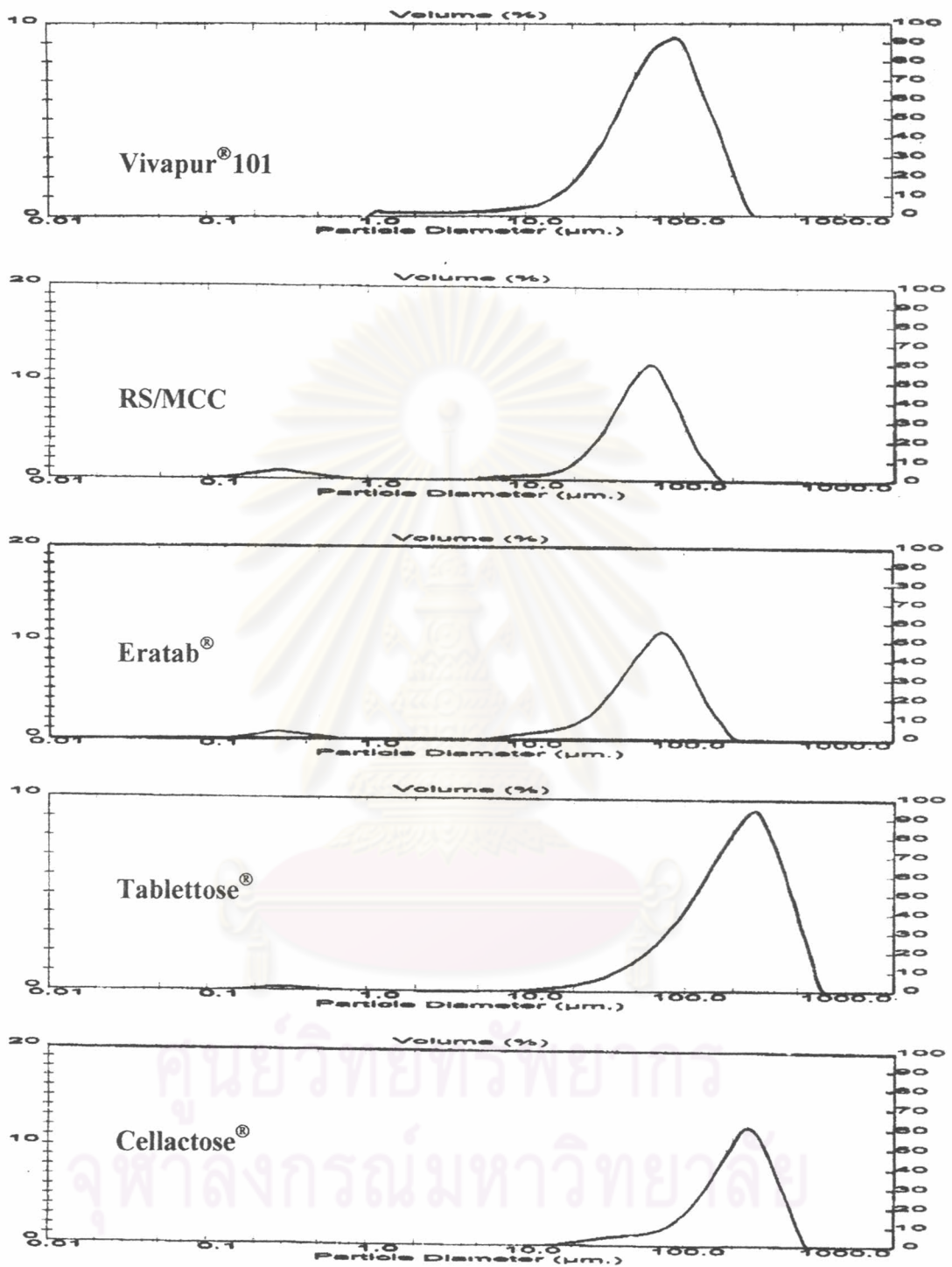


Appendix 32 Particle size distribution curve of F9-F12.



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Appendix 33 Particle size distribution curve of F13-F16.



Appendix 34 Particle size distribution curve of Vivapur® 101, RS/MCC, Eratab®, Tablettose®, and Cellactose®.

VITA



Ms. Vasinee Limwong was born on 8th July 1967 in Sukhothai province, Thailand. She got her bachelor degree in Pharmacy with second class honor from Faculty of Pharmacy, Mahidol University in 1989. After finished from Mahidol University, she started studying at Chulalongkorn University and received her Masters degree in the field of Manufacturing Pharmacy in 1993 from the Faculty of Pharmaceutical Sciences. She worked as a lecturer at Faculty of Pharmaceutical Sciences, Songkhla University between 1993 – 1996. Presently she works at the Faculty of Pharmaceutical Sciences, Rangsit University.



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