

ต้นฉบับ หน้าขาดหาย

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APPENDICES

Appendix A

Calibration data

Table 1A Calibration data of bovine serum albumin at 560 nm

Concentration ($\mu\text{g/ml}$)	Absorbance
0	0.186
0.5	0.192
5	0.237
10	0.299
20	0,398
30	0.501

Standard curve of bovine serum albumin

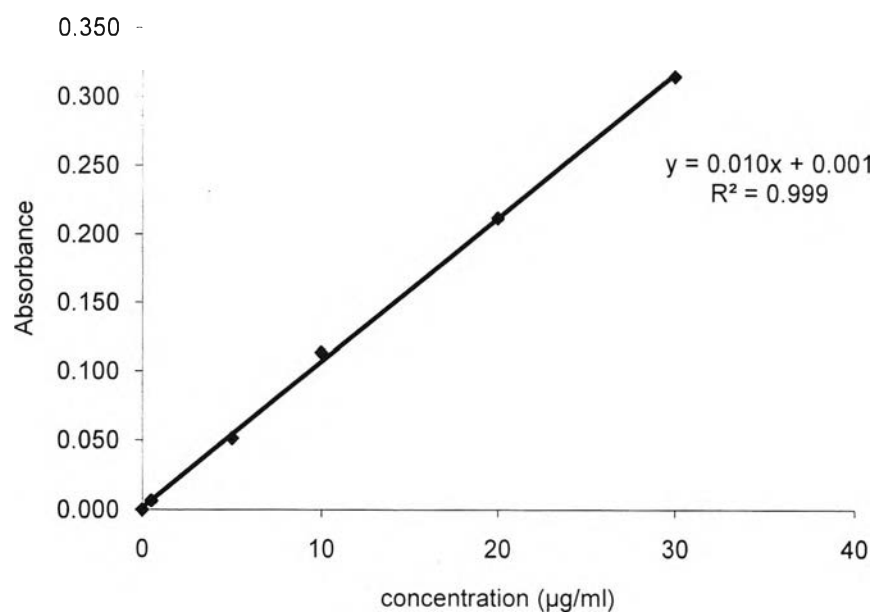


Figure 1A Standard calibration curve of bovine serum albumin at 560 nm

Table 2A The percentage of recovery of bovine serum albumin

Analytical concentration ($\mu\text{g/ml}$)	% Recovery of BSA				
	1	2	3	Average	SD
8	112.92	111.53	112.29	112.25	0.69
10	104.55	108.62	108.67	107.28	2.37
16	102.20	106.30	103.58	104.03	2.09
20	98.76	99.51	99.12	99.13	0.38
32	96.64	96.17	98.15	96.99	1.03

Table 3A Calibration data of bovine serum albumin at 560 nm in HBSS

Concentration ($\mu\text{g/ml}$)	Absorbance (nm)
0	0.723
5	0.764
10	0.811
15	0.848
20	0.891
30	0.981

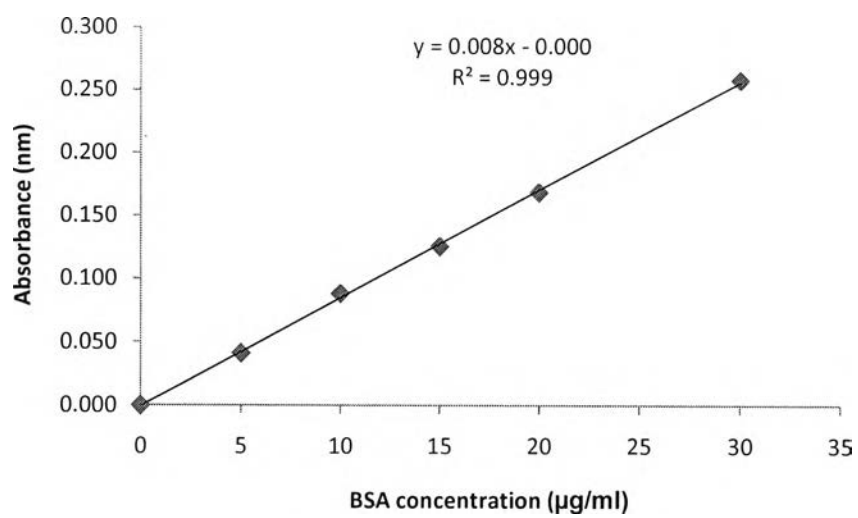
**Figure 2A** Standard calibration curve of bovine serum albumin in HBSS at 560 nm

Table 4A Calibration data of FD-4 at the excitation of 490 nm and emission of 515 nm

Concentration ($\mu\text{g/ml}$)	Intensity (nm)
0	1354
5	13348
12.5	31385
25	80962
50	188416
100	329861
200	681383

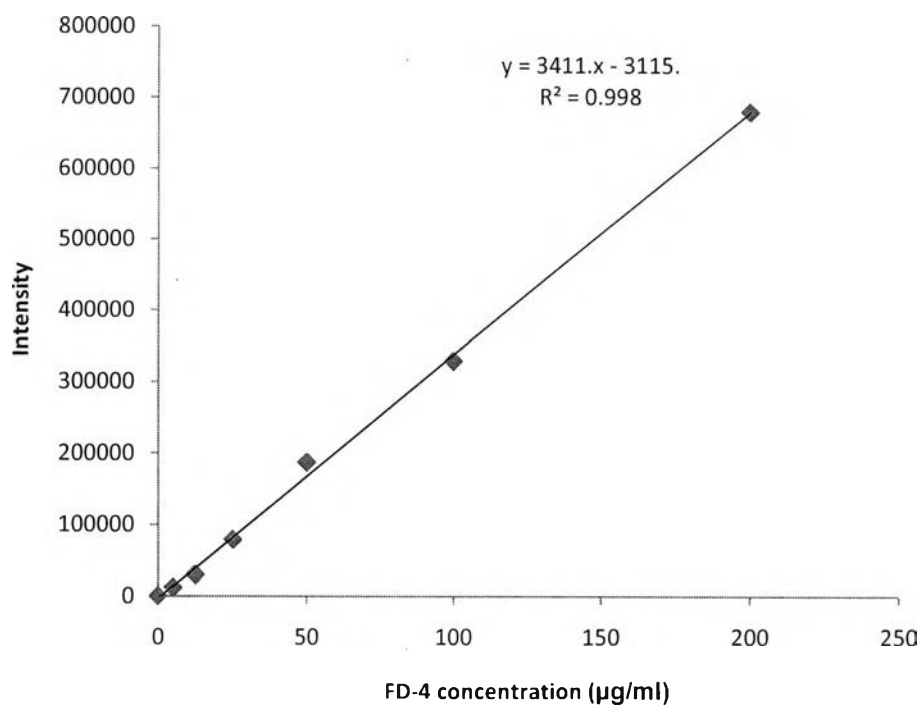


Figure 3A Standard calibration curve of FD-4 concentration at the excitation of 490 nm and emission of 515 nm

Appendix B

TGA scan

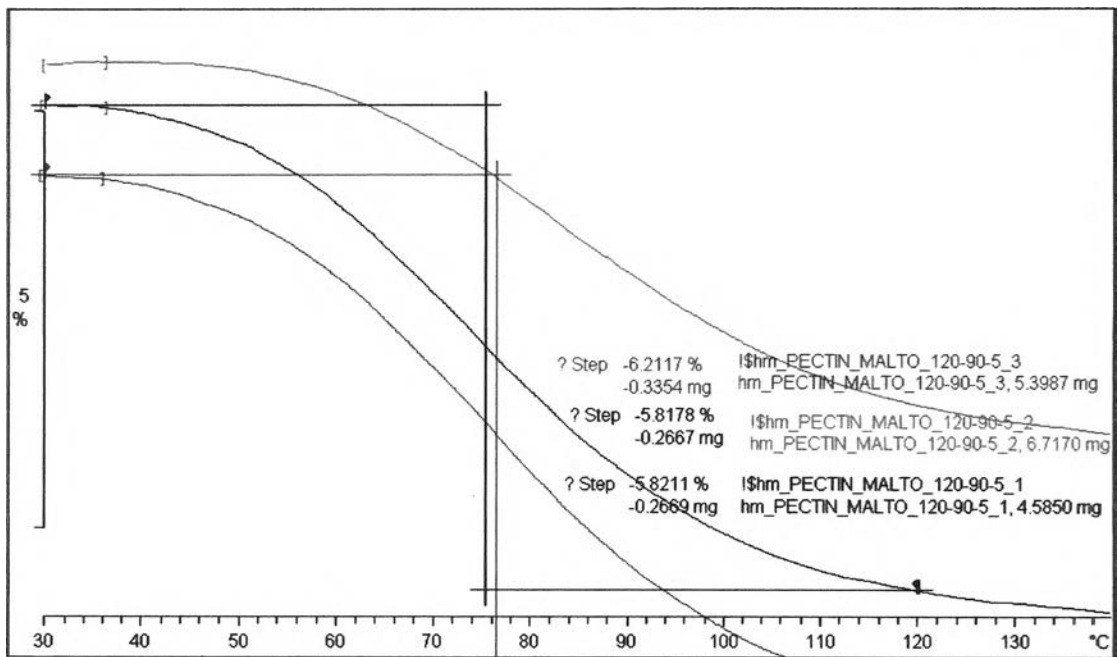


Figure 1B TGA scan of microparticle in the formulation of PP+MT+PG+A

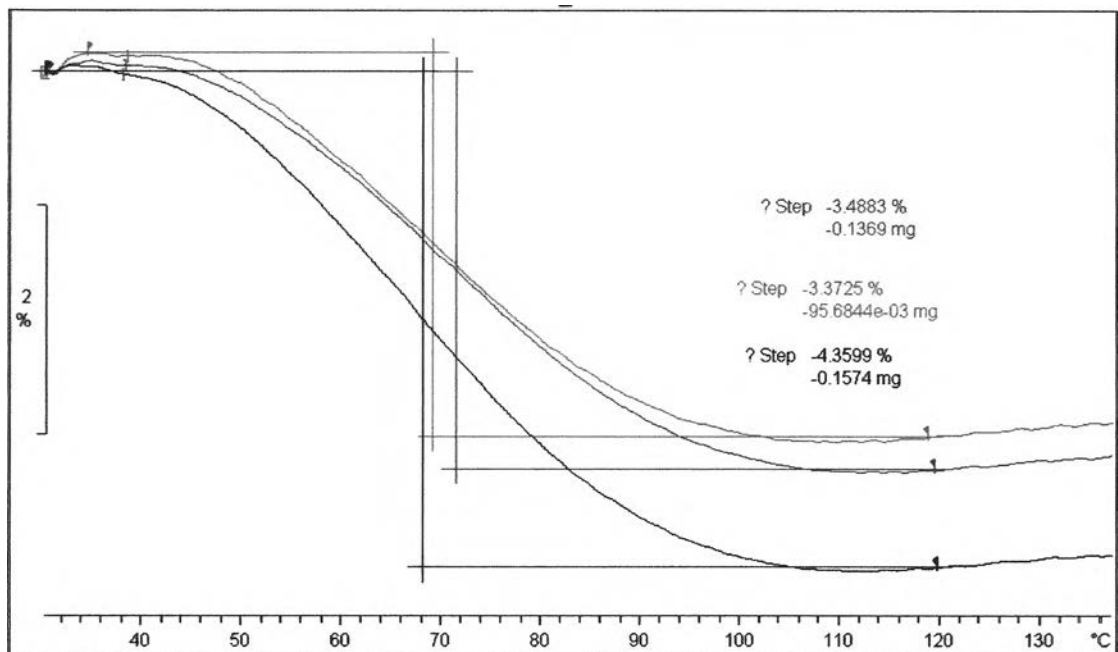


Figure 2B TGA scan of microparticle in the formulation of PM

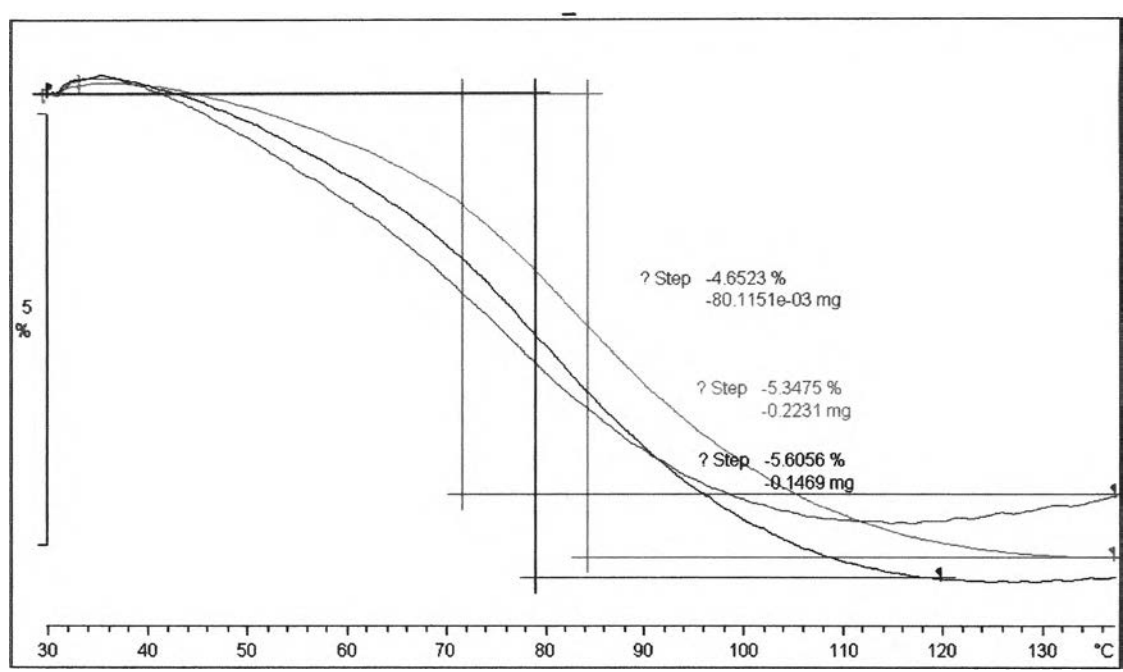


Figure 3B TGA scan of microparticle in the formulation of PL

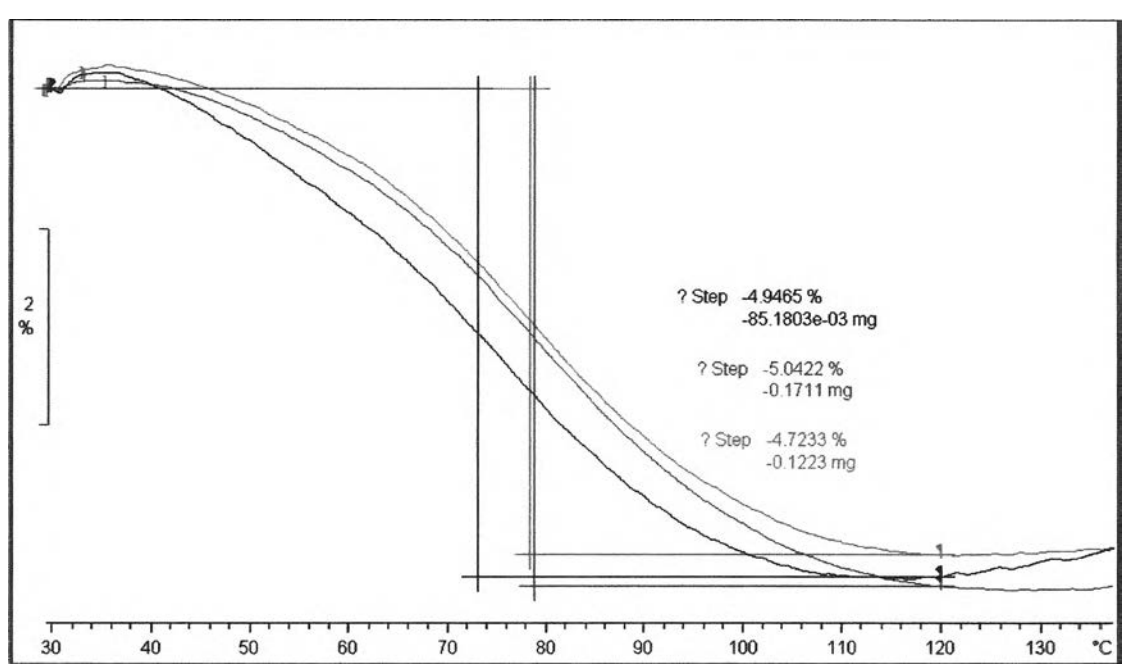


Figure 4B TGA scan of microparticle in the formulation of PLA0.1

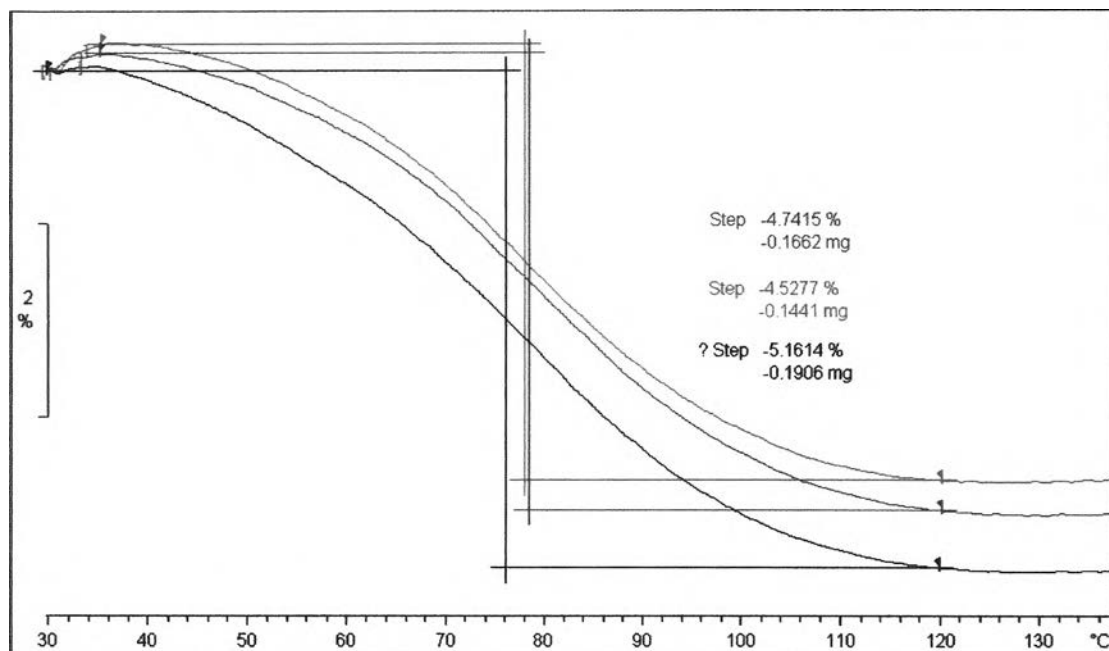


Figure 5B TGA scan of microparticle in the formulation of PLA0.15

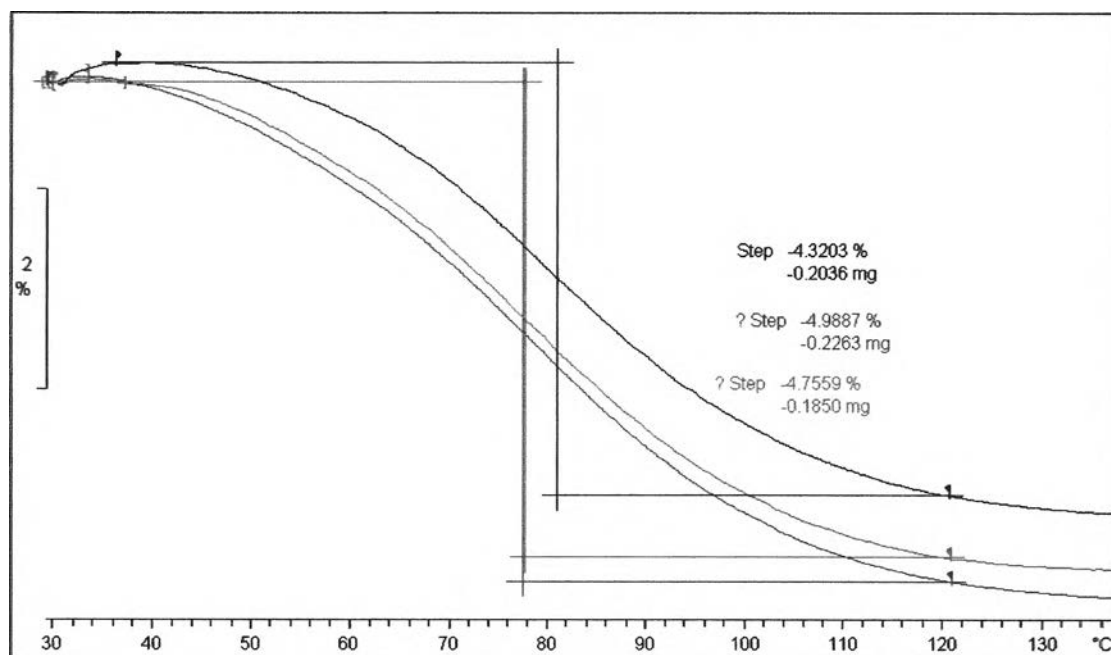


Figure 6B TGA scan of microparticle in the formulation of PLA0.2

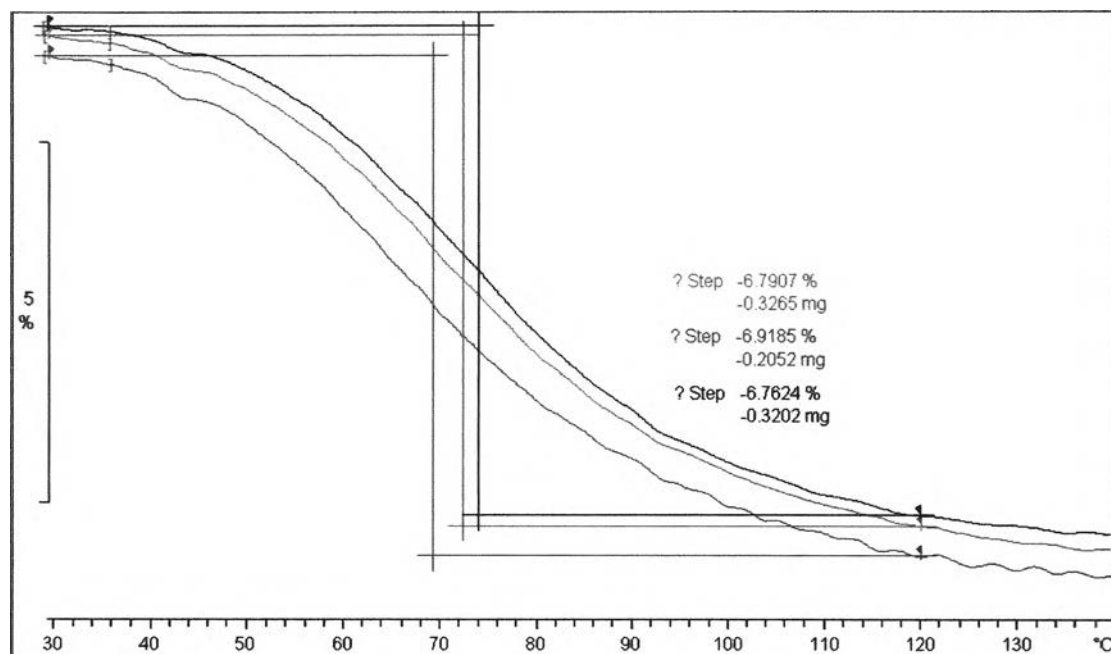


Figure 7B TGA scan of microparticle in the formulation of PLA0.12

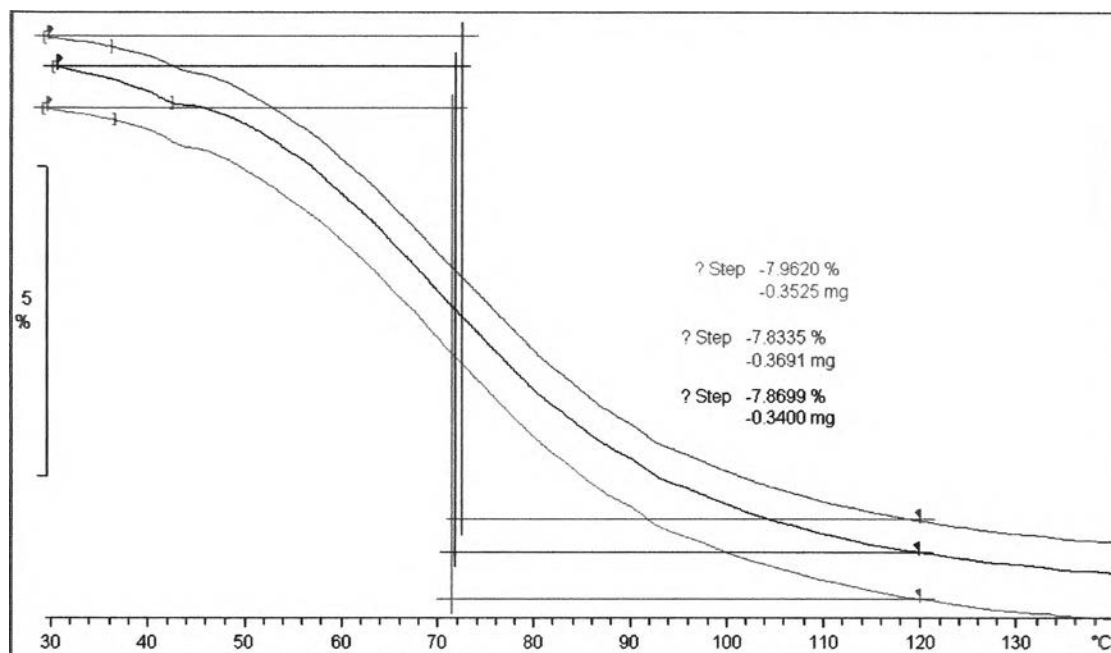


Figure 8B TGA scan of microparticle in the BSA:PP pectin ratio of 1:3

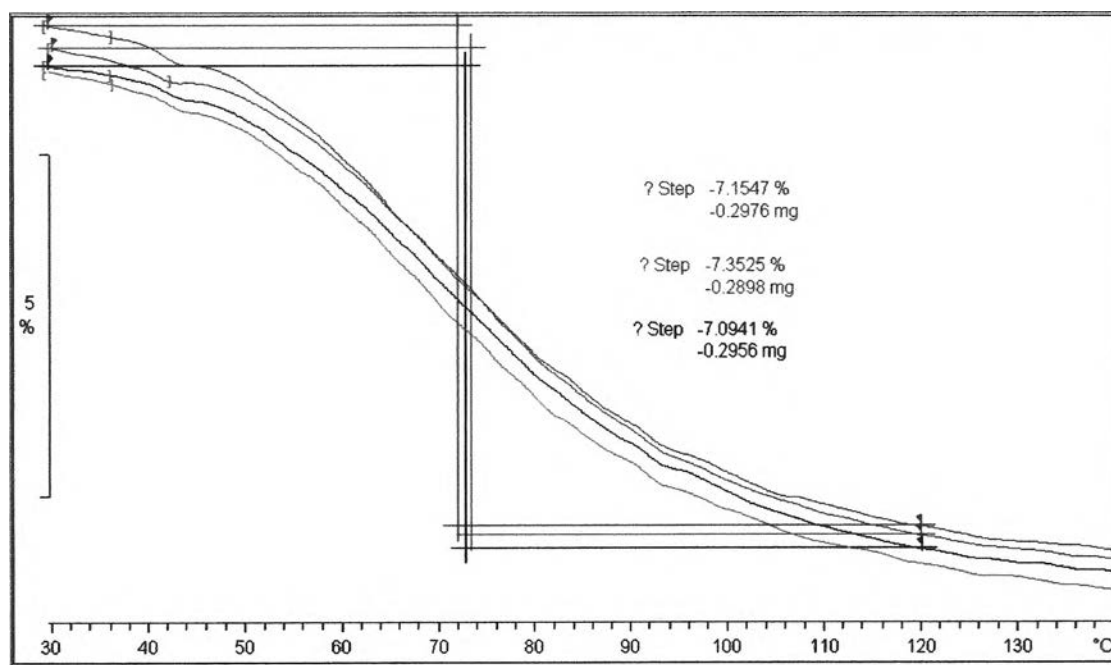


Figure 9B TGA scan of microparticle in the BSA:PP pectin ratio of 1:5

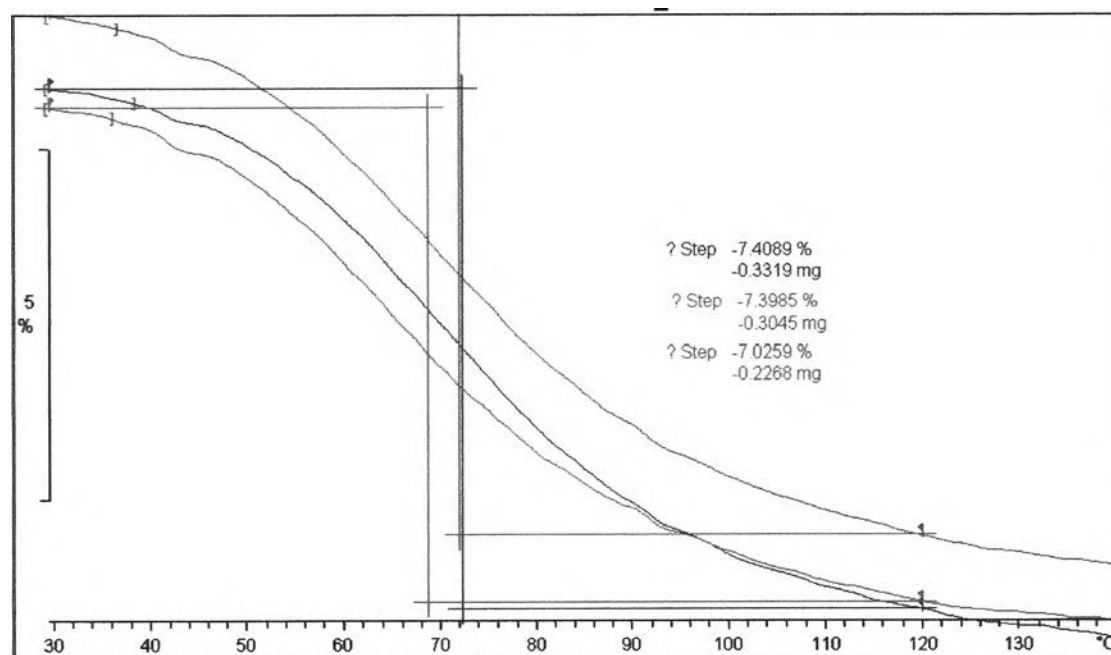


Figure 10B TGA scan of microparticle in the BSA:PP pectin ratio of 1:10

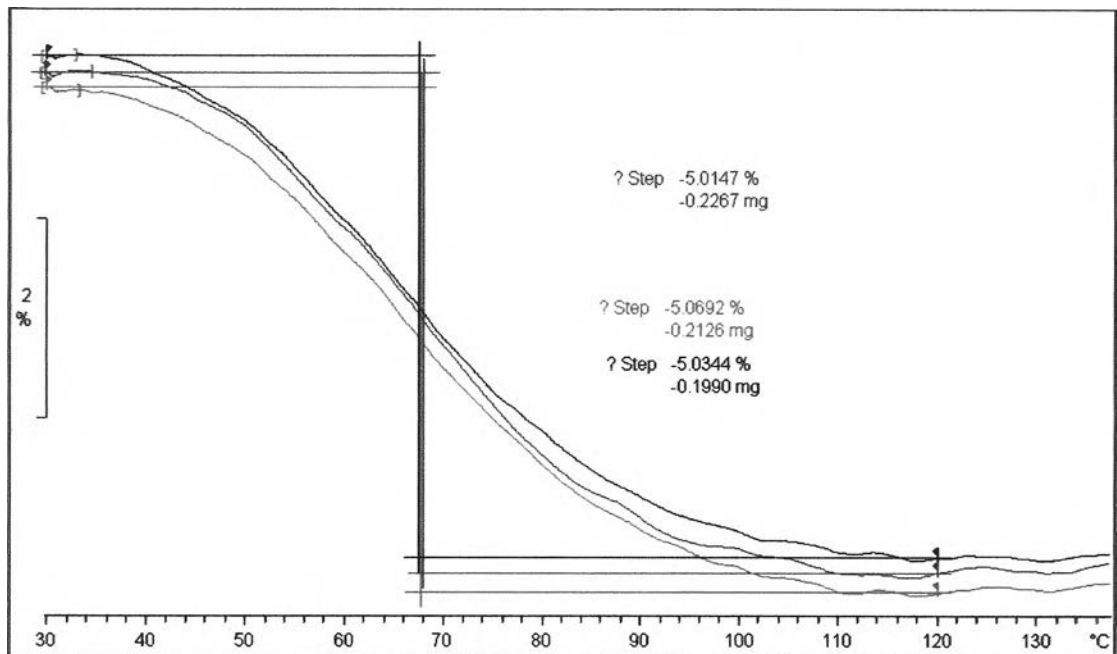


Figure 11B TGA scan of microparticle in the blank HM pectin

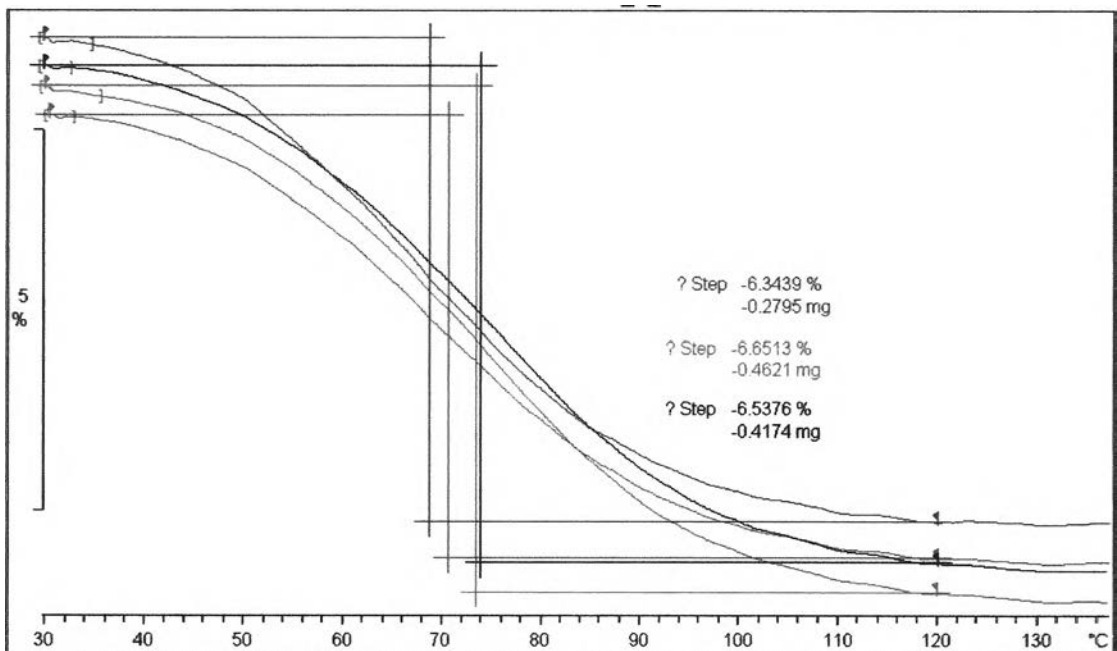


Figure 12B TGA scan of microparticle in the BSA:HM pectin ratio of 1:3

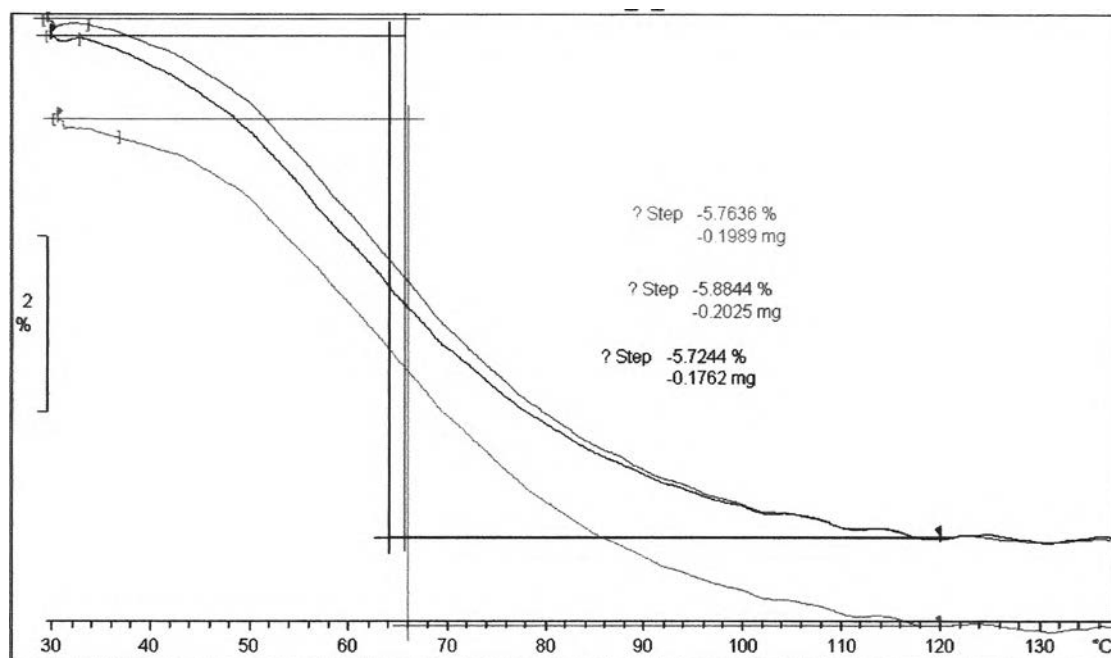


Figure 13B TGA scan of microparticle in the BSA:HM pectin ratio of 1:5

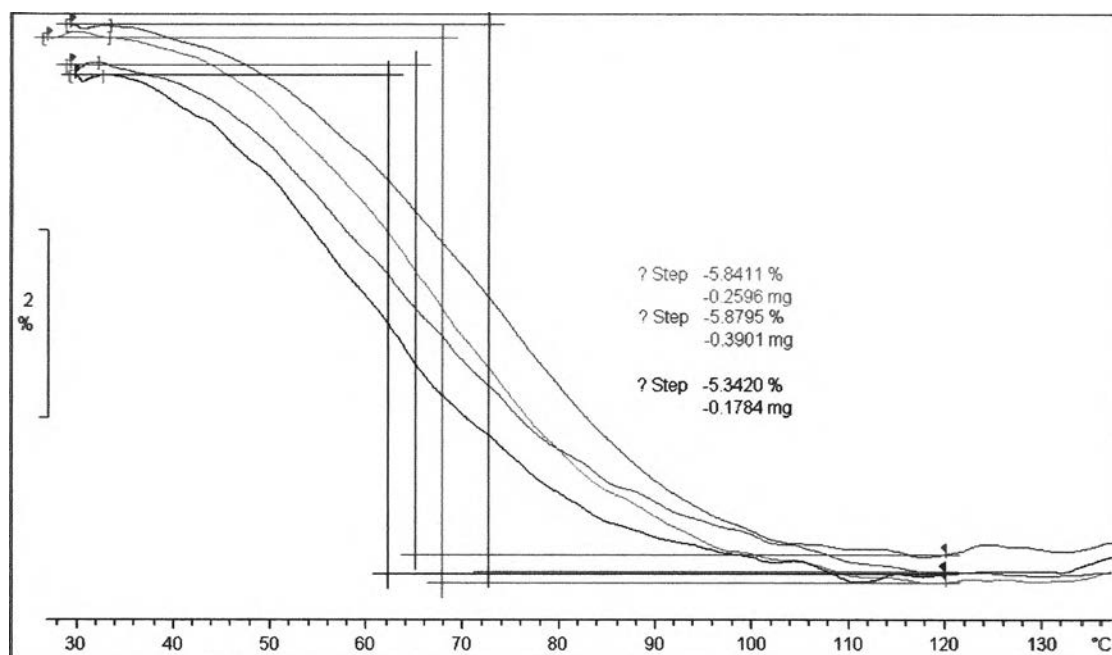


Figure 14B TGA scan of microparticle in the BSA/HM pectin ratio of 1:10

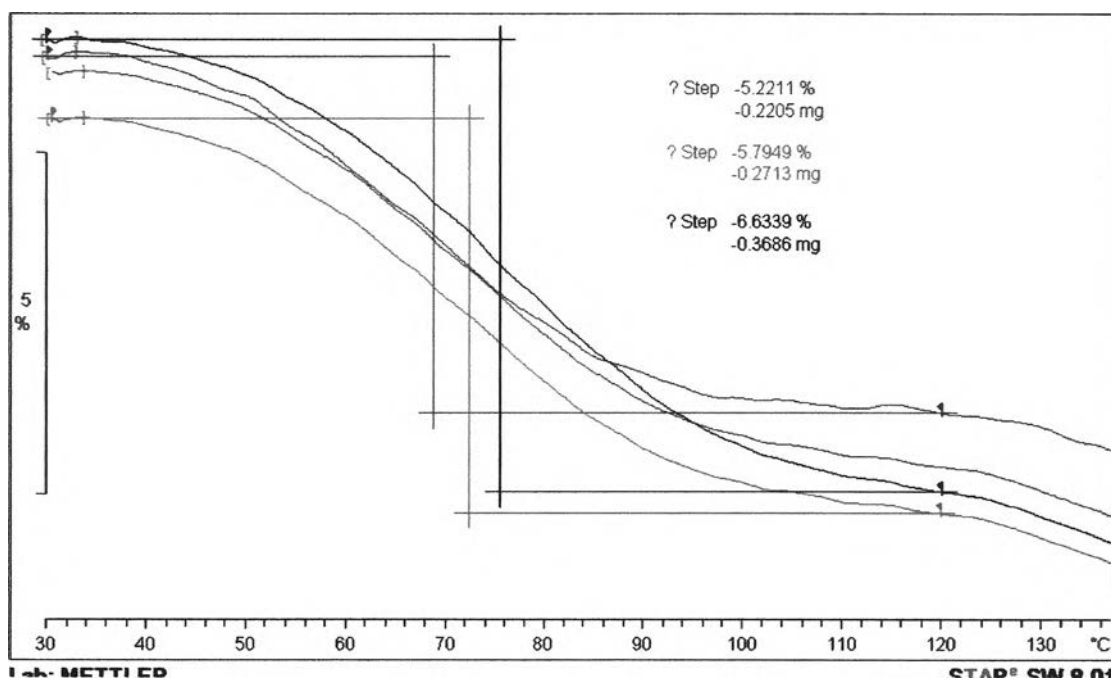


Figure 15B TGA scan of microparticle in the blank LM pectin

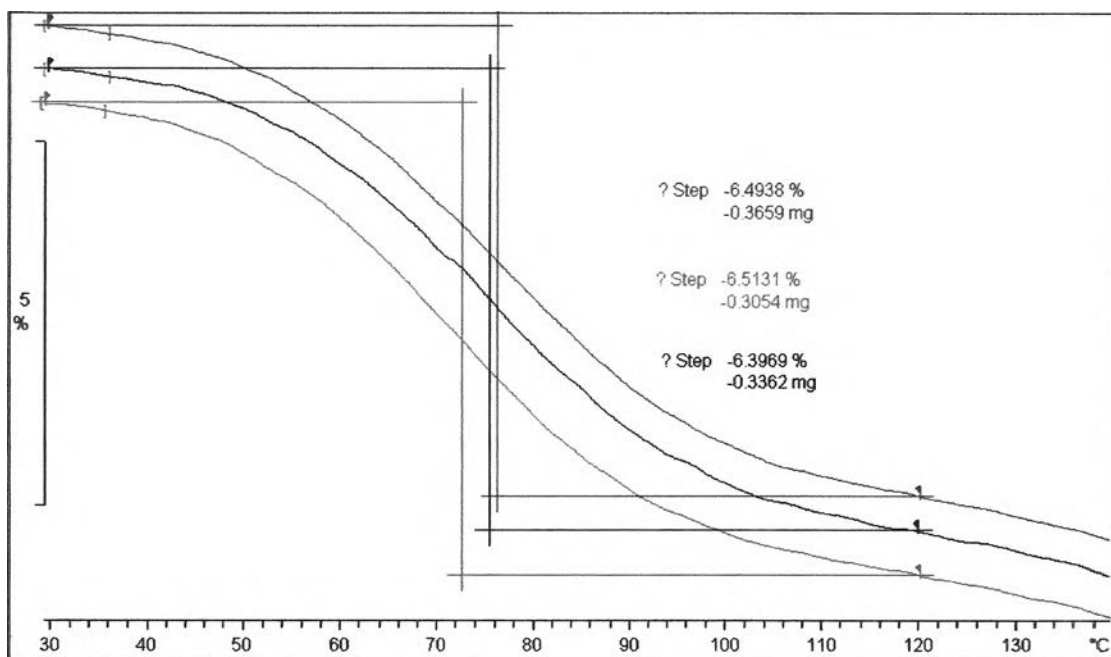


Figure 16B TGA scan of microparticle in the BSA/LM pectin ratio of 1:3

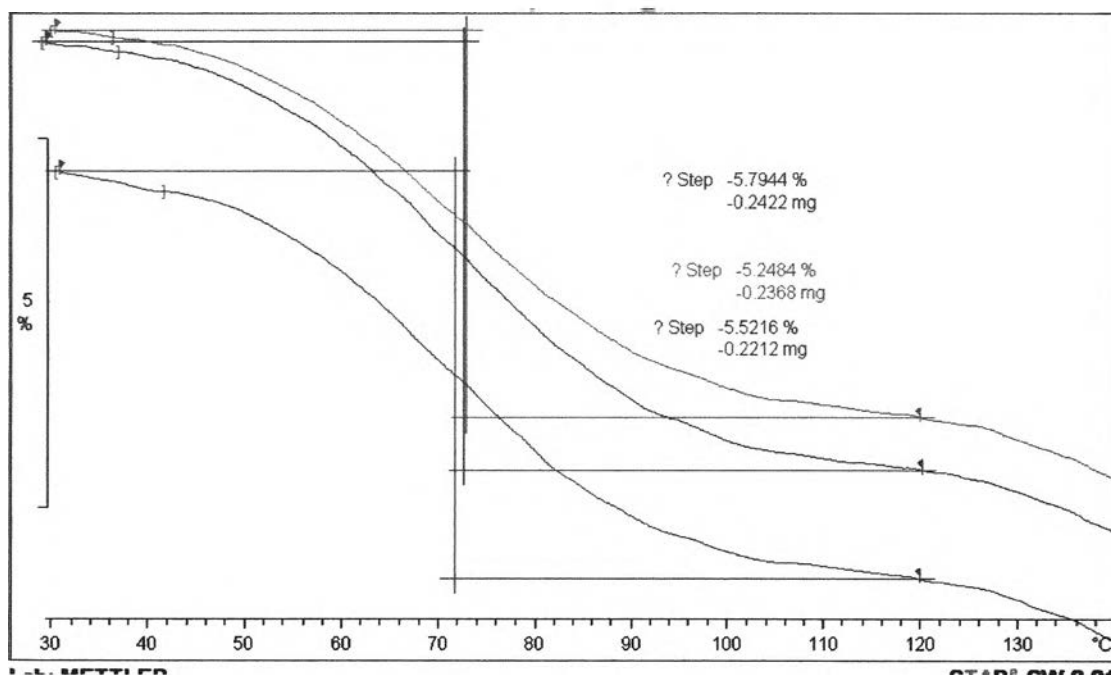


Figure 17B TGA scan of microparticle in the BSA/LM pectin ratio of 1:5

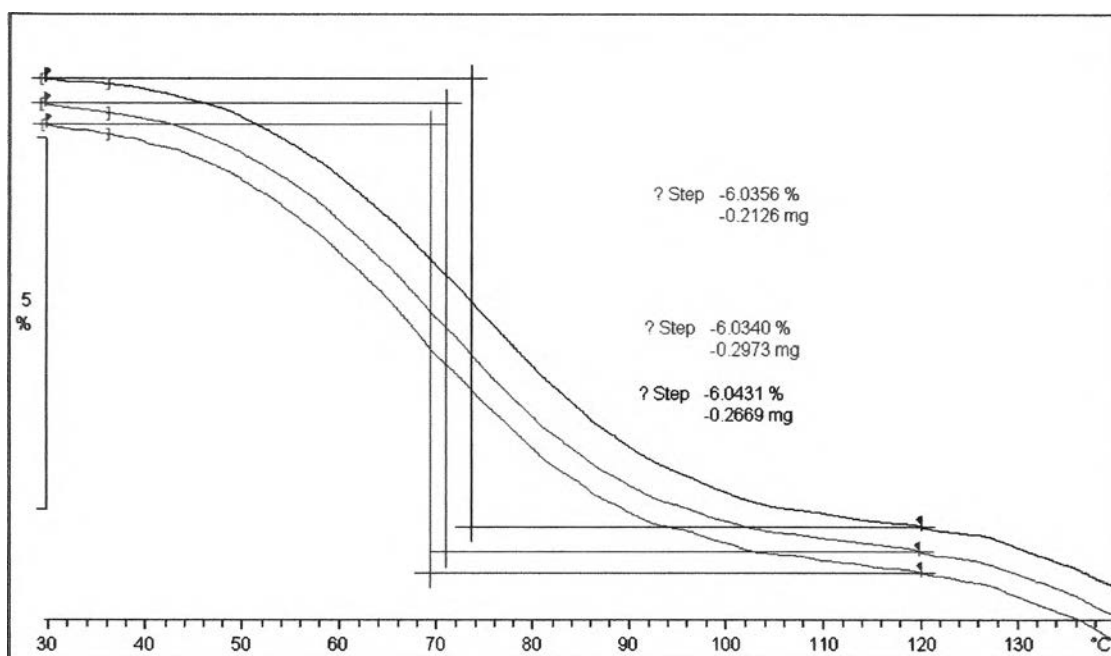


Figure 18B TGA scan of microparticle in the BSA/LM pectin ratio of 1:10

Appendix C

Table 1C Moisture adsorption of spray dried microparticles

Formulation	Moisture adsorption (%) at time				
	4 hrs	7 hrs	10 hrs	24 hrs	48 hrs
PM	7.00 ± 0.19	8.18 ± 0.25	8.47 ± 0.23	9.42 ± 0.15	9.80 ± 0.07
PL	8.39 ± 0.26	12.02 ± 0.20	14.24 ± 0.09	12.73 ± 1.03	11.34 ± 0.34
PLA0.1	8.63 ± 0.39	11.15 ± 0.22	12.67 ± 0.32	11.58 ± 1.34	10.66 ± 0.26
PLA0.12	7.71 ± 0.44	9.89 ± 0.40	11.26 ± 0.45	15.91 ± 1.81	14.19 ± 0.27
PLA0.15	7.23 ± 0.52	9.83 ± 0.45	11.20 ± 0.32	13.01 ± 0.50	10.53 ± 0.45
PLA0.2	6.59 ± 0.44	8.98 ± 0.48	10.45 ± 0.44	14.96 ± 1.73	14.80 ± 0.07
HM-PLA0.12	8.28 ± 1.17	10.19 ± 1.11	11.82 ± 1.01	12.54 ± 0.56	10.13 ± 0.15
LM-PLA0.12	8.28 ± 1.17	10.19 ± 1.11	11.82 ± 1.01	12.54 ± 0.566	10.13 ± 0.15
P+MT+A	10.25 ± 0.58	12.57 ± 0.64	13.98 ± 0.31	13.68 ± 0.07	13.13 ± 0.04
P+MT+A+PG	7.76 ± 0.30	9.99 ± 0.70	11.46 ± 0.62	N/A	12.96 ± 0.30

N/A Not Available

Appendix D

Particle size and size distribution from Mastersizer

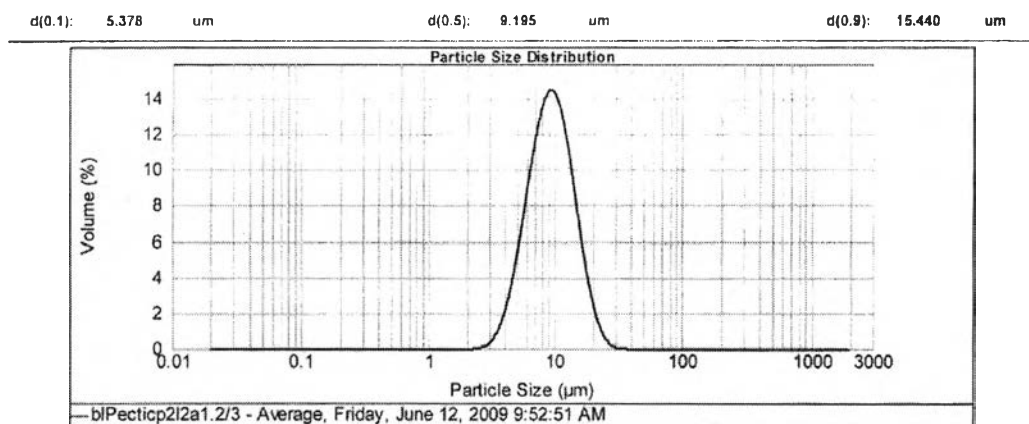


Figure 1D Particle size and size distribution of blank PP-LA0.12

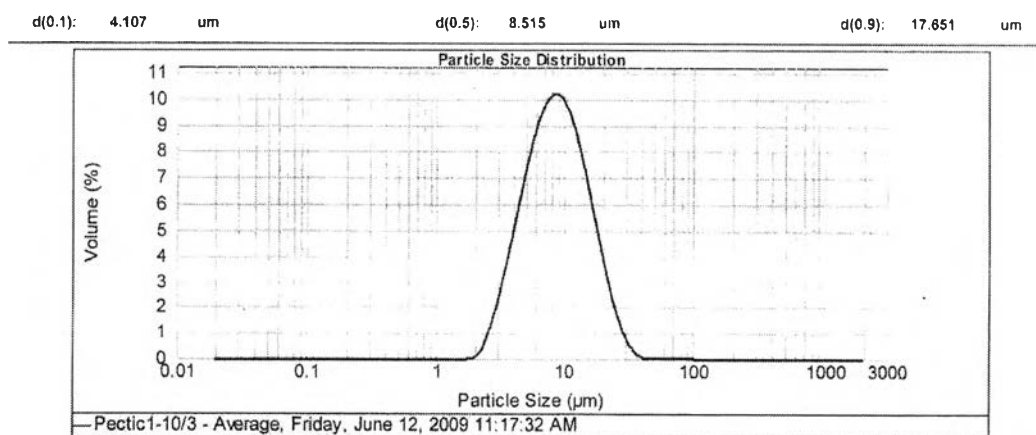


Figure 2D Particle size and size distribution of BSA:PP ratio 1:10

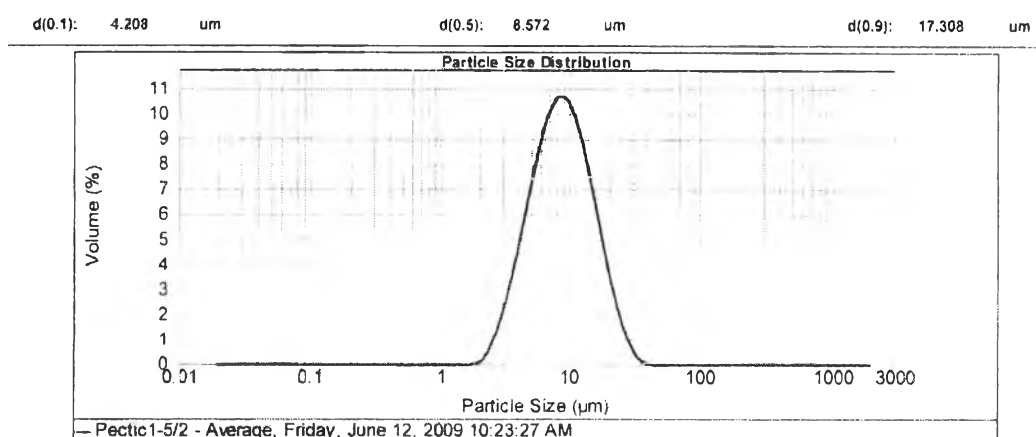


Figure 3D Particle size and size distribution of BSA:PP ratio 1:5

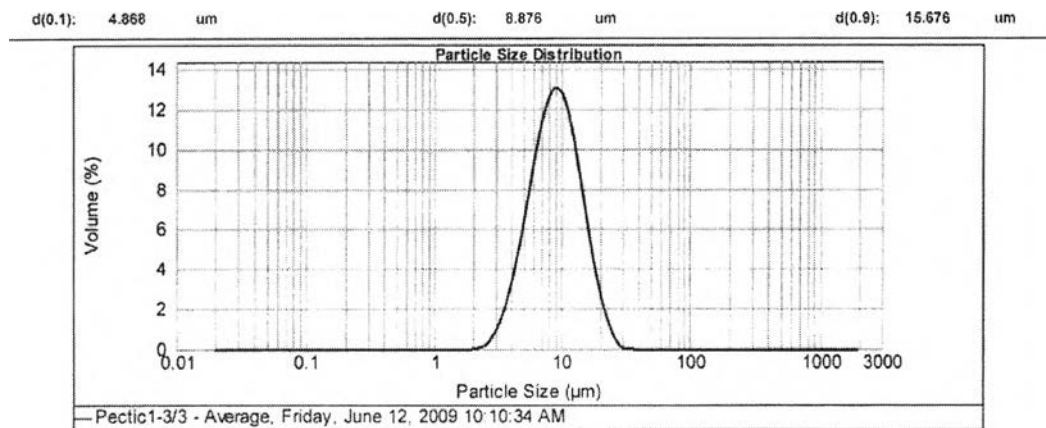


Figure 4D Particle size and size distribution of BSA:PP ratio 1:3

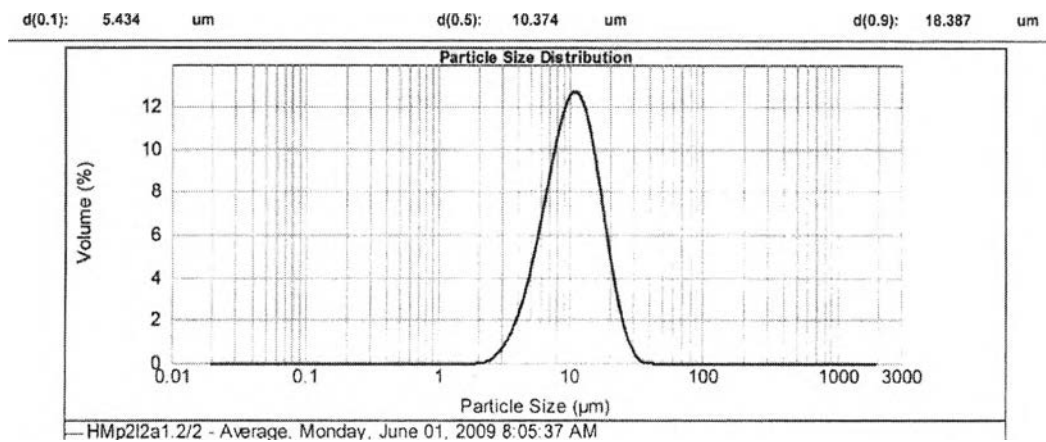


Figure 5D Particle size and size distribution of blank HM-PLA0.12

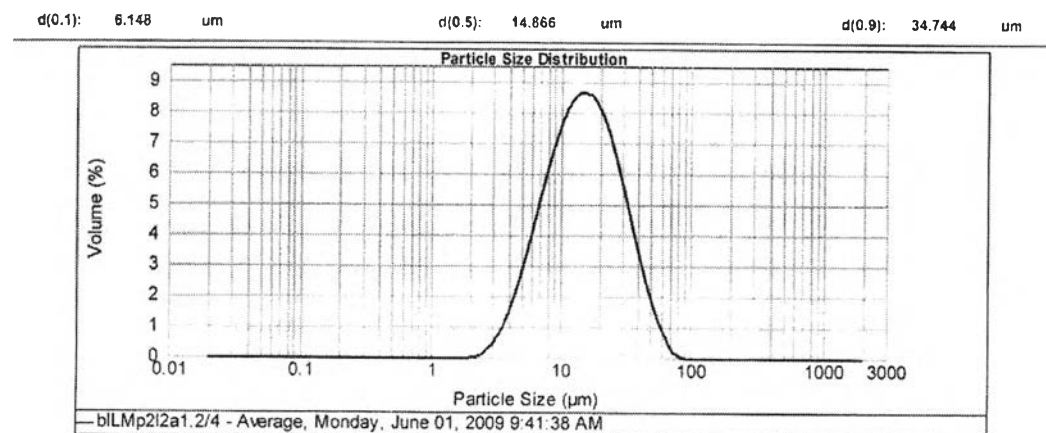


Figure 6D Particle size and size distribution of BSA:HM ratio 1:10

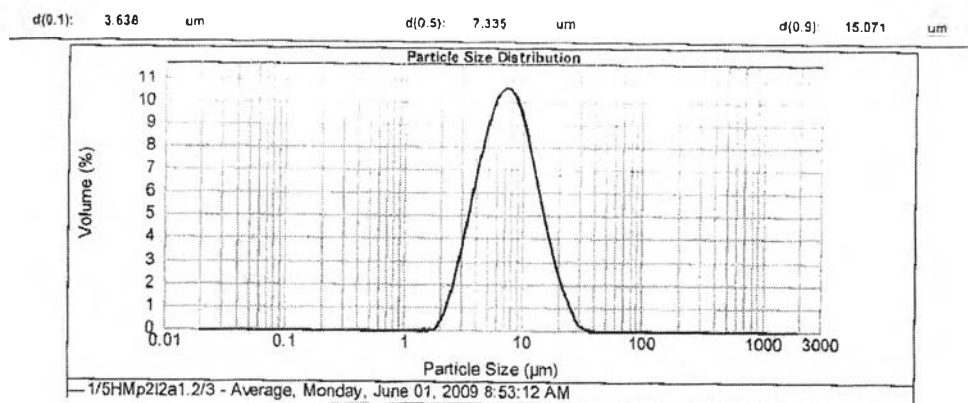


Figure 7D Particle size and size distribution of BSA:HM ratio 1:5

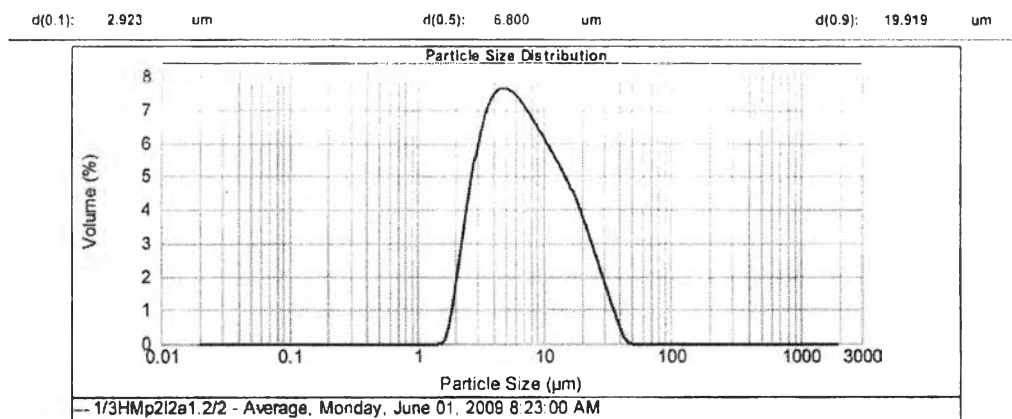


Figure 8D Particle size and size distribution of BSA:HM ratio 1:3

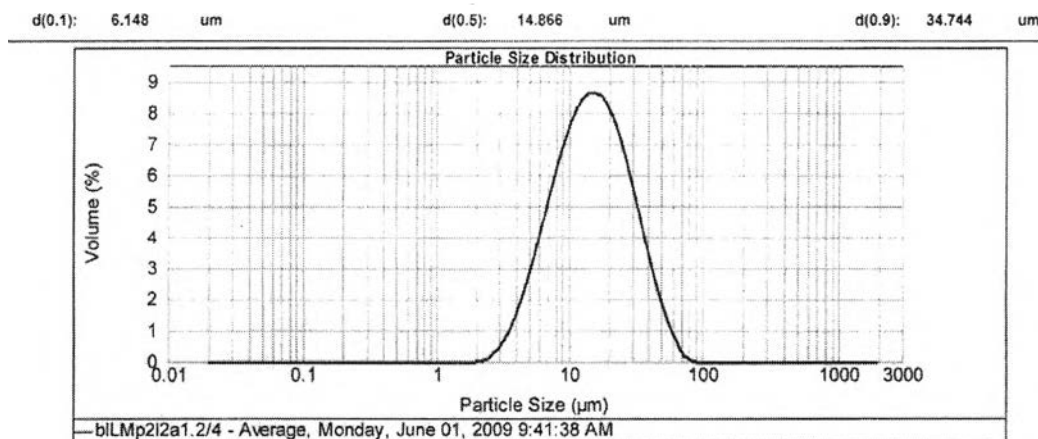


Figure 9D Particle size and size distribution of blank LM-PLA0.12

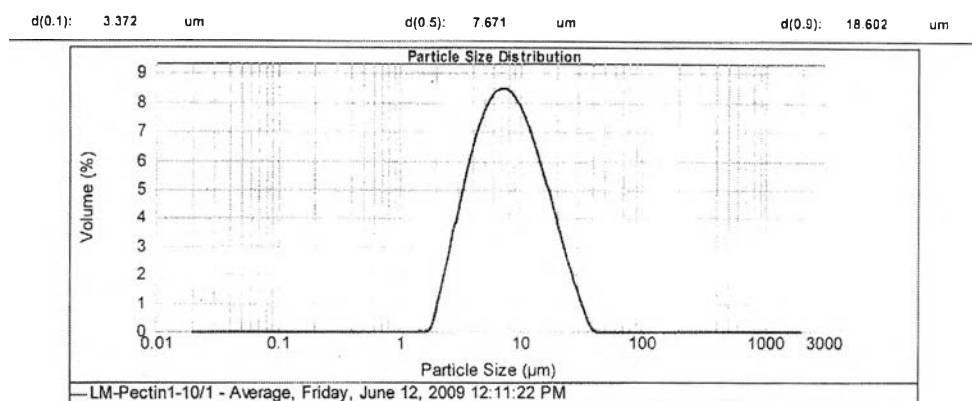


Figure 10D Particle size and size distribution of BSA:HM ratio 1:10

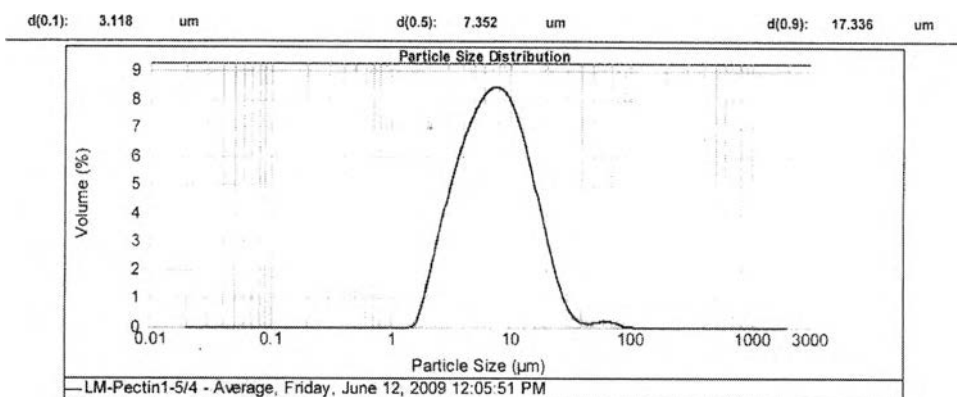


Figure 11D Particle size and size distribution of BSA:HM ratio 1:5

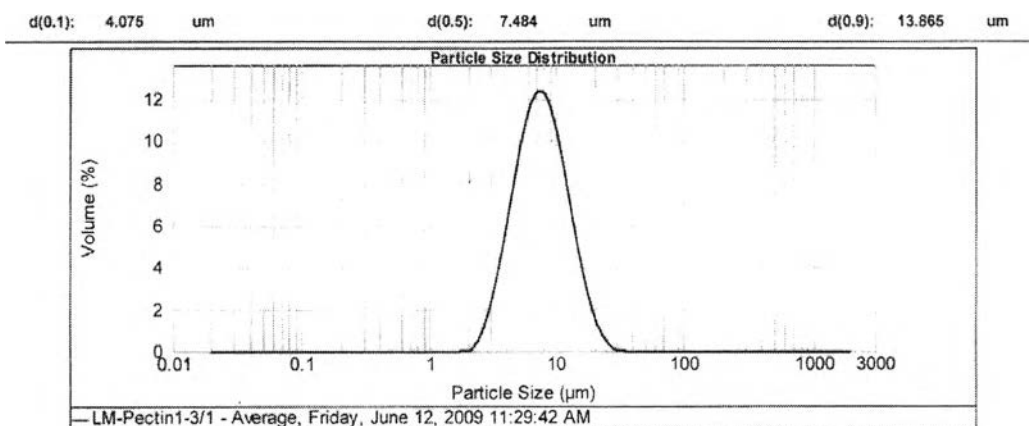


Figure 12D Particle size and size distribution of BSA:HM ratio 1:3

VITA

Thanyamas Nutithawat was born in Songkhla, Thailand, on August 25th, 1979. She received the Bachelor of Science degree in Pharmacy in 2002 from Faculty of Pharmaceutical Sciences, Chulalongkorn University, Thailand. She also worked at Siam Bheasach Co, Ltd., in position of production pharmacist during the year of 2002 to 2003. Then she worked at Bangkok General Hospital during the year of 2003 to 2005. And her last work place was MedicPharma in the position of production pharmacist during the year of 2006.

