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APPENDIX

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Table 26 Effect of Disintegrants on Disintegration Time of Griseofulvin Tablets

Formula Number	Disintegration Time, min \pm S.D.		
	Wet granulation Tablet Hardness 5-7 kp	Wet granulation Tablet Hardness 9-11 kp	Dry granulation Tablet Hardness 5-7 kp
1	> 60	> 60	> 60
2	15.08 \pm 0.3705	17.51 \pm 0.1942	0.14 \pm 0.0279
3	5.12 \pm 0.1173	14.38 \pm 0.1048	0.12 \pm 0.0289
4	0.43 \pm 0.0409	2.27 \pm 0.0937	0.11 \pm 0.0240
5	0.36 \pm 0.0376	2.28 \pm 0.4050	0.10 \pm 0.0126
6	0.32 \pm 0.0279	2.20 \pm 0.0836	0.10 \pm 0.0126
7	0.21 \pm 0.0376	2.06 \pm 0.1076	0.10 \pm 0.0154
22	> 60	> 60	> 60
23	5.37 \pm 0.0691	14.56 \pm 0.1972	0.31 \pm 0.0296
24	5.56 \pm 0.1569	15.44 \pm 0.0861	0.41 \pm 0.0286

Table 27 Effect of Disintegrants on Disintegration Time of Prednisolone Tablets

Formula Number	Disintegration Time, min. \pm S.D.		
	Wet granulation Tablet Hardness 1-2 Kp	Wet granulation Tablet Hardness 3-5 Kp	Dry granulation Tablet Hardness 1-2 Kp
8	30.33 \pm 0.2984	41.66 \pm 0.5164	1.17 \pm 0.0236
9	0.21 \pm 0.0240	1.27 \pm 0.0783	0.15 \pm 0.0412
10	0.08 \pm 0.0275	0.30 \pm 0.0562	0.10 \pm 0.0154
11	0.07 \pm 0.0184	0.27 \pm 0.0238	0.09 \pm 0.0346
12	0.07 \pm 0.0178	0.25 \pm 0.0343	0.08 \pm 0.0167
13	0.06 \pm 0.0118	0.20 \pm 0.0256	0.08 \pm 0.0126
14	0.05 \pm 0.0109	0.18 \pm 0.0352	0.08 \pm 0.0200
25	14.45 \pm 0.1300	44.66 \pm 0.5164	10.50 \pm 0.8366
26	0.58 \pm 0.0387	2.15 \pm 0.1830	0.13 \pm 0.0346
27	1.00 \pm 0.0707	2.35 \pm 0.0591	0.15 \pm 0.0155

Table 28 Effect of Disintegrants on Disintegration Time of Furosemide Tablets

Formula Number	Disintegration Time, min \pm S.D.		
	Wet granulation Tablet Hardness 4-6 Kp	Wet granulation Tablet Hardness 8-11 Kp	Dry granulation Tablet Hardness 4-6 Kp
15	> 60	> 60	2.14 \pm 0.0813
16	0.40 \pm 0.0340	8.54 \pm 0.5657	0.10 \pm 0.0126
17	0.36 \pm 0.0240	2.27 \pm 0.1038	0.05 \pm 0.0077
18	0.20 \pm 0.0240	1.31 \pm 0.0376	0.04 \pm 0.0063
19	0.20 \pm 0.0340	1.26 \pm 0.0878	0.04 \pm 0.0077
20	0.19 \pm 0.0240	1.19 \pm 0.0734	0.04 \pm 0.0063
21	0.15 \pm 0.0236	1.12 \pm 0.0440	0.03 \pm 0.0109
28	> 60	> 60	25.05 \pm 0.5039
29	0.39 \pm 0.0334	7.46 \pm 0.1540	0.22 \pm 0.0394
30	0.40 \pm 0.0387	10.33 \pm 0.5164	0.24 \pm 0.0272

Table 29 Effect of Disintegrants on Dissolution Time (t 85 %) of Griseofulvin Tablets

Formula Number	Dissolution Time (t 85 %), min \pm S.D.		
	Wet granulation Tablet Hardness 5-7 Kp	Wet granulation Tablet Hardness 9-11 Kp	Dry granulation Tablet Hardness 5-7 Kp
1	> 60	> 60	> 60
2	24.45 \pm 1.4849	40.45 \pm 2.8284	> 60
3	22.25 \pm 1.4142	27.15 \pm 1.6263	51.25 \pm 2.4748
4	22.10 \pm 1.7776	25.25 \pm 1.4142	43.15 \pm 1.4142
5	17.45 \pm 1.4142	24.20 \pm 2.5455	25.00 \pm 0.7778
6	15.05 \pm 1.4849	22.45 \pm 5.6556	22.25 \pm 1.4142
7	14.10 \pm 1.2727	21.25 \pm 4.5961	19.20 \pm 1.1313
22	53.25 \pm 3.8890	> 60	> 60
23	47.25 \pm 2.8284	56.25 \pm 1.7677	> 60
24	53.25 \pm 3.8890	> 60	> 60

Table.30 Effect of Disintegrants on Dissolution Time (t 70 %) of Prednisolone Tablets

Formula Number	Dissolution Time (t 70%), min \pm S.D.		
	Wet granulation Tablet Hardness 1-2 Kp	Wet granulation Tablet Hardness 3-5 Kp	Dry granulation Tablet Hardness 1-2 Kp
8	38.25 \pm 2.4748	> 60	> 60
9	30.25 \pm 2.8284	40.25 \pm 2.8284	> 60
10	12.25 \pm 1.0606	20.10 \pm 2.6870	59.25 \pm 1.4142
11	8.10 \pm 1.2727	10.25 \pm 1.0606	52.35 \pm 2.7577
12	4.10 \pm 1.5556	8.25 \pm 1.4142	45.75 \pm 1.4142
13	3.45 \pm 1.2727	6.45 \pm 1.6263	15.75 \pm 1.1313
14	3.10 \pm 0.8485	4.10 \pm 1.2727	10.75 \pm 2.6162
25	33.25 \pm 3.8890	45.25 \pm 5.3033	> 60
26	15.20 \pm 0.8485	22.05 \pm 2.8284	> 60
27	20.10 \pm 1.2727	30.10 \pm 2.6870	> 60

Table 31 Effect of Disintegrants on Dissolution Time (t 65%) of Furosemide Tablets

Formula Number	Dissolution Time (t 65%), min \pm S.D.		
	Wet granulation Tablet Hardness 4-6 Kp	Wet granulation Tablet Hardness 8-11 Kp	Dry granulation Tablet Hardness 4-6 Kp
15	20.10 \pm 2.6870	> 60	> 60
16	9.20 \pm 1.1313	18.10 \pm 1.5556	> 60
17	8.45 \pm 1.5556	16.45 \pm 2.8284	43.20 \pm 3.9597
18	7.10 \pm 1.5556	14.20 \pm 3.1112	36.45 \pm 3.0405
19	6.75 \pm 1.4142	11.10 \pm 2.8284	32.45 \pm 2.8284
20	5.85 \pm 1.2020	8.35 \pm 1.4142	30.45 \pm 1.4142
21	4.10 \pm 1.2727	7.45 \pm 1.4142	27.05 \pm 1.4849
28	17.45 \pm 2.1000	> 60	> 60
29	9.45 \pm 1.4142	22.25 \pm 1.7677	45.25 \pm 1.7677
30	11.10 \pm 1.2727	24.25 \pm 2.4748	47.45 \pm 4.2426

Table 32 Effect of The Methods to Incorporate Disintegrant into Granules on The Weight Variation of Griseofulvin Tablets(Formula No. 3), Prednisolone Tablets(Formula No.10),and Furosemide Tablets(Formula No.17)

Formula Number	Wet granulation Intragranular		Wet granulation Extragranular		Wet granulation 50:50 Intra:Extra	
	Av.weight (gm \pm S.D.)	% C.V.	Av.weight (gm \pm S.D.)	% C.V.	Av.weight (gm \pm S.D.)	% C.V.
3	0.3123 \pm 0.0003	0.09	0.3124 \pm 0.0003	0.10	0.3157 \pm 0.0017	0.53
10	0.1324 \pm 0.0010	0.79	0.1324 \pm 0.0011	0.89	0.1339 \pm 0.0009	0.66
17	0.1482 \pm 0.0013	0.87	0.1494 \pm 0.0012	0.84	0.1463 \pm 0.0009	0.64

Table 33 Effect of The Methods to Incorporate Disintegrant into Granules on The Thickness of Griseofulvin Tablets(Formula No.3),Prednisolone Tablets(Formula No.10),and Furosemide Tablets(Formula No 17)

Formula Number	Wet granulation Intragranular	Wet granulation Extragranular	Wet granulation 50:50 Intra:Extra
	Average Thickness (mm \pm S.D.)	Average Thickness (mm \pm S.D.)	Average Thickness (mm \pm S.D.)
3	5.03 \pm 0.0418	5.02 \pm 0.0204	5.27 \pm 0.0141
10	3.93 \pm 0.0556	3.95 \pm 0.0500	4.24 \pm 0.0574
17	4.06 \pm 0.0529	4.06 \pm 0.0768	4.09 \pm 0.0100

Table 34 Effect of The Methods of Incorporating Disintegrant into Granules on The Hardness of Griseofulvin Tablets(Formula No.3), Prednisolone Tablets(Formula No. 10) and,Furosemide Tablets (Formula No. 17)

Formula Number	Wet granulation Intragranular		Wet granulation Extragranular		Wet granulation 50:50 Intra: Extra	
	Hardness (Kp \pm S.D.)	% C.V.	Hardness (Kp \pm S.D.)	% C.V.	Hardness (Kp \pm S.D.)	% C.V.
3	4.96 \pm 0.2716	5.47	5.06 \pm 0.5779	9.53	6.72 \pm 0.3155	4.69
10	2.54 \pm 0.1404	5.52	2.53 \pm 0.2023	7.99	1.86 \pm 0.1646	8.85
17	5.17 \pm 0.1810	3.16	5.61 \pm 0.2632	4.69	5.37 \pm 0.3529	6.57

Table 35 Effect of The Methods of Incorporating Disintegrant into Granules on The Friability of Griseofulvin Tablets(Formula No.3), Prednisolone tablets (Formula No.10) and , Furosemide Tablets (Formula No.17)

Formula Number	Wet granulation Intragranular Friability %	Wet granulation Extragranular Friability %	Wet granulation 50:50 Intra:Extra Friability %
3	0.33	0.38	0.36
10	0.56	0.60	0.56
17	0.18	0.20	0.20

Table 36 Effect of The Methods of Incorporating Disintegrant into Granules on Disintegration Time of Griseofulvin Tablets (Formula No.3), Prednisolone Tablets (Formula No.10), and Furosemide Tablets (Formula No. 17)

Formula	Disintegration Time, min \pm S.D.		
Number	Wet granulation Intrgranular	Wet granulation Extragranular	Wet granulation 50:50 Intra:Extra
3	4.46 \pm 0.1569	4.04 \pm 0.1772	5.12 \pm 0.1173
10	0.06 \pm 0.0118	0.05 \pm 0.0190	0.08 \pm 0.0257
17	0.31 \pm 0.0471	0.32 \pm 0.0527	0.36 \pm 0.0240

Table 37 Effect of The Methods of Incorporating Disintegrant into Granules on Dissolution Time of Griseofulvin Tablets (Formula No. 3), Prednisolone Tablets (Formula No.10), and Furosemide Tablets (Formula No.17)

Formula	Dissolution Time, min \pm S.D.		
Number	Wet granulation Intrgranular	Wet granulation Extragranular	Wet granulation 50:50 Intra:Extra
3 (t 85 %)	30.25 \pm 2.8284	28.10 \pm 1.2727	25.25 \pm 1.4142
10 (t 70 %)	7.20 \pm 1.1313	4.10 \pm 2.8284	12.25 \pm 1.0606
17 (t 65 %)	14.10 \pm 2.6870	12.20 \pm 2.8284	8.45 \pm 1.5556

VITA

Flight Lieutenant Thavisak Teruya was born on November 15, 1952. He got his degree in Bachelor of Pharmacy in 1976 from Faculty of Pharmacy, Chiangmai University. During 1976-1979, he was an instructor in the Department of Manufacturing Pharmacy, Faculty of Pharmacy, Chiangmai University. Since 1979, he has worked in Division of Pharmaceutical Analysis and Research, Department of Medical Supplies, Directorate of Medical Services, Royal Thai Air Force.



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