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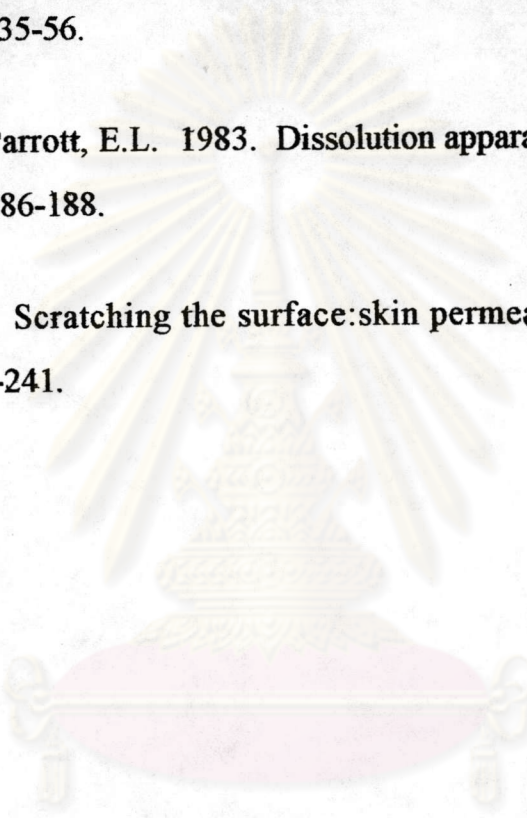


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ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



## Appendix I

### Cumulative permeation amount of NFP from NFP transdermal patch

Cumulative permeation amount of NFP from NFP transdermal patch containing no surfactant (control formulation, F1)

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	4.55	3.07	1.46	3.03
2	9.56	5.06	4.45	6.36
4	16.50	5.74	6.51	9.58
7	19.63	5.49	6.48	10.53
10	31.86	5.33	10.49	15.89
13	66.28	15.92	23.15	35.12
16	117.14	38.86	46.16	67.39
20	134.07	67.09	78.03	93.06
24	220.49	110.79	96.05	142.44

Cumulative permeation amount of NFP from NFP transdermal patch containing 0.5% sodium lauryl sulfate (F2)

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	2.98	1.80	3.13	2.64
2	4.67	4.08	3.18	3.98
4	11.62	9.55	7.28	9.48
7	19.89	23.78	19.06	20.91
10	31.26	41.49	32.48	35.08
13	45.36	66.47	154.36	88.73
16	62.92	94.28	284.98	147.39
20	83.10	132.43	299.00	171.51
24	122.57	170.20	313.47	202.08
28	153.91	198.35	347.88	233.38



**Cumulative permeation amount of NFP from NFP transdermal patch  
containing 1.0% sodium lauryl sulfate (F3)**

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	0.00	0.00	3.15	1.05
2	0.00	0.00	6.89	2.30
4	0.11	0.54	13.23	4.63
7	0.46	0.02	18.25	6.24
10	4.22	1.85	25.81	10.63
13	12.64	10.34	44.34	22.44
16	42.83	52.23	66.05	53.70
20	75.68	108.81	108.28	97.59
24	141.54	232.34	170.15	181.34

**Cumulative permeation amount of NFP from NFP transdermal patch  
containing 2.0% sodium lauryl sulfate (F4)**

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	1.15	0.80	0.99	0.98
2	1.28	0.70	1.40	1.13
4	1.21	0.80	1.82	1.28
7	1.41	0.85	2.19	1.48
10	3.47	6.37	7.52	5.79
13	6.42	80.12	26.95	37.83
16	16.50	190.21	85.48	97.40
20	30.49	233.08	181.41	148.33
24	40.48	353.70	341.40	245.19



**Cumulative permeation amount of NFP from NFP transdermal patch  
containing 1.0% cetyltrimethylammonium bromide (F5)**

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	3.45	0.00	1.84	1.76
2	8.56	3.89	4.33	5.59
4	2.63	5.48	5.85	4.65
7	3.47	9.35	9.54	7.45
10	5.21	10.57	11.59	9.12
13	8.10	21.74	16.92	15.59
16	13.25	38.09	38.47	29.94
20	29.07	67.37	79.38	58.61
24	46.40	129.31	102.51	92.74

**Cumulative permeation amount of NFP from NFP transdermal patch  
containing 2.0% cetyltrimethylammonium bromide (F6)**

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )		
	Cell A	Cell B	Average
0	0.00	0.00	0.00
1	3.93	5.34	4.64
2	3.49	9.13	6.31
4	6.59	16.13	11.36
7	8.65	29.29	18.97
10	21.00	65.24	43.12
13	45.59	106.88	76.24
16	94.37	171.15	132.76
20	177.11	264.80	220.96
24	324.88	355.77	340.33
28	394.23	342.26	368.25



Cumulative permeation amount of NFP from NFP transdermal patch containing 1.0% Cetylpyridinium chloride (F7)

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	2.43	3.05	2.17	2.55
2	4.65	3.98	3.15	3.93
4	7.09	6.09	4.44	5.87
7	11.56	8.94	7.57	9.36
10	10.75	21.34	15.62	15.90
13	46.70	38.67	30.78	38.72
16	48.84	72.79	58.11	59.91
20	102.27	80.13	55.97	79.46
24	126.40	186.64	128.96	147.33
28	237.64	216.07	190.36	214.69

Cumulative permeation amount of NFP from NFP transdermal patch containing 2.0% Cetylpyridinium chloride (F8)

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	0.35	1.46	0.39	0.73
2	1.94	2.73	1.00	1.89
4	4.48	7.24	5.20	5.64
7	10.30	13.78	12.72	12.27
10	17.84	20.27	23.26	20.46
13	32.07	28.43	38.17	32.89
16	48.26	54.18	59.58	54.01
20	81.50	88.94	96.66	89.03
24	114.16	113.19	128.98	118.78
28	147.95	166.89	170.49	161.78



**Cumulative permeation amount of NFP from NFP transdermal patch  
containing 1.0% Cremophor A25 (F9)**

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	0.48	0.00	0.82	0.43
2	0.98	1.38	1.01	1.12
4	1.29	5.16	3.00	3.15
7	5.95	11.93	9.81	9.23
10	17.44	20.74	17.79	18.66
13	30.66	29.76	27.74	29.39
16	34.79	44.14	29.25	36.06
20	127.54	70.88	100.46	99.63
24	153.63	87.30	130.40	123.78
28	216.35	213.59	194.93	208.29

**Cumulative permeation amount of NFP from NFP transdermal patch  
containing 2.0% Cremophor A25 (F10)**

Time (hr)	Permeation amount/surface area ( $\mu\text{g}/\text{cm}^2$ )			
	Cell A	Cell B	Cell C	Average
0	0.00	0.00	0.00	0.00
1	1.37	1.16	0.90	1.14
2	0.49	0.81	0.64	0.65
4	1.58	1.24	0.97	1.26
7	3.76	1.62	2.38	2.59
10	12.80	3.20	4.07	6.69
13	17.19	15.33	12.52	15.01
16	19.42	33.73	36.99	30.05
20	35.42	163.40	66.59	88.47
24	45.01	163.82	98.05	102.29
28	67.22	193.79	193.63	151.55



## Appendix II

### NFP concentration in rabbit plasma

**From single oral administration Adalat® 10 mg**

Time (hr)	NFP concentration in rabbit plasma (ng/ml)				
	No.1	No.2	No.3	No.4	No.5
0.5	11081.2	321.1	975.3	1290.5	347.4
1	10652.0	314.3	8030.2	6794.1	394.4
2	5416.2	502.7	10038.8	7721.1	667.2
4	2095.8	267.6	4844.2	9637.0	627.2
8	959.0	420.7	524.2	9111.7	1361.6
12	57.4	6599.1	187.3	842.4	4515.1
24	123.5	52.4	14.3	91.5	97.7

**From NFP transdermal patch administration**

Time (hr)	Plasma concentration/Dose (ng/ml)				
	No.1	No.2	No.3	No.4	No.5
0	0.00	0.00	0.00	0.00	0.00
1	5.41	0.90	1.75	1.09	1.02
2	3.35	1.87	1.44	1.61	1.80
4	1.65	3.37	1.53	3.81	1.31
8	95.45	47.16	85.46	212.60	218.32
12	79.78	5.73	1.10	110.95	30.20
18	55.64	11.20	1.76	47.51	13.16
24	9.06	7.88	1.93	13.72	8.75



## VITAE

Miss Monthip Adunyanon was born on September 3, 1967.  
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