

Table 7 Ephedrine、Amygdalin 及 Glycyrrhizic acid 在家兔血漿中定量  
分析之回收率(Recovery)試驗

Recovery Test (%)			
Conc. ( $\mu\text{g/ml}$ )	Ephedrine Recovery	Amygdalin Recovery	Glycyrrhizic acid Recovery
100	83.48	92.00	98.74
50	85.65	91.48	97.58
10	82.13	93.49	95.43
5	85.34	91.34	97.57
3	84.46	94.24	93.29
1	80.72	90.51	90.38
0.5	80.57	89.92	92.46
0.3	-	90.25	98.76
0.1	83.72	-	-
Mean	83.26	91.65	95.53
S.D	1.95	1.44	2.96
C.V %	2.35	1.57	3.10

Table 8 Ephedrine 在家兔血漿中之間日內(Interday)精確性試驗

Conc. ( $\mu\text{g/ml}$ )	1	2	3	Mean	S.D.	C.V.(%)	S.E.(%)
100.00	98.736	99.124	102.341	100.067	1.979	1.978	0.07
50.00	50.133	51.073	48.265	49.824	1.429	2.869	0.35
10.00	9.174	10.864	9.478	9.839	0.901	9.157	1.61
5.00	5.041	4.952	4.875	4.956	0.083	1.676	0.88
3.00	3.145	3.054	2.856	3.018	0.148	4.896	0.60
1.00	0.942	1.040	1.070	1.017	0.067	6.580	1.70
0.50	0.446	0.501	0.498	0.482	0.031	6.420	3.60
0.10	0.105	0.094	0.097	0.099	0.006	5.763	1.00

Table 9 Ephedrine 在家兔血漿中之同日內(Intraday)精確性試驗

Conc. ( $\mu\text{g/ml}$ )	1	2	3	Mean	S.D.	C.V.(%)	S.E.(%)
100.00	99.876	102.278	97.754	99.969	2.263	2.264	0.03
50.00	48.206	51.247	50.705	50.053	1.622	3.241	0.11
10.00	10.048	9.724	9.869	9.880	0.162	1.643	1.20
5.00	5.024	5.178	4.805	5.002	0.187	3.747	0.04
3.00	2.958	3.105	3.007	3.023	0.075	2.476	0.77
1.00	1.005	1.027	0.876	0.969	0.082	8.415	3.10
0.50	0.497	0.52	0.476	0.498	0.022	4.422	0.40
0.10	0.089	0.115	0.094	0.096	0.008	8.526	4.00

Table 10 Amygdalin 在家兔血漿中之間日內(Interday)精確性試驗

Conc. ( $\mu\text{g/ml}$ )	1	2	3	Mean	S.D.	C.V.(%)	S.E.(%)
100.00	98.751	99.127	100.547	99.475	0.947	0.952	0.53
50.00	49.951	52.054	51.384	51.130	1.074	2.101	2.26
10.00	9.861	10.027	10.749	10.212	0.472	4.623	2.12
5.00	5.048	4.917	4.823	4.929	0.113	2.293	1.42
3.00	3.057	2.951	2.894	2.967	0.083	2.788	1.10
1.00	0.958	1.007	1.085	1.017	0.064	6.300	1.70
0.50	0.478	0.521	0.485	0.495	0.023	4.664	1.00
0.30	0.283	0.314	0.305	0.301	0.016	5.304	0.33

Table 11 Amygdalin 在家兔血漿中之同日內(Intraday)精確性試驗

Conc. ( $\mu\text{g/ml}$ )	1	2	3	Mean	S.D.	C.V.(%)	S.E.(%)
100.00	97.278	95.307	102.351	98.312	3.634	3.696	1.69
50.00	48.024	54.357	48.837	50.406	3.446	6.836	0.81
10.00	9.829	10.202	9.846	9.959	0.211	2.115	0.41
5.00	5.195	4.957	5.217	5.123	0.144	2.814	2.46
3.00	3.081	2.845	3.127	3.018	0.151	5.014	0.60
1.00	1.003	0.981	1.114	1.033	0.071	6.904	3.30
0.50	0.534	0.482	0.463	0.493	0.037	7.456	1.40
0.30	0.286	0.324	0.277	0.296	0.025	8.437	1.33

Table 12 Glycyrrhizic acid 在家兔血漿中之間日內(Interday)精確性試驗

Conc. ( $\mu\text{g/ml}$ )	1	2	3	Mean	S.D.	C.V.(%)	S.E.(%)
100.00	98.437	99.018	105.371	100.942	3.847	3.811	0.94
50.00	46.058	48.257	49.158	47.824	1.595	3.334	4.35
10.00	10.307	9.758	9.661	9.909	0.348	3.516	0.91
5.00	5.134	4.792	4.517	4.814	0.309	6.421	3.72
3.00	2.559	2.786	2.847	2.731	0.152	5.558	8.97
1.00	0.891	0.957	1.038	0.962	0.074	7.654	3.80
0.50	0.482	0.527	0.534	0.514	0.028	5.487	2.80
0.30	0.287	0.324	0.301	0.304	0.019	6.145	1.33

Table 13 Glycyrrhizic acid 在家兔血漿中之同日內(Intraday)精確性試驗

Conc. ( $\mu\text{g/ml}$ )	1	2	3	Mean	S.D.	C.V.(%)	S.E.(%)
100.00	101.049	105.217	97.228	101.165	3.996	3.950	1.17
50.00	49.028	51.037	53.187	51.084	2.080	4.072	2.17
10.00	9.846	10.048	9.054	9.649	0.525	5.445	3.51
5.00	4.965	5.571	4.727	5.088	0.435	8.553	1.76
3.00	2.948	2.847	3.153	2.983	0.156	5.227	0.57
1.00	1.024	0.981	1.007	1.004	0.022	2.157	0.40
0.50	0.511	0.498	0.487	0.499	0.012	2.409	0.20
0.30	0.287	0.327	0.297	0.304	0.021	6.855	1.33

Table 14 Ephedrine 定量的極限試驗(Limit of Quantitation)

Conc. Expected ( $\mu\text{g/ml}$ )	Test No.			Mean	S.D.	C.V.%
	1	2	3			
	4	5	6			
100	104.876	95.364	99.388	98.855	3.243	3.281
	97.955	97.173	98.374			
50	52.314	51.364	52.017	51.677	1.492	2.888
	50.768	53.998	49.603			
10	11.012	9.546	10.009	9.861	0.628	6.372
	9.482	9.241	9.875			
5	5.331	5.186	4.854	5.103	0.212	4.146
	4.863	5.068	5.313			
3	2.939	3.203	3.085	3.011	0.164	5.432
	2.796	2.881	3.163			
1	0.975	0.911	0.945	0.980	0.053	5.386
	1.056	0.966	1.024			
0.5	0.506	0.487	0.462	0.502	0.029	5.865
	0.548	0.518	0.491			
0.1	0.097	0.111	0.088	0.101	0.010	9.761
	0.112	0.105	0.093			

Table 15 Amygdalin 定量的極限試驗(Limit of Quantitation)

Conc. Expected ( $\mu\text{g/ml}$ )	Test No.			Mean	S.D.	C.V.%
	1	2	3			
	4	5	6			
100	100.052 98.637	103.220 105.129	101.375 99.387	101.300	2.476	2.445
50	50.357 48.607	52.373 51.026	49.057 50.741	50.360	1.372	2.724
10	10.704 9.606	9.433 10.374	9.772 10.078	9.995	0.484	4.840
5	5.024 5.087	5.349 4.678	4.767 5.096	5.000	0.244	4.875
3	3.196 2.913	3.072 2.816	2.717 2.974	2.948	0.173	5.867
1	0.978 1.074	0.954 1.142	1.163 0.936	1.041	0.099	9.483
0.5	0.529 0.507	0.480 0.537	0.521 0.488	0.510	0.023	4.471
0.3	0.256 0.297	0.308 0.271	0.324 0.286	0.290	0.025	8.523

Table 16 Glycyrrhizic acid 定量的極限試驗(Limit of Quantitation)

Conc. Expected ( $\mu\text{g/ml}$ )	Test No.			Mean	S.D.	C.V.%
	1	2	3			
	4	5	6			
100	100.112 98.379	104.037 101.032	97.575 99.781	100.153	2.271	2.268
50	52.231 51.874	48.377 50.276	51.107 49.077	50.490	1.538	3.047
10	9.784 10.176	10.064 10.377	10.557 9.421	10.063	0.411	4.086
5	4.627 5.069	4.963 4.671	4.998 4.578	4.818	0.215	4.472
3	3.167 3.289	2.831 3.123	2.838 2.991	3.040	0.185	6.100
1	1.108 0.977	0.981 1.028	0.903 1.074	1.012	0.074	7.314
0.5	0.501 0.514	0.518 0.520	0.482 0.476	0.502	0.019	3.782
0.3	0.281 0.324	0.307 0.274	0.312 0.286	0.297	0.020	6.658

Table 17 Ephedrine 在家兔血漿中於 37 之安定性試驗

Time	1 $\mu$ g/ml	5 $\mu$ g/ml	10 $\mu$ g/ml
0-hr	1.116	5.319	10.312
1-hr	1.114	5.164	10.224
3-hr	1.089	5.081	10.071
6-hr	1.067	4.997	10.062
12-hr	1.032	4.849	9.969
24-hr	0.981	4.618	9.864
36-hr	0.913	4.434	9.759
48-hr	0.824	4.038	9.586

Table 18 Ephedrine 在家兔血漿中於-30 之安定性試驗

Time	1 $\mu$ g/ml	5 $\mu$ g/ml	10 $\mu$ g/ml
0-day	1.107	5.122	10.239
1-day	1.112	5.005	10.125
3-day	1.018	4.997	10.058
6-day	0.971	4.966	10.003
10-day	0.965	4.923	9.989
15-day	0.937	4.903	9.712
21-day	0.892	4.850	9.504



Table 19 Amygdalin 在家兔血漿中於 37 之安定性試驗

Time	1 $\mu$ g/ml	5 $\mu$ g/ml	10 $\mu$ g/ml
0-hr	1.013	5.124	10.341
1-hr	0.981	5.086	10.027
3-hr	0.916	4.902	9.843
6-hr	0.882	4.806	9.629
12-hr	0.859	4.683	9.416
24-hr	0.806	4.461	9.001
36-hr	0.744	4.283	8.769
48-hr	0.636	4.101	8.314

Table 20 Amygdalin 在家兔血漿中於-30 之安定性試驗

Time	1 $\mu$ g/ml	5 $\mu$ g/ml	10 $\mu$ g/ml
0-day	1.027	4.981	10.106
1-day	1.016	4.931	9.782
3-day	1.008	4.894	9.766
6-day	0.995	4.869	9.748
10-day	0.971	4.861	9.470
15-day	0.957	4.685	9.301
21-day	0.892	4.569	9.105

Table 21 Glycyrrhizic acid 在家兔血漿中於 37 之安定性試驗

Time	1 $\mu$ g/ml	5 $\mu$ g/ml	10 $\mu$ g/ml
0-hr	1.018	5.091	9.931
1-hr	0.996	4.995	9.980
3-hr	0.982	4.941	9.841
6-hr	0.974	4.951	9.899
12-hr	0.947	4.954	9.597
24-hr	0.944	4.790	9.594
36-hr	0.919	4.705	9.383
48-hr	0.901	4.577	9.237

Table 22 Glycyrrhizic acid 在家兔血漿中於-30 之安定性試驗

Time	1 $\mu$ g/ml	5 $\mu$ g/ml	10 $\mu$ g/ml
0-day	1.085	5.003	10.031
1-day	0.996	4.977	9.984
3-day	0.989	4.942	9.957
6-day	0.975	4.918	9.914
10-day	0.965	4.856	9.876
15-day	0.953	4.788	9.834
21-day	0.949	4.705	9.794

Table 23 六隻家兔靜脈注射 Ephedrine 標準品(劑量 5.6mg/kg)後之血漿中濃度值( $\mu\text{g/ml}$ )

Time (min.)	No.1	No.2	No.3	No.4	No.5	No.6	Mean	S.D.
2.5	3.894	4.249	4.269	4.820	4.602	4.491	4.388	0.323
5	3.782	4.158	4.141	4.732	4.367	4.467	4.275	0.325
10	3.607	3.975	3.953	4.614	4.247	4.207	4.101	0.340
15	3.418	3.794	3.773	4.402	4.023	3.895	3.884	0.324
20	3.114	3.578	3.596	4.173	3.890	3.565	3.653	0.356
30	2.872	3.308	3.364	3.811	3.687	3.355	3.400	0.329
45	2.690	2.973	3.122	3.561	3.587	3.103	3.173	0.347
60	2.425	2.566	2.744	3.153	3.266	2.874	2.838	0.328
90	2.096	2.106	2.498	2.755	2.853	2.491	2.466	0.317
120	1.809	1.765	2.216	2.376	2.453	2.168	2.131	0.286
150	1.651	1.481	1.891	2.018	2.034	1.873	1.825	0.217
180	1.424	1.188	1.514	1.482	1.486	1.453	1.424	0.120
210	1.264	1.035	1.078	1.146	1.003	1.156	1.114	0.095
240	0.999	0.777	0.595	0.797	0.649	0.778	0.766	0.140
300	0.678	0.538	0.445	0.594	0.320	0.484	0.510	0.124
360	0.237	0.311	0.246	0.462	0.261	0.335	0.309	0.084

Table 24 六隻家兔靜脈注射 Amygdalin 標準品(劑量 6.7mg/kg)後之血漿中濃度值( $\mu\text{g/ml}$ )

Time (min.)	No.1	No.2	No.3	No.4	No.5	No.6	Mean	S.D.
2.5	10.011	9.541	9.541	11.210	9.313	10.523	10.023	0.725
5	9.728	8.845	9.404	10.876	9.189	10.011	9.676	0.715
10	9.336	8.163	8.913	10.599	9.015	9.728	9.292	0.824
15	8.867	7.952	8.269	10.038	8.677	9.207	8.835	0.732
20	8.151	7.348	7.605	9.306	8.251	8.874	8.256	0.741
30	7.606	7.021	6.732	8.747	7.641	8.147	7.649	0.734
45	7.032	6.149	5.860	8.024	7.092	7.537	6.949	0.819
60	6.572	5.536	5.427	7.050	6.438	6.675	6.283	0.654
90	5.577	4.672	4.769	6.653	5.421	5.865	5.493	0.734
120	4.770	3.617	4.074	5.663	4.386	4.606	4.519	0.694
150	3.848	3.039	3.301	5.027	3.769	3.756	3.790	0.684
180	3.054	2.709	2.708	4.272	3.089	3.181	3.169	0.576
210	2.537	2.202	2.469	3.410	2.081	2.437	2.523	0.468
240	2.153	1.528	1.849	2.369	1.571	1.944	1.902	0.327
300	1.351	0.962	1.605	1.984	1.151	1.459	1.419	0.358
360	0.926	0.542	0.913	0.994	0.555	0.624	0.759	0.207

Table 25 六隻家兔靜脈注射 Glycyrrhizic acid 標準品(劑量 10mg/kg )  
後之血漿中濃度值( $\mu\text{g/ml}$ )

Time (min.)	No.1	No.2	No.3	No.4	No.5	No.6	Mean	S.D.
2.5	62.659	61.552	64.495	60.076	60.457	57.618	61.143	2.355
5	51.313	50.492	51.119	49.120	51.063	47.635	50.124	1.458
10	46.563	46.309	48.773	45.414	46.413	45.241	46.452	1.262
15	42.734	40.644	39.257	38.324	40.281	40.507	40.291	1.488
20	37.714	37.298	36.047	34.623	38.490	36.192	36.727	1.385
30	34.497	35.022	34.203	32.631	35.371	33.381	34.184	1.026
45	29.045	29.988	27.284	29.154	31.394	30.410	29.546	1.405
60	24.256	24.978	23.743	24.704	26.752	24.011	24.741	1.083
90	17.521	19.338	18.218	16.874	19.987	18.075	18.335	1.150
120	13.737	15.164	13.917	12.405	15.719	13.092	14.006	1.245
150	11.591	12.690	11.873	11.110	11.958	11.504	11.788	0.535
180	10.136	10.464	9.502	9.142	9.367	9.100	9.619	0.558
210	8.483	8.343	7.923	7.586	7.363	7.401	7.850	0.481
240	6.288	6.145	5.660	5.951	6.035	5.691	5.962	0.249
300	3.895	3.995	3.931	4.073	3.560	3.691	3.857	0.194
360	3.129	3.047	2.534	3.190	2.908	2.784	2.932	0.245

Table 26 六隻家兔以 Ephedrine、Amygdalin 及 Glycyrrhizic acid 標準品靜脈注射後之平均血漿中濃度值( $\mu\text{g/ml}$ )

Time (min.)	Ephedrine	Amygdalin	Glycyrrhizic acid
2.5	4.388 $\pm$ 0.323	10.023 $\pm$ 0.725	61.143 $\pm$ 2.355
5	4.275 $\pm$ 0.325	9.676 $\pm$ 0.715	50.124 $\pm$ 1.458
10	4.101 $\pm$ 0.340	9.292 $\pm$ 0.824	46.452 $\pm$ 1.262
15	3.884 $\pm$ 0.324	8.451 $\pm$ 0.736	40.291 $\pm$ 1.488
20	3.653 $\pm$ 0.356	8.256 $\pm$ 0.741	36.727 $\pm$ 1.385
30	3.400 $\pm$ 0.329	7.649 $\pm$ 0.734	34.184 $\pm$ 1.026
45	3.173 $\pm$ 0.347	6.949 $\pm$ 0.819	29.546 $\pm$ 1.405
60	2.838 $\pm$ 0.328	6.283 $\pm$ 0.654	24.741 $\pm$ 1.083
90	2.466 $\pm$ 0.317	5.493 $\pm$ 0.734	18.335 $\pm$ 1.150
120	2.131 $\pm$ 0.286	4.519 $\pm$ 0.649	14.006 $\pm$ 1.245
150	1.825 $\pm$ 0.217	3.790 $\pm$ 0.684	11.788 $\pm$ 0.535
180	1.424 $\pm$ 0.120	3.169 $\pm$ 0.576	9.619 $\pm$ 0.558
210	1.114 $\pm$ 0.095	2.523 $\pm$ 0.468	7.850 $\pm$ 0.481
240	0.766 $\pm$ 0.140	1.902 $\pm$ 0.327	5.962 $\pm$ 0.249
300	0.510 $\pm$ 0.124	1.419 $\pm$ 0.358	3.857 $\pm$ 0.194
360	0.309 $\pm$ 0.084	0.759 $\pm$ 0.207	2.932 $\pm$ 0.245

Data are expressed as Mean  $\pm$  S.D.

Table 27 六隻家兔靜脈注射麻杏甘石湯(劑量 1.912mg/kg )後之血漿  
中 Ephedrine 濃度值( $\mu\text{g/ml}$ )

Time (min.)	No.1	No.2	No.3	No.4	No.5	No.6	Mean	S.D.
2.5	2.664	2.396	2.801	3.173	2.979	2.906	2.820	0.269
5	2.460	2.369	2.674	3.089	2.876	2.786	2.709	0.267
10	2.257	2.135	2.525	2.876	2.733	2.639	2.528	0.284
15	2.086	2.051	2.361	2.602	2.559	2.428	2.348	0.233
20	1.894	1.870	2.143	2.360	2.385	2.136	2.131	0.220
30	1.699	1.663	1.879	2.134	2.143	1.819	1.890	0.208
45	1.446	1.407	1.593	1.868	1.886	1.622	1.637	0.203
60	1.239	1.181	1.320	1.713	1.613	1.450	1.419	0.212
90	1.035	0.950	1.072	1.487	1.320	1.214	1.179	0.200
120	0.694	0.691	0.941	1.240	1.035	0.946	0.924	0.210
150	0.483	0.456	0.643	0.999	0.774	0.643	0.666	0.201
180	0.365	0.306	0.482	0.644	0.644	0.487	0.488	0.139
210	0.239	0.150	0.341	0.405	0.359	0.275	0.295	0.093
240	0.183	N.D.	0.131	0.168	0.322	0.119	0.154	0.105
300	N.D.	N.D.	N.D.	N.D.	0.222	N.D.	0.222	N.D.
360	N.D.	N.D.	N.D.	N.D.	0.113	N.D.	0.113	N.D.

N.D. are expressed as not detectable

Table 28 六隻家兔靜脈注射麻杏甘石湯(劑量 8.759mg/kg )後之血漿  
中 Amygdalin 濃度值( $\mu\text{g/ml}$ )

Time (min.)	No.1	No.2	No.3	No.4	No.5	No.6	Mean	S.D.
2.5	5.058	5.007	5.318	4.761	5.581	4.500	5.038	0.385
5	4.882	4.573	4.951	4.637	5.476	4.320	4.807	0.399
10	4.477	4.453	4.834	4.450	5.219	4.103	4.589	0.386
15	4.131	4.210	4.532	4.214	5.018	3.898	4.334	0.392
20	3.663	3.863	4.163	3.813	4.723	3.611	3.973	0.416
30	3.258	3.572	3.893	3.329	4.371	3.108	3.588	0.472
45	2.843	3.098	3.495	2.939	3.783	2.904	3.177	0.379
60	2.605	2.907	3.270	2.573	3.201	2.525	2.847	0.330
90	2.227	2.543	2.762	2.116	2.803	2.178	2.438	0.305
120	1.820	2.267	2.291	1.630	2.115	1.772	1.982	0.279
150	1.461	1.794	1.930	1.281	1.738	1.315	1.587	0.271
180	1.236	1.691	1.430	0.999	1.335	1.027	1.286	0.260
210	0.839	1.164	0.853	0.608	0.784	0.642	0.815	0.199
240	0.364	0.793	0.469	N.D.	0.638	0.303	0.513	0.201
300	N.D.	0.349	N.D.	N.D.	0.365	N.D.	0.357	0.011
360	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D. are expressed as not detectable



Table 29 六隻家兔靜脈注射麻杏甘石湯(劑量 4.094mg/kg )後之血漿  
中 Glycyrrhizic acid 濃度值(μg/ml)

Time (min.)	No.1	No.2	No.3	No.4	No.5	No.6	Mean	S.D.
2.5	9.446	10.082	9.503	10.210	9.109	9.757	9.685	0.415
5	9.075	9.595	9.175	9.700	8.658	9.405	9.268	0.382
10	8.589	8.795	8.739	8.818	8.306	8.774	8.670	0.196
15	7.923	8.161	7.816	8.086	7.605	8.222	7.969	0.233
20	7.219	7.637	7.135	7.472	7.019	7.731	7.369	0.287
30	6.330	6.793	6.234	6.507	6.091	6.895	6.475	0.318
45	5.530	5.813	5.450	5.486	5.316	5.903	5.583	0.226
60	4.684	5.031	4.651	4.762	4.365	5.131	4.771	0.277
90	3.579	3.839	3.645	3.762	3.435	4.020	3.713	0.206
120	2.954	2.995	3.120	3.067	2.817	3.264	3.036	0.153
150	2.517	2.390	2.703	2.544	2.442	2.717	2.552	0.134
180	1.913	1.952	1.738	2.134	1.972	2.298	2.001	0.193
210	1.534	1.631	1.572	1.806	1.441	1.963	1.658	0.193
240	1.296	1.391	1.440	1.539	1.207	1.688	1.427	0.172
300	1.037	1.070	1.124	1.134	1.082	1.260	1.118	0.078
360	0.961	0.870	1.054	0.847	0.961	0.946	0.940	0.074

Table 30 六隻家兔靜脈注射麻杏甘石湯後之血漿中 Ephedrine、Amygdalin 及 Glycyrrhizic acid 平均濃度值( $\mu\text{g/ml}$ )

Time (min.)	Ephedrine	Amygdalin	Glycyrrhizic acid
2.5	2.820 $\pm$ 0.269	5.038 $\pm$ 0.385	9.685 $\pm$ 0.415
5	2.709 $\pm$ 0.267	4.807 $\pm$ 0.399	9.268 $\pm$ 0.382
10	2.528 $\pm$ 0.284	4.589 $\pm$ 0.386	8.670 $\pm$ 0.196
15	2.348 $\pm$ 0.233	4.334 $\pm$ 0.392	7.969 $\pm$ 0.233
20	2.131 $\pm$ 0.220	3.973 $\pm$ 0.416	7.369 $\pm$ 0.287
30	1.890 $\pm$ 0.208	3.588 $\pm$ 0.472	6.475 $\pm$ 0.318
45	1.637 $\pm$ 0.203	3.177 $\pm$ 0.379	5.583 $\pm$ 0.226
60	1.419 $\pm$ 0.212	2.847 $\pm$ 0.330	4.771 $\pm$ 0.277
90	1.179 $\pm$ 0.200	2.438 $\pm$ 0.305	3.713 $\pm$ 0.206
120	0.924 $\pm$ 0.210	1.982 $\pm$ 0.279	3.036 $\pm$ 0.153
150	0.666 $\pm$ 0.201	1.587 $\pm$ 0.271	2.552 $\pm$ 0.134
180	0.488 $\pm$ 0.139	1.286 $\pm$ 0.260	2.001 $\pm$ 0.193
210	0.295 $\pm$ 0.093	0.815 $\pm$ 0.199	1.658 $\pm$ 0.193
240	0.154 $\pm$ 0.105	0.473 $\pm$ 0.206	1.427 $\pm$ 0.172
300	0.222	0.357 $\pm$ 0.011	1.118 $\pm$ 0.078
360	0.113	N.D.	0.940 $\pm$ 0.074

Data are expressed as Mean  $\pm$  S.D.

N.D. are expressed as not detectable

Table 31 六隻家兔口服麻杏甘石湯(劑量 36.69mg/kg)後之血漿中  
Ephedrine 濃度值( $\mu\text{g/ml}$ )

Time (min.)	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
10	0.307	0.246	0.510	0.211	0.307	0.305	0.314	0.104
20	0.691	0.646	0.865	0.394	0.337	0.402	0.556	0.209
30	1.078	1.203	1.213	0.740	0.709	0.597	0.923	0.273
45	1.630	1.720	1.850	1.184	1.035	1.074	1.416	0.359
60	1.911	1.839	2.072	1.785	1.431	1.492	1.755	0.248
90	2.297	2.325	1.938	2.211	1.965	1.622	2.060	0.270
120	2.546	2.917	1.864	2.543	2.361	1.747	2.330	0.446
150	2.724	2.696	1.733	2.355	2.720	1.912	2.357	0.440
180	2.423	2.489	1.580	2.082	2.443	1.873	2.149	0.369
210	2.192	2.312	1.485	1.906	2.192	1.719	1.968	0.322
240	2.039	2.113	1.317	1.684	1.920	1.519	1.765	0.312
270	1.905	1.806	1.168	1.518	1.659	1.310	1.561	0.285
300	1.829	1.492	0.974	1.336	1.307	1.153	1.348	0.294
360	1.767	1.411	0.909	1.262	1.143	1.070	1.260	0.301
420	1.503	1.276	0.830	1.120	1.002	0.892	1.104	0.253
480	1.393	1.149	0.757	1.001	0.931	0.797	1.005	0.237
540	1.315	1.070	0.643	0.918	0.857	0.715	0.920	0.245
600	1.285	1.003	0.538	0.870	0.797	0.635	0.855	0.268

Table 32 六隻家兔口服麻杏甘石湯(劑量 83.84mg/kg )後之血漿中  
Amygdalin 濃度值( $\mu\text{g/ml}$ )

Time (min.)	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
10	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
20	N.D.	0.397	0.374	N.D.	N.D.	N.D.	0.386	0.016
30	0.454	0.714	0.679	0.435	0.578	0.468	0.555	0.121
45	0.931	1.334	1.114	0.854	0.822	0.854	0.985	0.201
60	1.361	1.699	1.746	1.199	1.144	1.146	1.383	0.275
90	1.564	2.067	2.328	1.372	1.372	1.659	1.727	0.390
120	2.222	1.814	2.556	1.627	1.638	1.972	1.972	0.363
150	2.030	1.259	2.244	1.616	2.240	2.655	2.007	0.499
180	1.690	0.859	2.170	1.414	1.817	2.255	1.701	0.516
210	1.372	0.692	1.616	1.144	1.390	1.754	1.328	0.376
240	1.012	0.488	1.210	1.005	0.984	1.625	1.054	0.369
270	0.488	N.D.	0.692	0.547	0.585	1.123	0.687	0.255
300	N.D.	N.D.	0.580	0.302	0.332	0.694	0.477	0.191
360	N.D.	N.D.	0.402	N.D.	N.D.	0.366	0.384	0.025
420	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
480	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
540	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
600	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

N.D. are expressed as not detectable

Table 33 六隻家兔口服麻杏甘石湯(劑量 78.43mg/kg)後之血漿中  
Glycyrrhizic acid 濃度值(μg/ml)

Time (min.)	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
10	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
20	0.343	0.355	0.297	0.349	0.343	0.316	0.334	0.022
30	0.564	0.573	0.599	0.528	0.557	0.587	0.568	0.025
45	0.805	0.824	0.808	0.775	0.805	0.762	0.796	0.023
60	1.425	1.527	1.506	1.392	1.470	1.369	1.448	0.063
90	1.764	1.914	1.706	1.856	1.764	1.641	1.774	0.099
120	2.252	2.278	2.256	2.312	2.219	2.121	2.240	0.066
150	3.141	3.357	3.445	3.329	3.264	2.950	3.248	0.178
180	4.081	3.835	4.172	4.389	4.293	3.937	4.118	0.210
210	4.835	4.582	4.601	5.282	5.114	4.888	4.884	0.277
240	4.294	3.927	4.406	4.976	4.585	5.455	4.607	0.540
270	3.582	3.278	3.927	4.512	4.058	4.172	3.921	0.438
300	3.048	2.674	3.355	3.450	3.252	3.435	3.202	0.298
360	2.381	1.990	2.780	2.659	2.449	2.590	2.475	0.277
420	2.117	1.776	2.211	1.990	1.878	1.894	1.978	0.162
480	1.538	1.276	1.745	1.440	1.424	1.288	1.452	0.174
540	0.914	0.801	1.028	0.949	0.853	0.916	0.910	0.078
600	0.413	0.339	0.662	0.458	0.405	0.434	0.452	0.110

N.D. are expressed as not detectable

Table 34 六隻家兔口服麻杏甘石湯後之血漿中 Ephedrine、Amygdalin 及 Glycyrrhizic acid 平均濃度值( $\mu\text{g/ml}$ )

Time (min.)	Ephedrine	Amygdalin	Glycyrrhizic acid
10	0.314 $\pm$ 0.104	N.D.	N.D.
20	0.556 $\pm$ 0.209	0.386 $\pm$ 0.016	0.334 $\pm$ 0.022
30	0.923 $\pm$ 0.273	0.555 $\pm$ 0.121	0.568 $\pm$ 0.025
45	1.416 $\pm$ 0.359	0.985 $\pm$ 0.201	0.796 $\pm$ 0.023
60	1.755 $\pm$ 0.248	1.383 $\pm$ 0.275	1.448 $\pm$ 0.063
90	2.060 $\pm$ 0.270	1.727 $\pm$ 0.390	1.774 $\pm$ 0.099
120	2.330 $\pm$ 0.446	1.972 $\pm$ 0.363	2.240 $\pm$ 0.066
150	2.357 $\pm$ 0.440	2.007 $\pm$ 0.499	3.248 $\pm$ 0.178
180	2.149 $\pm$ 0.369	1.701 $\pm$ 0.516	4.118 $\pm$ 0.210
210	1.968 $\pm$ 0.322	1.328 $\pm$ 0.376	4.884 $\pm$ 0.277
240	1.765 $\pm$ 0.312	1.054 $\pm$ 0.369	4.607 $\pm$ 0.540
270	1.561 $\pm$ 0.285	0.687 $\pm$ 0.255	3.921 $\pm$ 0.438
300	1.348 $\pm$ 0.294	0.477 $\pm$ 0.191	3.202 $\pm$ 0.298
360	1.260 $\pm$ 0.301	0.384 $\pm$ 0.025	2.475 $\pm$ 0.277
420	1.104 $\pm$ 0.253	N.D.	1.978 $\pm$ 0.162
480	1.005 $\pm$ 0.237	N.D.	1.452 $\pm$ 0.174
540	0.920 $\pm$ 0.245	N.D.	0.910 $\pm$ 0.078
600	0.855 $\pm$ 0.268	N.D.	0.452 $\pm$ 0.110

Data are expressed as Mean  $\pm$  S.D.

N.D. are expressed as not detectable

Table 35 六隻家兔靜脈注射 Ephedrine 標準品(劑量 5.6mg/kg )後之血漿中濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.012	0.008	0.007	0.005	0.008	0.007	0.008	0.002
T <sub>1/2</sub>	57.802	90.821	94.154	152.506	91.293	98.695	97.645	30.651
AUC <sub>P</sub>	570.050	538.299	576.947	654.723	620.235	594.745	592.500	49.812
AUC <sub>TOTAL</sub>	589.818	579.057	610.370	756.393	654.618	642.455	638.785	64.604
CL	0.025	0.023	0.023	0.016	0.019	0.020	0.021	0.003
MRT	131.456	140.144	131.067	175.672	124.731	141.754	140.804	12.208
VD <sub>SS</sub>	3.254	3.243	3.006	2.857	2.401	2.846	2.935	0.316

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Table 36 六隻家兔靜脈注射 Ephedrine 標準品(劑量 5.6mg/kg )後之血漿中濃度值經 WINNONLIN 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
A	0.472	0.381	0.008	0.581	0.649	2.564	0.776	0.904
B	3.785	4.040	4.545	4.340	4.220	1.949	3.813	0.949
$\alpha$	0.477	0.084	0.002	0.005	0.008	0.007	0.097	0.189
$\beta$	0.006	0.007	0.007	0.007	0.008	0.007	0.007	0.001
AUC	639.384	592.920	619.909	727.023	643.671	649.509	645.403	44.994
K10-HL	104.119	92.957	94.370	102.397	91.629	99.748	97.537	5.249
$\alpha$ -HL	1.453	8.221	392.085	126.437	89.327	99.683	119.534	142.809
$\beta$ -HL	116.908	100.949	93.856	99.180	91.983	99.835	100.452	8.812
K10	0.007	0.007	0.007	0.007	0.008	0.007	0.007	0.0004
K12	0.051453	0.006084	0.000031	0.000042	0.000001	0.000000	0.009602	0.020646
K21	0.425	0.078	0.002	0.006	0.008	0.007	0.087	0.168
Volume	3.430	3.031	3.075	2.499	2.588	2.858	2.913	0.343
C <sub>max</sub>	4.257	4.421	4.553	4.921	4.869	4.513	4.589	0.259
CL	0.023	0.023	0.023	0.017	0.020	0.020	0.021	0.002
MRT	168.405	144.618	138.484	148.818	132.206	143.906	146.073	12.353
VD <sub>SS</sub>	3.845	3.268	3.128	2.518	2.588	2.858	3.034	0.494

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Table 37 六隻家兔靜脈注射 Amygdalin 標準品(劑量 6.7mg/kg)後之血漿中濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.004	0.009	0.006	0.007	0.009	0.009	0.007	0.002
T <sub>1/2</sub>	166.041	80.236	117.846	95.753	79.923	73.182	102.164	35.165
AUC <sub>P</sub>	1329.93	1124.08	1223.20	1634.87	1273.06	1359.06	1324.03	173.57
AUC <sub>TOTAL</sub>	1551.79	1186.04	1378.46	1772.22	1337.07	1424.95	1441.76	200.97
CL	0.011	0.014	0.012	0.008	0.011	0.011	0.011	0.002
MRT	183.640	129.845	167.508	151.434	127.964	127.477	147.978	23.727
VD <sub>SS</sub>	2.059	1.761	2.042	1.256	1.407	1.378	1.651	0.353

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Table 38 六隻家兔靜脈注射 Amygdalin 標準品(劑量 6.7mg/kg)後之血漿中濃度值經 WINNONLIN 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
Volume	1.771	1.785	1.917	1.322	1.472	1.465	1.622	0.233
K10	0.006	0.007	0.006	0.006	0.007	0.007	0.007	0.001
AUC	1513.946	1220.694	1411.540	1853.814	1356.395	1497.618	1475.668	213.678
K10-HL	106.810	93.798	111.628	115.590	94.150	98.731	103.451	9.246
Cmax	9.825	9.021	8.765	11.117	9.986	10.514	9.871	0.886
CL	0.011	0.013	0.012	0.008	0.011	0.010	0.011	0.002
MRT	233291.3 29	165187.1 54	227322.1 65	309143.8 76	184238.9 37	213319.2 31	222083.782	49957.553
VD <sub>SS</sub>	1.771	1.785	1.917	1.322	1.472	1.465	1.622	0.233

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Table 39 六隻家兔靜脈注射 Glycyrrhizic acid 標準品(劑量 10mg/kg)  
後之血漿中濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.006	0.006	0.007	0.005	0.006	0.006	0.006	0.0006
T <sub>1/2</sub>	119.152	118.549	93.877	133.368	113.901	116.308	115.859	12.743
AUC <sub>P</sub>	4922.20	5074.85	4855.35	4719.95	5068.73	4749.81	4989.48	152.64
AUC <sub>TOTAL</sub>	5460.19	5596.09	5198.62	5333.87	5546.69	5217.06	5392.09	168.29
CL	0.005	0.004	0.005	0.004	0.004	0.004	0.004	0.0005
MRT	144.994	142.909	127.932	154.766	136.185	139.004	140.965	9.023
VD <sub>SS</sub>	0.690	0.613	0.615	0.638	0.540	0.586	0.614	0.050

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Table 40 六隻家兔靜脈注射 Glycyrrhizic acid 標準品(劑量 10mg/kg)  
後之血漿中濃度值經 WINNONLIN 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
A	28.753	25.248	31.181	29.684	20.398	24.173	26.573	4.033
B	31.637	37.747	36.403	25.593	38.670	30.177	33.371	5.101
$\alpha$	0.043	0.076	0.085	0.030	0.057	0.032	0.054	0.023
$\beta$	0.007	0.007	0.007	0.006	0.008	0.007	0.007	0.001
AUC	5462.820	5548.734	5243.300	5314.877	5465.655	5216.289	5375.279	135.840
K10-HL	62.701	61.054	53.776	66.647	64.138	66.526	62.473	4.782
$\alpha$ -HL	16.194	9.088	8.115	23.241	12.093	21.857	15.098	6.436
$\beta$ -HL	104.968	95.813	92.888	116.990	91.590	102.308	100.760	9.529
K10	0.011	0.011	0.013	0.010	0.011	0.010	0.011	0.001
K12	0.013	0.024	0.031	0.008	0.014	0.007	0.016	0.009
K21	0.026	0.049	0.049	0.017	0.040	0.021	0.034	0.014
Volume	0.431	0.381	0.370	0.398	0.372	0.423	0.396	0.026
C <sub>max</sub>	60.391	62.995	67.584	55.276	59.068	54.349	59.944	4.934
CL	0.005	0.004	0.005	0.004	0.004	0.004	0.004	0.0003
MRT	135.687	130.765	125.495	143.453	124.669	130.639	131.785	6.985
VD <sub>SS</sub>	0.646	0.566	0.598	0.594	0.502	0.576	0.580	0.047

各藥動學參數說明請參閱附錄一

Table 41 六隻家兔靜脈注射麻杏甘石湯(劑量 1.912mg/kg)後之血漿中 Ephedrine 濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.012	0.019	0.022	0.022	0.009	0.023	0.018	0.006
T <sub>1/2</sub>	60.225	37.397	31.917	30.944	79.629	29.507	35.937	23.985
AUC <sub>P</sub>	209.535	192.628	241.050	304.155	308.888	247.516	250.629	47.777
AUC <sub>TOTAL</sub>	225.439	200.722	247.083	311.656	321.873	252.583	259.893	47.805
CL	0.019	0.022	0.018	0.015	0.012	0.021	0.018	0.004
MRT	92.089	76.002	83.240	87.000	113.744	80.699	88.796	13.391
VD <sub>SS</sub>	1.716	1.666	1.482	1.284	1.414	1.661	1.537	0.171

各藥動學參數說明請參閱附錄一

Table 42 六隻家兔靜脈注射麻杏甘石湯劑量(1.912mg/kg)後之血漿中 Ephedrine 濃度值經 WINNONLIN 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
A	0.580	0.002	0.248	0.021	0.259	0.032	0.191	0.223
B	2.420	2.517	2.773	3.163	2.835	2.962	2.778	0.276
$\alpha$	0.236	0.387	0.410	0.392	0.115	0.025	0.261	0.163
$\beta$	0.011	0.012	0.011	0.010	0.009	0.011	0.011	0.001
AUC	228.580	207.325	261.749	331.030	323.731	260.747	268.860	49.802
K10-HL	52.819	57.045	60.061	72.055	72.530	60.356	62.478	8.074
$\alpha$ -HL	2.941	1.793	1.692	1.770	6.004	27.762	6.994	10.307
$\beta$ -HL	64.761	57.099	65.287	72.532	78.607	60.713	66.500	7.866
K10	0.013	0.012	0.012	0.010	0.010	0.011	0.011	0.001
K12	0.0410	0.0003	0.0319	0.0025	0.0082	0.0001	0.0140	0.0179
K21	0.192	0.386	0.377	0.389	0.107	0.025	0.246	0.160
Volume	1.400	1.747	1.457	1.445	1.293	1.737	1.513	0.186
C <sub>max</sub>	3.000	2.519	3.021	3.184	3.094	2.995	2.969	0.232
CL	0.018	0.021	0.017	0.014	0.012	0.020	0.017	0.003
MRT	92.472	82.373	93.976	104.625	112.681	87.353	95.580	11.212
VD <sub>SS</sub>	1.699	1.748	1.580	1.454	1.392	1.742	1.603	0.153

各藥動學參數說明請參閱附錄一

Table 43 六隻家兔靜脈注射麻杏甘石湯劑量(8.759mg/kg)後之血漿中  
Amygdalin 濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.020	0.013	0.019	0.017	0.009	0.020	0.016	0.004
T <sub>1/2</sub>	34.012	51.616	37.297	40.407	80.481	34.063	46.313	17.962
AUC <sub>P</sub>	477.498	613.006	570.370	448.994	606.624	446.543	527.173	78.264
AUC <sub>TOTAL</sub>	495.363	639.000	595.612	469.810	649.013	461.437	551.706	86.077
CL	0.039	0.031	0.034	0.045	0.028	0.051	0.038	0.009
MRT	92.573	110.360	94.862	89.863	112.878	89.158	98.282	10.558
VD <sub>SS</sub>	3.607	3.471	3.201	4.016	3.200	4.560	3.676	0.528

各藥動學參數說明請參閱附錄一

Table 44 六隻家兔靜脈注射麻杏甘石湯劑量(8.759mg/kg)後之血漿中  
Amygdalin 濃度值經 WINNONLIN 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
Volume	4.010	4.191	3.732	4.414	3.159	5.100	4.101	0.654
K10	0.009	0.007	0.008	0.009	0.009	0.009	0.009	0.001
AUC	543.601	663.078	638.656	517.748	652.109	489.912	584.184	75.833
K10-HL	78.295	95.843	82.201	75.434	77.593	73.388	80.459	8.098
Cmax	4.813	4.795	5.385	4.758	5.825	4.627	5.034	0.469
CL	0.036	0.030	0.031	0.041	0.028	0.048	0.036	0.008
MRT	112.955	138.272	118.591	108.828	111.943	105.876	116.077	11.682
VD <sub>SS</sub>	4.010	4.191	3.732	4.414	3.159	5.100	4.101	0.654

各藥動學參數說明請參閱附錄一

Table 45 六隻家兔靜脈注射麻杏甘石湯(劑量 4.094mg/kg)後之血漿中  
Glycyrrhizic acid 濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.002	0.002	0.003	0.002	0.002	0.002	0.002	0.0004
T <sub>1/2</sub>	278.068	423.247	266.738	443.865	364.867	355.404	355.365	72.609
AUC <sub>P</sub>	982.957	1005.23	1003.54	1021.22	949.989	1089.13	1008.68	46.42
AUC <sub>TOTAL</sub>	1368.56	1576.28	1409.35	1677.08	1455.96	1663.01	1525.04	132.227
CL	0.007	0.006	0.007	0.006	0.006	0.007	0.007	0.0005
MRT	294.368	420.233	295.594	459.115	381.617	376.013	371.157	66.158
VD <sub>SS</sub>	1.936	2.506	1.972	2.683	2.254	2.487	2.306	0.305

各藥動學參數說明請參閱附錄一

Table 46 六隻家兔靜脈注射麻杏甘石湯(劑量 4.094mg/kg)後之血漿中  
Glycyrrhizic acid 濃度值經 WINNONLIN 處理之相關藥動學參  
數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
A	5.786	5.566	5.594	4.893	5.662	4.678	5.363	0.459
B	3.885	4.150	4.210	5.751	3.673	5.376	4.508	0.849
$\alpha$	0.020	0.022	0.023	0.036	0.021	0.024	0.024	0.006
$\beta$	0.004	0.004	0.004	0.005	0.004	0.005	0.005	0.001
AUC	1193.559	1189.179	1225.242	1192.935	1171.010	1301.821	1212.291	47.217
K10-HL	85.549	84.839	86.623	77.688	86.951	89.748	85.233	4.061
$\alpha$ -HL	33.912	31.609	30.157	19.093	33.167	28.585	29.420	5.420
$\beta$ -HL	162.455	156.238	161.648	127.535	169.843	142.971	153.448	15.532
K10	0.008	0.008	0.008	0.009	0.008	0.008	0.008	0.000
K12	0.006	0.006	0.007	0.011	0.006	0.006	0.007	0.002
K21	0.011	0.012	0.012	0.022	0.011	0.015	0.014	0.004
Volume	0.931	0.967	0.959	0.921	0.921	1.094	0.965	0.066
C <sub>max</sub>	9.671	9.716	9.804	10.644	9.335	10.054	9.871	0.444
CL	0.008	0.008	0.008	0.008	0.007	0.008	0.008	0.000
MRT	190.391	187.025	195.527	166.321	199.415	181.808	186.748	11.769
VD <sub>SS</sub>	1.436	1.478	1.500	1.366	1.465	1.536	1.464	0.058

各藥動學參數說明請參閱附錄一

Table 47 六隻家兔口服麻杏甘石湯(劑量 36.69mg/kg)後之血漿中  
Ephedrine 濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.001	0.001	0.003	0.001	0.001	0.002	0.002	0.0008
T <sub>1/2</sub>	1030.48	611.936	243.511	592.891	535.119	365.973	563.318	269.628
AUC <sub>p</sub>	1055.22	979.313	684.978	847.904	539.611	695.866	800.482	195.684
AUC <sub>TOTAL</sub>	2965.99	1864.99	874.024	1592.23	1455.04	1031.21	1630.58	748.62
CL/F	0.031	0.051	0.109	0.062	0.058	0.089	0.068	0.028
MRT	1444.12	843.262	397.431	821.584	731.295	544.998	797.115	360.274
VD <sub>SS</sub>	44.648	43.136	43.380	51.084	42.419	48.464	45.522	3.472

各藥動學參數說明請參閱附錄一

Table 48 六隻家兔口服麻杏甘石湯(劑量 36.69mg/kg)後之血漿中  
Ephedrine 濃度值經 WINNONLIN 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
Volume/F	28.556	27.227	40.234	31.537	22.231	34.172	30.660	6.197
K01	0.014	0.014	0.028	0.012	0.009	0.012	0.015	0.007
K10	0.002	0.003	0.003	0.003	0.004	0.003	0.003	0.001
AUC	1639.009	1301.052	878.714	1095.837	1021.931	884.183	1136.788	291.372
K01-HL	48.640	51.081	24.706	59.686	78.202	57.645	53.326	17.459
K10-HL	353.784	257.379	256.874	241.966	186.576	228.389	254.161	55.359
Tmax	161.435	148.681	92.340	159.991	168.893	153.151	147.415	27.870
Cmax	2.340	2.348	1.848	1.985	2.027	1.686	2.039	0.265

各藥動學參數說明請參閱附錄一

Table 49 六隻家兔口服麻杏甘石湯(劑量 83.84mg/kg)後之血漿中  
Amygdalin 濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.017	0.009	0.009	0.020	0.018	0.012	0.014	0.005
T <sub>1/2</sub>	40.224	73.543	81.064	34.583	38.270	56.800	54.081	19.680
AUC <sub>p</sub>	357.703	281.049	492.887	313.370	353.006	482.915	380.155	88.081
AUC <sub>TOTAL</sub>	386.029	332.830	539.911	328.441	371.340	512.913	411.910	91.785
CL/F	0.543	0.655	0.404	0.689	0.518	0.408	0.536	0.120
MRT	157.632	150.970	185.366	160.058	163.333	187.532	167.482	15.257
VD <sub>SS</sub>	85.548	98.839	74.811	110.282	84.759	76.598	88.473	13.661

各藥動學參數說明請參閱附錄一

Table 50 六隻家兔口服麻杏甘石湯(劑量 83.84mg/kg)後之血漿中  
Amygdalin 濃度值經 WINNONLIN 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
Volume/F	91.293	74.941	50.744	112.133	99.630	89.154	86.316	21.314
K01	0.027	0.022	0.015	0.034	0.015	0.041	0.026	0.011
K10	0.005	0.010	0.009	0.004	0.006	0.002	0.006	0.003
AUC	472.480	295.653	468.959	461.347	343.815	970.894	502.191	241.279
K01-HL	25.756	31.816	45.939	20.564	46.629	16.762	31.244	12.703
K10-HL	142.712	70.480	75.698	158.454	123.214	286.387	142.824	78.713
Tmax	77.632	66.550	84.198	69.612	105.167	72.902	79.343	14.094
Cmax	1.574	1.511	1.986	1.488	1.070	1.970	1.600	0.343

各藥動學參數說明請參閱附錄一

Table 51 六隻家兔口服麻杏甘石湯(劑量 78.43mg/kg)後之血漿中  
Glycyrrhizic acid 濃度值經 LAGRAN-P 處理之相關藥動學參數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
$\lambda$ -z	0.011	0.011	0.008	0.010	0.009	0.009	0.010	0.001
T <sub>1/2</sub>	63.250	62.739	87.799	72.595	73.310	76.448	72.690	9.284
AUC <sub>p</sub>	1340.35	1234.29	1428.01	1441.71	1375.96	1376.09	1366.07	74.54
AUC <sub>TOTAL</sub>	1378.04	1264.98	1509.97	1489.68	1424.41	1429.97	1416.18	88.06
CL/F	0.142	0.161	0.135	0.142	0.127	0.138	0.141	0.011
MRT	287.805	277.150	306.190	288.090	288.289	289.810	289.556	9.354
VD <sub>SS</sub>	40.956	44.674	41.347	40.960	36.512	39.911	40.727	2.627

各藥動學參數說明請參閱附錄一

Table 52 六隻家兔口服麻杏甘石湯(劑量 78.43mg/kg)後之血漿中  
Glycyrrhizic acid 濃度值經 WINNONLIN 處理之相關藥動學參  
數

Parameters	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.
Volume/F	25.383	27.677	25.734	24.643	22.948	23.957	25.057	1.628
K01	0.006	0.006	0.006	0.005	0.006	0.007	0.006	0.001
K10	0.006	0.006	0.005	0.006	0.006	0.006	0.006	0.000
AUC	1366.921	1212.892	1499.306	1448.699	1354.615	1396.582	1379.836	97.948
K01-HL	110.889	112.893	118.294	131.722	107.936	99.822	113.593	10.772
K10-HL	122.640	114.115	131.160	116.835	119.438	118.264	120.409	5.975
Tmax	168.171	163.748	179.624	178.867	163.736	156.565	168.452	9.155
Cmax	2.986	2.725	3.067	2.974	3.040	3.270	3.010	0.176

各藥動學參數說明請參閱附錄一

Table 53 六隻家兔口服麻杏甘石湯後 Ephedrine 、 Amygdalin 及 Glycyrrhizic acid 之生體可用率

F(%)	No1.	No2.	No3.	No4.	No5.	No6.	Mean	S.D.	C.V.(%)
Ephedrine	32.84	28.94	15.48	15.38	14.96	19.23	21.14	7.81	36.93
Amygdalin	8.01	4.11	6.77	8.27	5.03	22.32	9.09	6.69	73.59
Glycyrrhizic acid	5.26	4.70	5.64	5.62	5.51	6.02	5.46	0.44	8.14

生體可用率 ( F ) 計算公式請參閱附錄一



Table 54 六隻家兔經標準品靜脈注射 I.V.(S)及麻杏甘石湯靜脈注射 I.V.(M)後之 Ephedrine 血中濃度值( $\mu\text{g/ml}$ )經 LAGRAN-P 程式處理之相關動力學參數平均值以 T-test 比較之結果

Parameters	I.V. (S)	I.V. (M)	T-value	$t_{0.975}$	Result
$T_{1/2}$	97.645 $\pm$ 30.651	35.937 $\pm$ 23.985	2.970	2.517	P<0.05
AUC <sub>P</sub>	592.500 $\pm$ 49.812	250.629 $\pm$ 47.777	49.237	2.517	P<0.05
AUC <sub>TOTAL</sub>	638.785 $\pm$ 64.604	259.893 $\pm$ 47.805	24.734	2.517	P<0.05
CL	0.021 $\pm$ 0.003	0.018 $\pm$ 0.004	2.386	2.517	N.S.
MRT	140.804 $\pm$ 12.208	88.796 $\pm$ 13.391	4.862	2.517	P<0.05
VD <sub>SS</sub>	2.935 $\pm$ 0.316	1.537 $\pm$ 0.171	13.693	2.517	P<0.05

各藥動學參數說明請參閱附錄一

Data are expressed as Mean  $\pm$  S.D.

N.S. are expressed as non significance

Table 55 六隻家兔經標準品靜脈注射 I.V.(S)及麻杏甘石湯靜脈注射 I.V.(M)後之 Amygdalin 血中濃度值( $\mu\text{g/ml}$ )經 LAGRAN-P 程式處理之相關動力學參數平均值以 T-test 比較之結果

Parameters	I.V. (S)	I.V. (M)	T-value	$t_{0.975}$	Result
$T_{1/2}$	102.164 $\pm$ 35.165	46.313 $\pm$ 17.962	2.969	2.517	P<0.05
AUC <sub>P</sub>	1324.03 $\pm$ 173.57	527.173 $\pm$ 78.264	8.168	2.517	P<0.05
AUC <sub>TOTAL</sub>	1441.76 $\pm$ 200.97	551.706 $\pm$ 86.077	8.052	2.517	P<0.05
CL	0.011 $\pm$ 0.002	0.038 $\pm$ 0.009	-6.607	2.517	P<0.05
MRT	147.978 $\pm$ 23.727	98.282 $\pm$ 10.558	4.005	2.517	P<0.05
VD <sub>SS</sub>	1.651 $\pm$ 0.353	3.676 $\pm$ 0.528	-6.395	2.517	P<0.05

各藥動學參數說明請參閱附錄一

Data are expressed as Mean  $\pm$  S.D.

Table 56 六隻家兔經標準品靜脈注射 I.V.(S)及麻杏甘石湯靜脈注射 I.V.(M)後之 Glycyrrhizic acid 血中濃度值( $\mu\text{g/ml}$ )經 LAGRAN-P 程式處理之相關動力學參數平均值以 T-test 比較之結果

Parameters	I.V. (S)	I.V. (M)	T-value	$t_{0.975}$	Result
$T_{1/2}$	115.859 $\pm$ 12.743	355.365 $\pm$ 72.609	-9.194	2.517	P<0.05
AUC <sub>P</sub>	4989.48 $\pm$ 152.64	1008.68 $\pm$ 46.42	50.550	2.517	P<0.05
AUC <sub>TOTAL</sub>	5392.09 $\pm$ 168.29	1525.04 $\pm$ 132.227	39.701	2.517	P<0.05
CL	0.004 $\pm$ 0.0005	0.007 $\pm$ 0.0005	-13.000	2.517	P<0.05
MRT	140.965 $\pm$ 9.023	371.157 $\pm$ 66.158	-9.284	2.517	P<0.05
VD <sub>SS</sub>	0.614 $\pm$ 0.050	2.306 $\pm$ 0.305	-12.853	2.517	P<0.05

各藥動學參數說明請參閱附錄一

Data are expressed as Mean  $\pm$  S.D.

Table 57 六隻家兔經標準品靜脈注射 I.V.(S)及麻杏甘石湯靜脈注射 I.V.(M)後之 Ephedrine 血中濃度值( $\mu\text{g/ml}$ )經 WINNONLIN 程式處理之相關動力學參數平均值以 T-test 比較之結果

Parameters	I.V. (S)	I.V. (M)	T-value	$t_{0.975}$	Result
AUC <sub>TOTAL</sub>	645.403 $\pm$ 44.994	268.860 $\pm$ 49.802	28.199	2.517	P<0.05
$T_{1/2}$	100.452 $\pm$ 8.812	66.500 $\pm$ 7.866	5.997	2.517	P<0.05
CL	0.021 $\pm$ 0.002	0.017 $\pm$ 0.003	3.381	2.517	P<0.05
VD <sub>SS</sub>	3.034 $\pm$ 0.494	1.603 $\pm$ 0.153	8.649	2.517	P<0.05

各藥動學參數說明請參閱附錄一

Data are expressed as Mean  $\pm$  S.D.

Table 58 六隻家兔經標準品靜脈注射 I.V.(S)及麻杏甘石湯靜脈注射 I.V.(M)後之 Amygdalin 血中濃度值( $\mu\text{g/ml}$ )經 WINNONLIN 程式處理之相關動力學參數平均值以 T-test 比較之結果

Parameters	I.V. (S)	I.V. (M)	T-value	$t_{0.975}$	Result
AUC <sub>TOTAL</sub>	1475.668 $\pm$ 213.678	584.184 $\pm$ 75.833	7.942	2.517	P<0.05
T <sub>1/2</sub>	103.451 $\pm$ 9.246	80.459 $\pm$ 8.098	3.904	2.517	P<0.05
CL	0.011 $\pm$ 0.002	0.036 $\pm$ 0.008	-6.678	2.517	P<0.05
VD <sub>SS</sub>	1.622 $\pm$ 0.233	4.101 $\pm$ 0.654	-8.053	2.517	P<0.05

各藥動學參數說明請參閱附錄一

Data are expressed as Mean  $\pm$  S.D.

Table 59 六隻家兔經標準品靜脈注射 I.V.(S)及麻杏甘石湯靜脈注射 I.V.(M)後之 Glycyrrhizic acid 血中濃度值( $\mu\text{g/ml}$ )經 WINNONLIN 程式處理之相關動力學參數平均值以 T-test 比較之結果

Parameters	I.V. (S)	I.V. (M)	T-value	$t_{0.975}$	Result
AUC <sub>TOTAL</sub>	5375.279 $\pm$ 135.840	1212.291 $\pm$ 47.217	58.539	2.517	P<0.05
T <sub>1/2</sub>	100.760 $\pm$ 9.529	153.448 $\pm$ 15.532	-5.345	2.517	P<0.05
CL	0.004 $\pm$ 0.0003	0.008 $\pm$ 0.000	-17.393	2.517	P<0.05
VD <sub>SS</sub>	0.580 $\pm$ 0.047	1.464 $\pm$ 0.058	-26.043	2.517	P<0.05

各藥動學參數說明請參閱附錄一

Data are expressed as Mean  $\pm$  S.D.

Table 60 六隻家兔經標準品靜脈注射 I.V.(S)、麻杏甘石湯靜脈注射 I.V.(M)及口服 P.O.後之 Ephedrine 血中濃度值( $\mu\text{g/ml}$ )經 LAGRAN-P 程式處理之相關動力學參數平均值以 One-Way ANOVA 比較之結果

Parameters	I.V. (S)	I.V. (M)	P.O.	F-value	$\alpha=0.05$	Result
$T_{1/2}$	97.645 $\pm$ 30.651	35.937 $\pm$ 23.985	563.318 $\pm$ 269.628	19.786	3.68	P<0.05
AUC <sub>TOTAL</sub>	638.785 $\pm$ 64.604	259.893 $\pm$ 47.805	1630.58 $\pm$ 748.62	15.908	3.68	P<0.05
CL	0.021 $\pm$ 0.003	0.018 $\pm$ 0.004	0.068 $\pm$ 0.028	16.675	3.68	P<0.05
VD <sub>SS</sub>	2.935 $\pm$ 0.316	1.537 $\pm$ 0.171	45.522 $\pm$ 3.472	40.105	3.68	P<0.05

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Data are expressed as Mean  $\pm$  S.D.

Table 61 六隻家兔經標準品靜脈注射 I.V.(S)、麻杏甘石湯靜脈注射 I.V.(M)及口服 P.O.後之 Ephedrine 血中濃度值( $\mu\text{g/ml}$ )經 WINNONLIN 程式處理之相關動力學參數平均值以 One-Way ANOVA 比較之結果

Parameters	I.V. (S)	I.V. (M)	P.O.	F-value	$\alpha=0.05$	Result
AUC <sub>TOTAL</sub>	645.403 $\pm$ 44.994	268.860 $\pm$ 49.802	1136.788 $\pm$ 291.372	38.118	3.68	P<0.05
$T_{1/2}$	100.452 $\pm$ 8.812	66.500 $\pm$ 7.866	254.161 $\pm$ 55.359	59.388	3.68	P<0.05
CL	0.021 $\pm$ 0.002	0.017 $\pm$ 0.003	0.086 $\pm$ 0.020	67.755	3.68	P<0.05
VD <sub>SS</sub>	3.034 $\pm$ 0.494	1.603 $\pm$ 0.153	30.665 $\pm$ 6.197	124.867	3.68	P<0.05

各藥動學參數說明請參閱附錄一

Data are expressed as Mean  $\pm$  S.D.

Table 62 六隻家兔經標準品靜脈注射 I.V.(S)、麻杏甘石湯靜脈注射 I.V.(M)及口服 P.O.後之 Amygdalin 血中濃度值( $\mu\text{g/ml}$ )經 LAGRAN-P 程式處理之相關動力學參數平均值以 One-Way ANOVA 比較之結果

Parameters	I.V. (S)	I.V. (M)	P.O.	F-value	$\alpha=0.05$	Result
$T_{1/2}$	102.164 $\pm$ 35.165	46.313 $\pm$ 17.962	54.081 $\pm$ 19.680	8.464	3.68	P<0.05
$AUC_{\text{TOTAL}}$	1441.76 $\pm$ 200.97	551.706 $\pm$ 86.077	411.910 $\pm$ 91.78 5	99.902	3.68	P<0.05
CL	0.011 $\pm$ 0.002	0.038 $\pm$ 0.009	0.536 $\pm$ 0.120	109.041	3.68	P<0.05
$VD_{\text{SS}}$	1.651 $\pm$ 0.353	3.676 $\pm$ 0.528	88.473 $\pm$ 13.661	236.324	3.68	P<0.05

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Data are expressed as Mean  $\pm$  S.D.

Table 63 六隻家兔經標準品靜脈注射 I.V.(S)、麻杏甘石湯靜脈注射 I.V.(M)及口服 P.O.後之 Amygdalin 血中濃度值( $\mu\text{g/ml}$ )經 WINNONLIN 程式處理之相關動力學參數平均值以 One-Way ANOVA 比較之結果

Parameters	I.V. (S)	I.V. (M)	P.O.	F-value	$\alpha=0.05$	Result
$AUC_{\text{TOTAL}}$	1475.668 $\pm$ 213.678	584.184 $\pm$ 75.833	502.191 $\pm$ 241.279	47.867	3.68	P<0.05
$T_{1/2}$	103.451 $\pm$ 9.246	80.459 $\pm$ 8.098	142.824 $\pm$ 78.713	2.821	3.68	P<0.1
CL	0.011 $\pm$ 0.002	0.036 $\pm$ 0.008	0.485 $\pm$ 0.170	35.053	3.68	P<0.05
$VD_{\text{SS}}$	1.622 $\pm$ 0.233	4.101 $\pm$ 0.654	86.316 $\pm$ 21.314	2.800	3.68	P<0.1

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Data are expressed as Mean  $\pm$  S.D.

Table 64 六隻家兔經標準品靜脈注射 I.V.(S)、麻杏甘石湯靜脈注射 I.V.(M)及口服 P.O.後之 Glycyrrhizic acid 血中濃度值( $\mu\text{g/ml}$ )經 LAGRAN-P 程式處理之相關動力學參數平均值以 One-Way ANOVA 比較之結果

Parameters	I.V. (S)	I.V. (M)	P.O.	F-value	$\alpha=0.05$	Result
$T_{1/2}$	115.859 $\pm$ 12.743	355.365 $\pm$ 72.609	72.690 $\pm$ 9.284	75.607	3.68	P<0.05
AUC <sub>TOTAL</sub>	5392.09 $\pm$ 168.29	1525.04 $\pm$ 132.227	1416.18 $\pm$ 88.06	17.68	3.68	P<0.05
CL	0.004 $\pm$ 0.0005	0.007 $\pm$ 0.0005	0.141 $\pm$ 0.011	852.198	3.68	P<0.05
VD <sub>SS</sub>	0.614 $\pm$ 0.050	2.306 $\pm$ 0.305	40.727 $\pm$ 2.627	1324.177	3.68	P<0.05

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Data are expressed as Mean  $\pm$  S.D.

Table 65 六隻家兔經標準品靜脈注射 I.V.(S)、麻杏甘石湯靜脈注射 I.V.(M)及口服 P.O.後之 Glycyrrhizic acid 血中濃度值( $\mu\text{g/ml}$ )經 WINNONLIN 程式處理之相關動力學參數平均值以 One-Way ANOVA 比較之結果

Parameters	I.V. (S)	I.V. (M)	P.O.	F-value	$\alpha=0.05$	Result
AUC <sub>TOTAL</sub>	5375.279 $\pm$ 135.840	1212.291 $\pm$ 47.217	1379.836 $\pm$ 97.948	3301.865	3.68	P<0.05
$T_{1/2}$	100.760 $\pm$ 9.529	153.448 $\pm$ 15.532	120.409 $\pm$ 5.975	204.325	3.68	P<0.05
CL	0.004 $\pm$ 0.0003	0.008 $\pm$ 0.000	0.145 $\pm$ 0.012	734.757	3.68	P<0.05
VD <sub>SS</sub>	0.580 $\pm$ 0.047	1.464 $\pm$ 0.058	25.057 $\pm$ 1.628	1305.693	3.68	P<0.05

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Data are expressed as Mean  $\pm$  S.D.