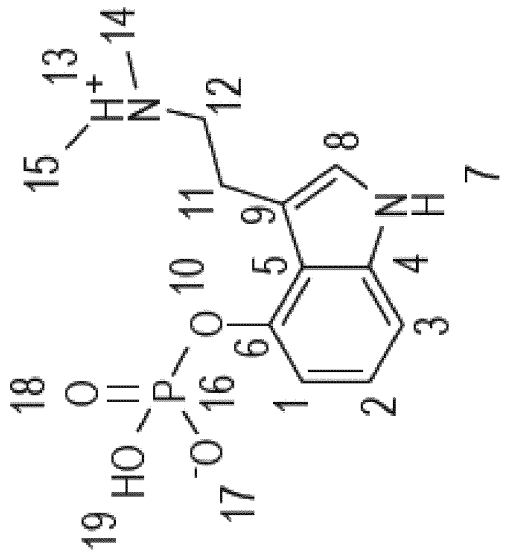


Psilocybin

$C_{12}H_{17}N_2O_4P$

Exact Mass: 284.09

Mol. Wt.: 284.25

Fig. 1

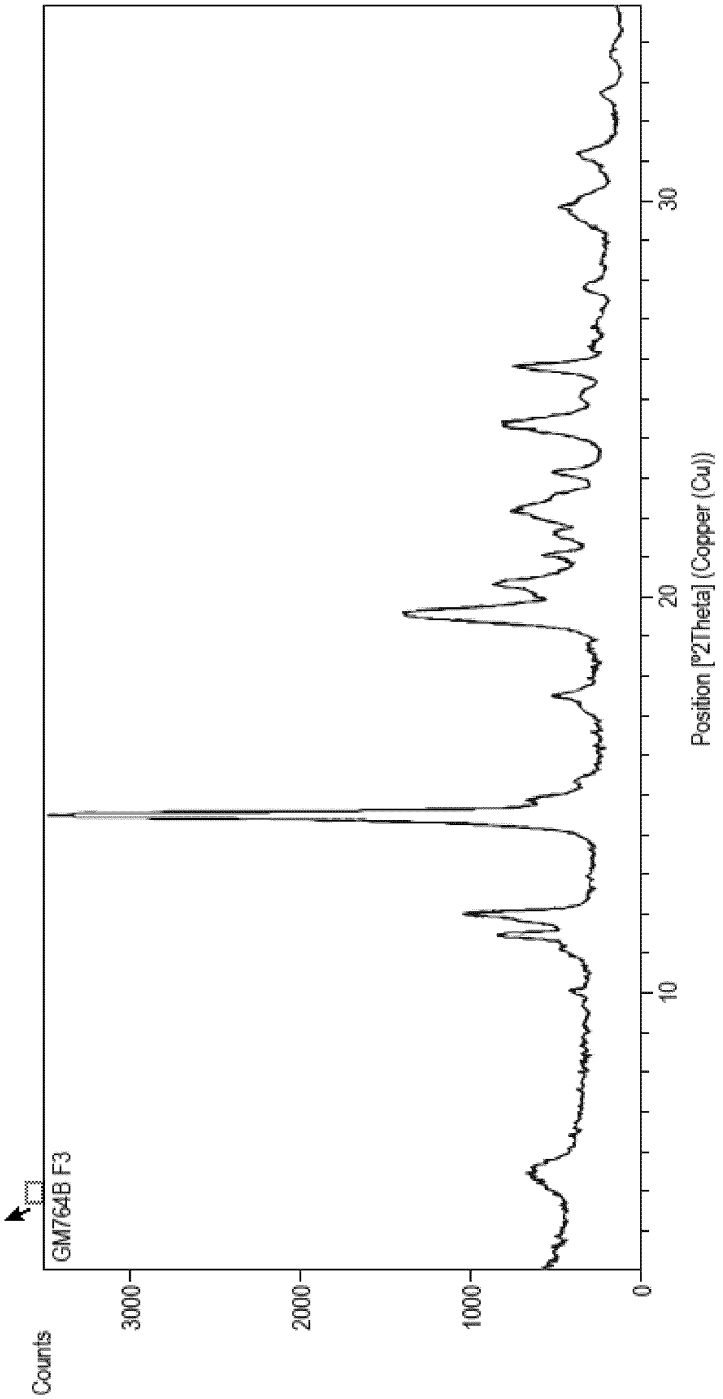

GM764B F3
Counts
3000
2000
1000
0
10
20
30
Position [°2Theta] (Copper (Cu))

Fig. 2A

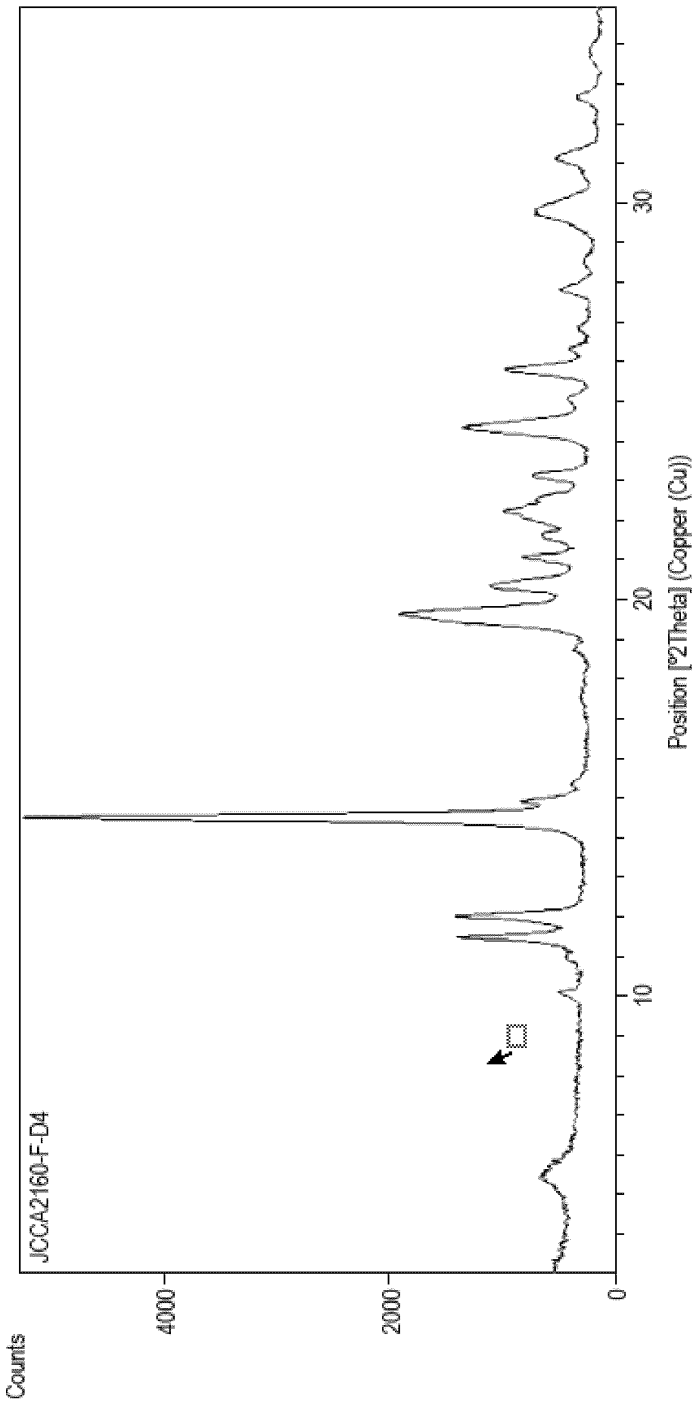

JCCA2160-F-D4
Counts
4000
2000
0
10
20
30
Position [°2Theta] (Copper (Cu))

Fig. 2B

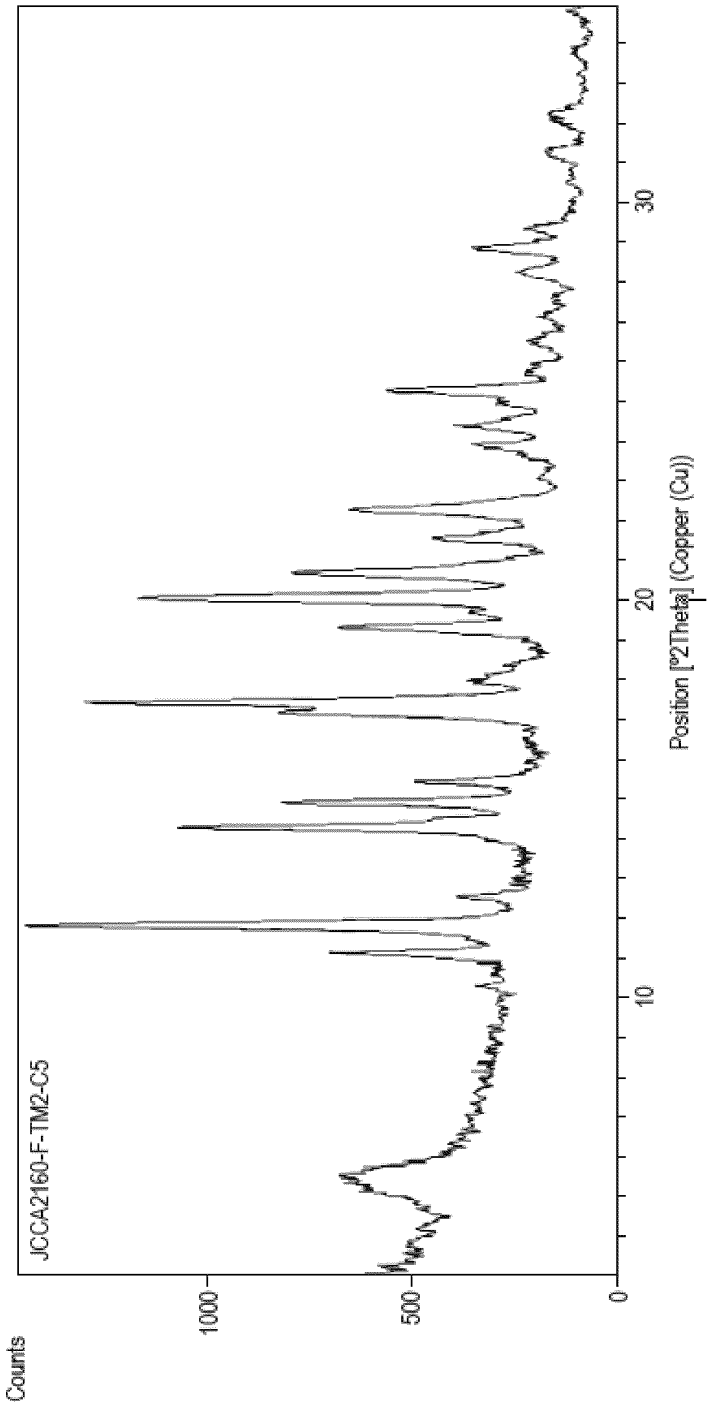

JCCA2160-F-TM2-C5
Counts
1000
500
0
10
20
30
Position [°2Theta] (Copper (Cu))

Fig. 2C

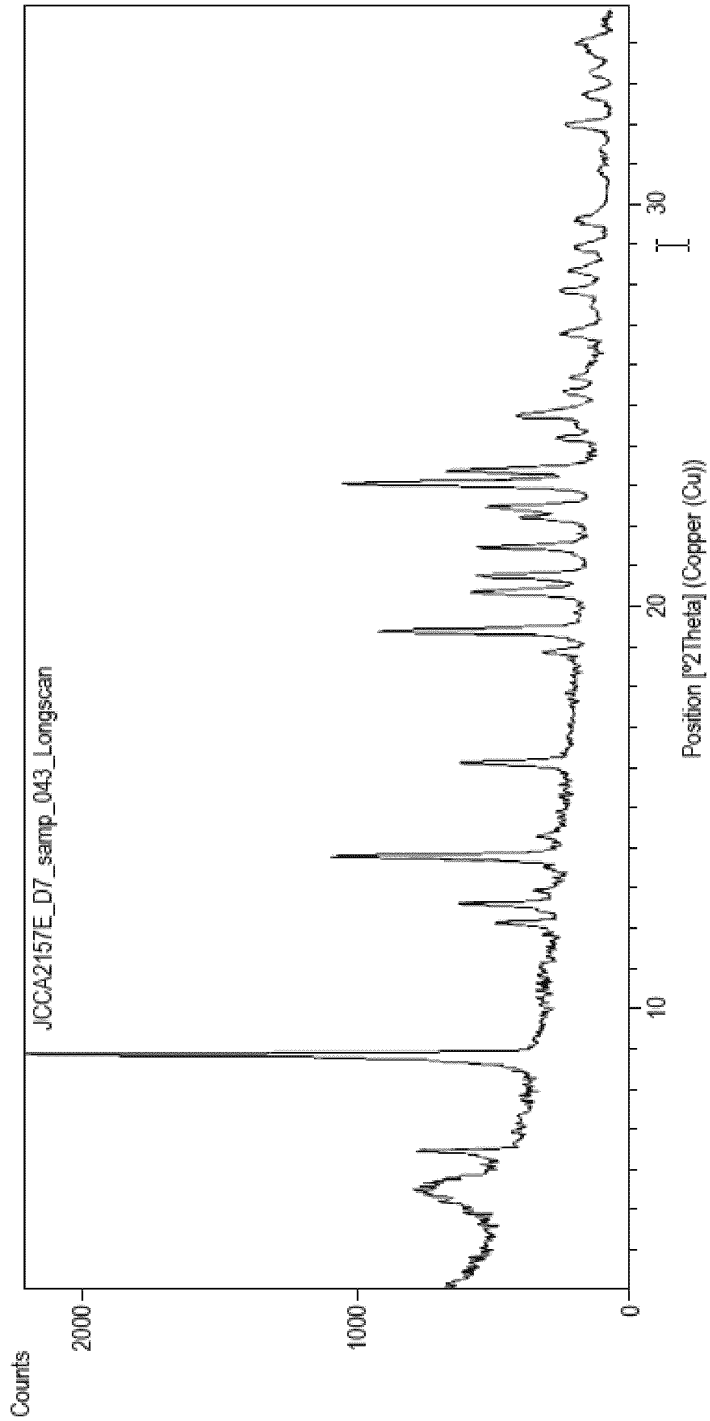

JCCA2157E_D7_samp_043_Longscan
Counts
2000
1000
0
10
20
30
Position [°2Theta] (Copper (Cu))

Fig. 2D

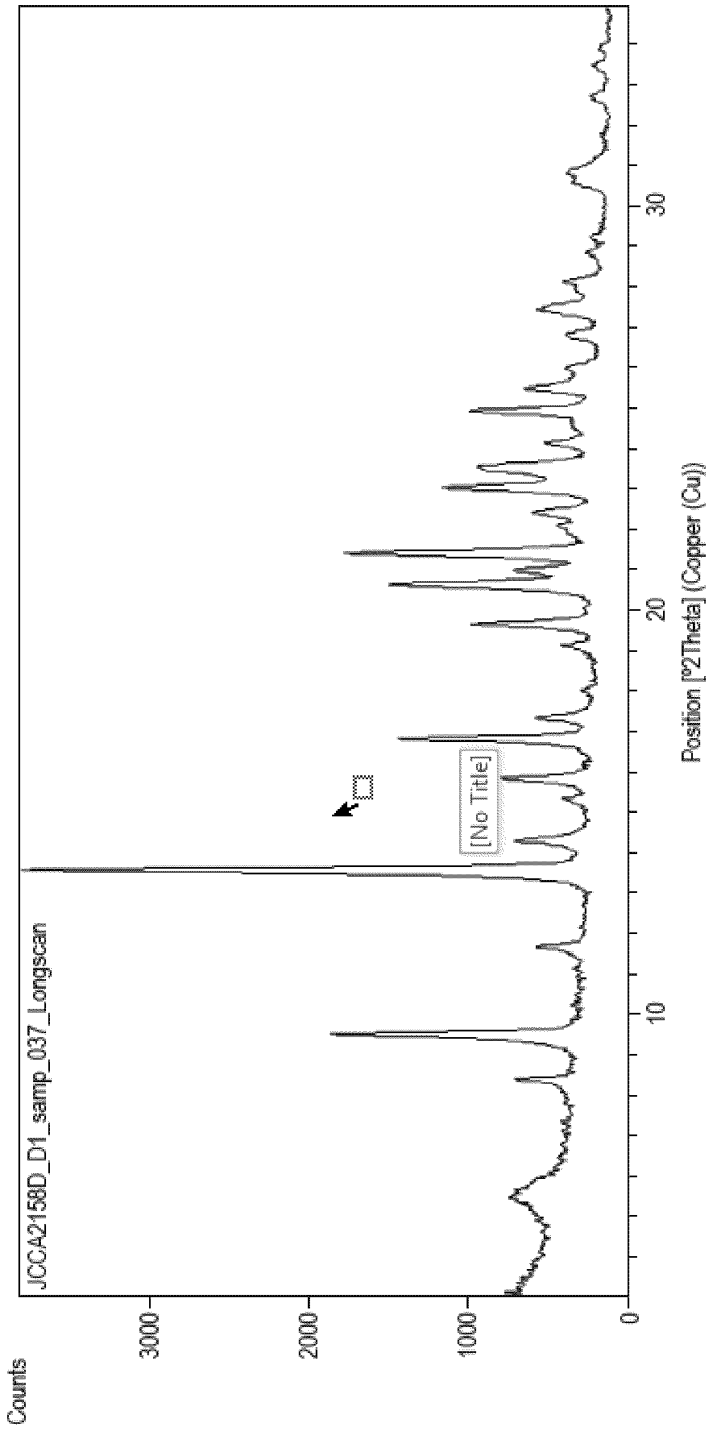

JCCA2158D_D1_samp_037_Longscan
[No Title]
Counts
3000
2000
1000
0
10
20
30
Position [°2Theta] (Copper (Cu))

Fig. 2E

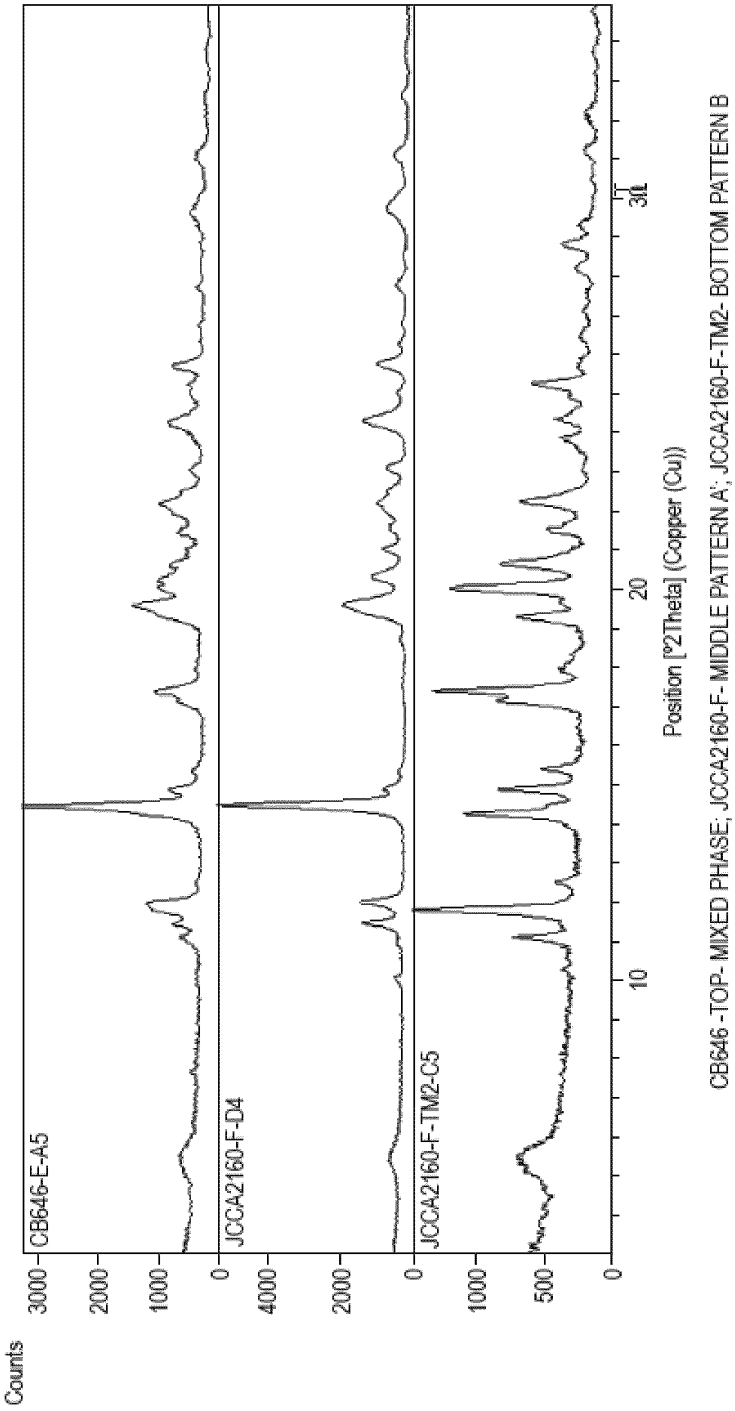

Counts
3000
2000
1000
0
CB646-E-A5
4000
2000
0
JCCA2160-F-D4
1000
500
0
JCCA2160-F-TM2-C5
10
20
30
Position [°2Theta] (Copper (Cu))
CB646 -TOP- MIXED PHASE; JCCA2160-F- MIDDLE PATTERN A'; JCCA2160-F-TM2- BOTTOM PATTERN B

Fig. 2F

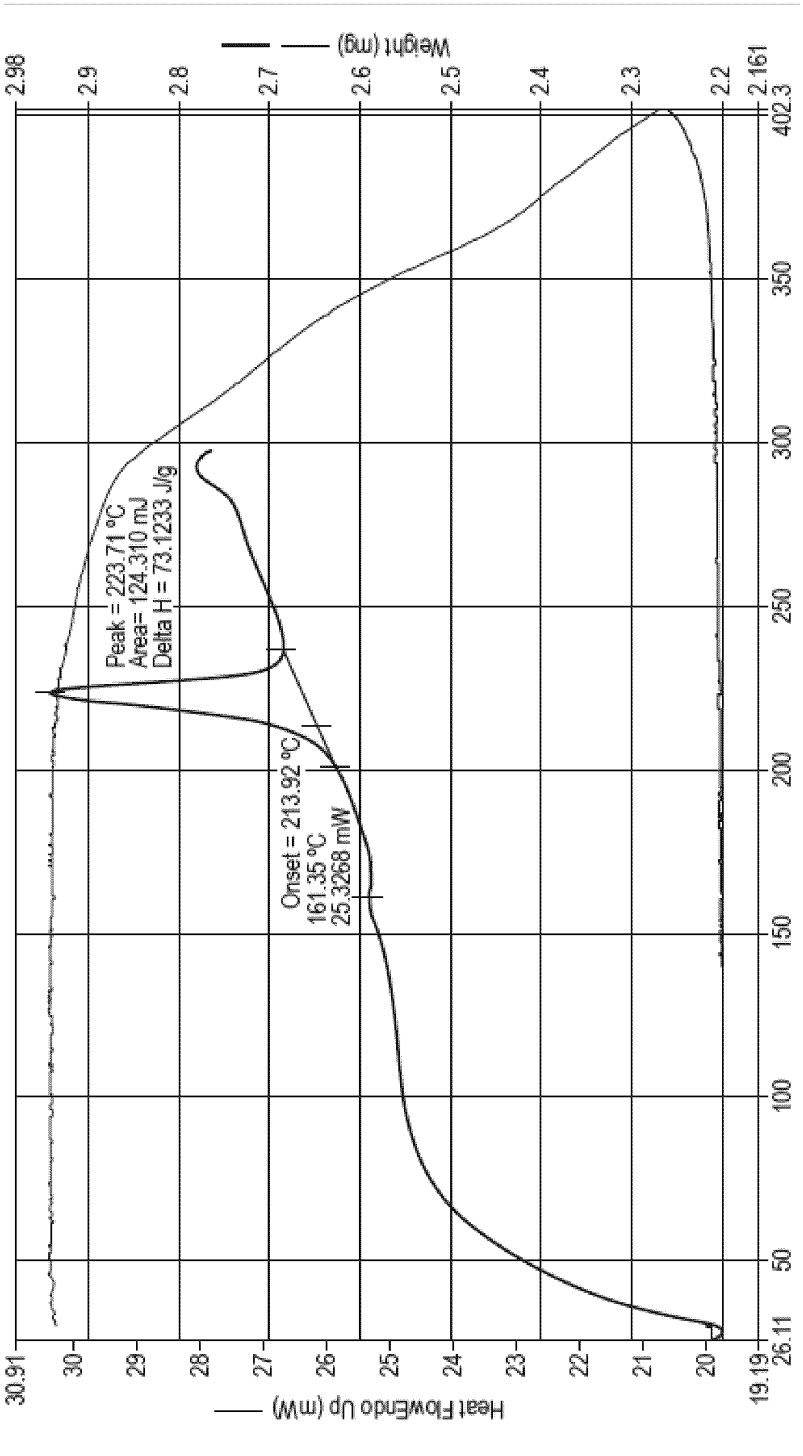

Heat Flow Endo Up (mW)
Weight (mg)
Peak = 223.71 °C
Area= 124.310 mJ
Delta H = 73.1233 J/g
Onset = 213.92 °C
161.35 °C
25.3268 mW
30.91
30
29
28
27
26
25
24
23
22
21
20
19.19
26.11
50
100
150
200
250
300
350
402.3
2.98
2.9
2.8
2.7
2.6
2.5
2.4
2.3
2.2
2.161

Fig. 3A

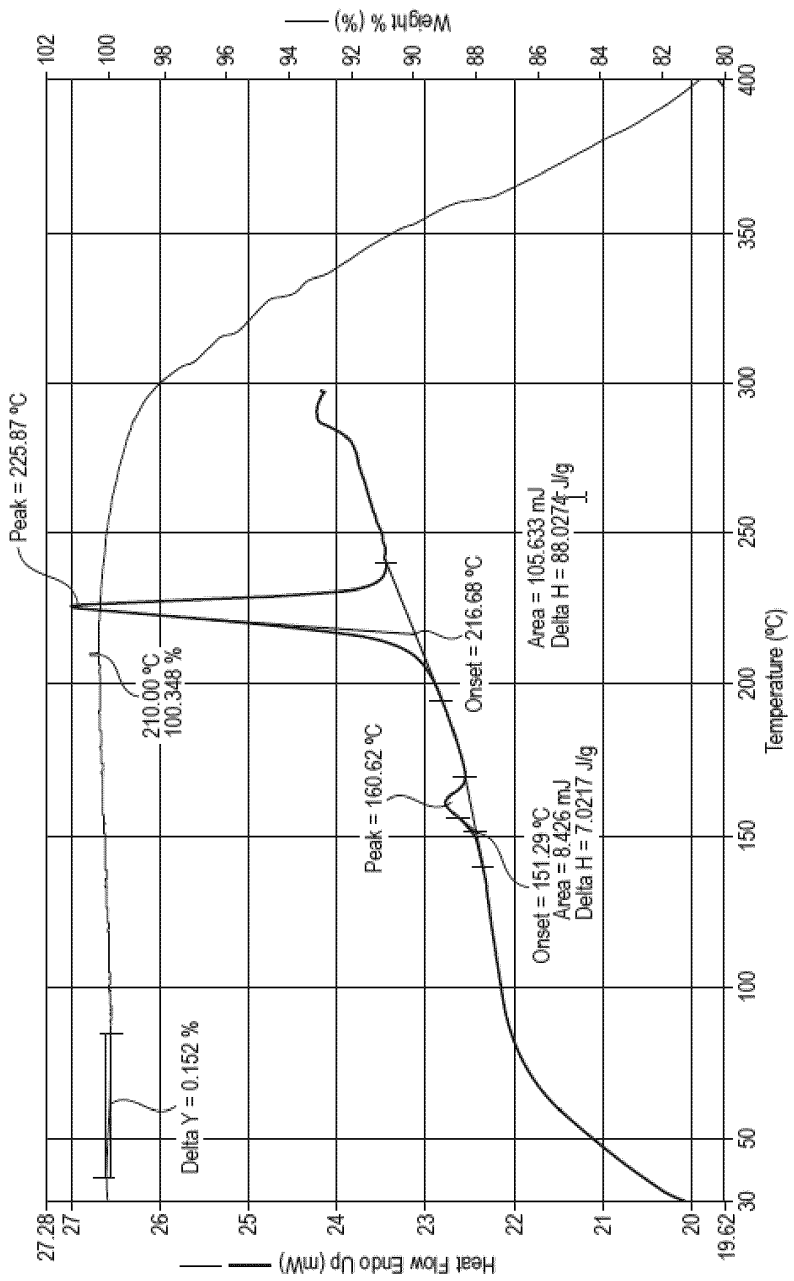

Weight % (%)
Heat Flow Endo Up (mW)
Temperature (°C)
Peak = 225.87 °C
210.00 °C
100.348 %
Delta Y = 0.152 %
Peak = 160.62 °C
Onset = 216.68 °C
Area = 105.633 mJ
Delta H = 88.0274 J/g
Onset = 151.29 °C
Area = 8.426 mJ
Delta H = 7.0217 J/g

Fig. 3B

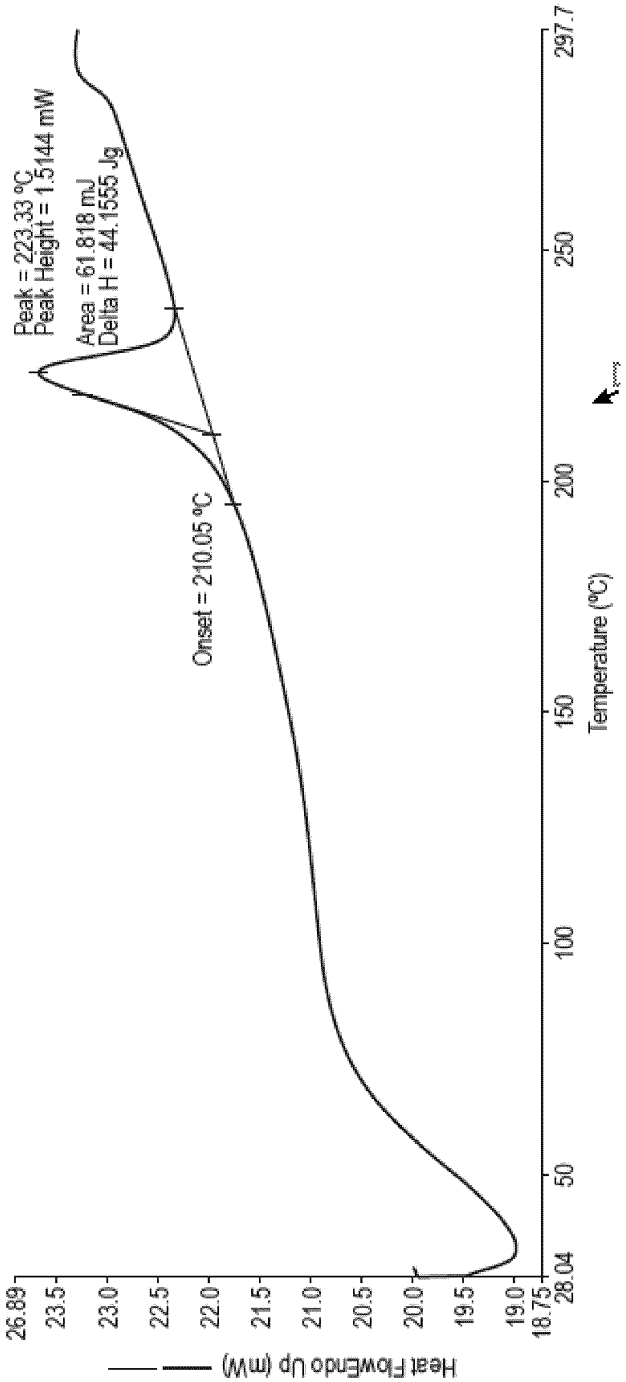

Peak = 223.33 °C
Peak Height = 1.5144 mW
Area = 61.818 mJ
Delta H = 44.1555 Jg
Onset = 210.05 °C
Heat FlowEndo Up (mW)
Temperature (°C)
26.89
23.5
23.0
22.5
22.0
21.5
21.0
20.5
20.0
19.5
19.0
18.75
28.04
50
100
150
200
250
297.7

Fig. 3C

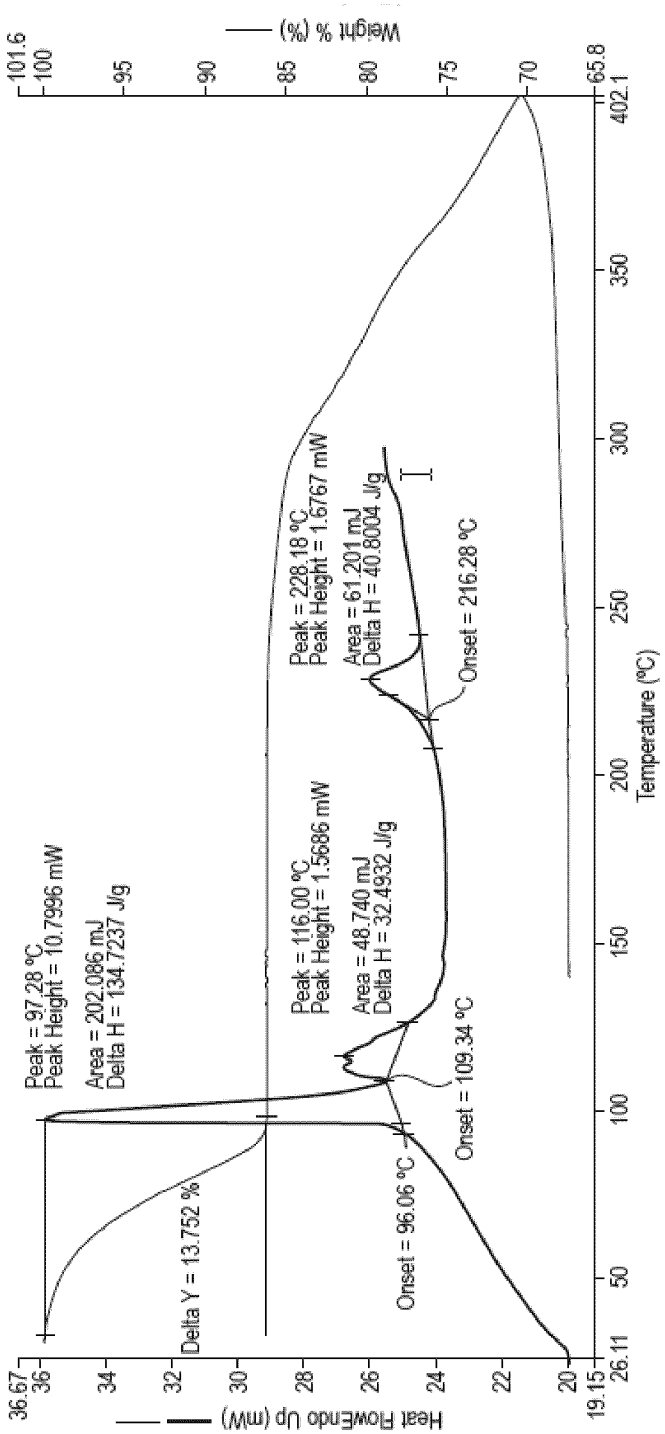

Weight % (%)
101.6
100
95
90
85
80
75
70
65.8
402.1
350
300
250
200
150
100
50
26.11
19.15
Temperature (°C)
Heat FlowEndo Up (mW)
36.67
36
34
32
30
28
26
24
22
20
Peak = 97.28 °C
Peak Height = 10.7996 mW
Area = 202.086 mJ
Delta H = 134.7237 J/g
Delta Y = 13.752 %
Onset = 96.06 °C
Peak = 116.00 °C
Peak Height = 1.5686 mW
Area = 48.740 mJ
Delta H = 32.4932 J/g
Onset = 109.34 °C
Peak = 228.18 °C
Peak Height = 1.6767 mW
Area = 61.201 mJ
Delta H = 40.8004 J/g
Onset = 216.28 °C

Fig. 3D

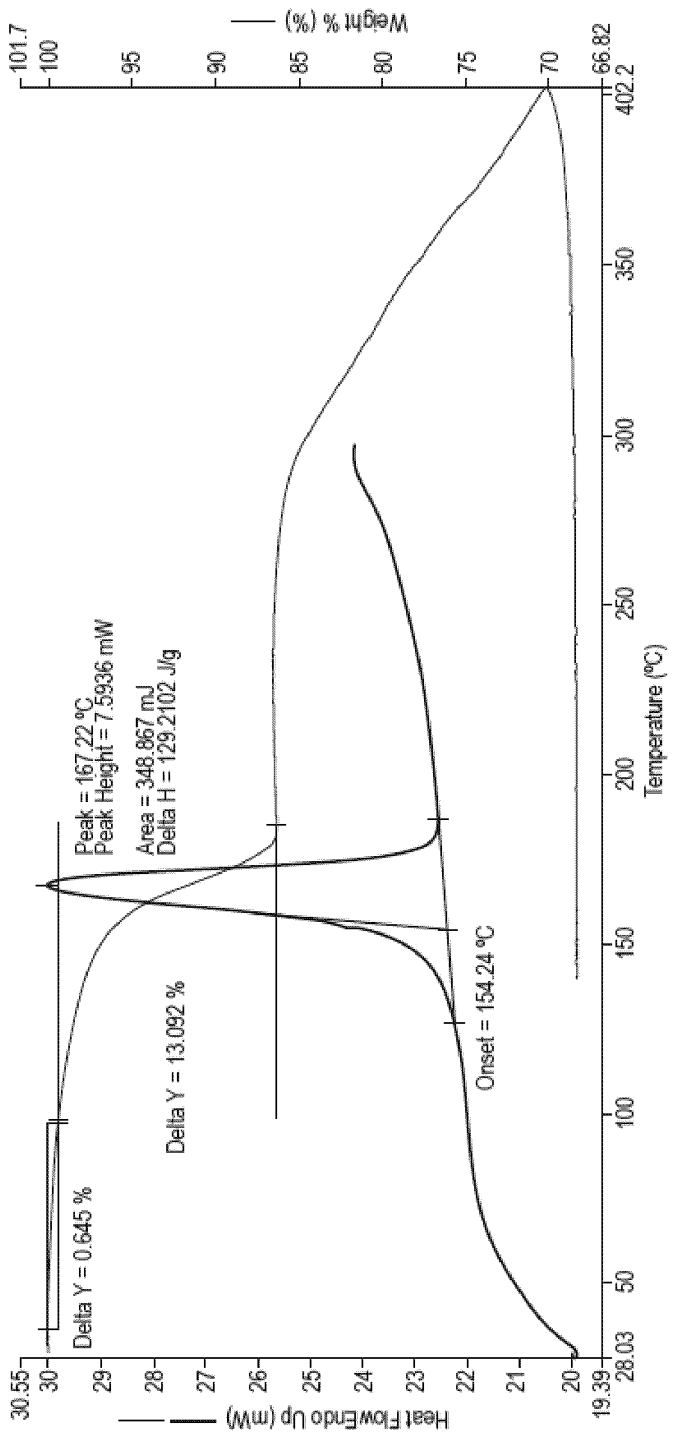

Weight % (%)
101.7
100
95
90
85
80
75
70
66.82
402.2
350
300
250
200
150
100
50
28.03
Temperature (°C)
Heat FlowEndo Up (mW)
30.55
30
29
28
27
26
25
24
23
22
21
20
19.39
Peak = 167.22 °C
Peak Height = 7.5936 mW
Area = 348.867 mJ
Delta H = 129.2102 J/g
Delta Y = 0.645 %
Delta Y = 13.092 %
Onset = 154.24 °C

Fig. 3E

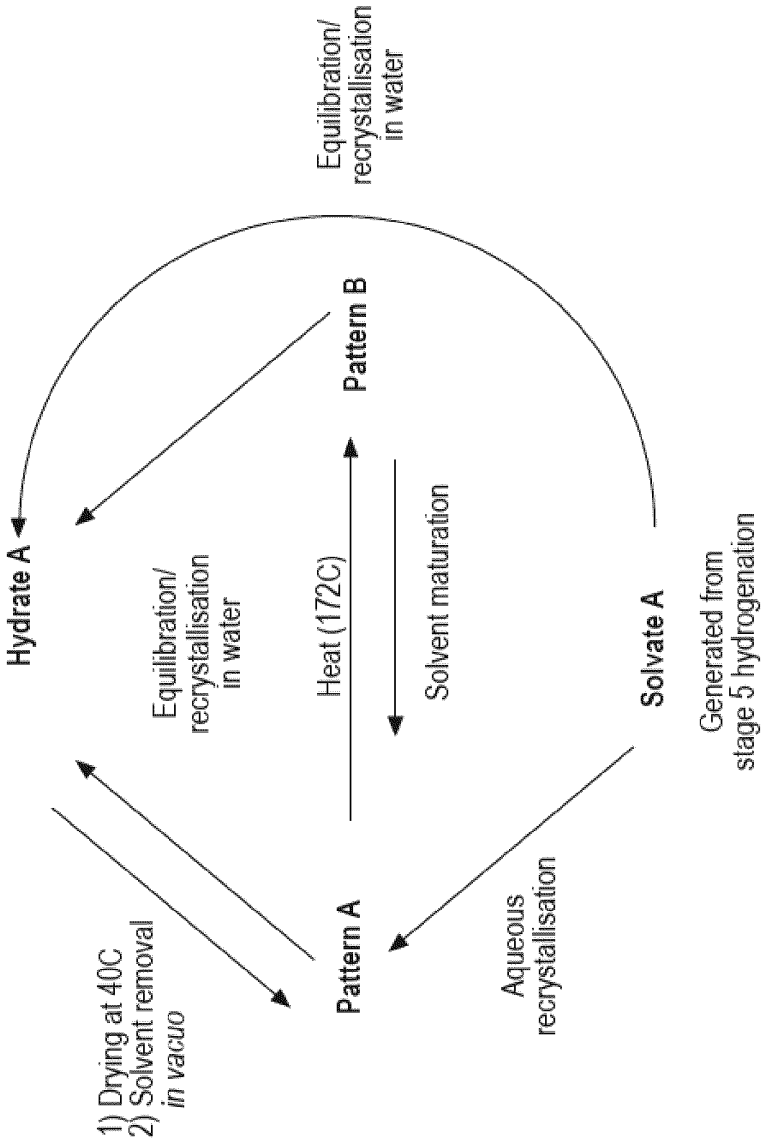

Equilibration/
recrystallisation
in water
Pattern B
Hydrate A
Equilibration/
recrystallisation
in water
Heat (172C)
Solvent maturation
Solvate A
Generated from
stage 5 hydrogenation
1) Drying at 40C
2) Solvent removal
in vacuo
Pattern A
Aqueous
recrystallisation

Fig. 4

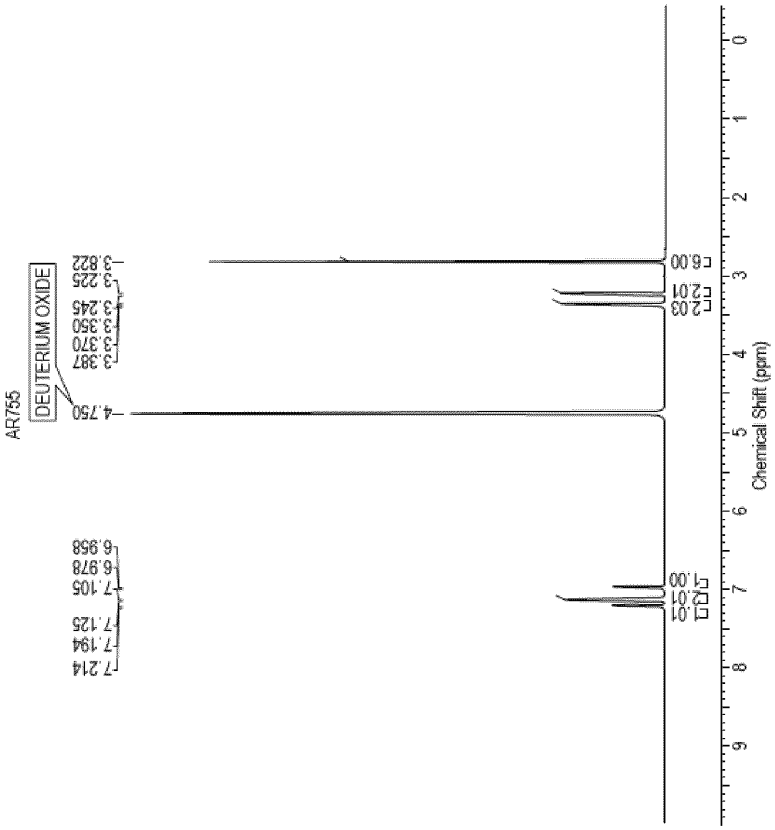

AR755
DEUTERIUM OXIDE
4.750
3.822
3.225
3.246
3.350
3.370
3.387
7.214
7.194
7.125
7.105
6.978
6.958
6.00
2.01
2.03
5.00
5.01
5.01
Chemical Shift (ppm)

Fig. 5

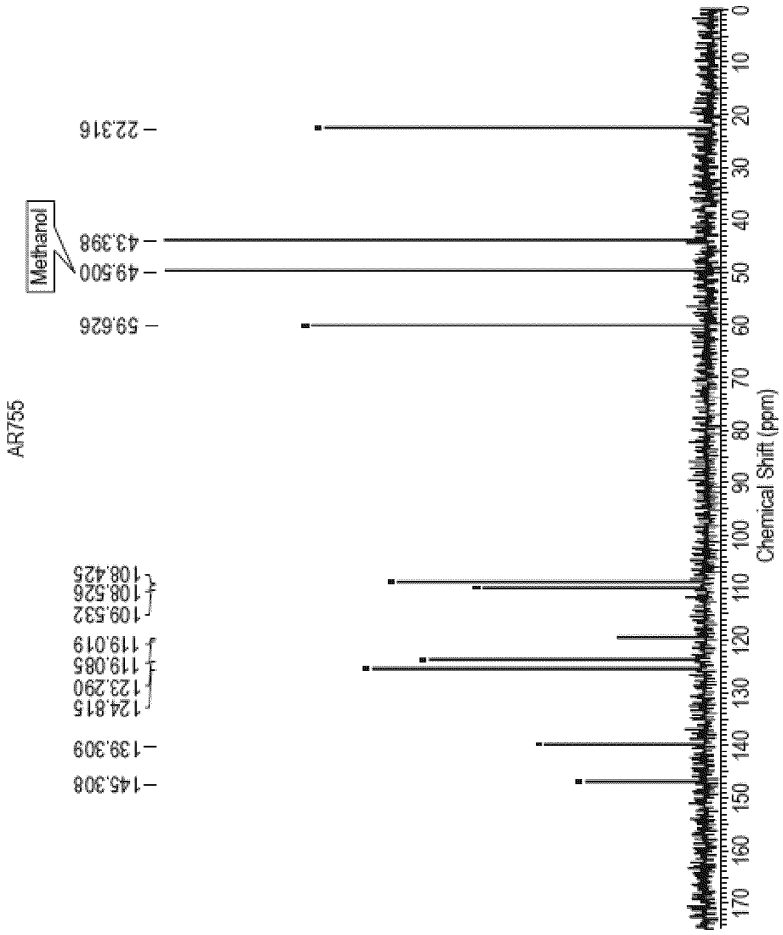

AR755
Methanol
22.316
43.398
49.500
59.626
108.425
108.526
109.532
119.019
119.085
123.290
124.815
139.309
145.308
Chemical Shift (ppm)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170

Fig. 6

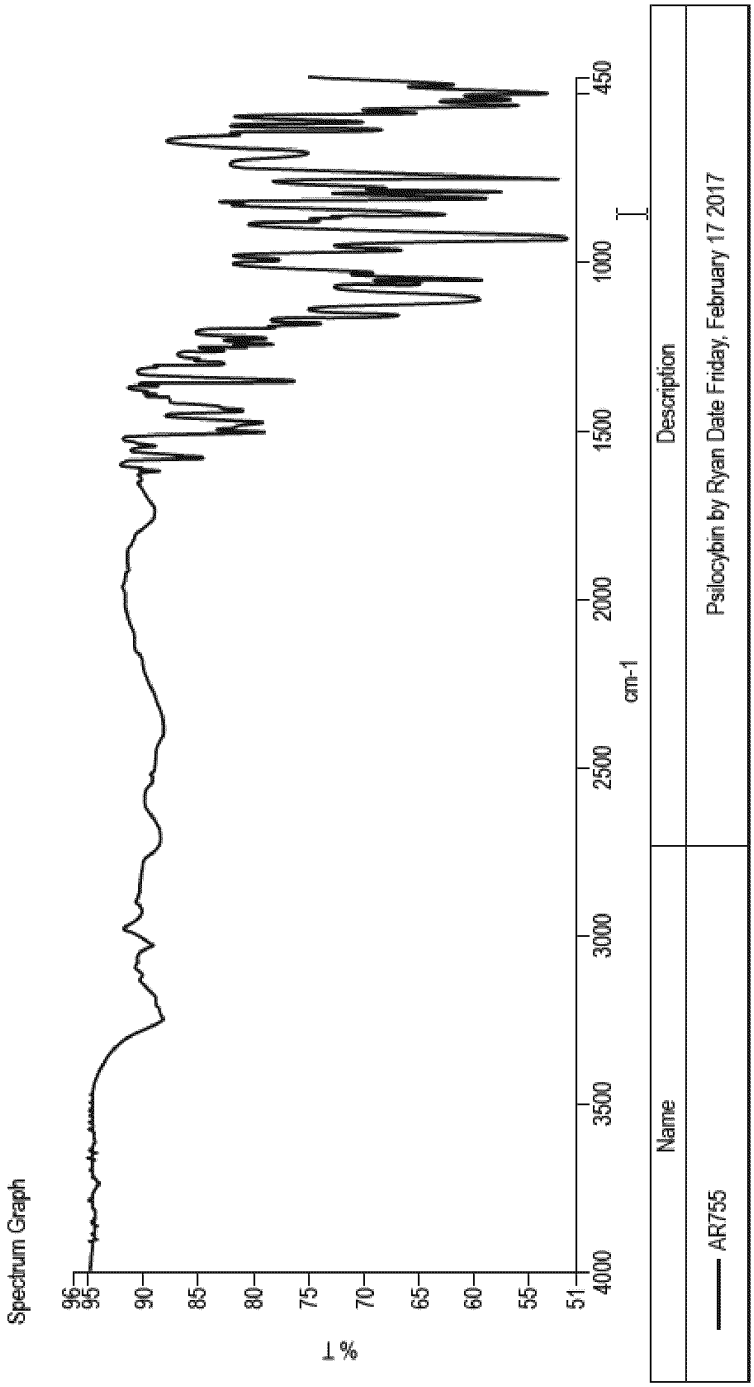

Spectrum Graph
T %
96
95
90
85
80
75
70
65
60
55
51
4000
3500
3000
2500
2000
1500
1000
450
cm-1
Name
Description
AR755
Psilocybin by Ryan Date Friday, February 17 2017

Fig. 7

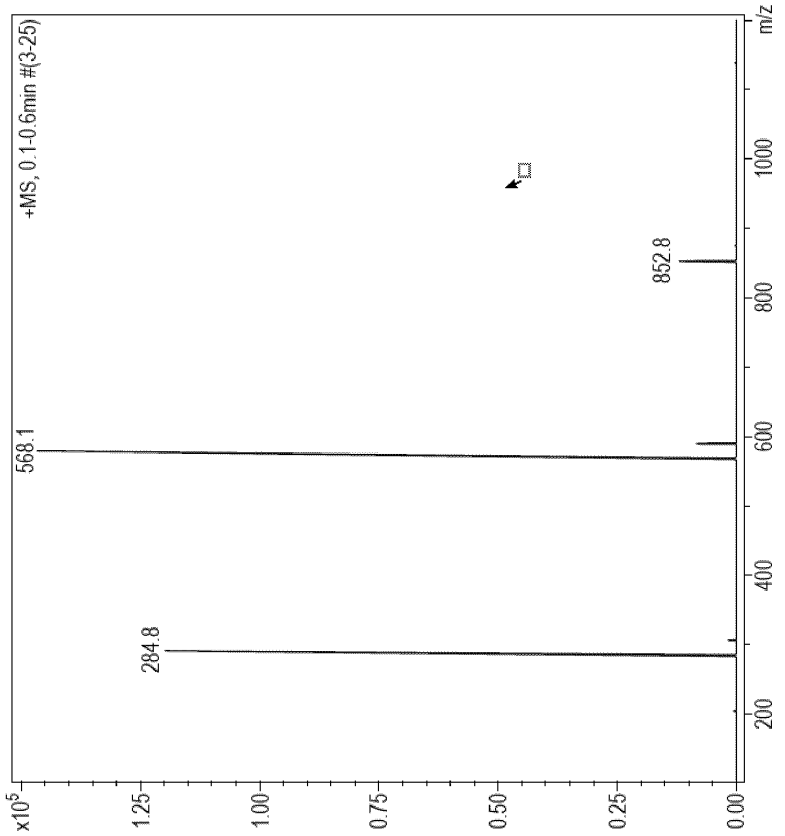

+MS, 0.1-0.6min #(3-25)
568.1
284.8
852.8
x10^5
1.25
1.00
0.75
0.50
0.25
0.00
200
400
600
800
1000
m/z

Fig. 8

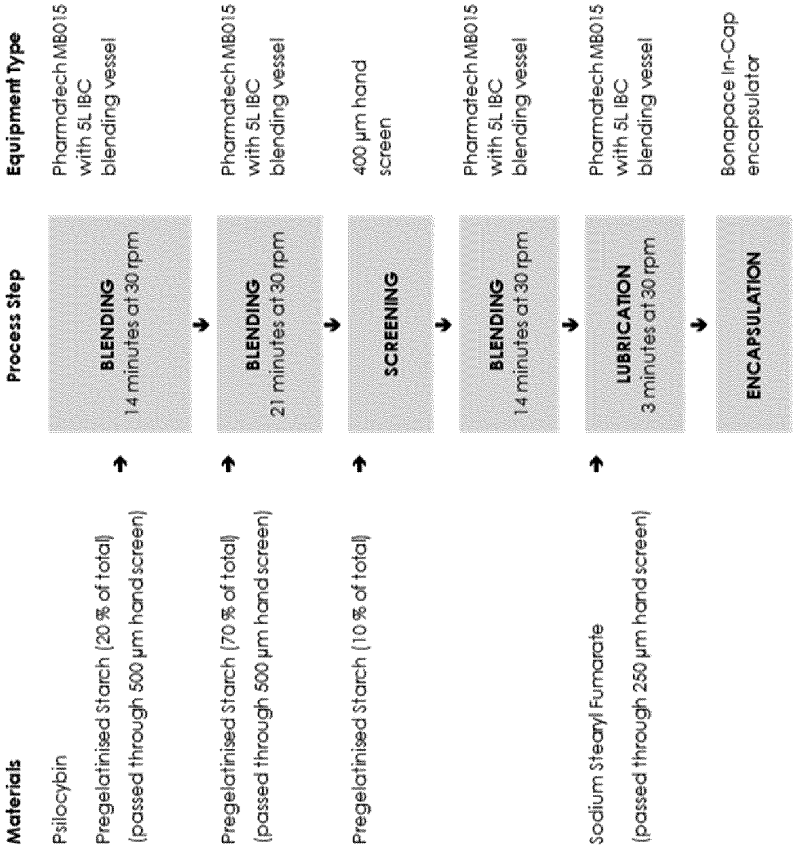

Materials
Process Step
Equipment Type
Psilocybin
Pregelatinised Starch (20 % of total)
(passed through 500 µm hand screen)
BLENDING
14 minutes at 30 rpm
Pharmatech MB015
with 5L IBC
blending vessel
Pregelatinised Starch (70 % of total)
(passed through 500 µm hand screen)
BLENDING
21 minutes at 30 rpm
Pharmatech MB015
with 5L IBC
blending vessel
Pregelatinised Starch (10 % of total)
SCREENING
400 µm hand
screen
BLENDING
14 minutes at 30 rpm
Pharmatech MB015
with 5L IBC
blending vessel
Sodium Stearyl Fumarate
(passed through 250 µm hand screen)
LUBRICATION
3 minutes at 30 rpm
Pharmatech MB015
with 5L IBC
blending vessel
ENCAPSULATION
Bonapace In-Cap
encapsulator

Fig. 9

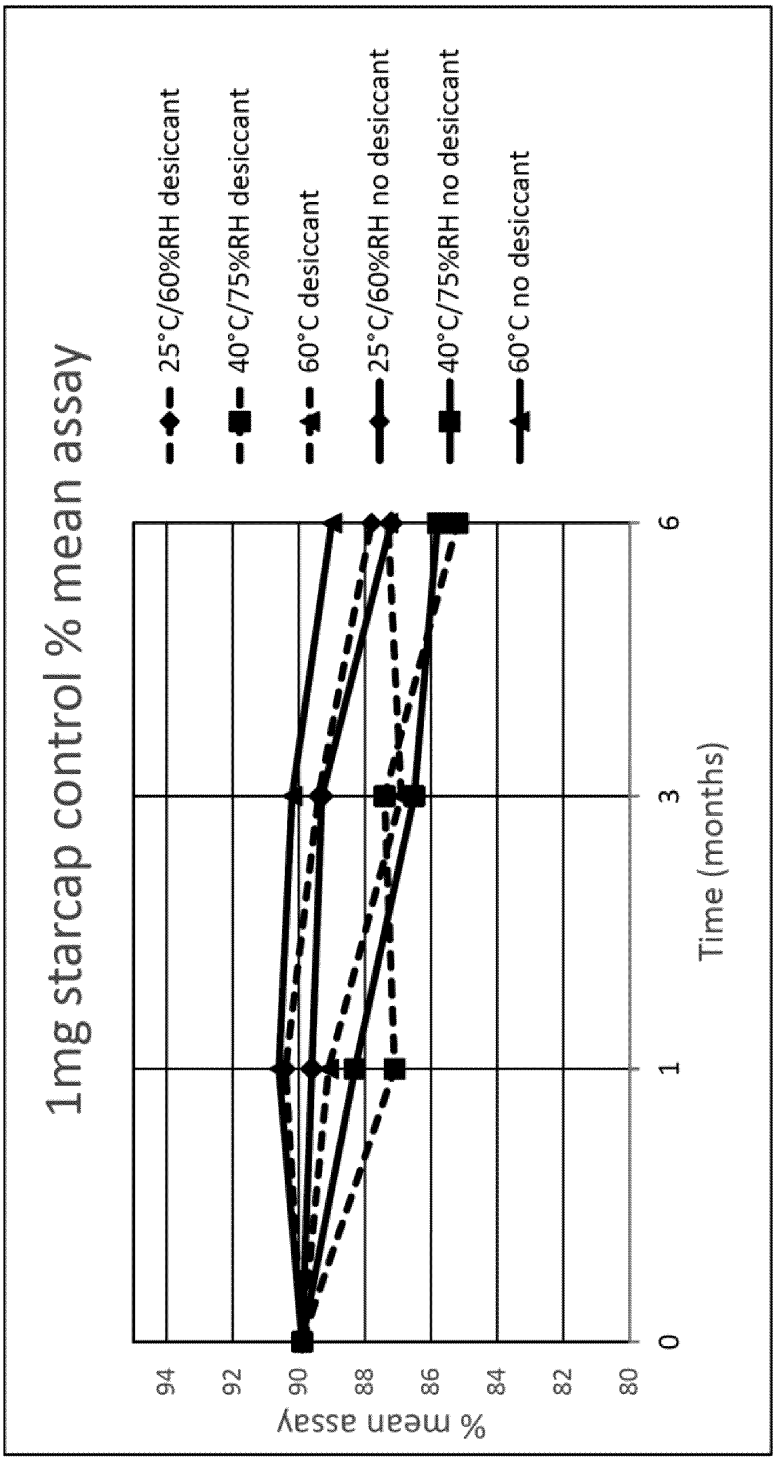

1mg starcap control % mean assay
25°C/60%RH desiccant
40°C/75%RH desiccant
60°C desiccant
25°C/60%RH no desiccant
40°C/75%RH no desiccant
60°C no desiccant
% mean assay
94
92
90
88
86
84
82
80
0
1
3
6
Time (months)

Fig. 10

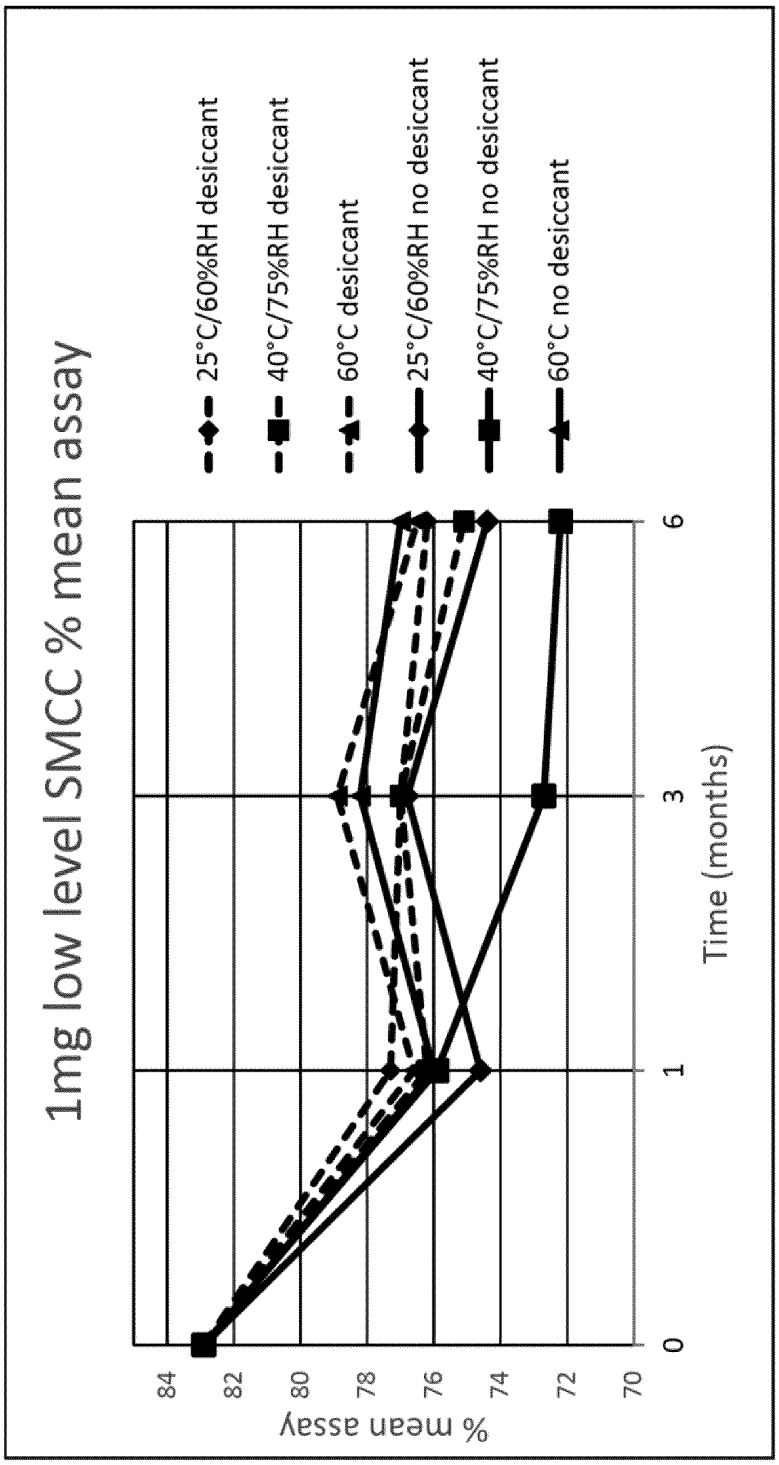

1mg low level SMCC % mean assay
25°C/60%RH desiccant
40°C/75%RH desiccant
60°C desiccant
25°C/60%RH no desiccant
40°C/75%RH no desiccant
60°C no desiccant
% mean assay
84
82
80
78
76
74
72
70
0
1
3
6
Time (months)

Fig. 11

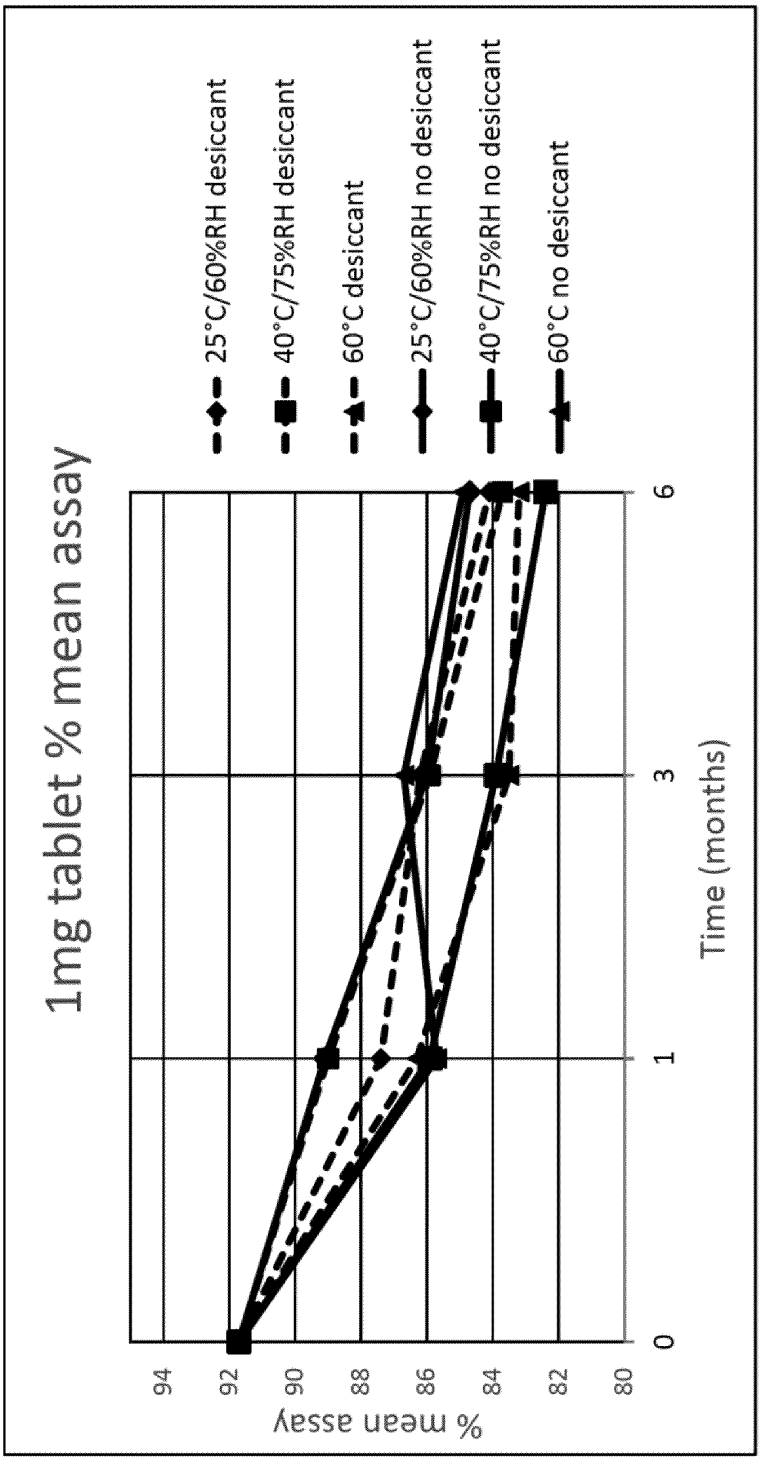

1mg tablet % mean assay
25°C/60%RH desiccant
40°C/75%RH desiccant
60°C desiccant
25°C/60%RH no desiccant
40°C/75%RH no desiccant
60°C no desiccant
% mean assay
94
92
90
88
86
84
82
80
0
1
3
6
Time (months)

Fig. 12

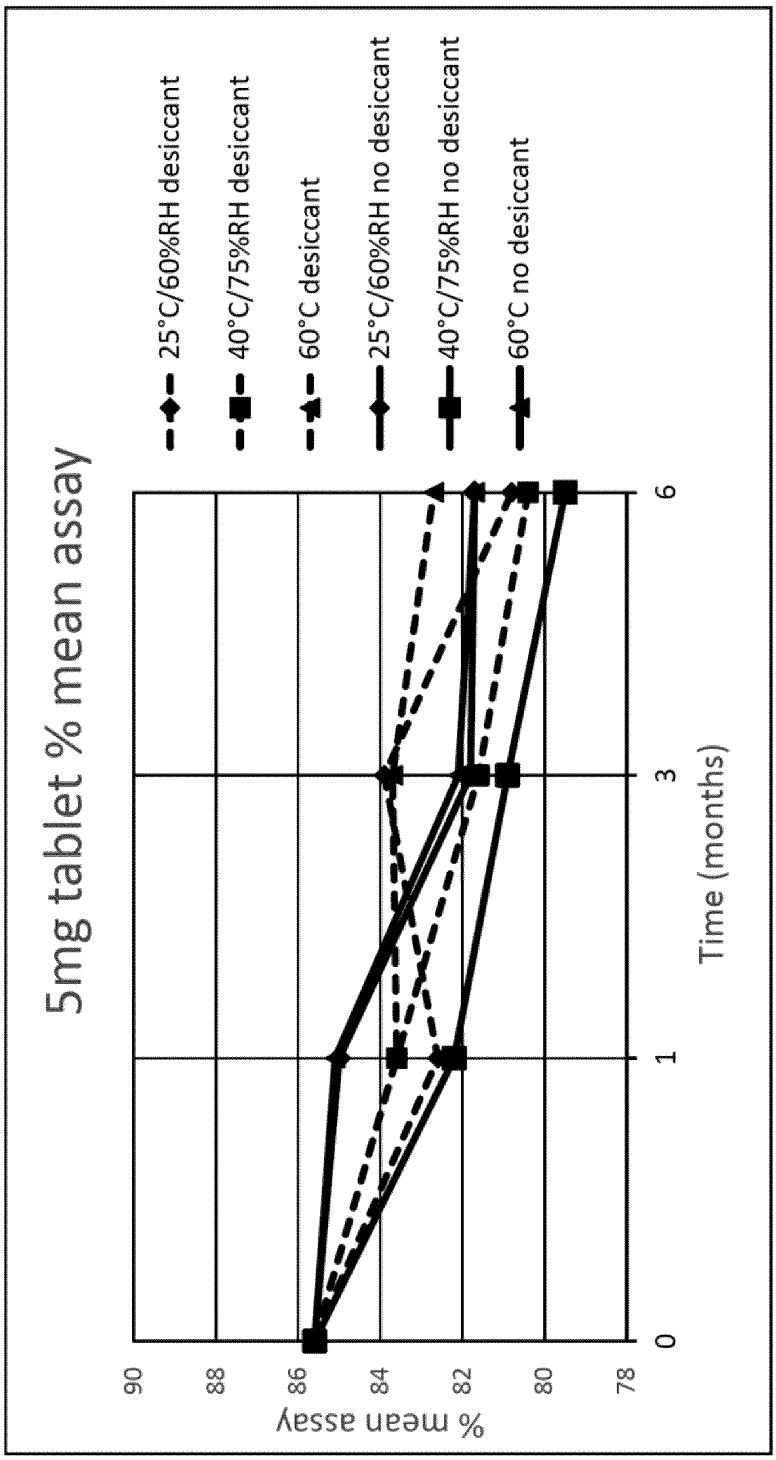

5mg tablet % mean assay
25°C/60%RH desiccant
40°C/75%RH desiccant
60°C desiccant
25°C/60%RH no desiccant
40°C/75%RH no desiccant
60°C no desiccant
% mean assay
90
88
86
84
82
80
78
Time (months)
0
1
3
6

Fig. 13