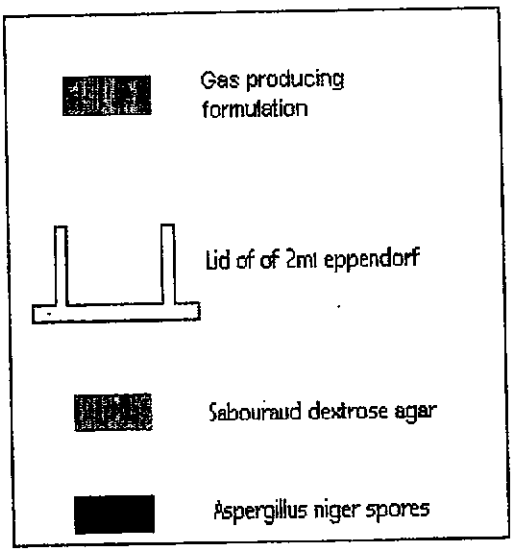

Gas producing formulation
Lid of of 2ml eppendorf
Sabouraud dextrose agar
Aspergillus niger spores

Key

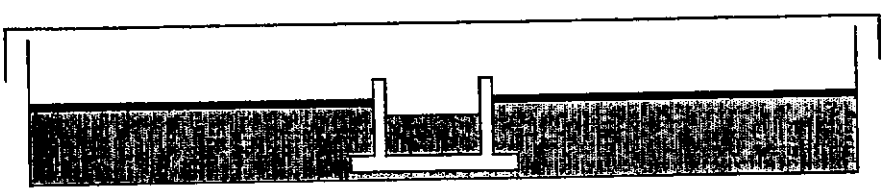


Fig. 1

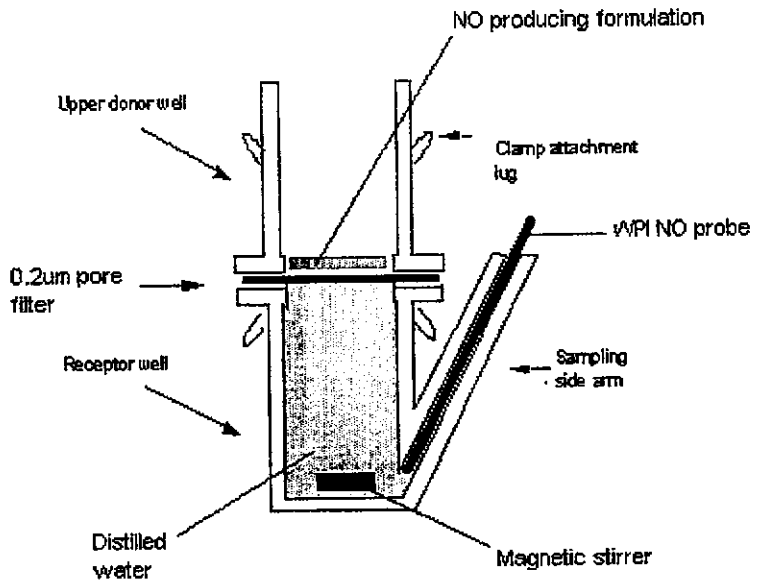

NO producing formulation
Upper donor well
Clamp attachment lug
WPI NO probe
0.2um pore filter
Receptor well
Sampling side arm
Distilled water
Magnetic stirrer

Fig. 2

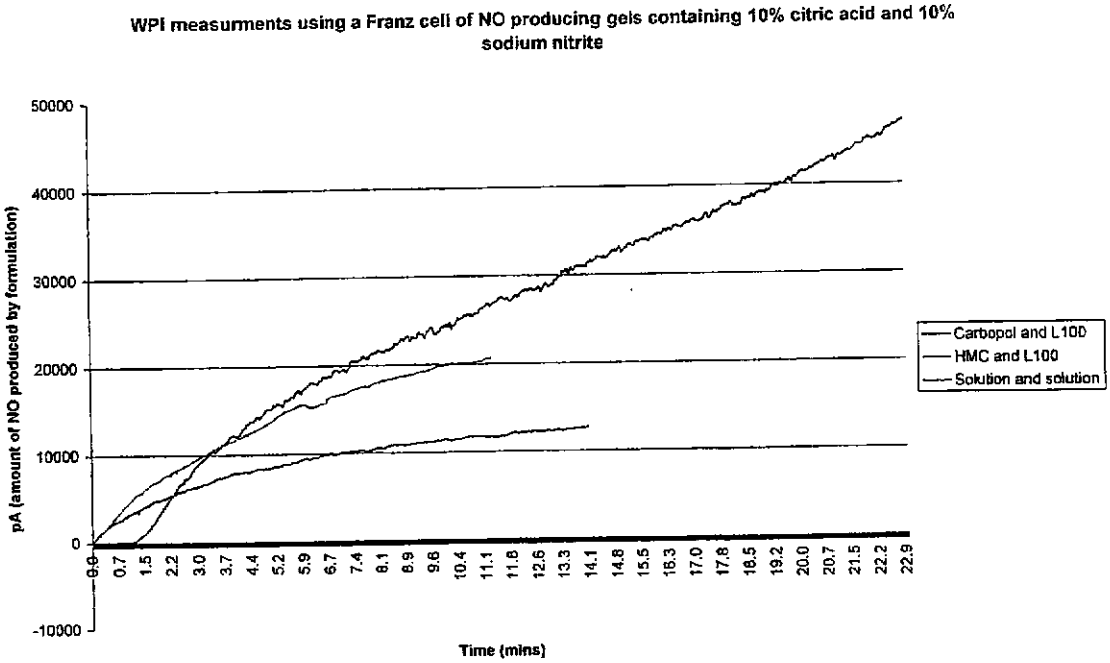

WPI measurments using a Franz cell of NO producing gels containing 10% citric acid and 10% sodium nitrite
pA (amount of NO produced by formulation)
50000
40000
30000
20000
10000
0
-10000
0.0
0.7
1.5
2.2
3.0
3.7
4.4
5.2
5.9
6.7
7.4
8.1
8.9
9.6
10.4
11.1
11.8
12.6
13.3
14.1
14.8
15.5
16.3
17.0
17.8
18.5
19.2
20.0
20.7
21.5
22.2
22.9
Time (mins)
Carbopol and L100
HMC and L100
Solution and solution

Fig. 3

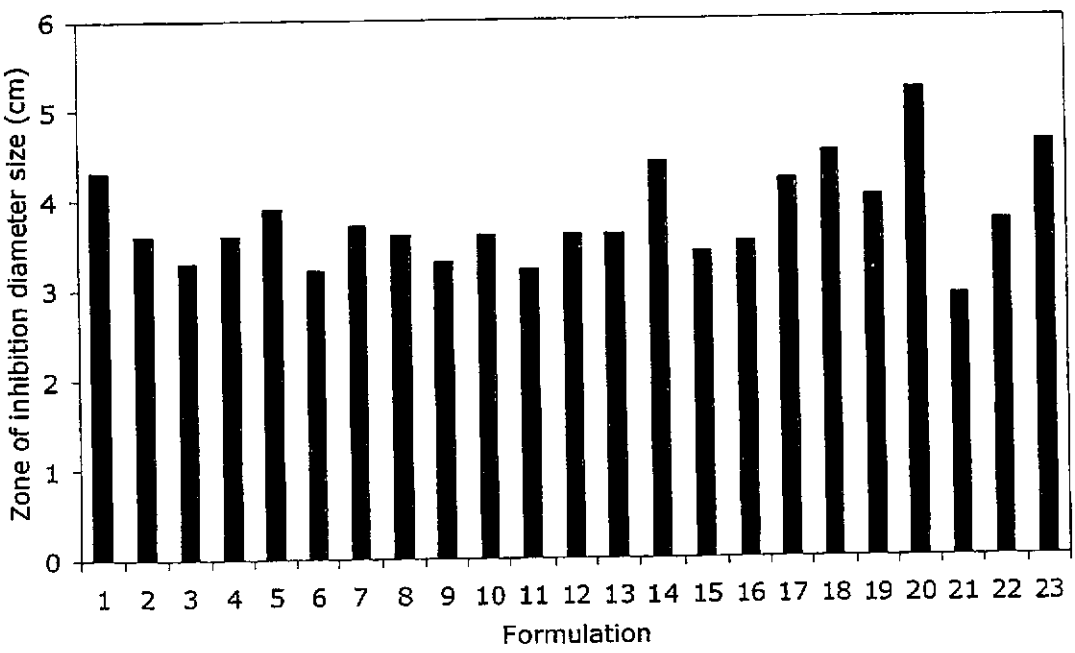

Zone of inhibition diameter size (cm)
0
1
2
3
4
5
6
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Formulation

Fig. 4

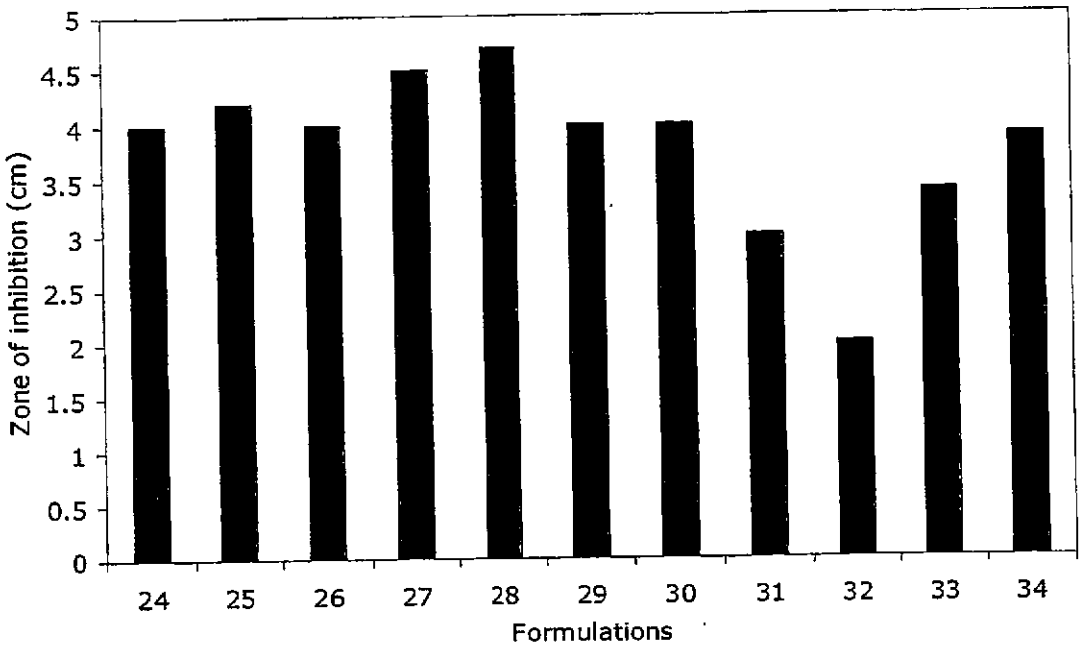

Zone of inhibition (cm)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
24
25
26
27
28
29
30
31
32
33
34
Formulations

Fig. 5

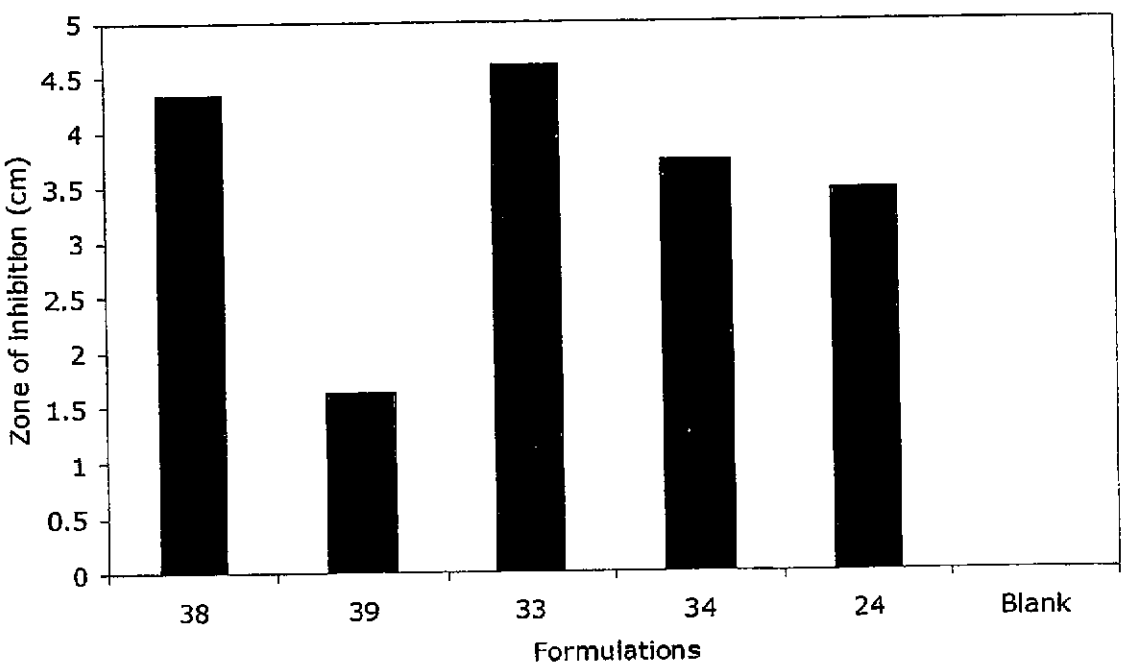

Zone of inhibition (cm)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
38
39
33
34
24
Blank
Formulations

Fig. 6

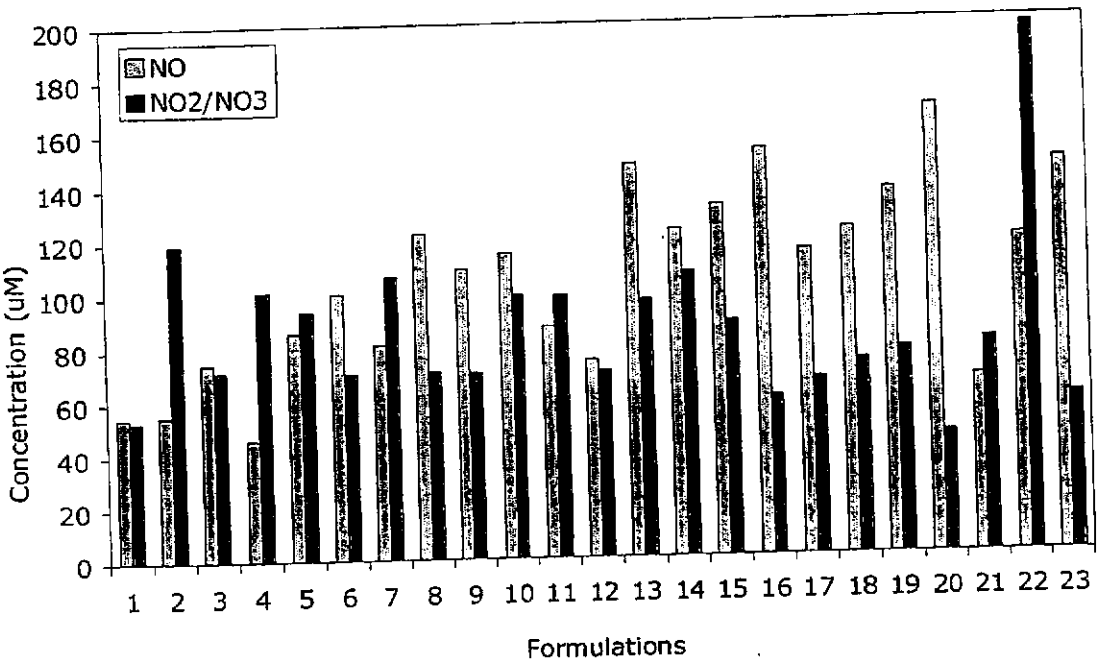

NO
NO2/NO3
Concentration (uM)
0
20
40
60
80
100
120
140
160
180
200
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Formulations

Fig. 7

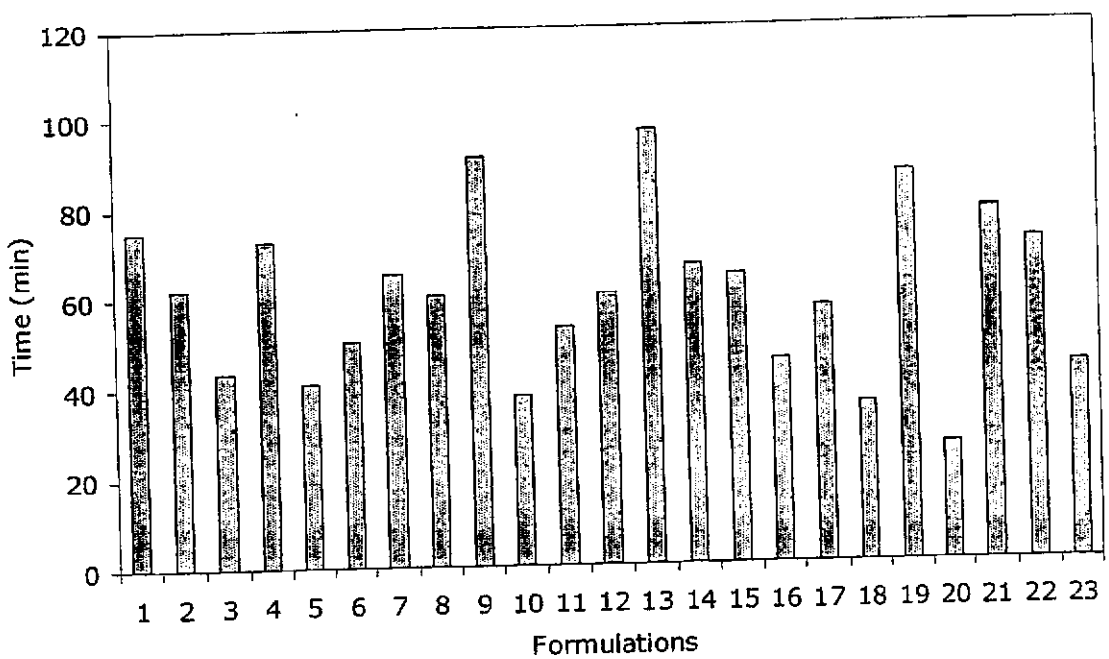

Time (min)
0
20
40
60
80
100
120
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Formulations

Fig. 8

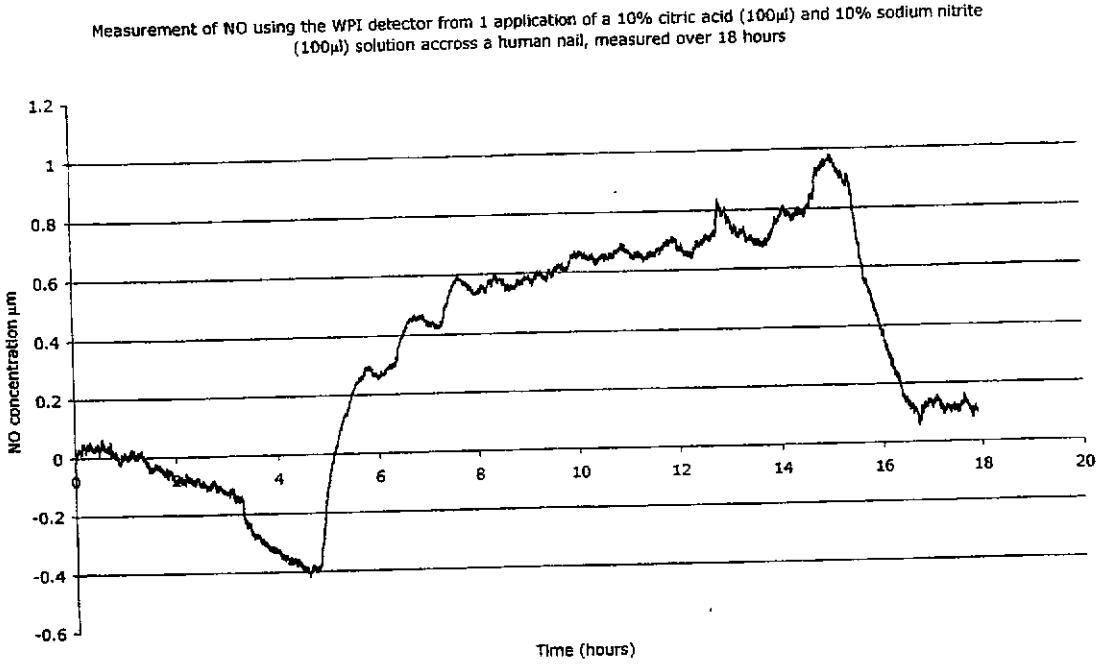

Measurement of NO using the WPI detector from 1 application of a 10% citric acid (100µl) and 10% sodium nitrite (100µl) solution accross a human nail, measured over 18 hours
NO concentration µm
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
0
4
6
8
10
12
14
16
18
20
Time (hours)

Fig. 9

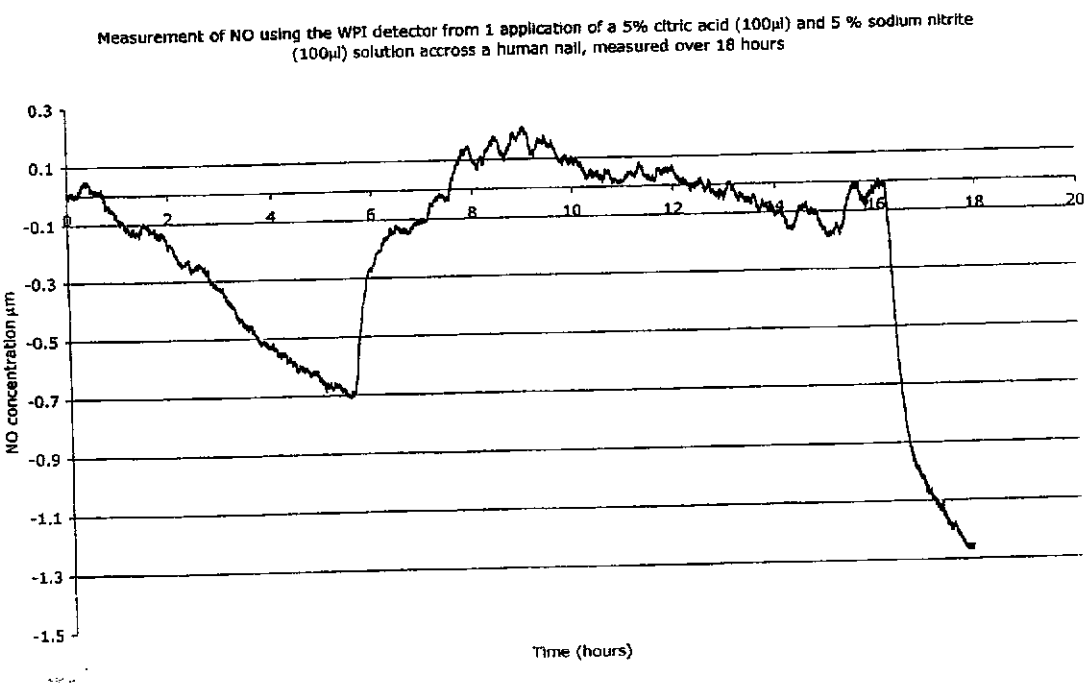

Measurement of NO using the WPI detector from 1 application of a 5% citric acid (100µl) and 5 % sodium nitrite (100µl) solution accross a human nail, measured over 18 hours
NO concentration µm
0.3
0.1
-0.1
-0.3
-0.5
-0.7
-0.9
-1.1
-1.3
-1.5
0
2
4
6
8
10
12
16
18
20
Time (hours)

Fig. 10

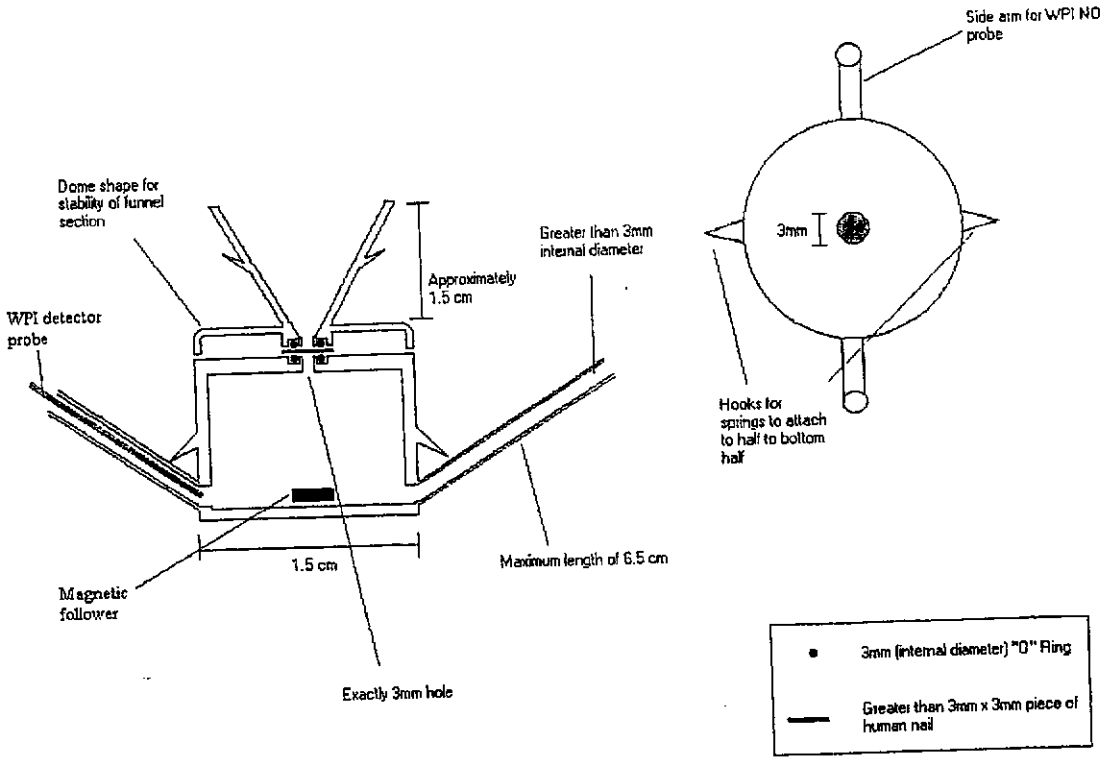

Side arm for WPI NO probe
Dome shape for stability of funnel section
Approximately 1.5 cm
Greater than 3mm internal diameter
WPI detector probe
3mm
Hooks for springs to attach to half to bottom half
1.5 cm
Maximum length of 6.5 cm
Magnetic follower
Exactly 3mm hole
3mm (internal diameter) "O" Ring
Greater than 3mm x 3mm piece of human nail

Fig. 11

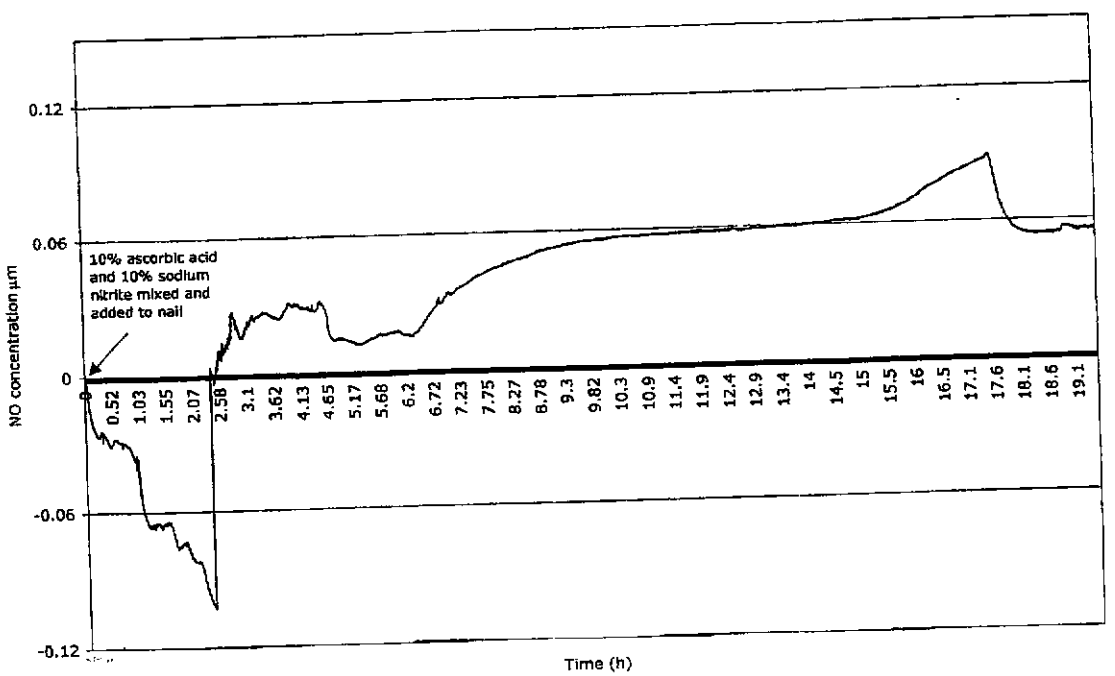

0.12
0.06
0
-0.06
-0.12
NO concentration µM
10% ascorbic acid and 10% sodium nitrite mixed and added to nail
0
0.52
1.03
1.55
2.07
2.58
3.1
3.62
4.13
4.65
5.17
5.68
6.2
6.72
7.23
7.75
8.27
8.78
9.3
9.82
10.3
10.9
11.4
11.9
12.4
12.9
13.4
14
14.5
15
15.5
16
16.5
17.1
17.6
18.1
18.6
19.1
Time (h)

Fig. 12

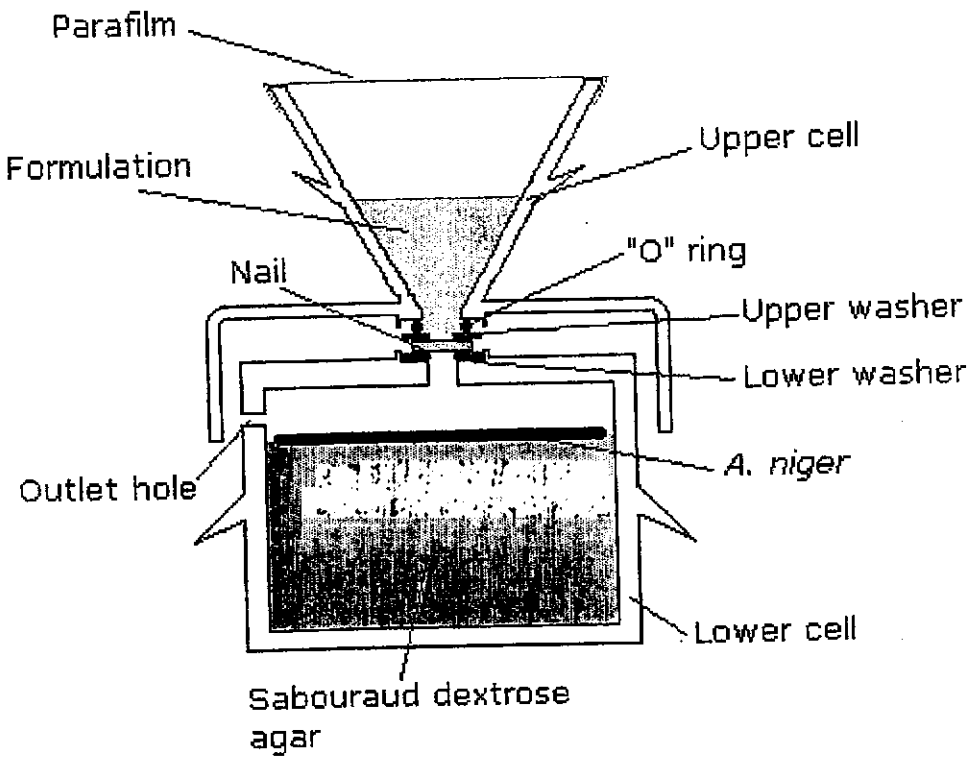

Parafilm
Formulation
Upper cell
"O" ring
Nail
Upper washer
Lower washer
A. niger
Outlet hole
Lower cell
Sabouraud dextrose agar

Fig. 13