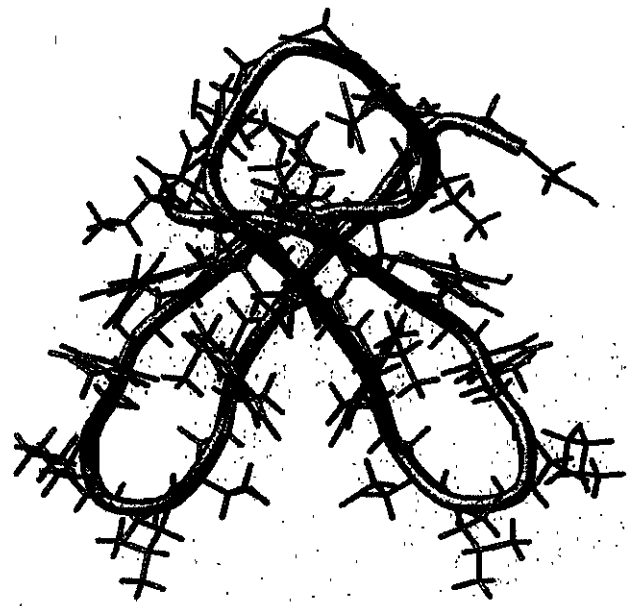


Fig. 1

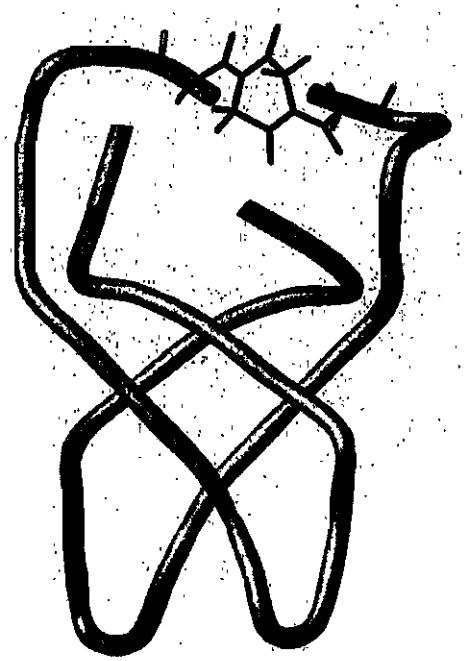


Fig. 2

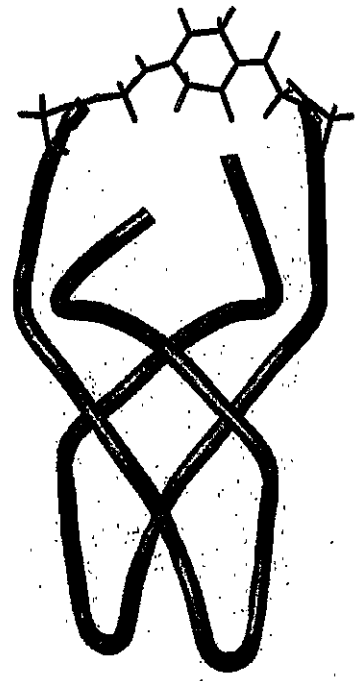


Fig. 3

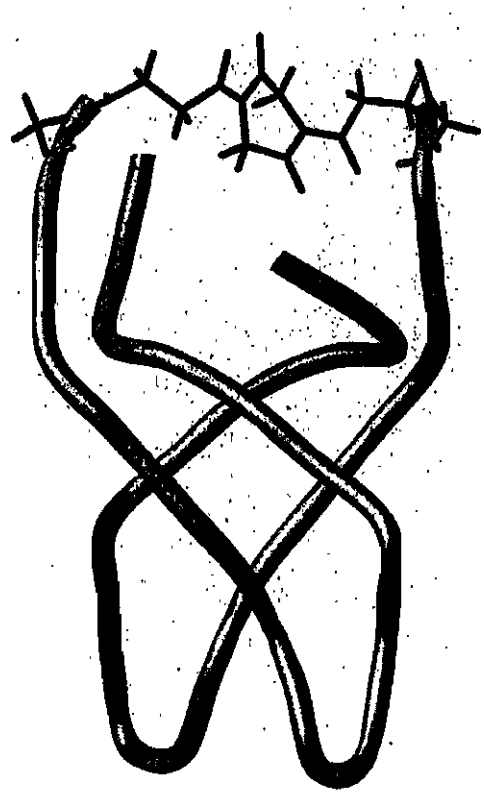


Fig. 4

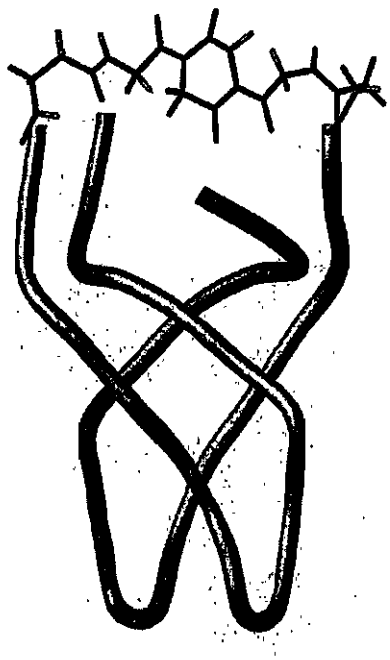


Fig. 5

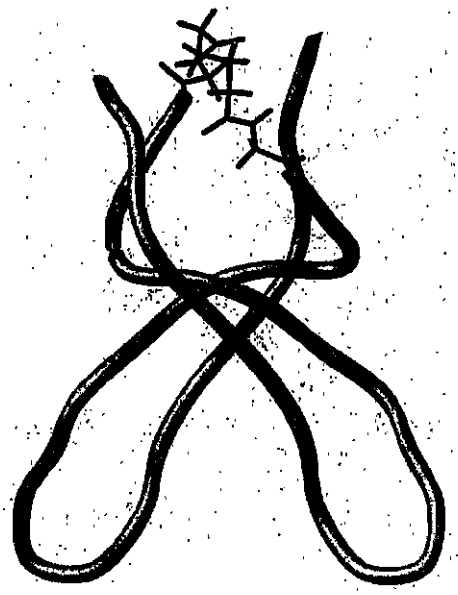


Fig. 6

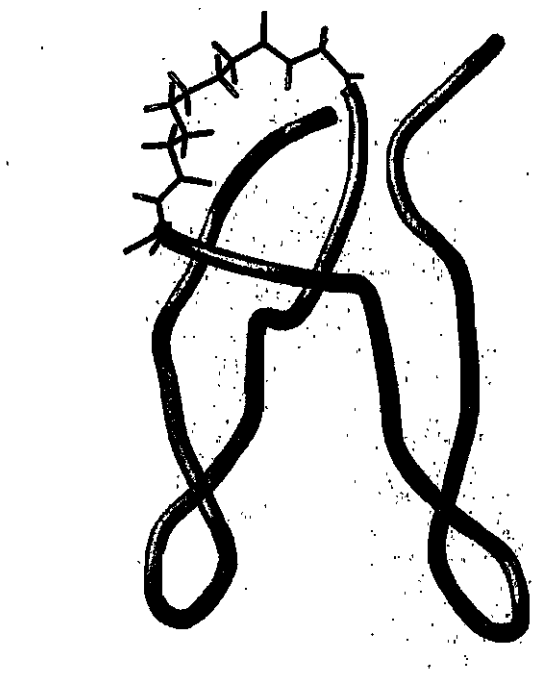


Fig. 7

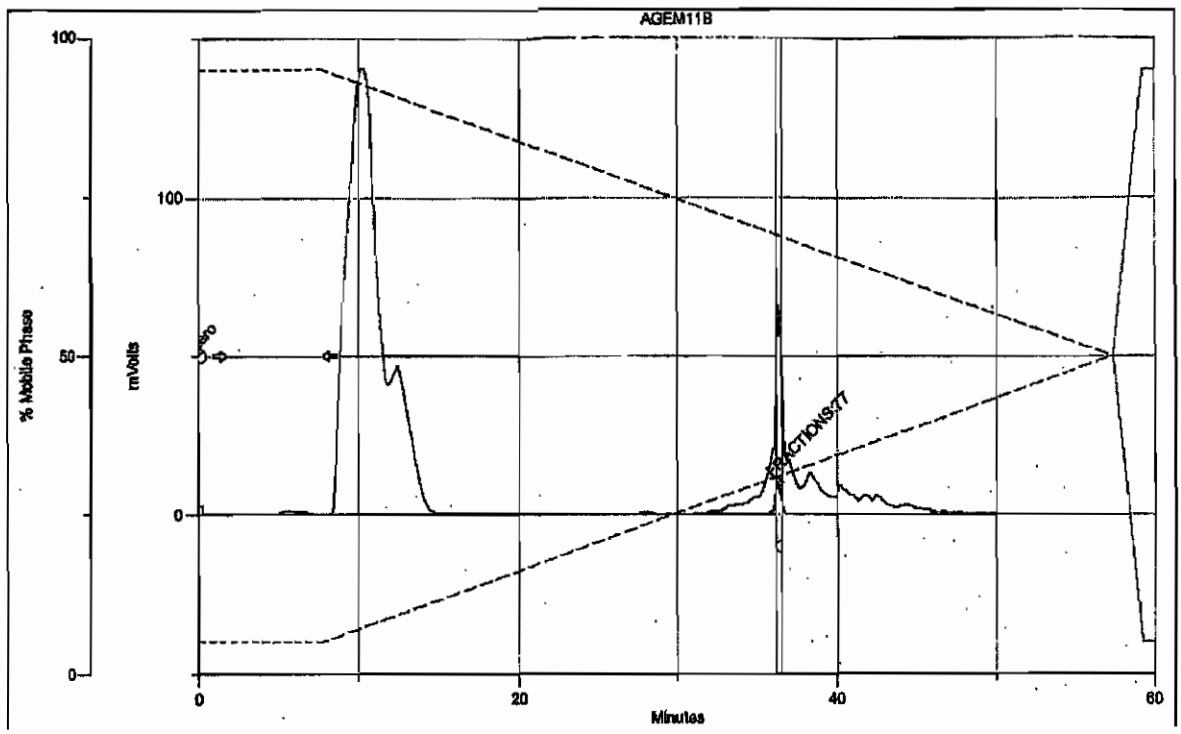

AGEM11B
100
50
0
% Mobile Phase
100
0
mVolts
0
20
40
60
Minutes
FRACTION377

Fig. 8

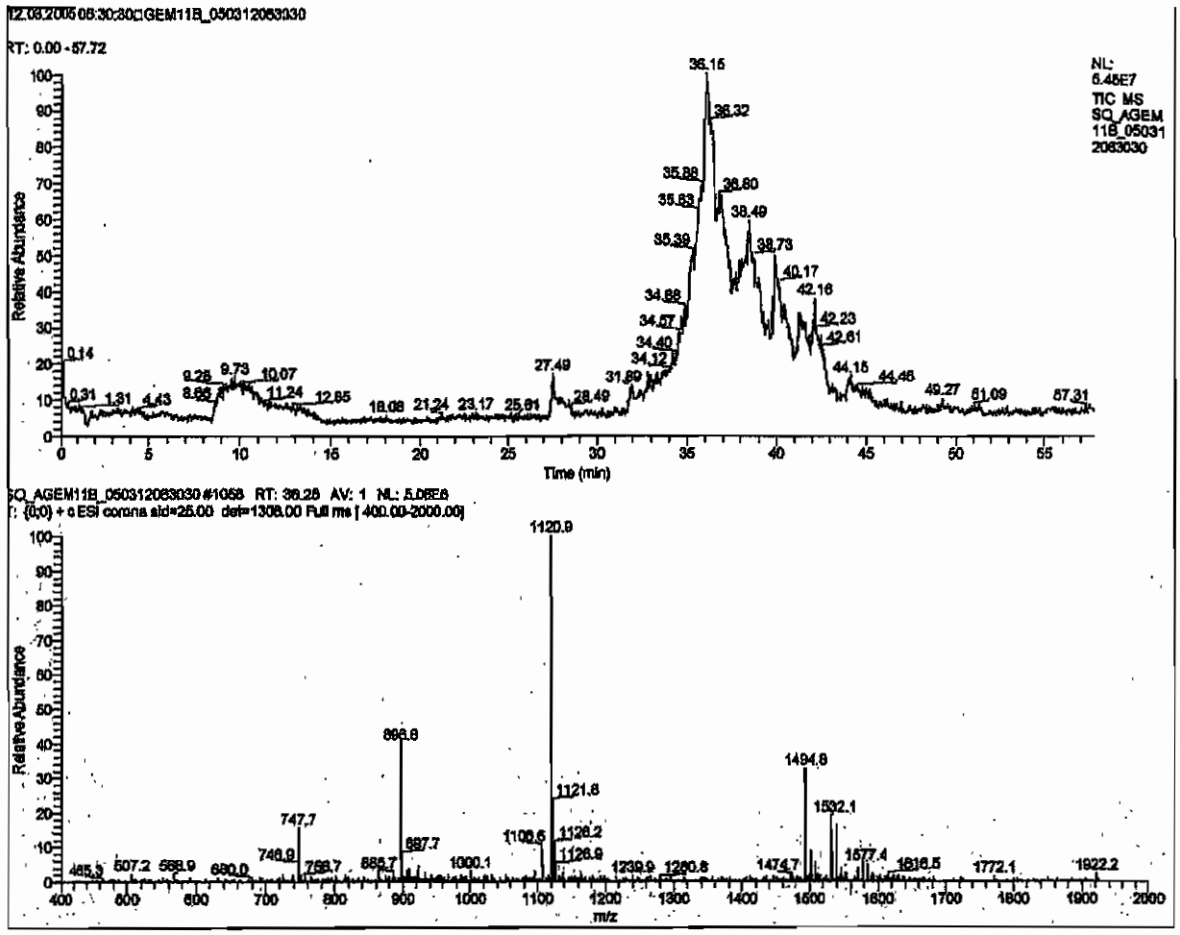

RT: 0.00 - 57.72
Relative Abundance
Time (min)
NL:
6.45E7
TIC MS
SQ_AGEM
11B_05031
2063030
36.15
36.32
35.88
35.63
36.60
38.49
35.39
38.73
40.17
42.16
34.88
34.57
42.23
42.61
34.40
34.12
27.49
31.89
44.15
44.46
49.27
51.09
57.31
0.14
0.31
1.31
1.43
9.28
8.66
9.73
10.07
11.24
12.85
18.08
21.24
23.17
25.91
28.49
SQ_AGEM11B_05031206303 0#1058 RT: 36.25 AV: 1 NL: 5.06E6
T: {0,0} + c ESI corona sid=25.00 det=1306.00 Full ms [ 400.00-2000.00]
1120.9
866.8
1494.8
1121.8
1532.1
747.7
1106.6
1126.2
887.7
746.9
1126.9
1577.4
1616.5
1772.1
1922.2
485.3
507.2
568.9
680.0
756.7
885.7
1000.1
1239.9
1280.8
1474.7
m/z

Fig. 9

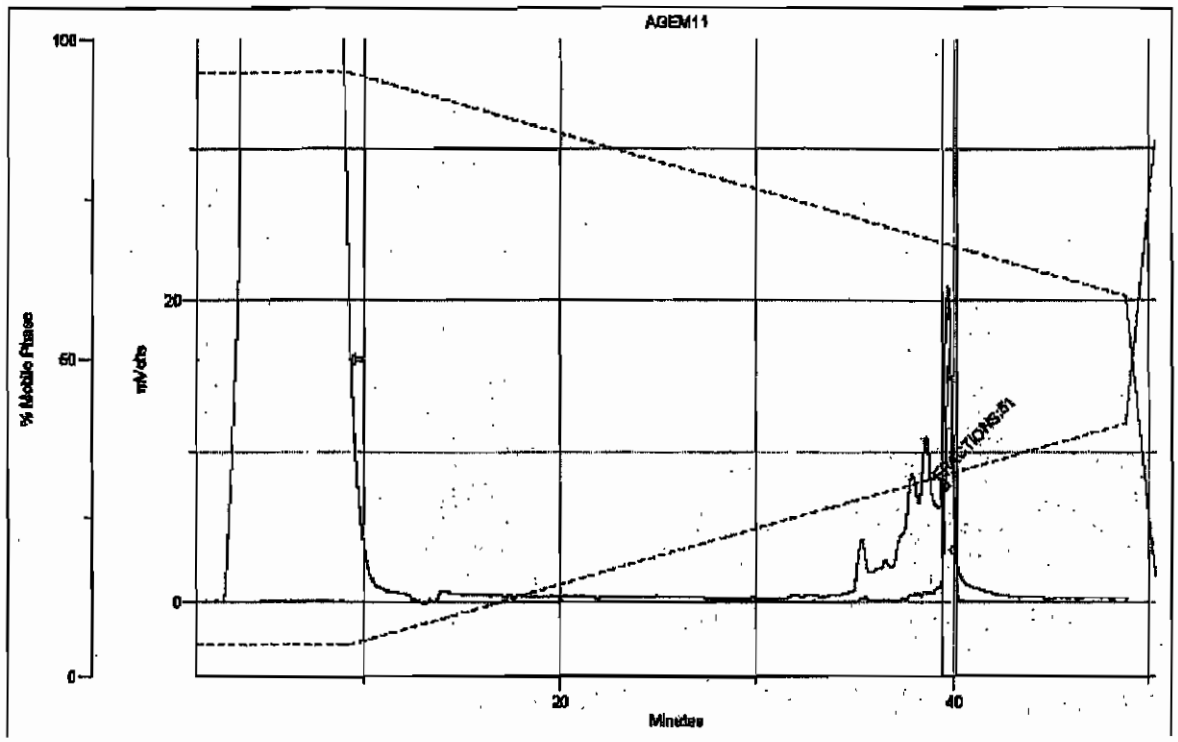

AGEM11
100
50
0
% Mobile Phase
mV/div
20
0
20
40
Minutes
FRACTIONS:61

Fig. 10

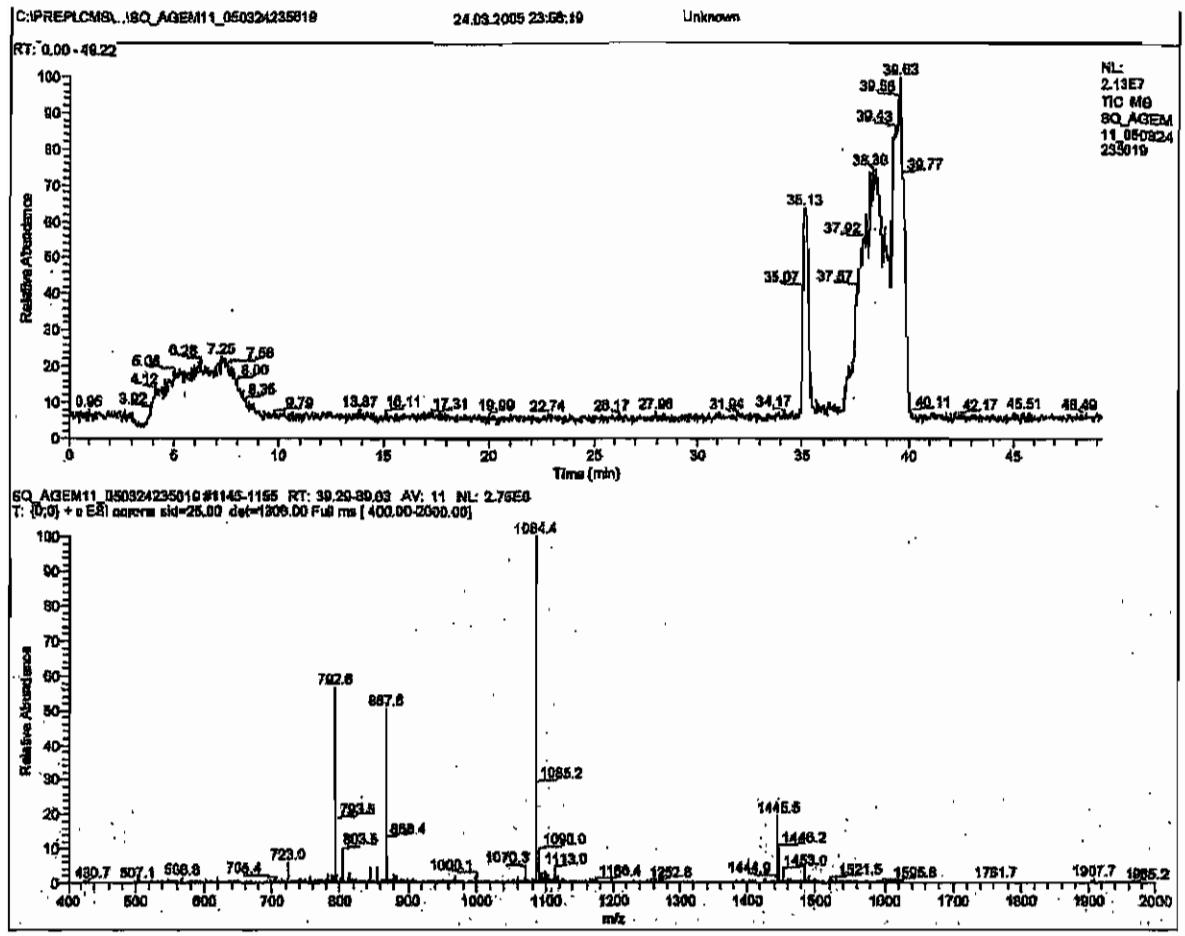

C:\PREPLCMS\...\SQ_AGEM11_050324235819
24.03.2005 23:58:19
Unknown
RT: 0.00 - 49.22
NL:
2.13E7
TIC MS
SQ_AGEM
11_050324
235819
Relative Abundance
Time (min)
SQ_AGEM11_050324235819 #1145-1155 RT: 39.29-39.63 AV: 11 NL: 2.76E6
T: {0,0} + c ESI norm sid=25.00 det=1306.00 Full ms [ 400.00-2000.00]
1084.4
792.6
887.6
1085.2
m/z

Fig. 11

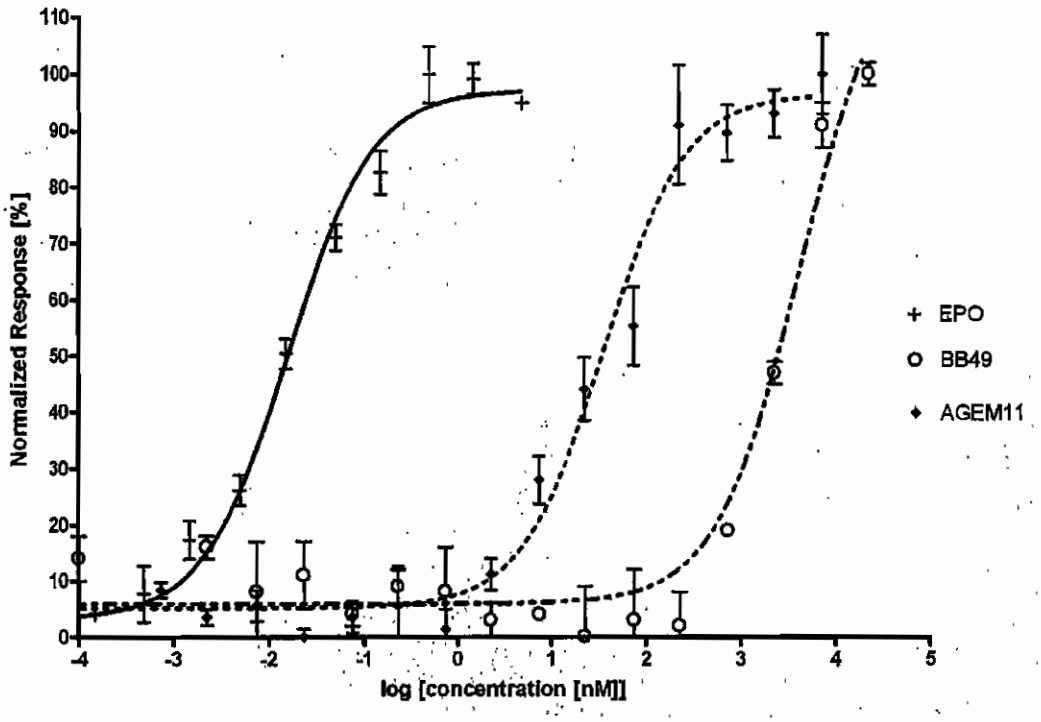



Fig. 12

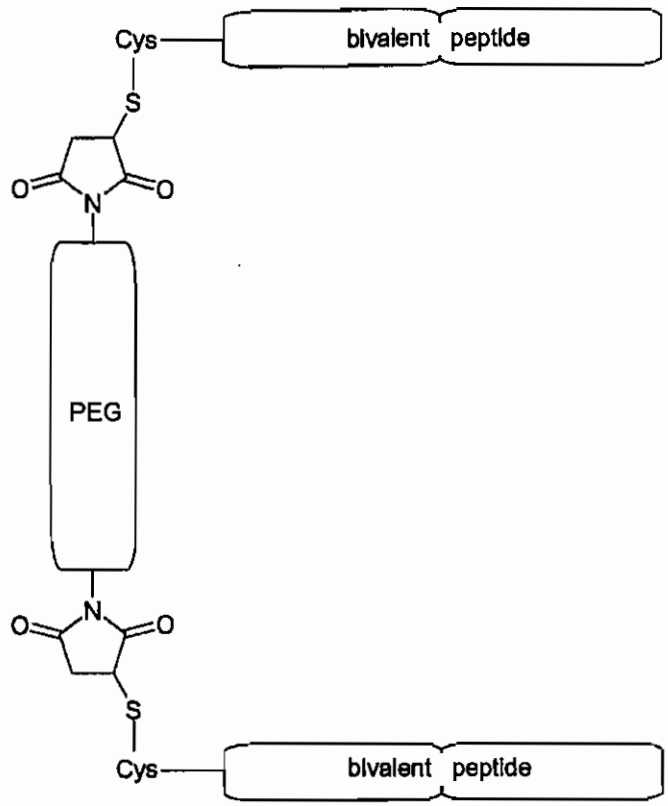

Cys
bivalent peptide
S
O
N
O
PEG
O
N
O
S
Cys
bivalent peptide

Fig. 13

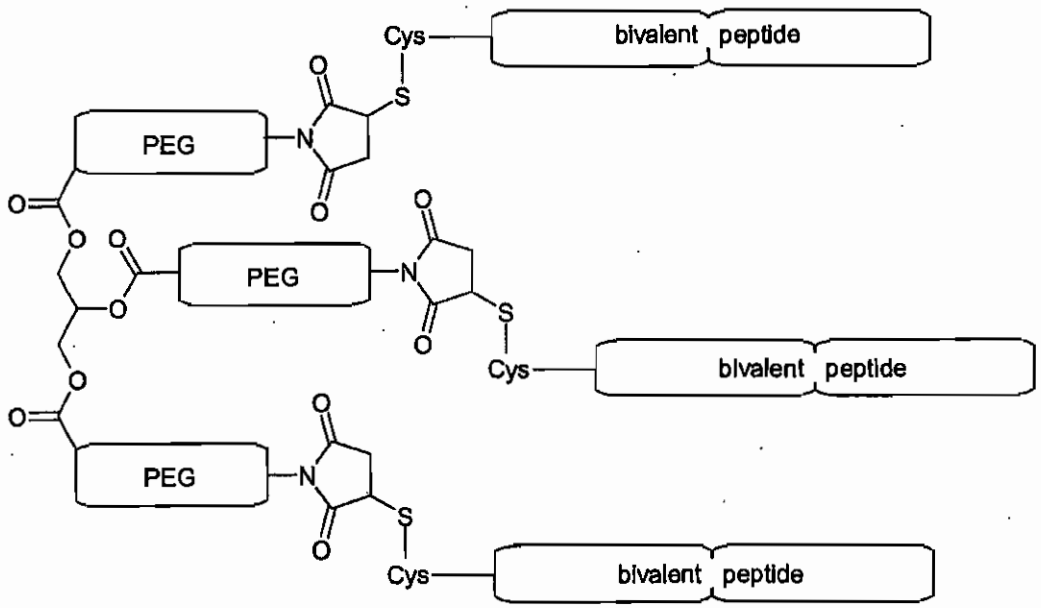

Cys
bivalent peptide
S
O
PEG
N
O
O
O
O
O
PEG
N
O
S
Cys
bivalent peptide
O
O
PEG
N
O
S
Cys
bivalent peptide

Fig. 14

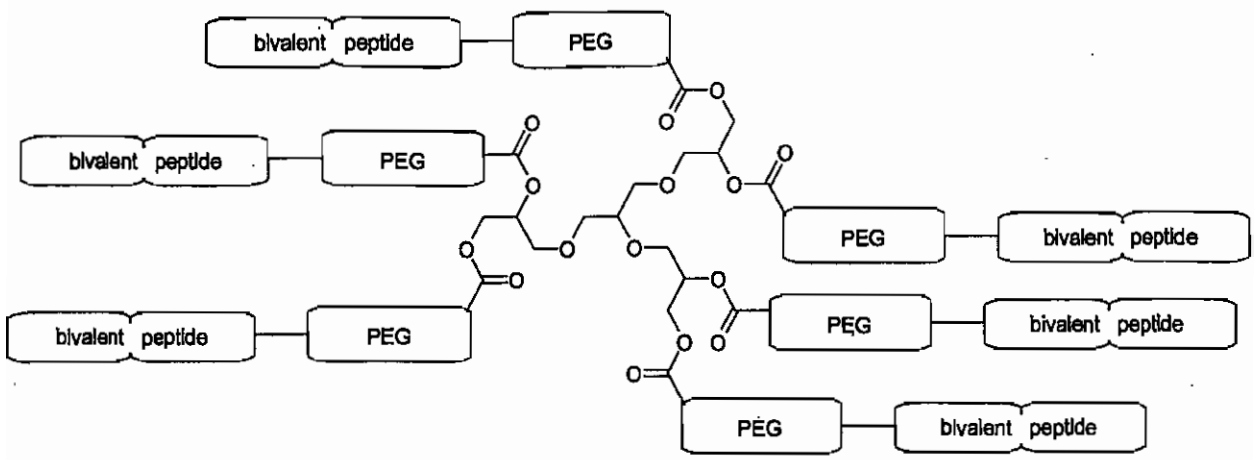

bivalent peptide
PEG
bivalent peptide
PEG
bivalent peptide
PEG
bivalent peptide
PEG
bivalent peptide
PEG
bivalent peptide
PEG
bivalent peptide

Fig. 15

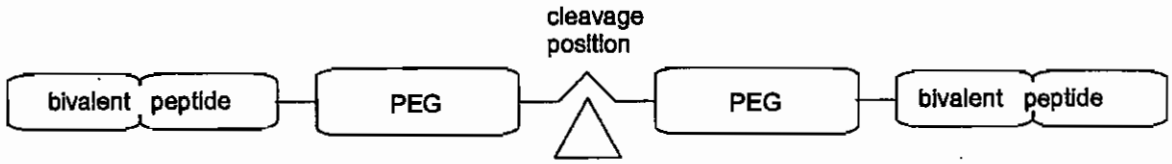

cleavage position
bivalent peptide
PEG
PEG
bivalent peptide

Fig. 16

**Figures 17 and 18**: These figures show dose response curves of erythropoietin mimetic peptides determined from raw data obtained by assays described in example 3b and curves fitted with the program GraphPad Prism version 4.

**Fig. 17**

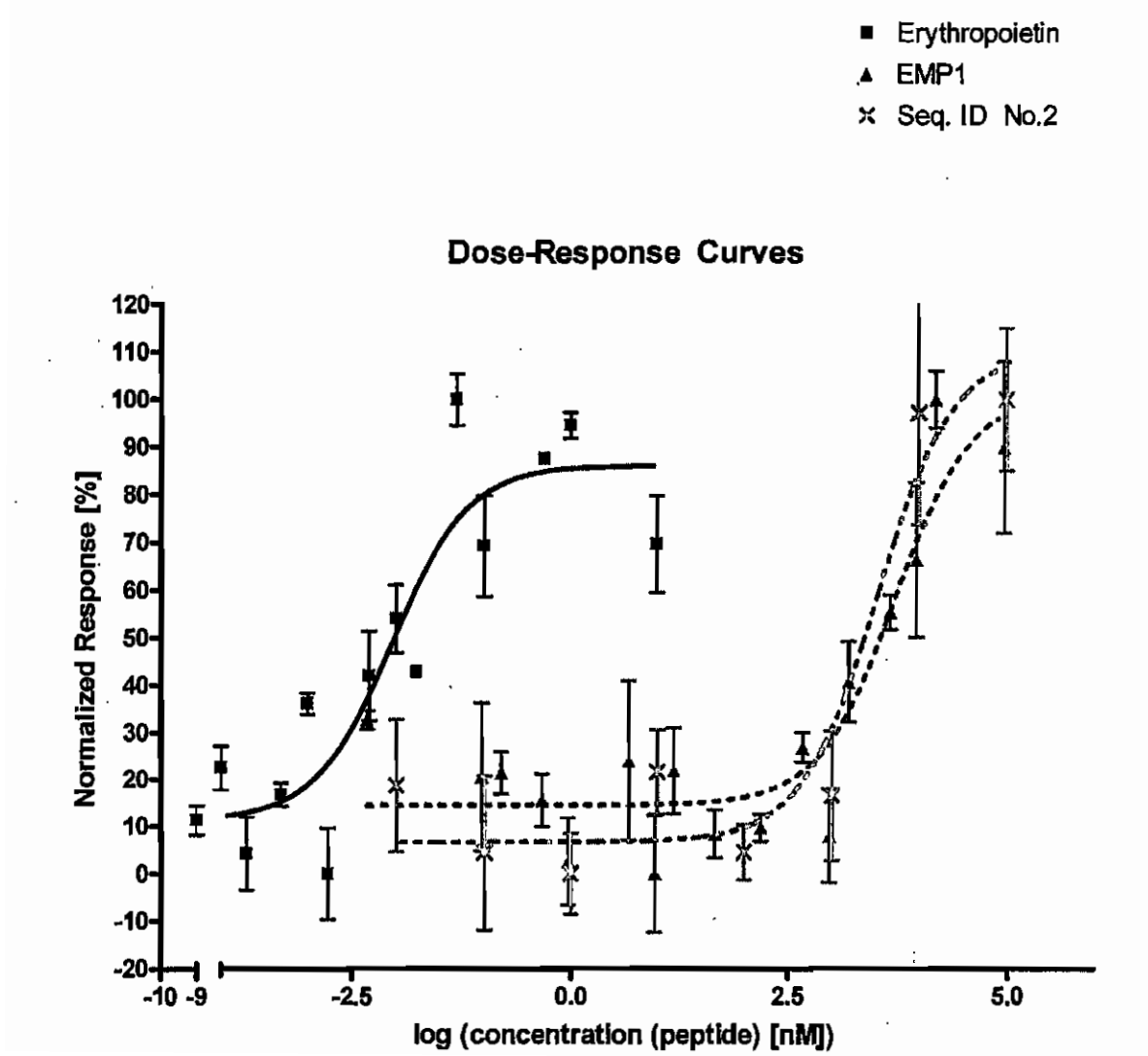


Fig. 18

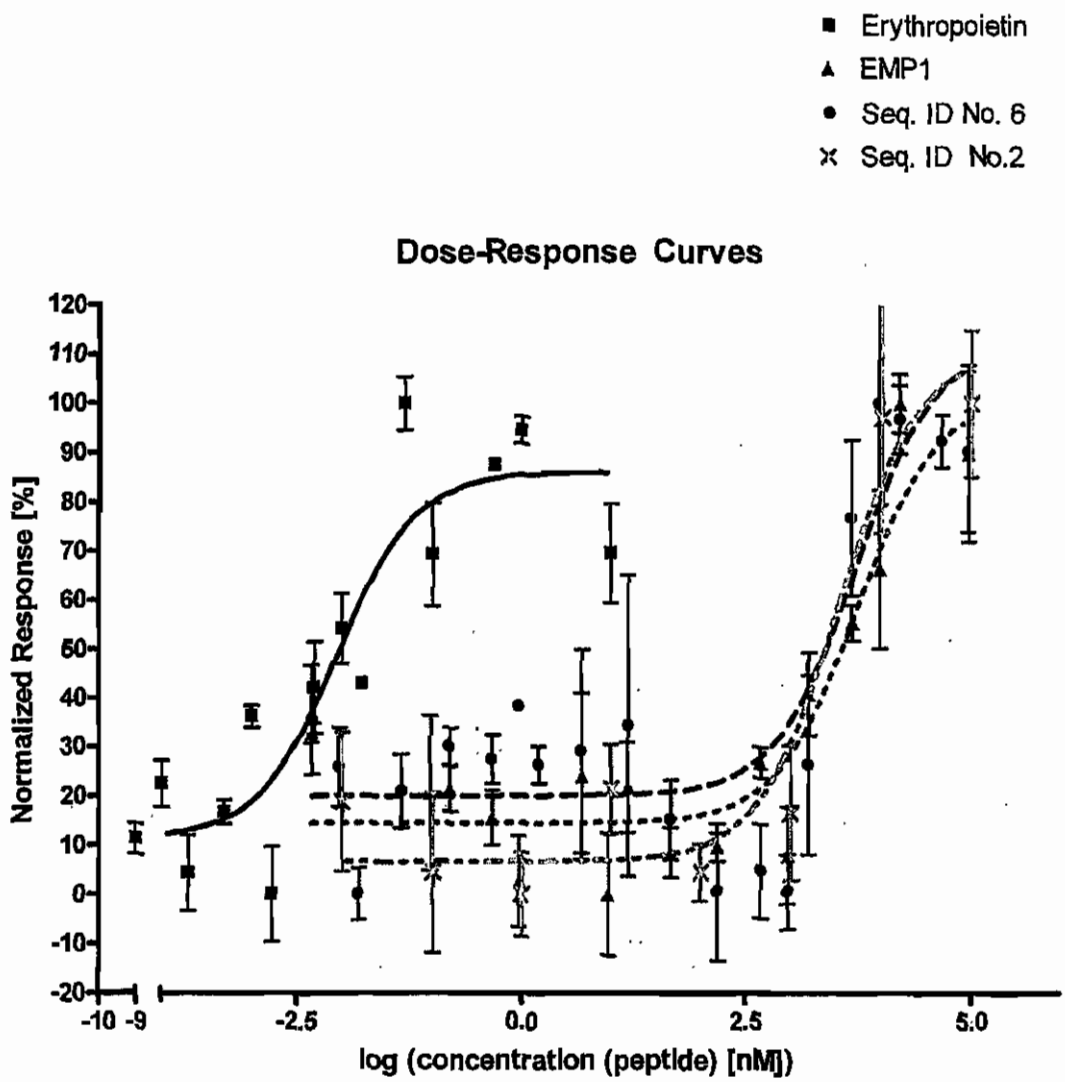

Erythropoietin
EMP1
Seq. ID No. 6
Seq. ID No.2
Dose-Response Curves
Normalized Response [%]
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-10 -9
-2.5
0.0
2.5
5.0
log (concentration (peptide) [nM])

Fig. 19

| Sequence | Unusual amino acid | Expected result | Tested result |
|---|---|---|---|
| GGTYACHFGKLTUVCKKQGG | U = 2-naphthylalanine | pos | + |
| GGTYSCHMGKLTXVCKKQGG | X = 1-naphthylalanine | pos | ++ |
| GGLYACHFGKLTUVCRKQGG | U = 2-naphthylalanine | pos | + |
| GGTYTCHFGKLTXVCKKLGG | X = 1-naphthylalanine | pos | ++ |
| GGLYACHFGKLTXICKKQGG | X = 1-naphthylalanine | pos | + |
| GGLYSCHFGKITXECKKQGG | X = 1-naphthylalanine | pos | + |
| GGTYACHFGKLTWVCKKQGG | | pos | + |
| GGTYSCHFGKLTWVCKKNGG | | pos | + |
| GGLYACHFGKLTXVCKKQGG | X = 1-naphthylalanine | pos | + |
| GGLYSCHMGKLTWVCKKQRG | | pos | + |
| GGTYLCHFGKLTWVCKKQGG | | pos | + |
| GGTLSCEFGKLTEVCDKQGG | | neg | - |
| GGLYSCHFGKLTWVCKKQGG | | pos | + |
| GGTYHCHFGKLTWVCKKQGG | | pos | + |
| GGLYSCHFGKITXVCKKQGG | X = 1-naphthylalanine | pos | ++ |
| GGLYSCHMGKITWVCRKQGG | | pos | + |
| GGTYSCHFGKITUVCKKQGG | | pos | + |
| GGTYSCHFGKLTXVCQKQGG | X = 1-naphthylalanine | pos | + |
| GGLYSCHFGKITWVCKKQRG | | pos | + |
| GGLYSCHMGKLTWVCRKQGG | | pos | ++ |
| GGLYACHFGKITWVCRKQGG | | pos | + |
| GGLYACHFGKLTWVCRKQRG | | pos | + |
| GGLYSCHMGKLTXDCKKQGG | X = 1-naphthylalanine | pos | + |
| GGLYACHFGKLTWVCRKLGG | | pos | + |
| GGLYSCHFGKLTXVCKKLGG | X = 1-naphthylalanine | pos | + |
| GGTYSCHFGKLTWVCSKQGG | | pos | + |
| GGLYSCHFGKITWVCKKQGG | | pos | + |
| GGDYSCHFGKLTWVCKKQGG | | pos | + |
| GGLYSCHFGKLTXVCQKQGG | X = 1-naphthylalanine | pos | ++ |
| GGTYSCHFGKLTWVCQKQRG | | pos | ++ |
| GGTYSCHFGKLTWVCGKQGG | | pos | + |
| GGLYSCHFGKLTUVCQKQGG | U = 2-naphthylalanine | pos | + |
| GGTYTCHMGKLTWVCKKQGG | | pos | + |
| GGTYSCHFGKLTWVCKKQGG | | pos | + |
| GGLYSCHFGKLTWVCRKQRG | | pos | + |
| GGTYSCHFGKLTXVCKKQRG | X = 1-naphthylalanine | pos | ++ |
| GGLYACHFGKLTWVCQKQGG | | pos | + |
| GGLYACHFGKLTWDCQKQGG | | pos | ++ |
| GGTYSCHFGKLTWVCKKAGG | | pos | + |
| GGTYSCHFGKLTWICKKQGG | | pos | + |
| GGTYSCHFGKLTWVCLKQGG | | pos | + |
| GGVYSCHFGKLTWVCKKQGG | | pos | + |

| | | | |
|---|---|---|---|
| GGTYTCHFGKLTUVCKKQGG | U = 2-naphthylalanine | pos | ++ |
| GGTYSCHFGKITWVCKKQRG | | pos | + |
| GGLYSCHFGKLTWVCRKLGG | | pos | + |
| GGTLSCDFGGLTWVCEKQEG | | neg | -- |
| GGTYSCHFGKLTUVCKKLGG | U = 2-naphthylalanine | pos | ++ |
| GGLYSCHMGKLTWVCKKLGG | | pos | + |
| GGLYSCHMGKLTWDCKKQRG | | pos | + |
| GGTYSCHFGKLTWLCKKQGG | | pos | + |
| GGLYSCHFGKLTUVCRKQRG | U = 2-naphthylalanine | pos | + |
| GGLYACHMGKLTWDCKKQGG | | pos | + |
| GGTYTCHFGKLTUVCKKLGG | U = 2-naphthylalanine | pos | + |
| GGTYACHMGKLTWVCKKQGG | | pos | + |
| GGTGSCEFGGLAKVCEKQEG | | neg | -- |
| GGMYSCHFGKLTWVCKKQGG | | pos | + |
| GGLYSCHMGKLTWVCKKQGG | | pos | + |
| GGLYSCHFGKITWVCQKQGG | | pos | + |
| GGTYSCHMGKLTUVCKKQGG | U = 2-naphthylalanine | pos | + |
| GGTYSCHFGKITWVCKKLGG | | pos | + |
| GGTLSCDFGKLTWVCEKQGG | | neg | - |
| GGTYSCHFGKITXVCKKQGG | | pos | ++ |
| GGTYSCHMGKITWVCKKQGG | | pos | + |
| GGTYSCDPGGLFWVCEKQGG | | neg | - |
| GGLYACHMGKITXVCQKLRG | X = 1-naphthylalanine | pos | + |
| GGTYTCHFGKLTWVCKKLGG | | pos | + |
| GGTYSCHFGKLTXVCKKQRG | X = 1-naphthylalanine | pos | + |
| GGTYSCHMGKLTWVCKKQGG | | pos | + |
| GGTYTCHMGKITWVCKKQGG | | pos | + |
| GGLYSCHFGKLTUVCKKLGG | U = 2-naphthylalanine | pos | ++ |
| GGTYACHFGKLTWVCKKLGG | | pos | + |
| GGLYACHFGKLTUVCKKQGG | U = 2-naphthylalanine | pos | ++ |
| GGTGSCEAGKLTDVCEKQDG | | neg | - |
| GGLYSCHFGKLTUVCRKQGG | U = 2-naphthylalanine | pos | + |
| GGTYTCHFGKLTWVCKKQGG | | pos | + |
| GGTLSCDFGKLGWVCKKQGG | | neg | - |
| GGTYSCHFGKLTWVCHKQGG | | pos | + |
| GGLYSCHMGKLTWVCQKQGG | | pos | + |
| GGTGSCEFGKLTEVCKKQGG | | neg | -- |
| GGLYSCHFGKITWVCKKQAG | | pos | + |
| GGTYSCHFGKLTXVCKKLGG | X = 1-naphthylalanine | pos | + |
| GGLYACHMGKLTWVCRKQGG | | pos | + |
| GGTYSCHFGKLTWDCKKQGG | | pos | + |
| GGLYSCHMGKLTWLCKKLGG | | pos | ++ |
| GGTYTCHFGKLTWVCKKQRG | | pos | + |
| GGLYACHFGKLTWECKKLGG | | pos | + |
| GGTGSCDFGKLAWVCDKQEG | | neg | -- |

| | | | |
|---|---|---|---|
| GGLYACHZGKLTWVCRKQGG | Z = homoserine-methylether | pos | + |
| GGLYACHFGKLTWVCKKQRG | | pos | + |
| GGTGSCDAGKLTDVCDKQDG | | neg | - |
| GGLYSCHMGKITWLCKKQGG | | pos | - |
| GGLYACHZGKLTWVCKKQGG | Z = homoserine-methylether | pos | + |
| GGTYSCHFGKITWVCKKQGG | | pos | + |
| GGLYSCHMGKLTWVCRKLGG | | pos | + |
| GGLYSCHFGKITWVCRKQAG | | pos | + |
| GGTGSCDFGKLTDVCAKQEG | | neg | -- |
| GGTYSCRFGKLTWVCKKQGG | | pos | ++ |
| GGLYSCHFGKITWVCRKQGG | | pos | + |
| GGTYSCEGGKLGKVCEKQEG | | neg | -- |
| GGTLSCDAGGLTKVCDKQDG | | neg | -- |
| GGTLSCHPGKLTKVCKKQDG | | neg | -- |
| GGTYTCHFGKITUVCKKQGG | U = 2-naphthylalanine | pos | ++ |
| GGTYACHFGKITWVCKKQGG | | pos | + |
| GGLYSCHFGKLTXVCKKQGG | X = 1-naphthylalanine | pos | ++ |
| GGLYSCHMGKLTWICQKQGG | | pos | + |
| GGTYSCHFGKLTWVCQKQGG | | pos | + |
| GGLYACHFGKLTULCKKQGG | U = 2-naphthylalanine | pos | ++ |
| GGTLSCEFGKLFKVCEKQGG | | neg | -- |
| GGTYTCHFGKITWVCKKQAG | | pos | + |
| GGLYSCHMGKLTWVCRKQRG | | pos | + |
| GGTYTCHFGKITWVCQKQGG | | pos | + |
| GGTYTCHMGKLTWVCKKLGG | | pos | + |
| GGTYTCHFGKITWVCKKQGG | | pos | + |
| GGTYSCHFGKLTWVCAKQGG | | pos | + |
| GGLYSCHFGKLTWVCQKQGG | | pos | + |
| GGLYSCHFGKLTWVCKKQRG | | pos | ++ |
| GGLYSCHFGKITUICKKQGG | U = 2-naphthylalanine | pos | + |
| GGTYTCHFGKLTXVCQKQGG | X = 1-naphthylalanine | pos | + |
| GGTGSCEPGKLTDVCEKQGG | | neg | -- |
| GGTYTCHFGKITWVCKKQRG | | pos | + |
| GGTYTCHFGKITXVCKKQGG | X = 1-naphthylalanine | pos | ++ |
| GGTYTCHMGKLTWVCKKQRG | | pos | ++ |
| GGLYSCHMGKITWVCKKQGG | | pos | + |
| GGLYACHFGKITWECKKQGG | | pos | + |
| GGLYACHMGKITXVCQKLGG | X = 1-naphthylalanine | pos | + |
| GGLYSCHFGKLTXVCKKQRG | X = 1-naphthylalanine | pos | +++ |
| GGTYSCHFGKLTUVCKKQRG | U = 2-naphthylalanine | pos | + |
| GGLYACHFGKLTWVCRKQGG | | pos | + |
| GGTYSCEAGKLTKVCEKQEG | | neg | -- |
| GGLYACHFGKLTWVCKKLGG | | pos | + |
| GGTYTCHFGKLTXVCKKQGG | X = 1-naphthylalanine | pos | ++ |

| | | | |
|---|---|---|---|
| GGLYSCHFGKLTUVCRKLGG | U = 2-naphthylalanine | pos | + |
| GGLYSCHFGKLTXVCRKLGG | X = 1-naphthylalanine | pos | + |
| GGTYSCHFGKVTWVCKKQGG | | pos | + |
| GGTYSCHFGKMTWVCKKQGG | | pos | + |
| GGNYSCHFGKLTWVCKKQGG | | pos | + |
| GGLYSCHFGKITUVCRKQGG | U = 2-naphthylalanine | pos | + |
| GGTYTCHFGKLTWVCQKLGG | | pos | + |
| GGLYACHZGKLTWVCKKQGG | Z = homoserine-methylether | pos | + |
| GGLYSCHFGKITUVCKKQGG | U = 2-naphthylalanine | pos | ++ |
| GGLYSCHFGKLTXVCRKQGG | X = 1-naphthylalanine | pos | ++ |
| GGAYSCHFGKLTWVCKKQGG | | pos | + |
| GGSYSCHFGKLTWVCKKQGG | | pos | + |
| GGTLSCDFGKLGWVCDKQEG | | neg | -- |
| GGTYKCHFGKLTWVCKKQGG | | pos | + |
| GGTYACHFGKLTWVCQKQGG | | pos | + |
| GGLYACHFGKITWVCKKQGG | | pos | + |
| GGLYSCHFGKLTWVCQKLGG | | pos | + |
| GGTYACHFGKLTXVCKKLGG | X = 1-naphthylalanine | pos | ++ |
| GGLYACHFGKLTXVCRKQGG | X = 1-naphthylalanine | pos | ++ |
| GGTYSCHFGKLTWVCTKQGG | | pos | + |
| GGTYMCHFGKLTWVCKKQGG | | pos | + |
| GGTYACHFGKLTXVCKKQGG | X = 1-naphthylalanine | pos | ++ |
| GGTYSCWFGKLTWVCKKQGG | | pos | + |
| GGTLSCDFGGLGWVCDKQEG | | neg | - |
| GGLYSCHMGKLTXVCRKQGG | X = 1-naphthylalanine | pos | ++ |
| GGLYSCHFGKLTUVCKKQRG | U = 2-naphthylalanine | pos | ++ |
| GGLYSCHMGKLTUECKKQGG | U = 2-naphthylalanine | pos | + |
| GGTYTCHFGKLTWVCQKQGG | | pos | + |
| GGLYACHMGKLTWVCKKQGG | | pos | + |
| GGTYSCHFGKLTUVCKKQGG | U = 2-naphthylalanine | pos | + |
| GGLYSCHMGKLTXVCKKQGG | X = 1-naphthylalanine | pos | ++ |
| GGLYACHFGKLTWVCKKQGG | | pos | + |
| GGLYSCHFGKITWVCRKQRG | | pos | + |
| GGTYSCHFGKLTWECKKQGG | | pos | + |
| GGTYSCLFGKLTWVCKKQGG | | pos | + |
| GGTYSCHFGKLTWVCKKQGG | | pos | + |
| GGTYSCHFGKLTWVCRKQGG | | pos | + |
| GGTYSCHZGKLTWVCKKQGG | Z = homoserine-methylether | pos | + |
| GGTYSCHFGKLTWVCQKLGG | | pos | + |
| GGLYSCHFGKLTUVCKKQGG | U = 2-naphthylalanine | pos | + |
| GGLYSCHFGKITXVCRKQGG | X = 1-naphthylalanine | pos | + |
| GGTYTCHMGKLTXVCKKQGG | X = 1-naphthylalanine | pos | ++ |
| GGLYSCHFGKLTXVCRKQRG | X = 1-naphthylalanine | pos | ++ |
| GGTYTCHFGKLTUVCQKQGG | U = 2-naphthylalanine | pos | + |

| | | | |
|---|---|---|---|
| GGTYSCHFGKLTUVCQKQGG | U = 2-naphthylalanine | pos | + |
| GGTYTCHZGKLTWVCKKQGG | Z = homoserine-methylether | pos | + |
| GGLYSCHMGKITWVCQKQRG | | pos | + |
| GGTYSCHFGKITWVCQKQGG | | pos | + |
| GGTYSCHFGKLTXVCKKQGG | X = 1-naphthylalanine | pos | ++ |
| GGTYSCHFGKLTWVCKKQRG | | pos | ++ |
| GGTYTCHFGKLTUVCKKQRG | U = 2-naphthylalanine | pos | + |
| GGLYSCHFGKLTWVCKKLGG | | pos | + |
| GGTYACHFGKLTWVCKKQRG | | pos | ++ |
| GGEYSCHFGKLTWVCKKQGG | | pos | + |
| GGLYSCHFGKLTWVCQKQRG | | pos | ++ |
| GGTYTCHFGKLTWVCRKQRG | | pos | + |
| GGTYSCHFGKATWVCKKQGG | | pos | + |
| GGLYACHFGKLTWICKKQRG | | pos | + |
| GGTYSCHFGKTTWVCKKQGG | | pos | + |
| GGTGSCEFGGLGWVCDKQGG | | neg | - |
| GGTYSCHFGKLTWVCKKQGG | | pos | + |
| GGTYTCHFGKLTXVCKKQRG | X = 1-naphthylalanine | pos | ++ |
| GGTGSCEFGKLTWVCDKQGG | | neg | - |

**Fig. 20**

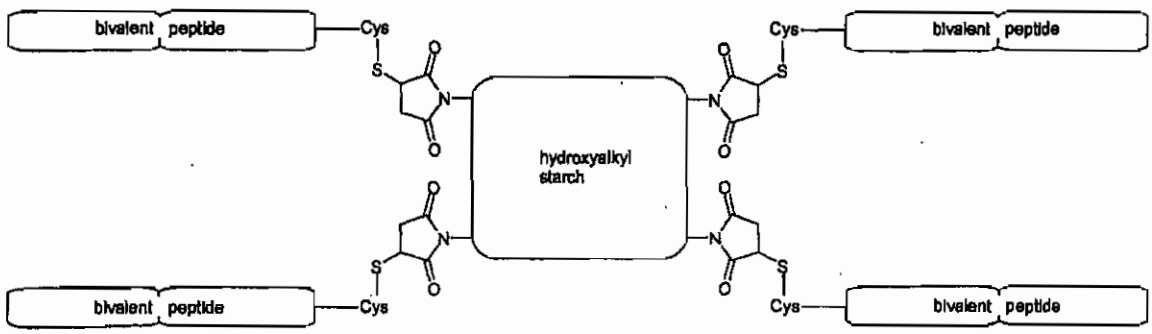
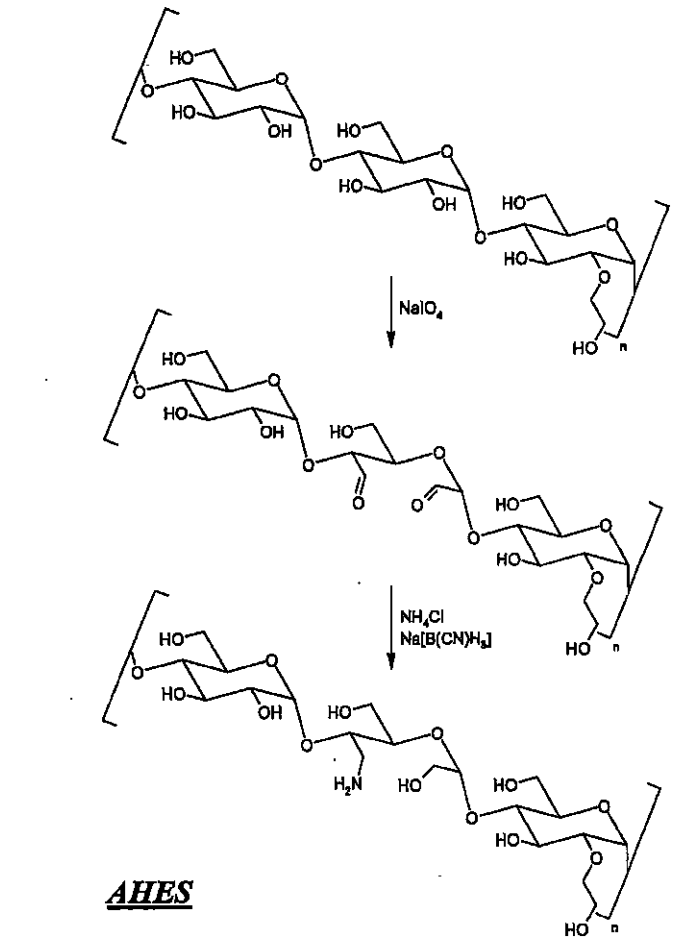
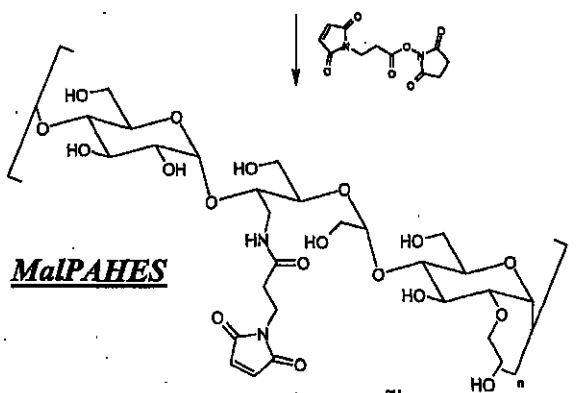


Fig. 21



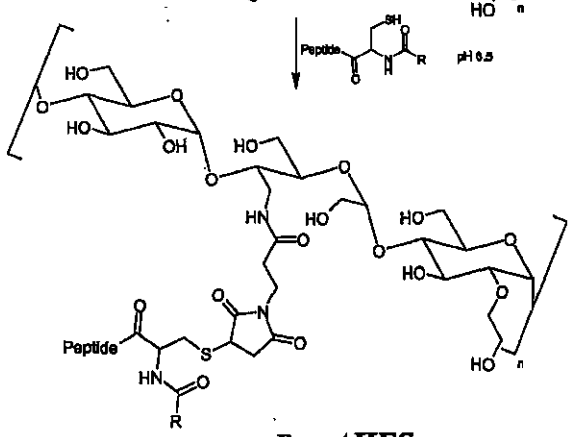



**Fig. 22**

| Peptide | Rabbit serum (C6) 1:500 1 | Rabbit serum (C6) 1:1000 2 | Human serum (U34): 1:100 3 | Human serum (U34): 1:500 4 |
|---|---|---|---|---|
| Buffer only | 14.03% | 7.55% | 17.99% | 4.42% |
| 5µg EPO | 0.08% | 0.09% | 0.06% | 0.09% |
| 50µg EPO | 0.06% | 0.07% | 0.09% | 0.07% |
| 5µg test peptide 1 | 11.14% | 7.3% | 16.77% | 2.55% |
| 50µg test peptide 1 | 8.74% | 7.26% | 14.26% | 4.03% |
| 5µg test peptide 2 | 8.77% | 8.48% | 17.32% | 2.25% |
| 50µg test peptide 2 | 11.78% | 7.11% | 15.5% | 1.76% |
| 3% QC | 3.28% | | | |
| negative control | 0.06% | | | |
| positive control | 40.35% | | | |