Figures

Fig. 1

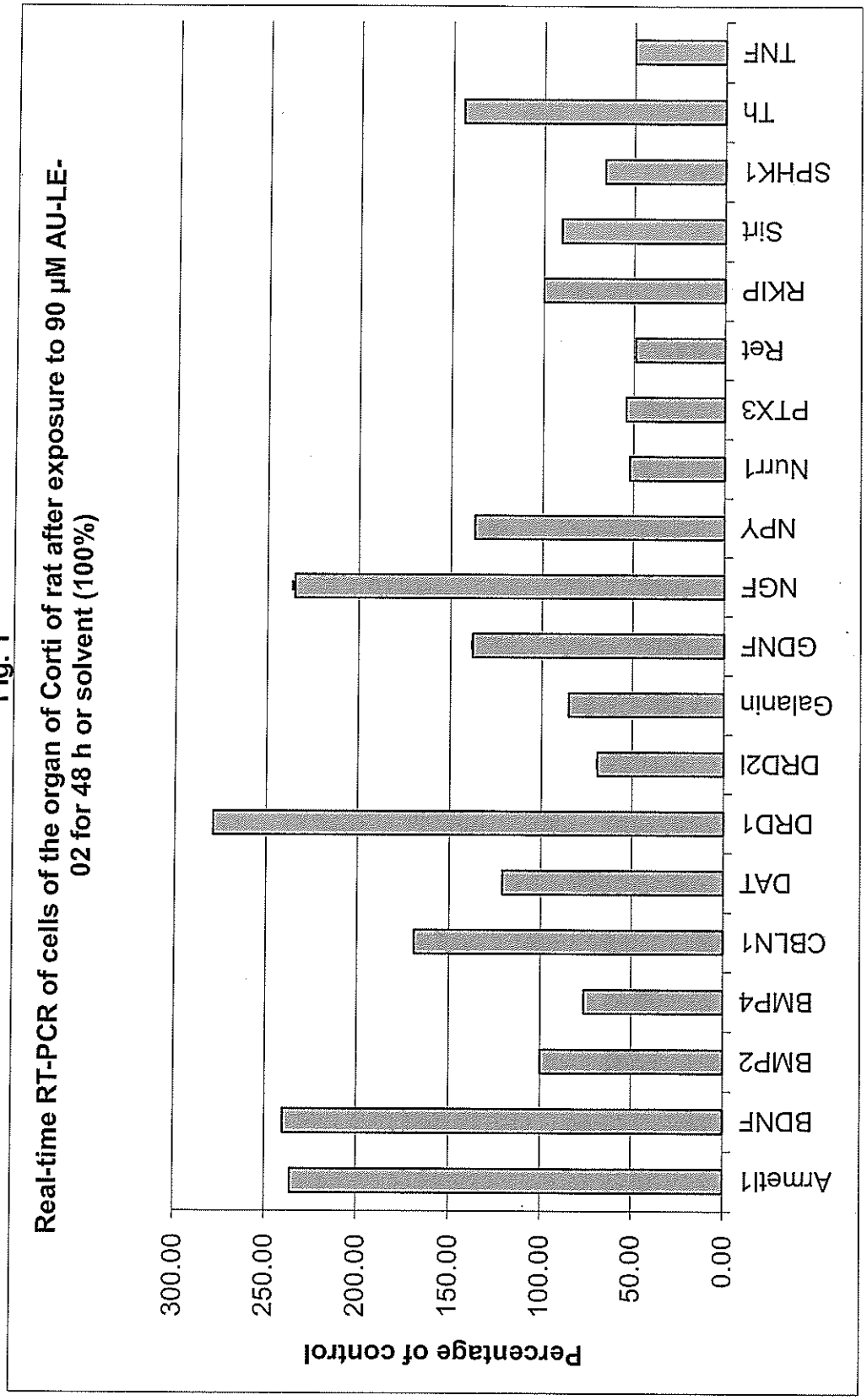


Fig. 2

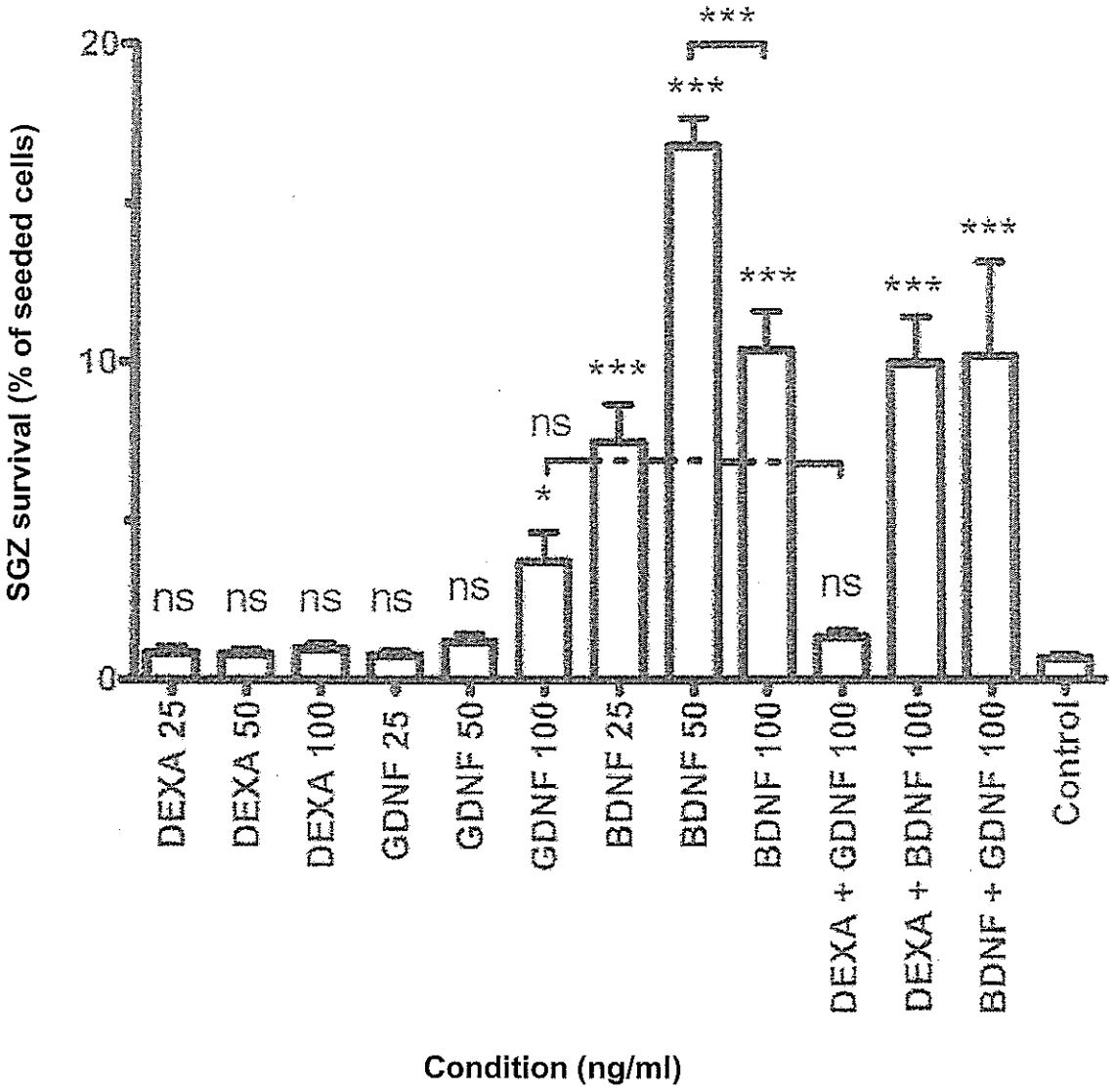

SGZ survival (% of seeded cells)
20
10
0
ns
ns
ns
ns
ns
*
ns
***
***
***
***
ns
***
***
DEXA 25
DEXA 50
DEXA 100
GDNF 25
GDNF 50
GDNF 100
BDNF 25
BDNF 50
BDNF 100
DEXA + GDNF 100
DEXA + BDNF 100
BDNF + GDNF 100
Control
Condition (ng/ml)

Fig. 3A

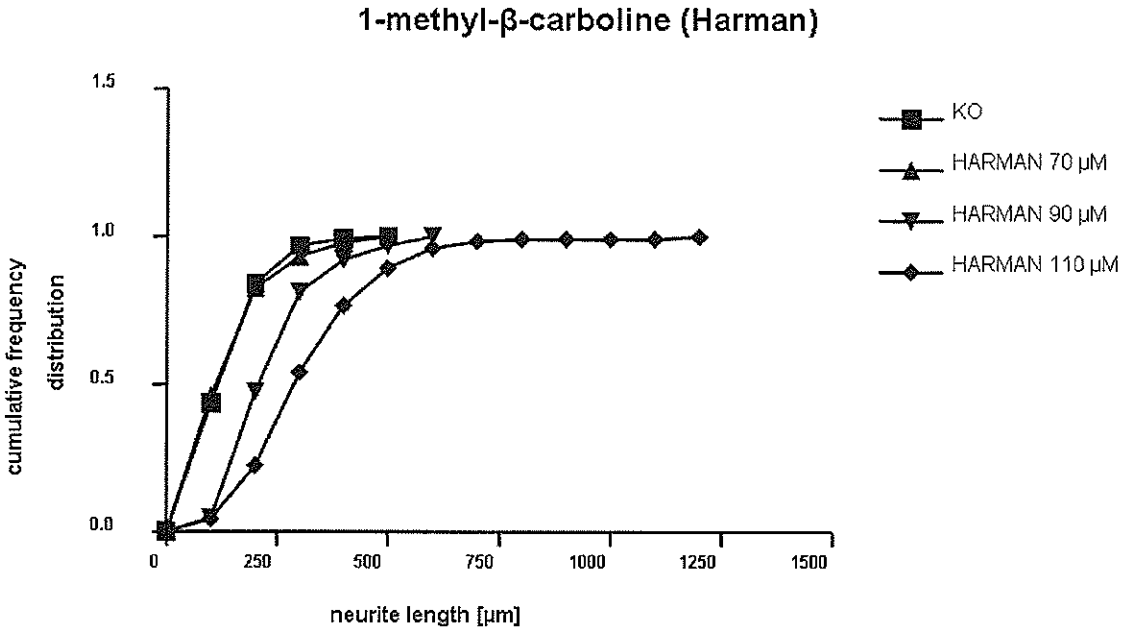

1-methyl-β-carboline (Harman)
cumulative frequency distribution
1.5
1.0
0.5
0.0
0
250
500
750
1000
1250
1500
neurite length [µm]
KO
HARMAN 70 µM
HARMAN 90 µM
HARMAN 110 µM

Fig. 3B

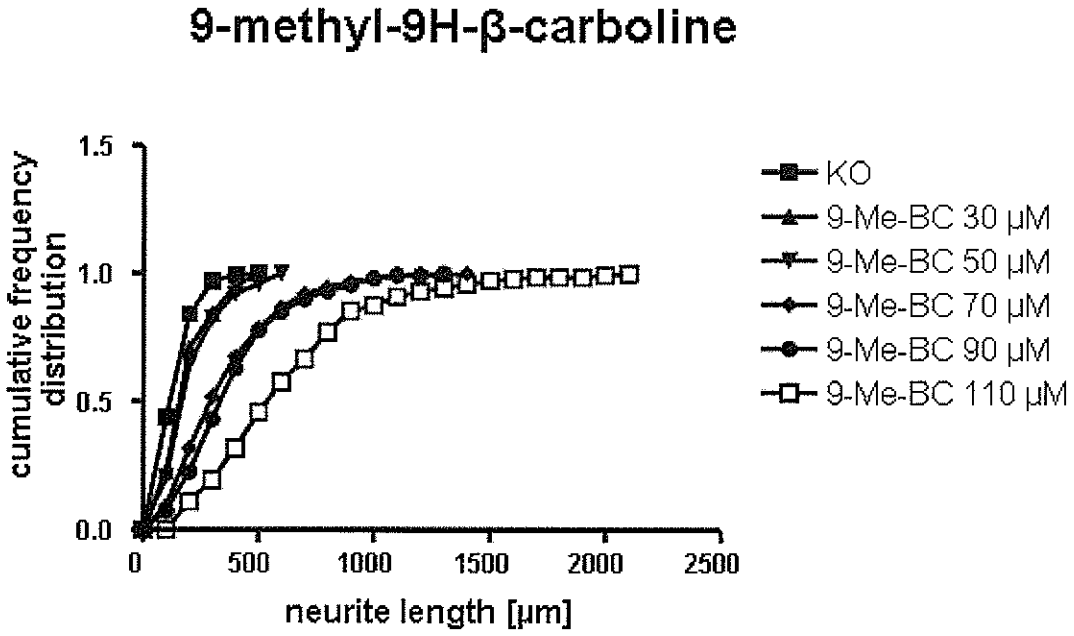

9-methyl-9H-β-carboline
cumulative frequency distribution
1.5
1.0
0.5
0.0
0
500
1000
1500
2000
2500
neurite length [µm]
KO
9-Me-BC 30 µM
9-Me-BC 50 µM
9-Me-BC 70 µM
9-Me-BC 90 µM
9-Me-BC 110 µM

Fig. 3C

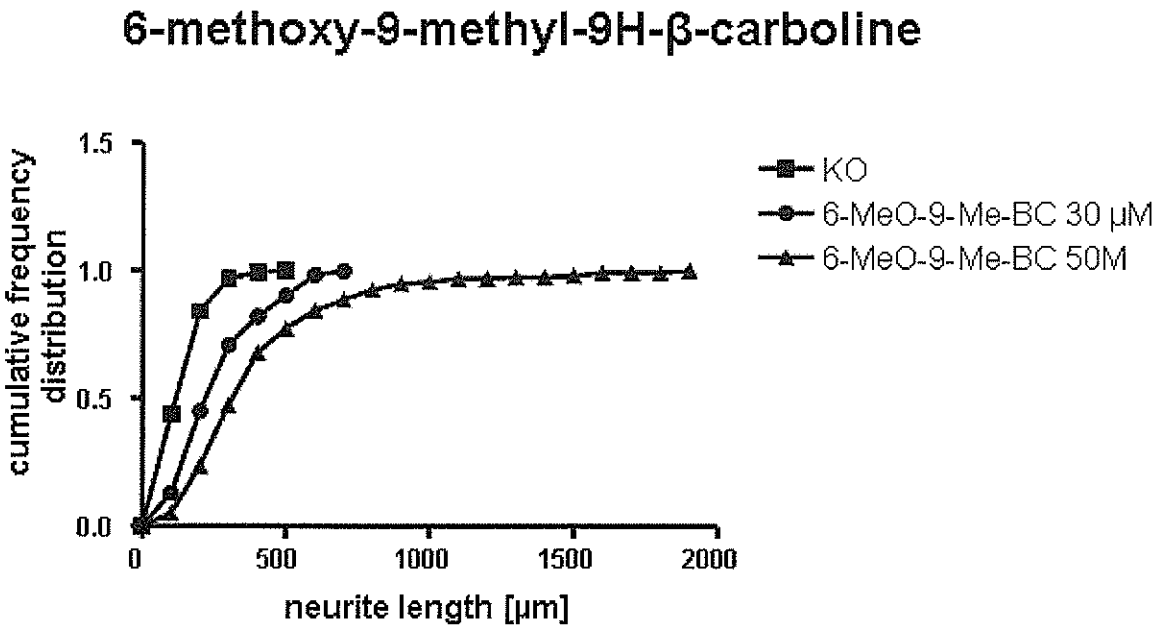

6-methoxy-9-methyl-9H-β-carboline
cumulative frequency distribution
1.5
1.0
0.5
0.0
0
500
1000
1500
2000
neurite length [µm]
KO
6-MeO-9-Me-BC 30 µM
6-MeO-9-Me-BC 50M

Fig. 3D

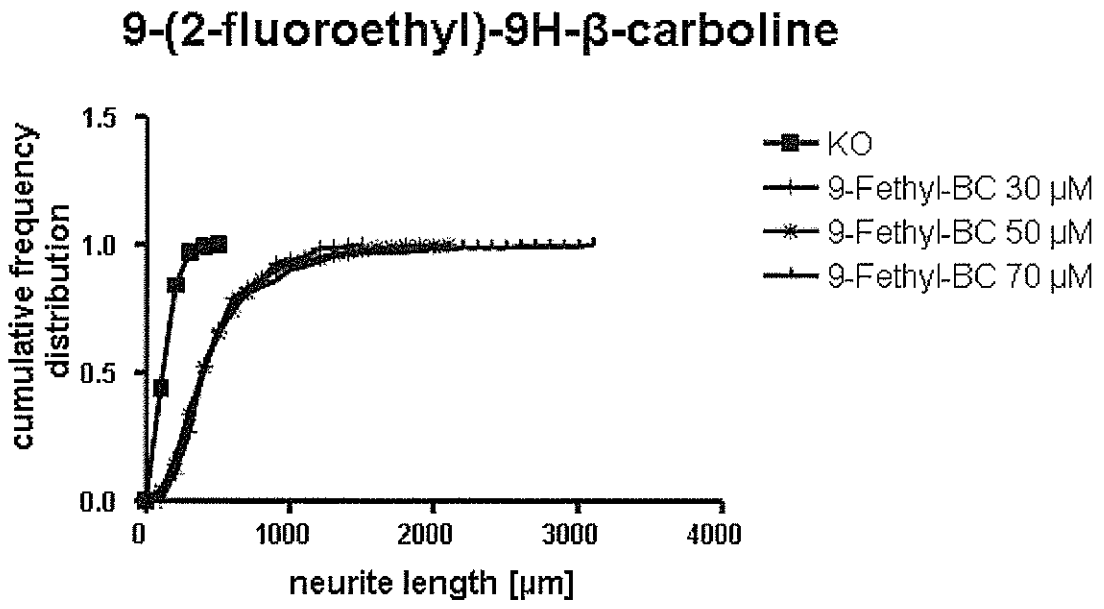

9-(2-fluoroethyl)-9H-β-carboline
cumulative frequency distribution
1.5
1.0
0.5
0.0
0
1000
2000
3000
4000
neurite length [µm]
KO
9-Fethyl-BC 30 µM
9-Fethyl-BC 50 µM
9-Fethyl-BC 70 µM

Fig. 4A

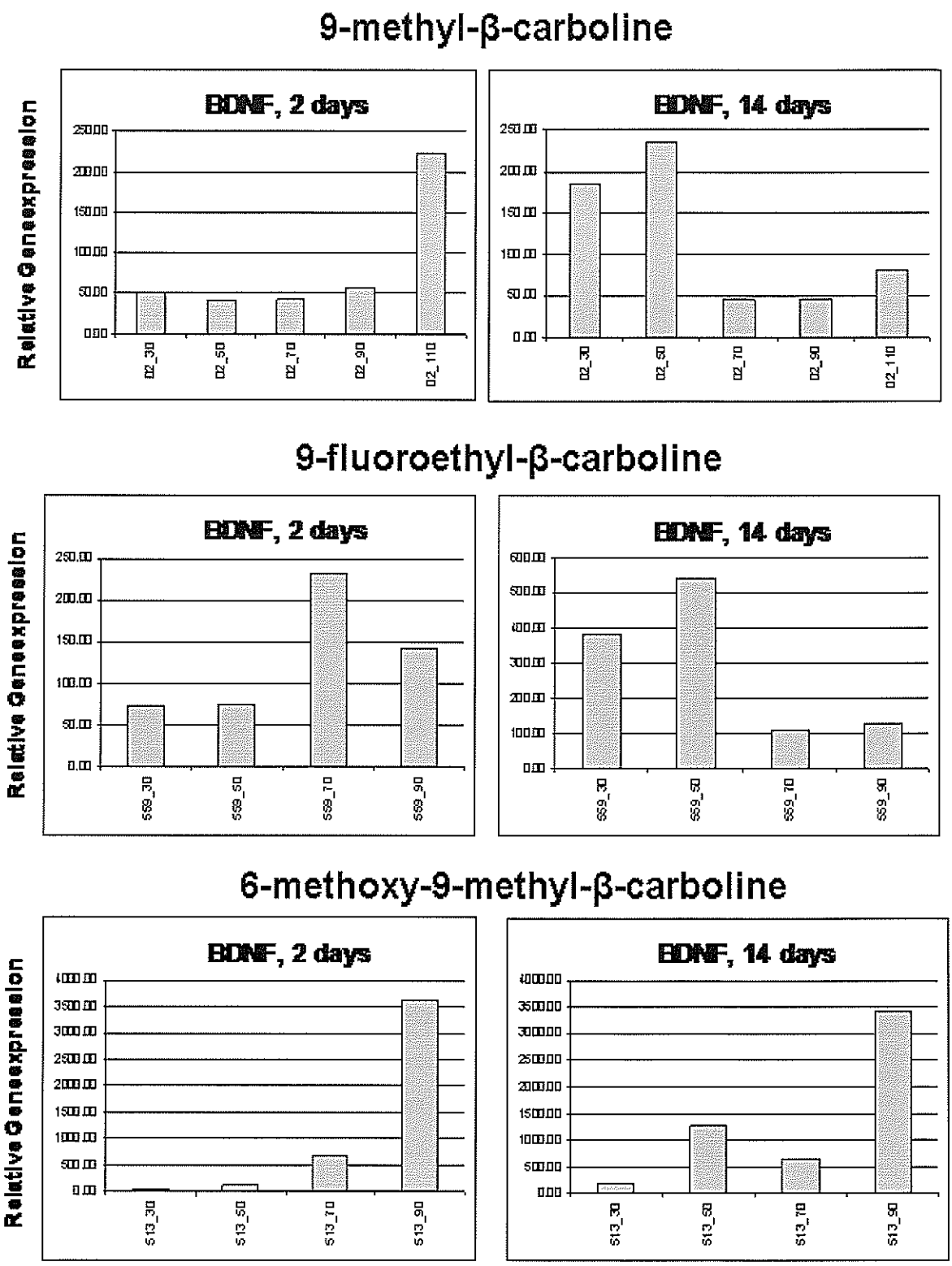

9-methyl-β-carboline
Relative Geneexpression
BDNF, 2 days
250.00
200.00
150.00
100.00
50.00
0.00
D2_30
D2_50
D2_70
D2_90
D2_110
BDNF, 14 days
250.00
200.00
150.00
100.00
50.00
0.00
D2_30
D2_50
D2_70
D2_90
D2_110
9-fluoroethyl-β-carboline
Relative Geneexpression
BDNF, 2 days
250.00
200.00
150.00
100.00
50.00
0.00
S59_30
S59_50
S59_70
S59_90
BDNF, 14 days
600.00
500.00
400.00
300.00
200.00
100.00
0.00
S59_30
S59_50
S59_70
S59_90
6-methoxy-9-methyl-β-carboline
Relative Geneexpression
BDNF, 2 days
4000.00
3500.00
3000.00
2500.00
2000.00
1500.00
1000.00
500.00
0.00
S13_30
S13_50
S13_70
S13_90
BDNF, 14 days
400000
350000
300000
250000
200000
150000
100000
50000
0.00
S13_30
S13_50
S13_70
S13_90

Fig. 4B

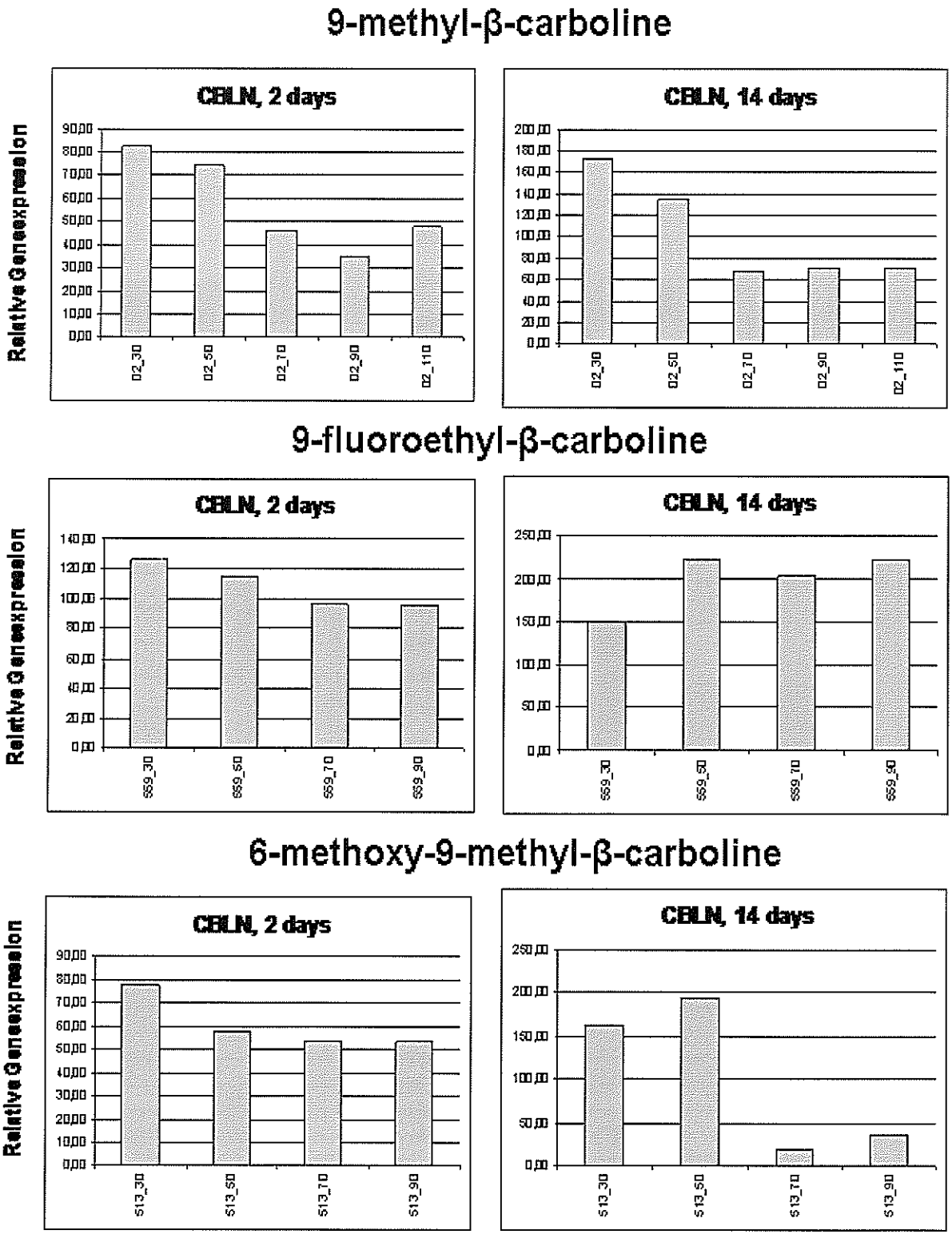

9-methyl-β-carboline
CBLN, 2 days
CBLN, 14 days
Relative Genexpression
02_30
02_50
02_70
02_90
02_110
9-fluoroethyl-β-carboline
CBLN, 2 days
CBLN, 14 days
Relative Genexpression
S59_30
S59_50
S59_70
S59_90
6-methoxy-9-methyl-β-carboline
CBLN, 2 days
CBLN, 14 days
Relative Genexpression
S13_30
S13_50
S13_70
S13_90

Fig. 4C

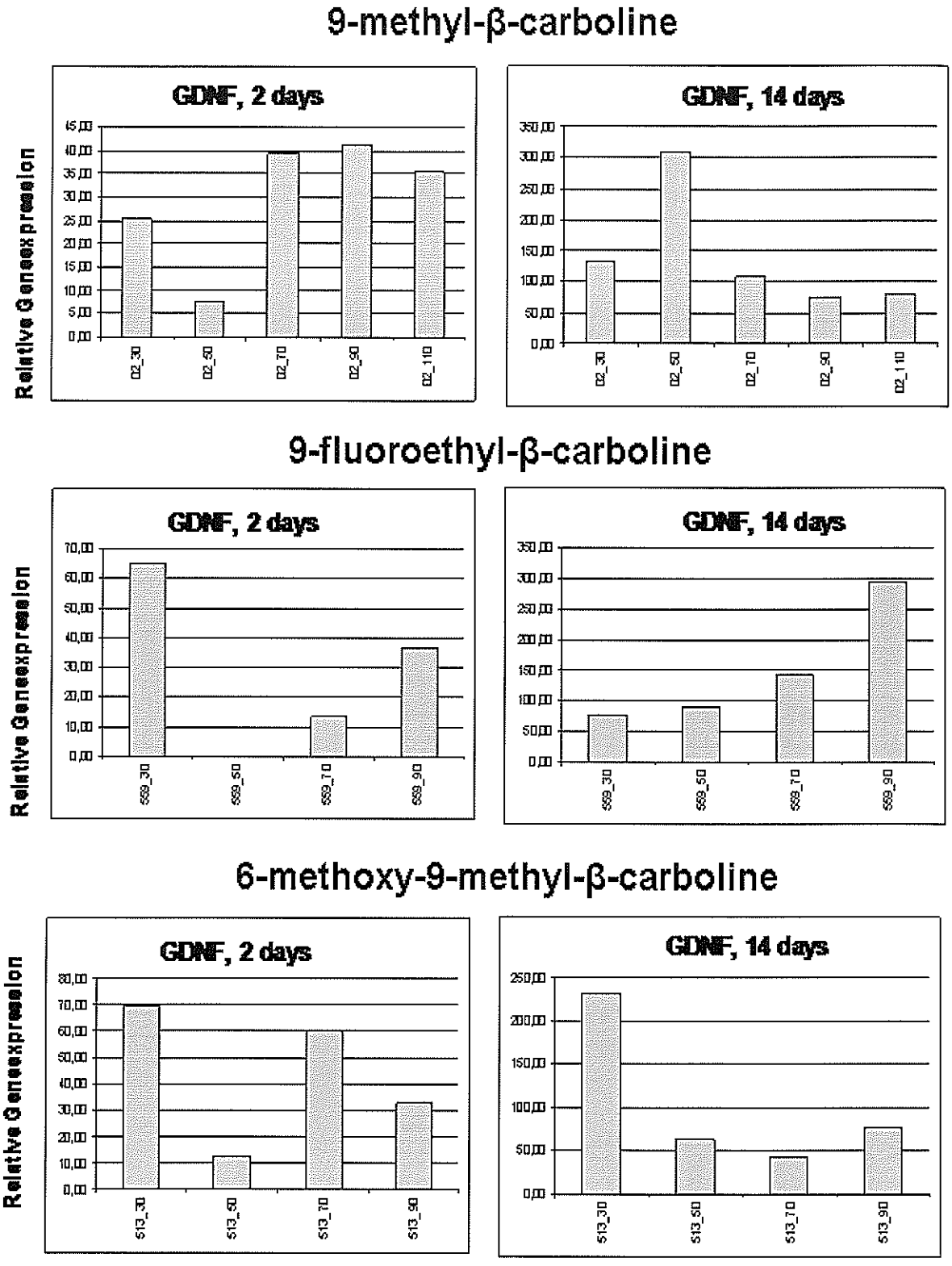

9-methyl-β-carboline
GDNF, 2 days
GDNF, 14 days
Relative Genexpression
02_30
02_50
02_70
02_90
02_110
9-fluoroethyl-β-carboline
GDNF, 2 days
GDNF, 14 days
Relative Genexpression
569_30
569_50
569_70
569_90
6-methoxy-9-methyl-β-carboline
GDNF, 2 days
GDNF, 14 days
Relative Genexpression
513_30
513_50
513_70
513_90

Fig. 4D

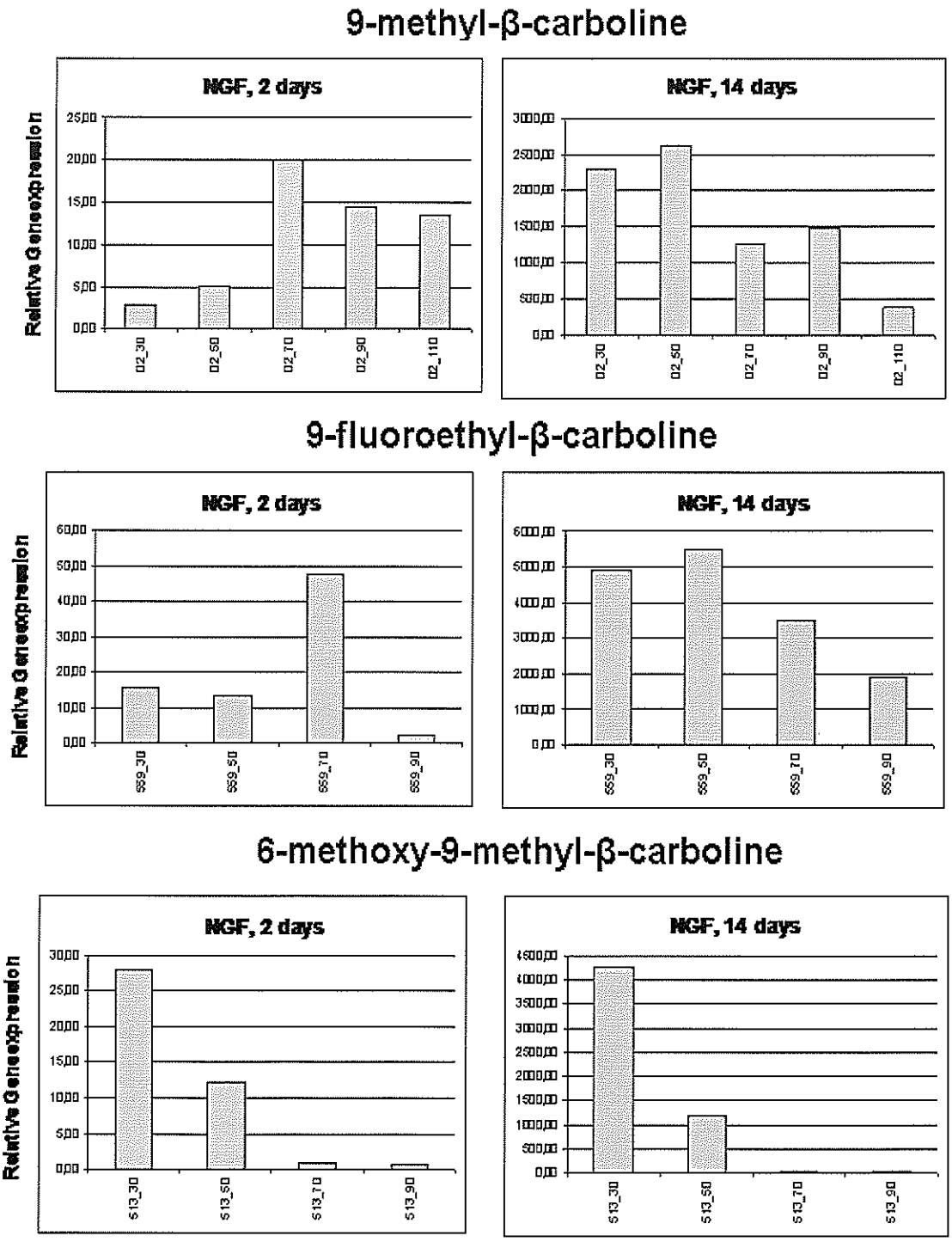

9-methyl-β-carboline
NGF, 2 days
Relative Gene expression
25,00
20,00
15,00
10,00
5,00
0,00
02_30
02_50
02_70
02_90
02_110
NGF, 14 days
3000,00
2500,00
2000,00
1500,00
1000,00
500,00
0,00
02_30
02_50
02_70
02_90
02_110
9-fluoroethyl-β-carboline
NGF, 2 days
Relative Gene expression
60,00
50,00
40,00
30,00
20,00
10,00
0,00
559_30
559_50
559_70
559_90
NGF, 14 days
6000,00
5000,00
4000,00
3000,00
2000,00
1000,00
0,00
559_30
559_50
559_70
559_90
6-methoxy-9-methyl-β-carboline
NGF, 2 days
Relative Gene expression
30,00
25,00
20,00
15,00
10,00
5,00
0,00
513_30
513_50
513_70
513_90
NGF, 14 days
4500,00
4000,00
3500,00
3000,00
2500,00
2000,00
1500,00
1000,00
500,00
0,00
513_30
513_50
513_70
513_90

Fig. 4E

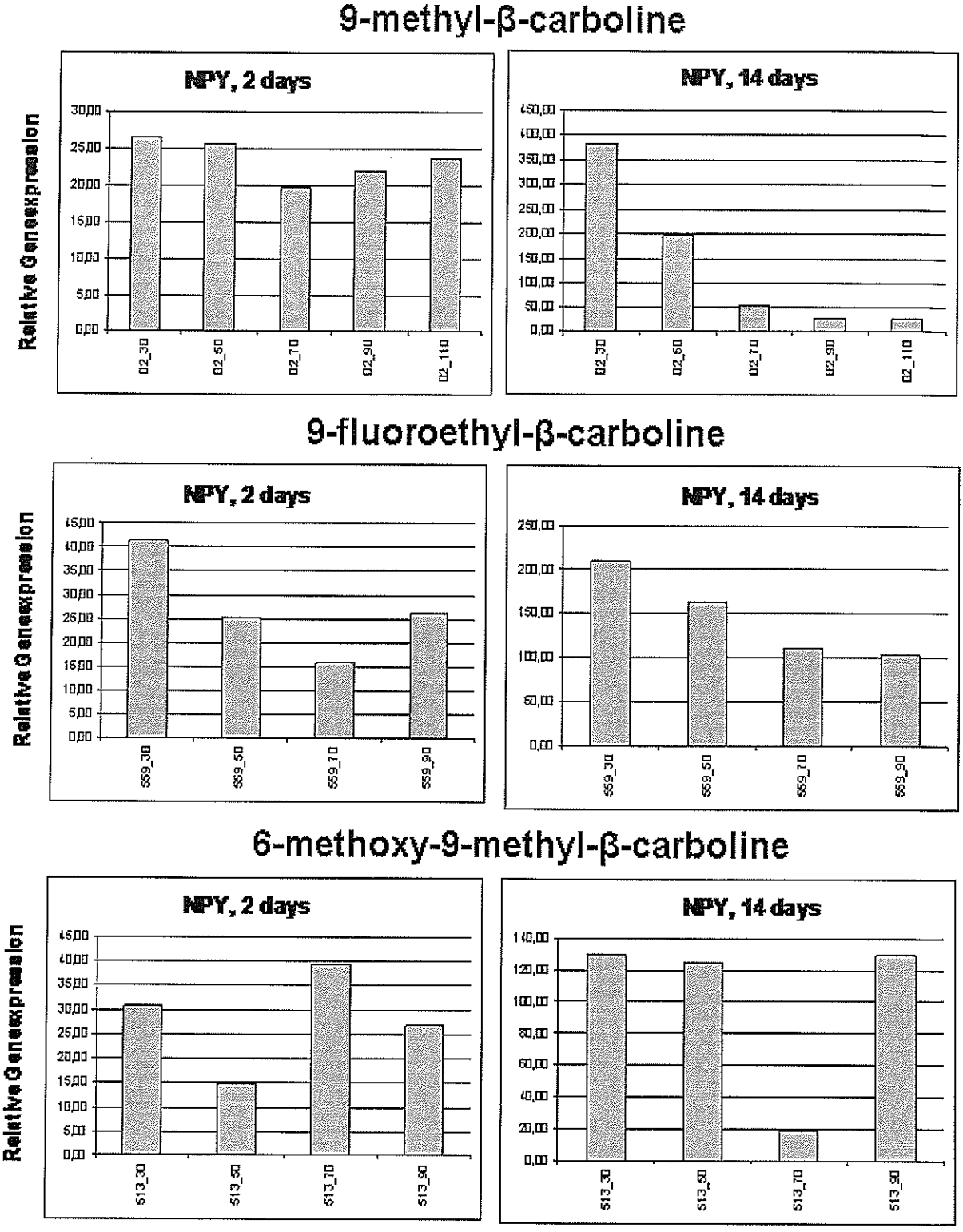

9-methyl-β-carboline
NPY, 2 days
NPY, 14 days
Relative Genexpression
02_30
02_50
02_70
02_90
02_110
9-fluoroethyl-β-carboline
NPY, 2 days
NPY, 14 days
Relative Genexpression
559_30
559_50
559_70
559_90
6-methoxy-9-methyl-β-carboline
NPY, 2 days
NPY, 14 days
Relative Genexpression
513_30
513_50
513_70
513_90

Fig. 5

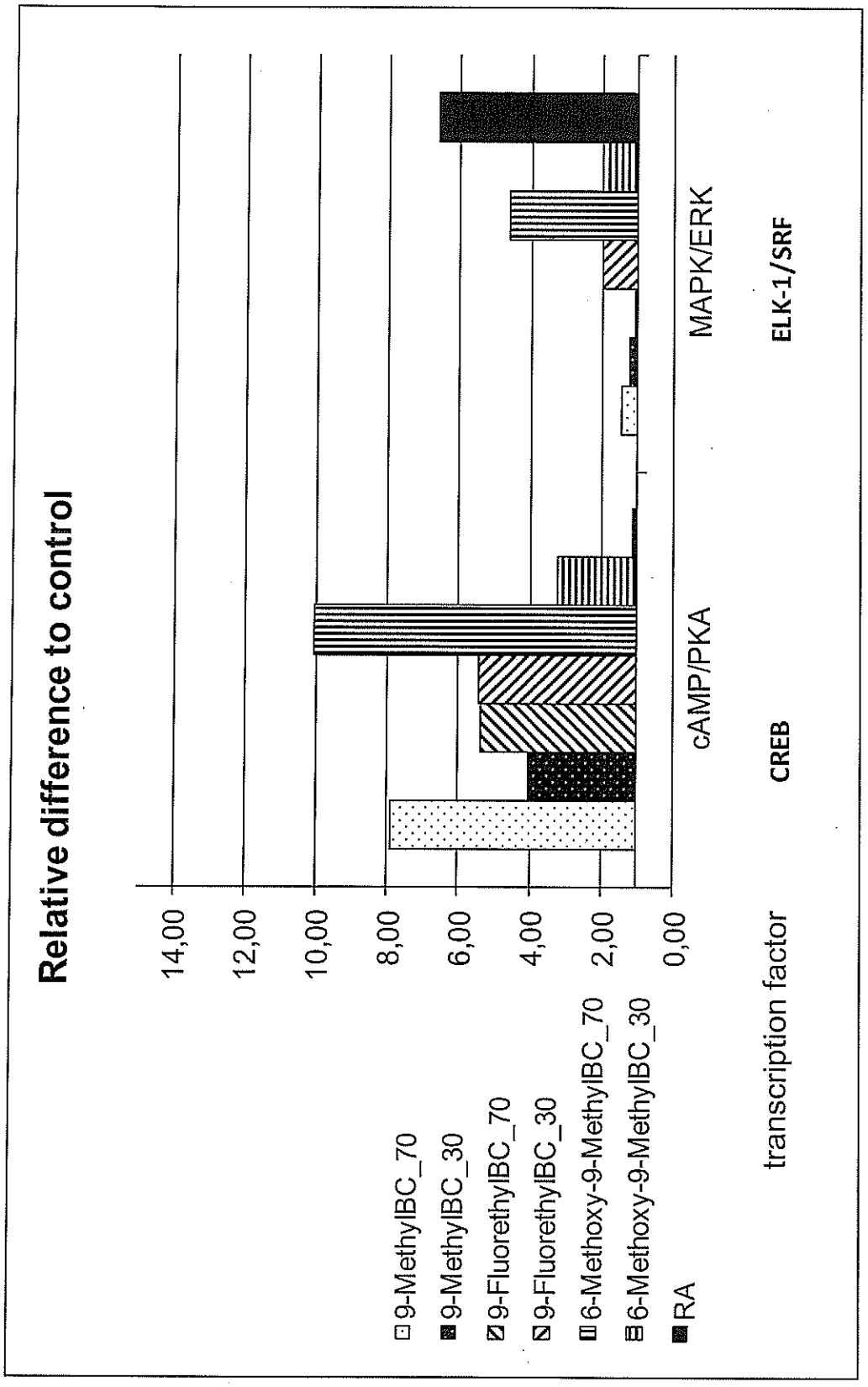

Relative difference to control
14,00
12,00
10,00
8,00
6,00
4,00
2,00
0,00
9-MethylBC_70
9-MethylBC_30
9-FluorethylBC_70
9-FluorethylBC_30
6-Methoxy-9-MethylBC_70
6-Methoxy-9-MethylBC_30
RA
transcription factor
CREB
cAMP/PKA
ELK-1/SRF
MAPK/ERK

Fig. 6

Fig. 6A

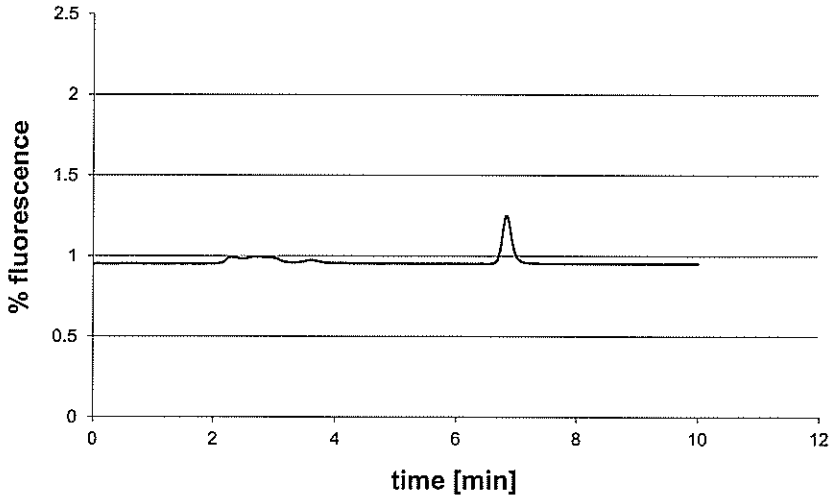


Fig. 6B

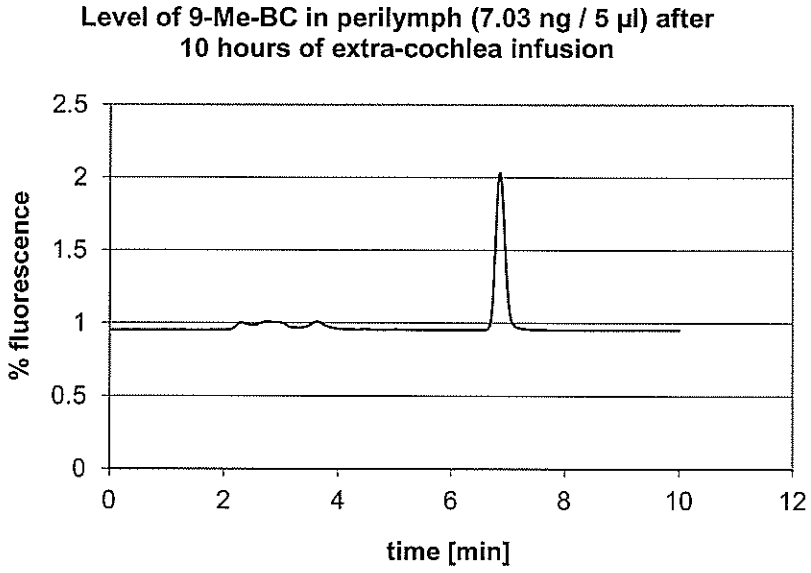


Fig. 6C

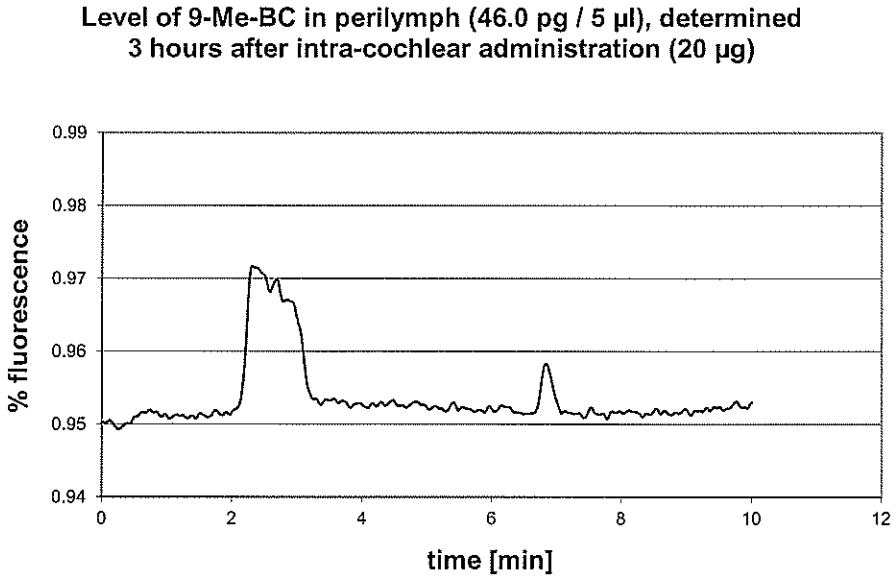

Level of 9-Me-BC in perilymph (46.0 pg / 5 µl), determined
3 hours after intra-cochlear administration (20 µg)
% fluorescence
0.99
0.98
0.97
0.96
0.95
0.94
0
2
4
6
8
10
12
time [min]

Fig. 6D

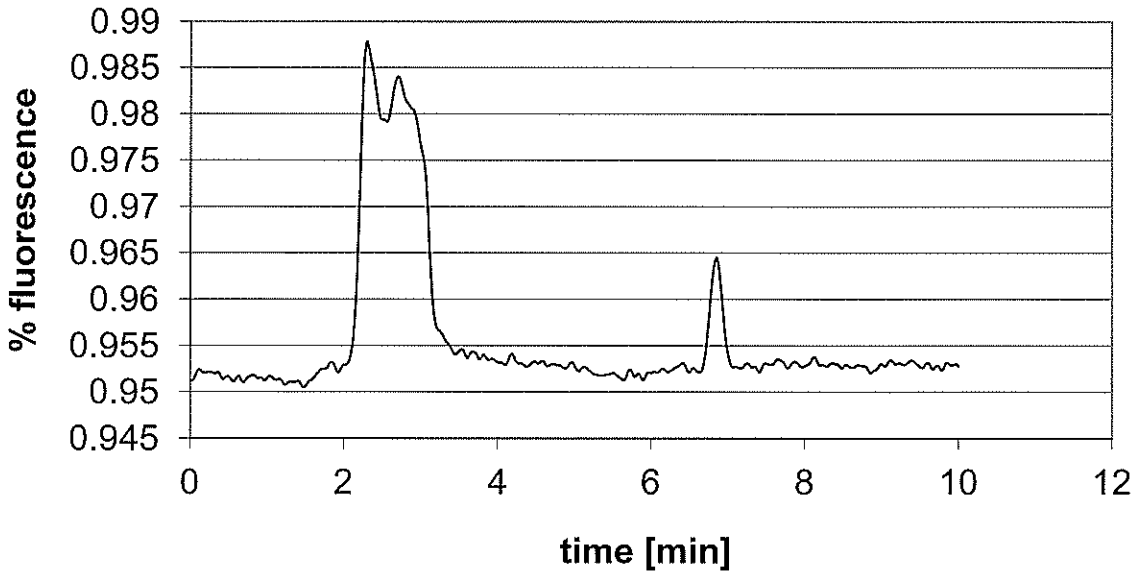

Level of 9-Me-BC in perilymph (78.8 pg / 5 µl), determined
20 hours after intra-cochlear administration (20 µg)
% fluorescence
0.99
0.985
0.98
0.975
0.97
0.965
0.96
0.955
0.95
0.945
0
2
4
6
8
10
12
time [min]

Fig. 6E

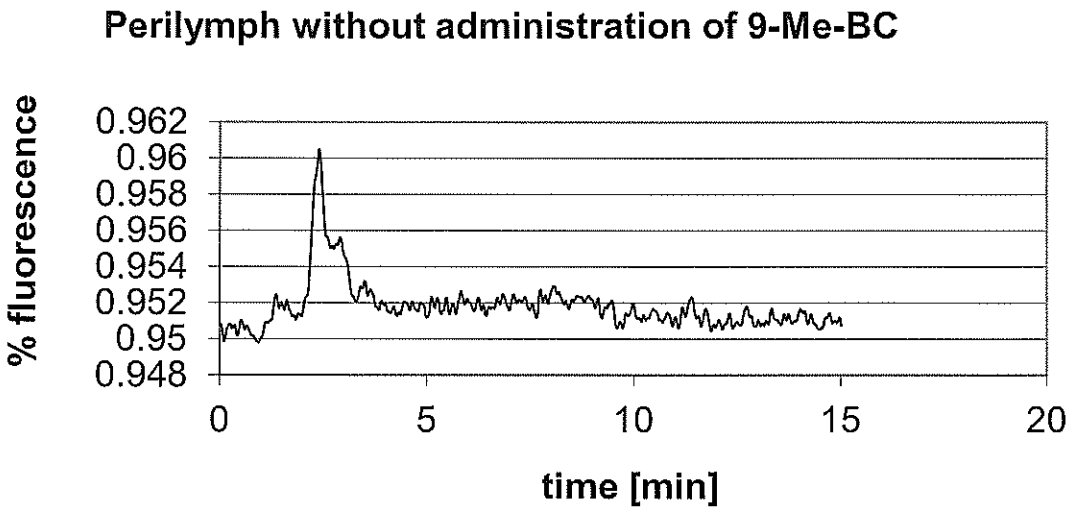
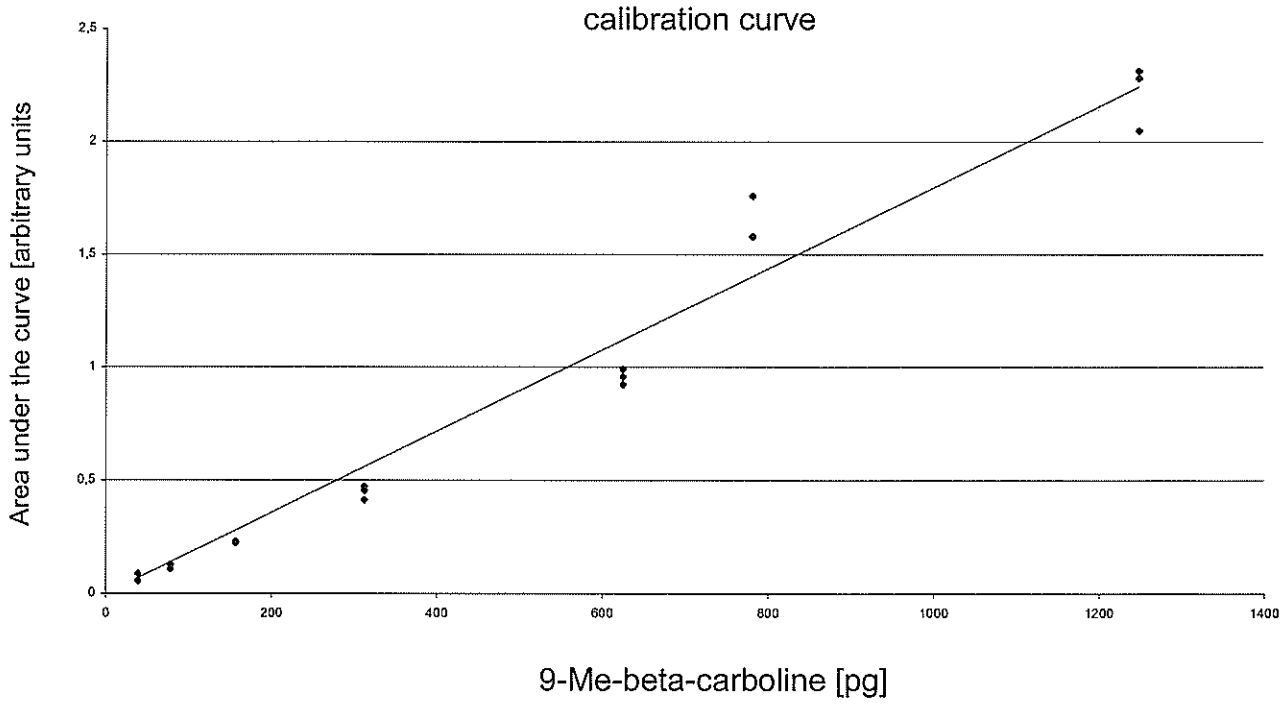

Perilymph without administration of 9-Me-BC
% fluorescence
0.962
0.96
0.958
0.956
0.954
0.952
0.95
0.948
0
5
10
15
20
time [min]

Fig. 6F


calibration curve
Area under the curve [arbitrary units]
2,5
2
1,5
1
0,5
0
0
200
400
600
800
1000
1200
1400
9-Me-beta-carboline [pg]