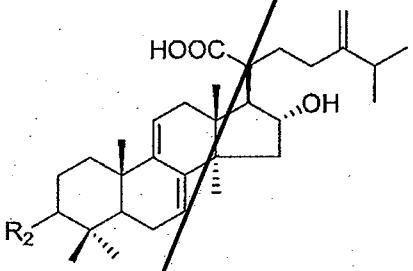


R_1: $COCH_3$, H



R_2: $\blacktriangleleft$OCOCH$_3$, $\blacktriangleleft$OH, =O, ····OH

Fig. 1

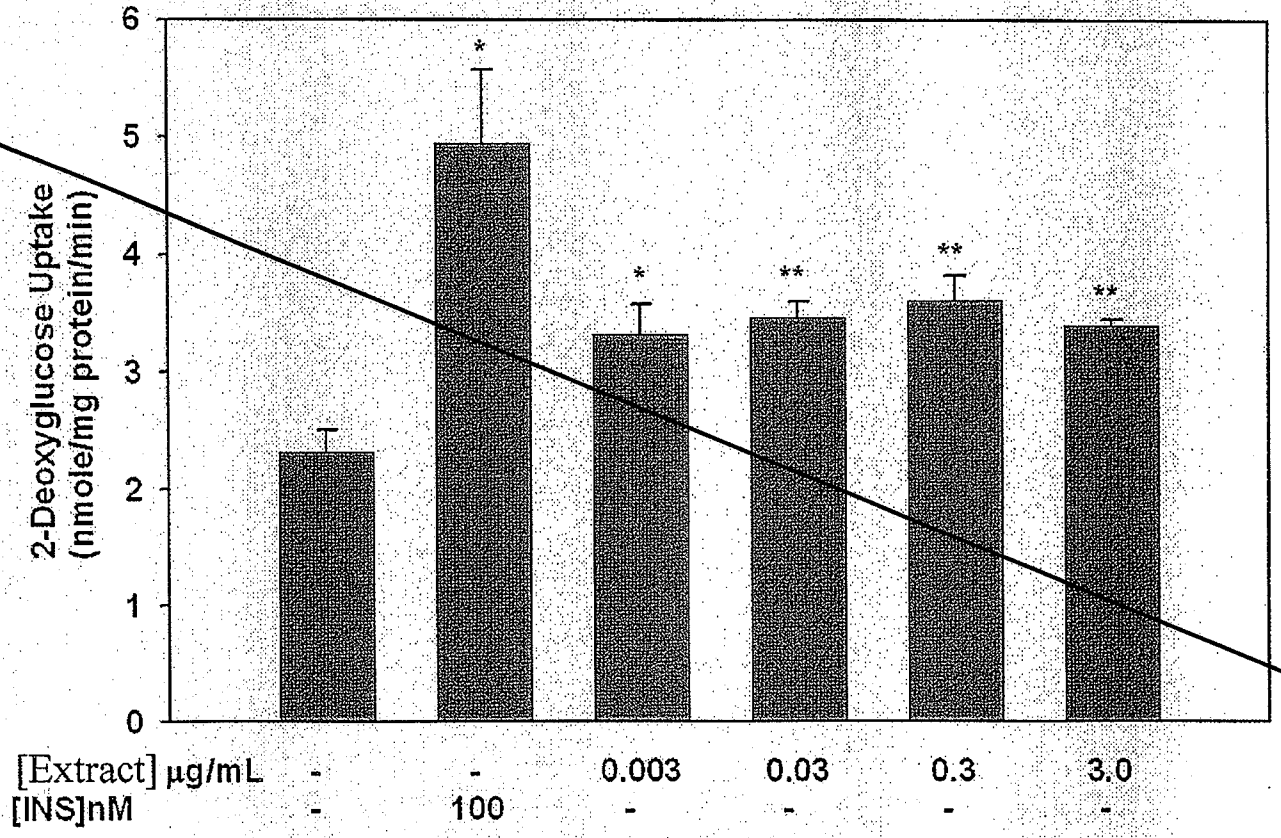

2-Deoxyglucose Uptake
(nmole/mg protein/min)
0
1
2
3
4
5
6
*
*
**
**
**
[Extract] µg/mL - - 0.003 0.03 0.3 3.0
[INS]nM - 100 - - - -

Fig. 2A

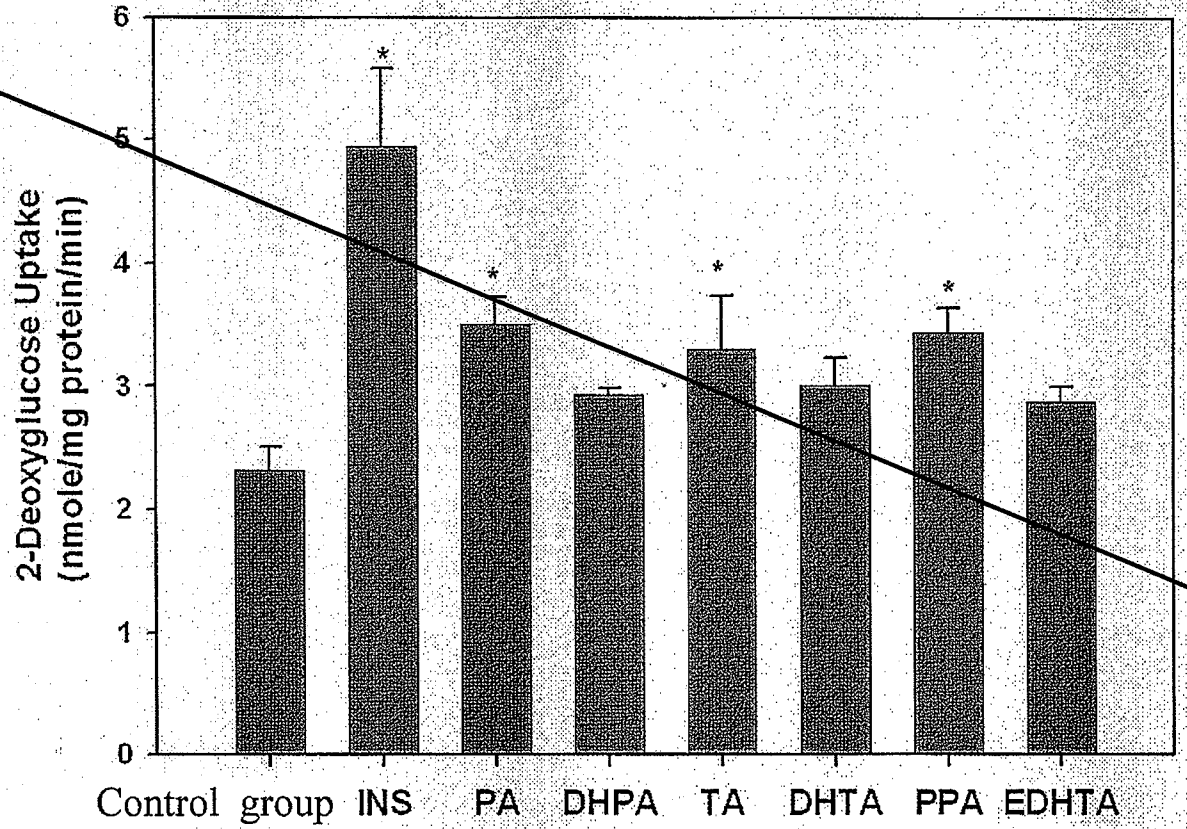

2-Deoxyglucose Uptake
(nmole/mg protein/min)
0
1
2
3
4
5
6
*
*
*
*
Control group
INS
PA
DHPA
TA
DHTA
PPA
EDHTA

Fig. 2B

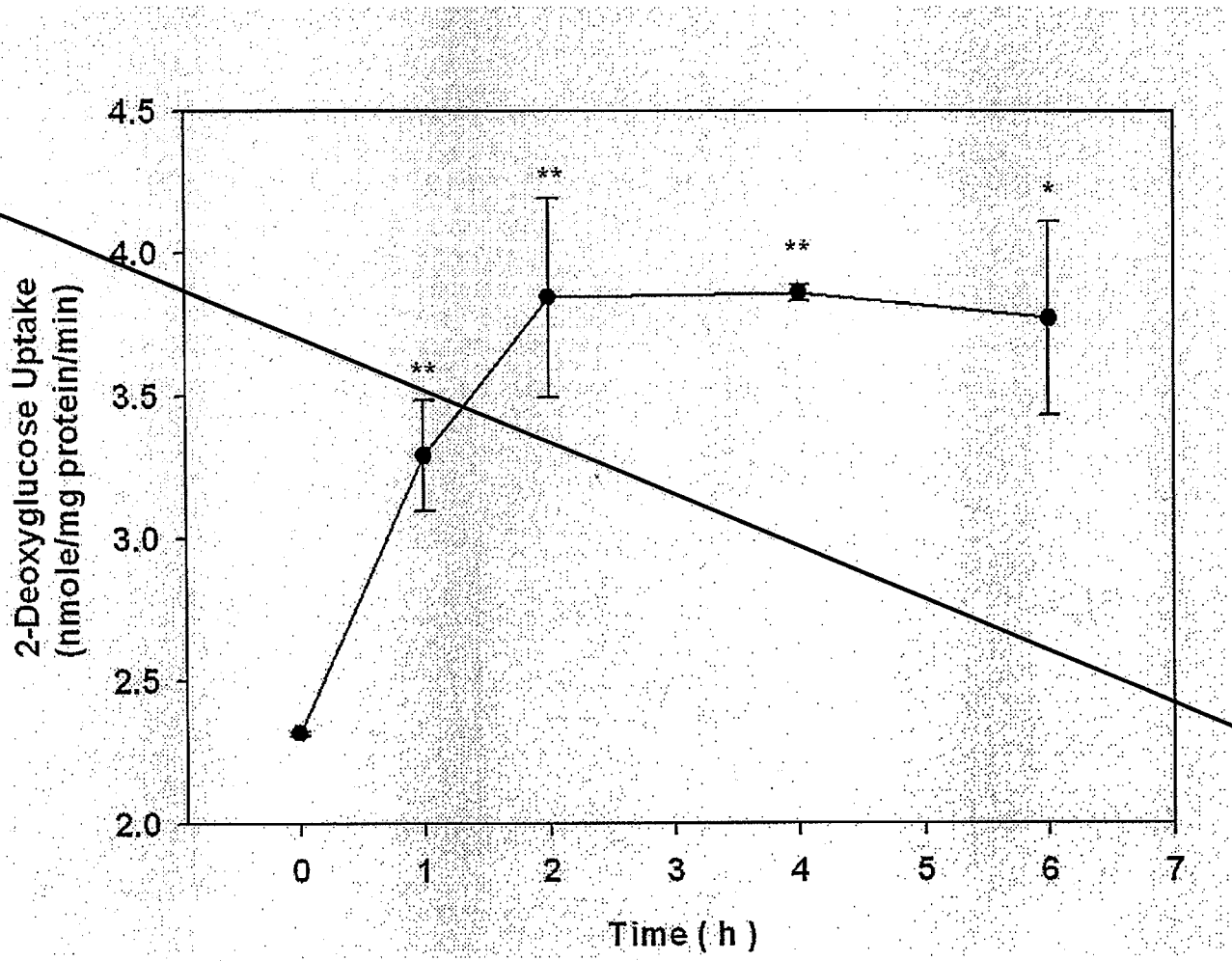

4.5
4.0
3.5
3.0
2.5
2.0
2-Deoxyglucose Uptake
(nmole/mg protein/min)
0
1
2
3
4
5
6
7
Time (h)
**
**
**
*

Fig. 3A

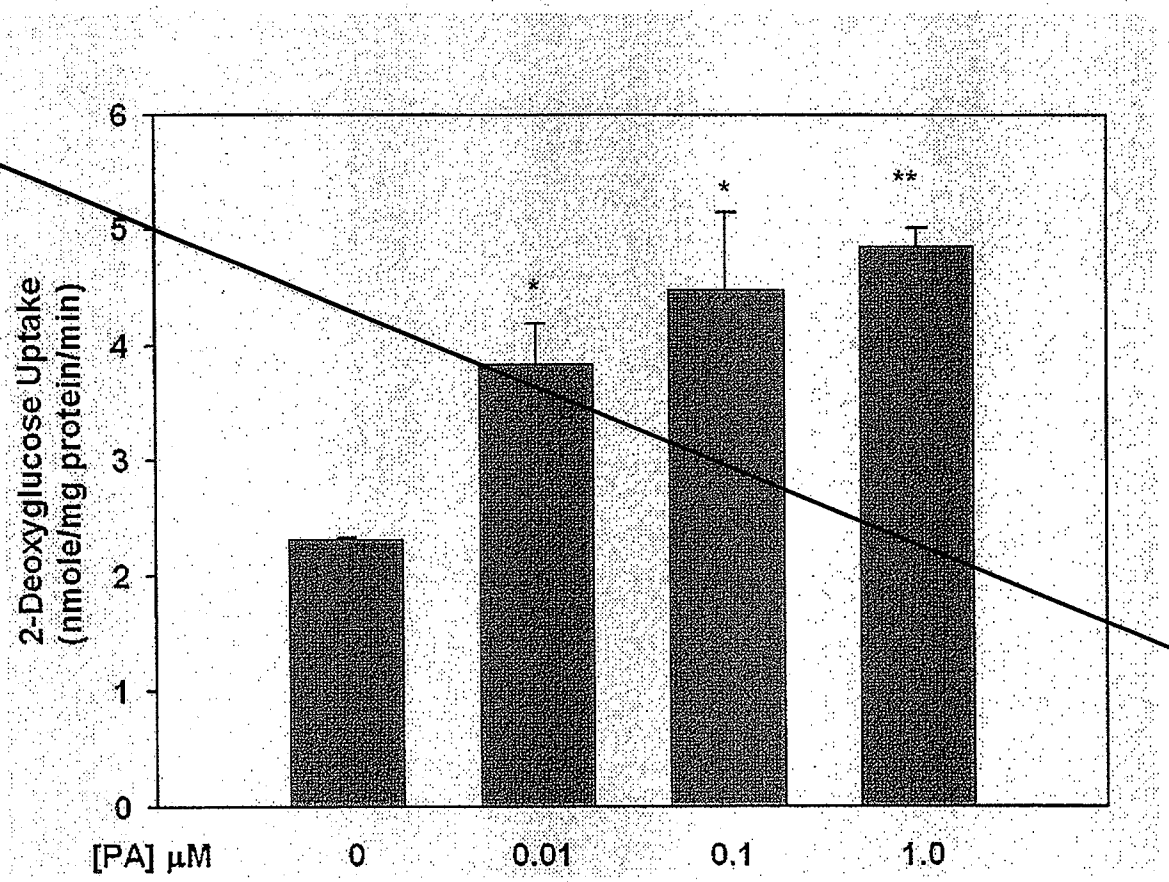

2-Deoxyglucose Uptake
(nmole/mg protein/min)
6
5
4
3
2
1
0
*
*
**
[PA] μM
0
0.01
0.1
1.0

Fig. 3B

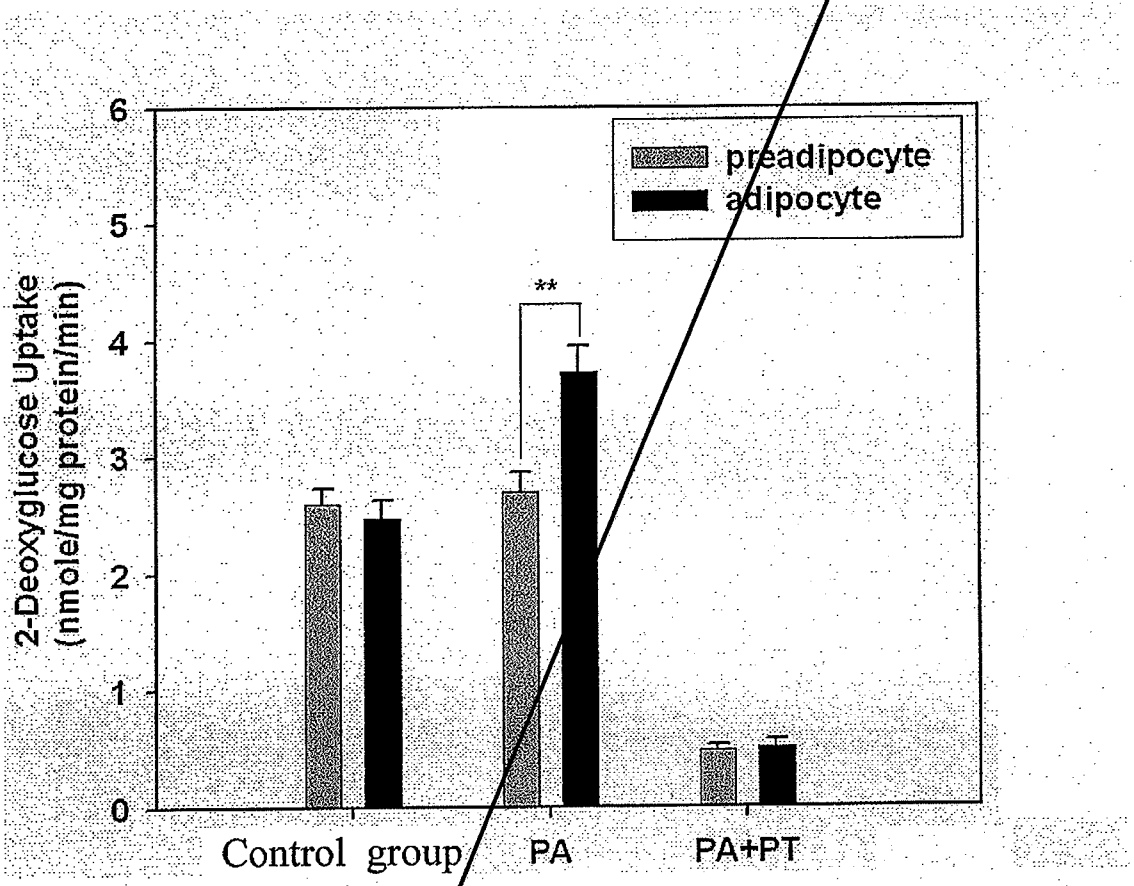

preadipocyte
adipocyte
2-Deoxyglucose Uptake
(nmole/mg protein/min)
0
1
2
3
4
5
6
**
Control group
PA
PA+PT

Fig. 4

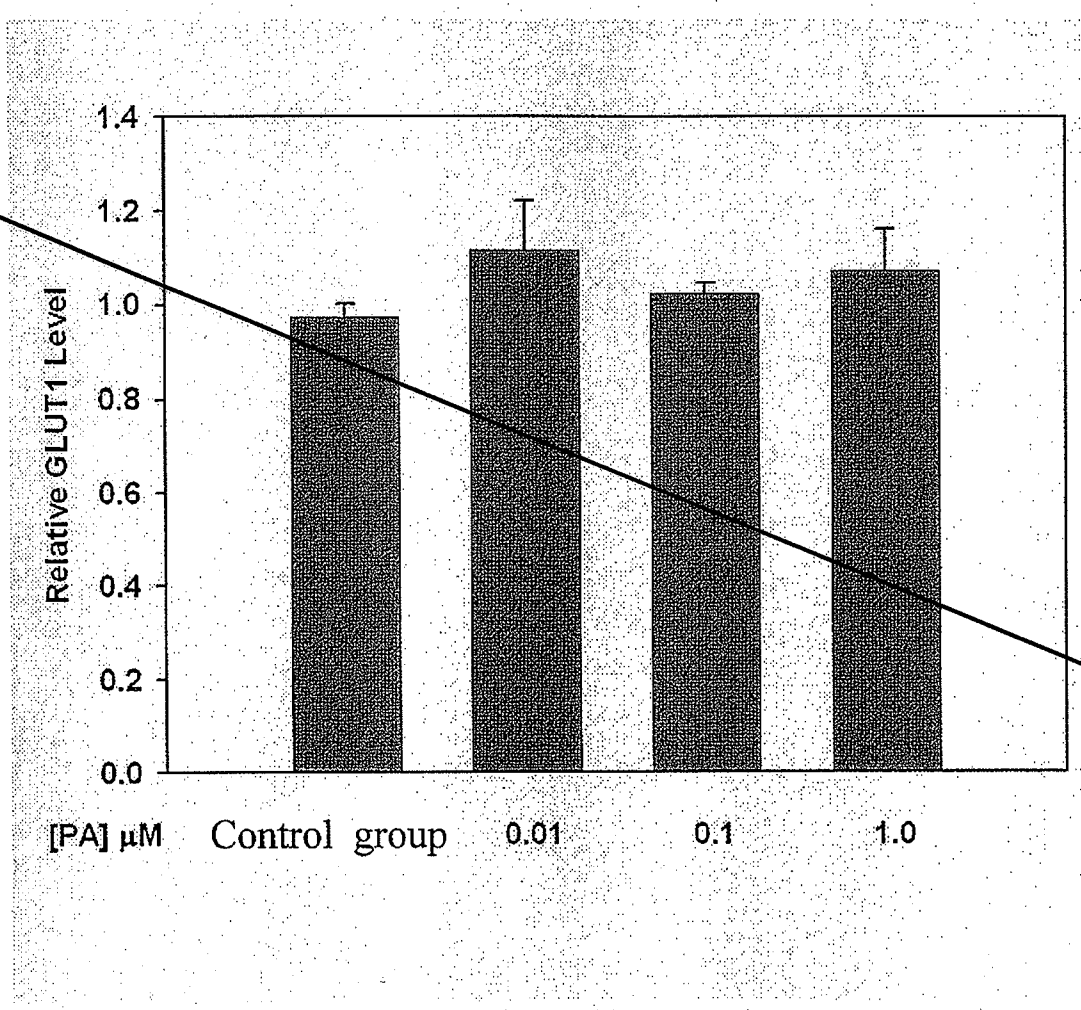

Relative GLUT1 Level
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
[PA] μM
Control group
0.01
0.1
1.0

Fig. 5A

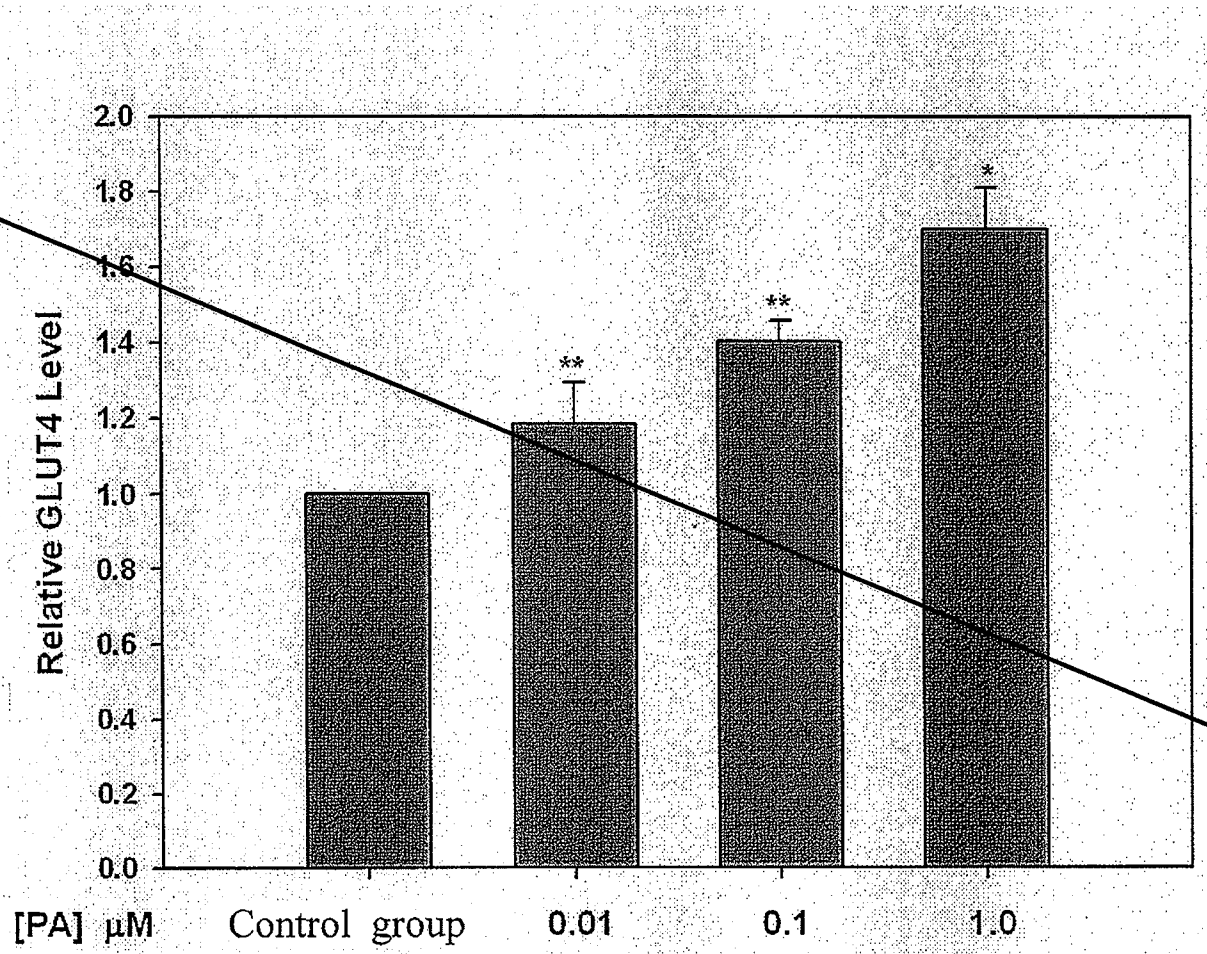

Relative GLUT4 Level
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
**
**
*
[PA] μM
Control group
0.01
0.1
1.0

Fig. 5B

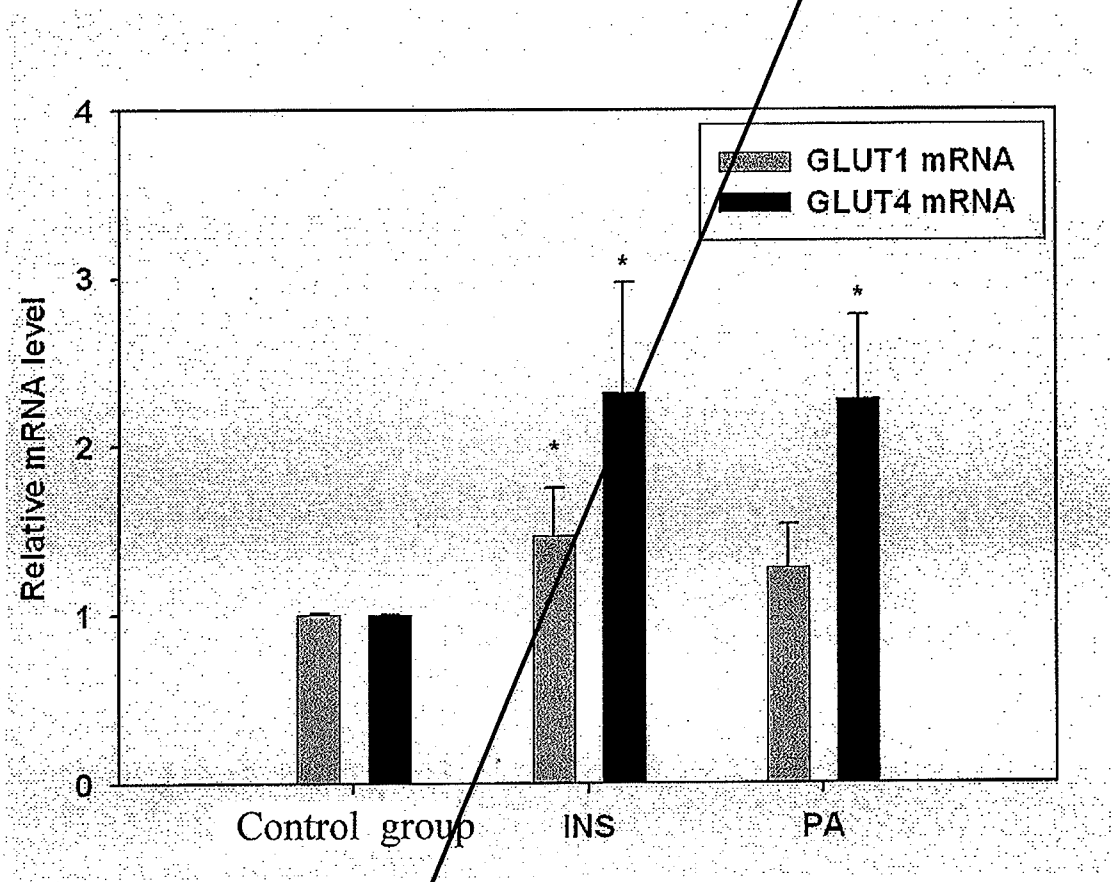

GLUT1 mRNA
GLUT4 mRNA
Relative mRNA level
4
3
2
1
0
*
*
*
Control group
INS
PA

Fig. 6

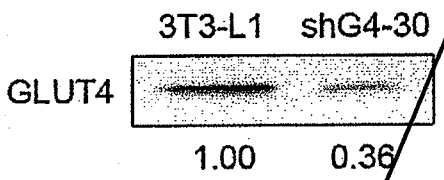

3T3-L1
shG4-30
GLUT4
1.00
0.36

Fig. 7A

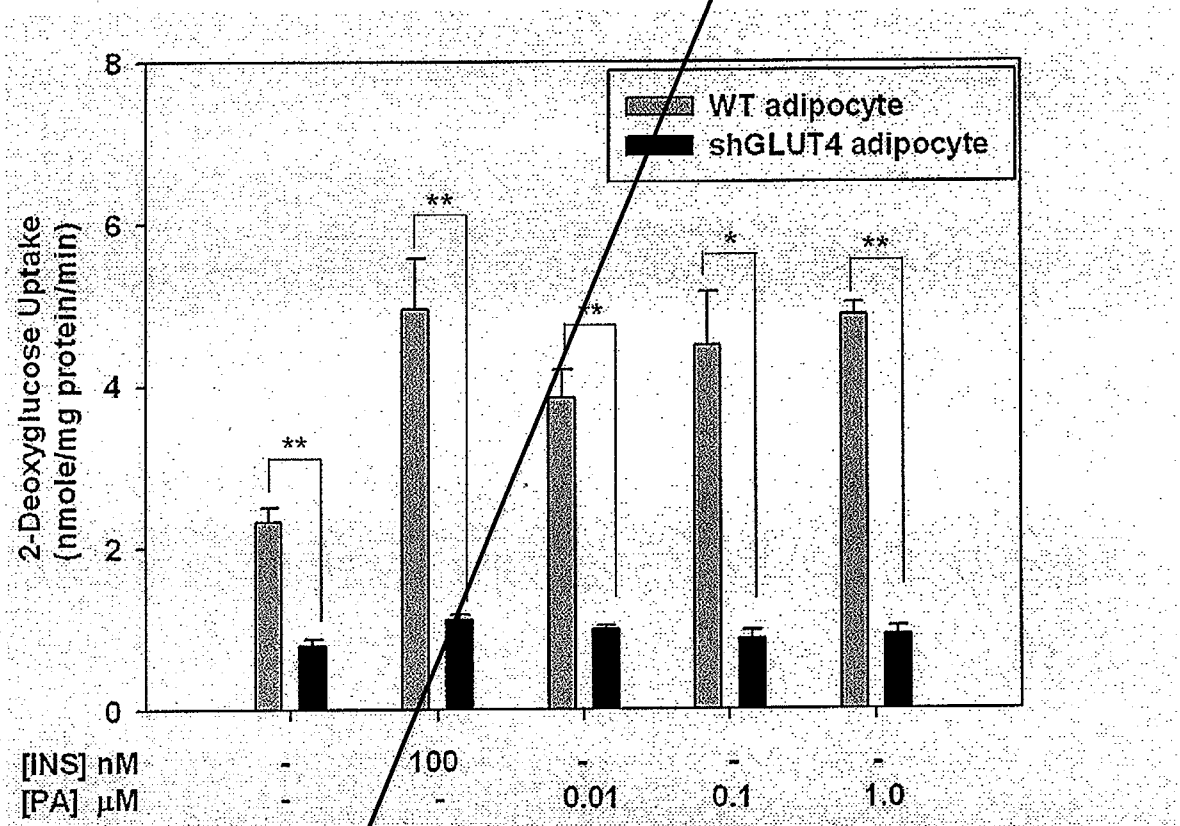

WT adipocyte
shGLUT4 adipocyte
2-Deoxyglucose Uptake (nmole/mg protein/min)
0
2
4
6
8
**
**
**
*
**
[INS] nM - 100 - - -
[PA] μM - - 0.01 0.1 1.0

Fig. 7B

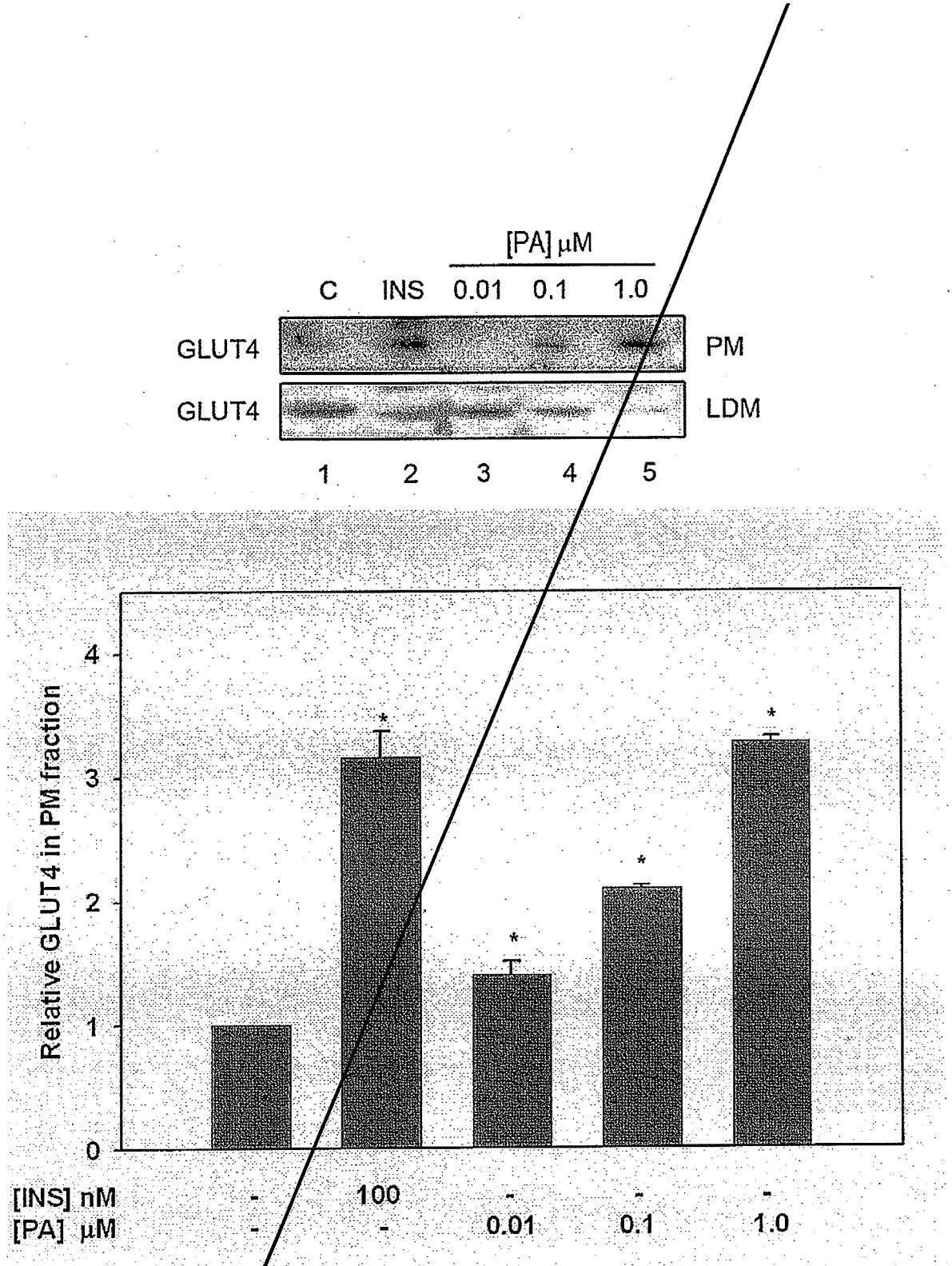

[PA] μM
C
INS
0.01
0.1
1.0
GLUT4
PM
GLUT4
LDM
1
2
3
4
5
Relative GLUT4 in PM fraction
0
1
2
3
4
*
*
*
*
[INS] nM
[PA] μM
-
-
100
-
-
0.01
-
0.1
-
1.0

Fig. 8A

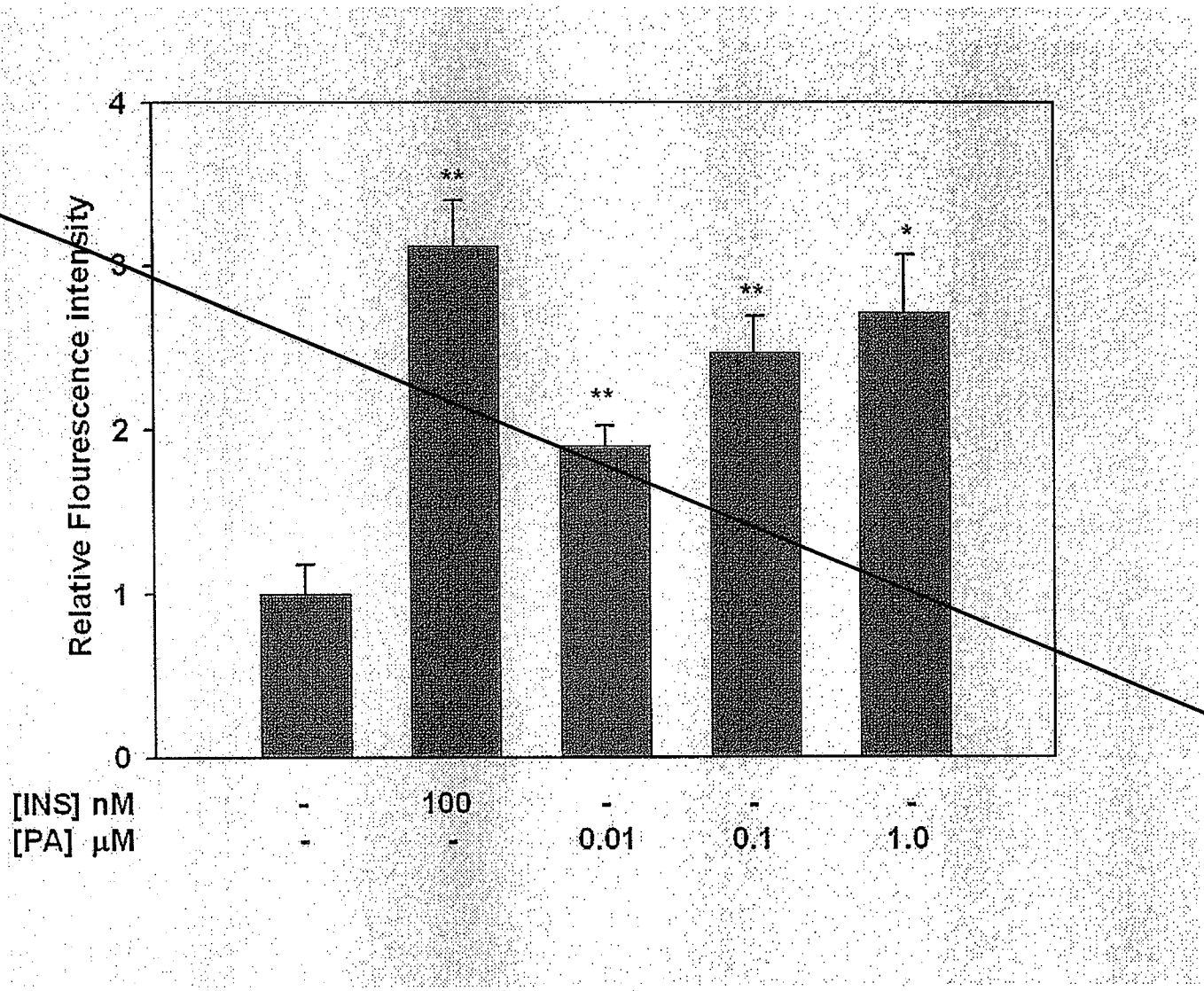

Relative Flourescence intensity
4
3
2
1
0
**
**
**
*
[INS] nM - 100 - - -
[PA] µM - - 0.01 0.1 1.0

Fig. 8B

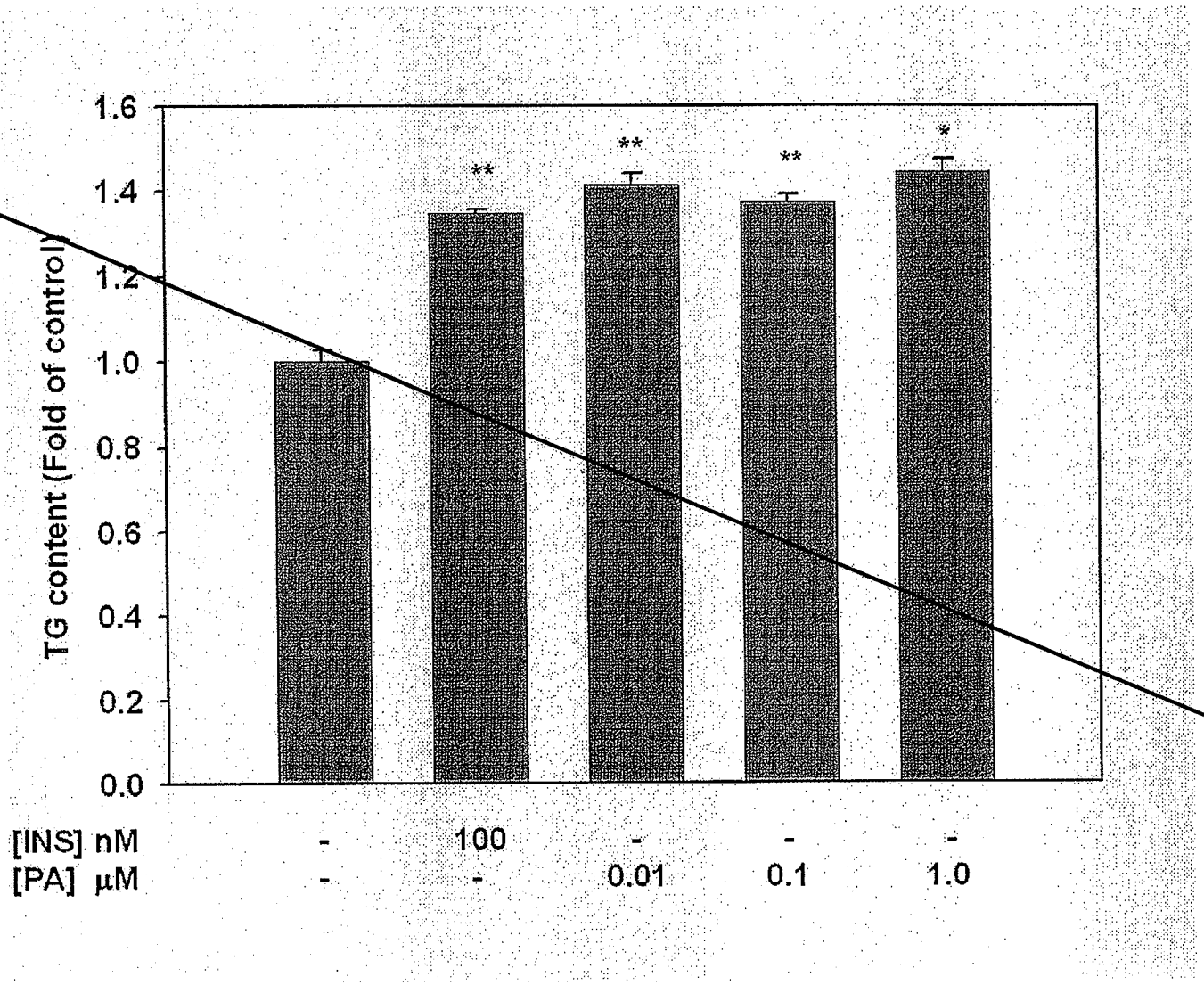

TG content (Fold of control)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
**
**
**
*
[INS] nM - 100 - - -
[PA] μM - - 0.01 0.1 1.0

Fig. 9A

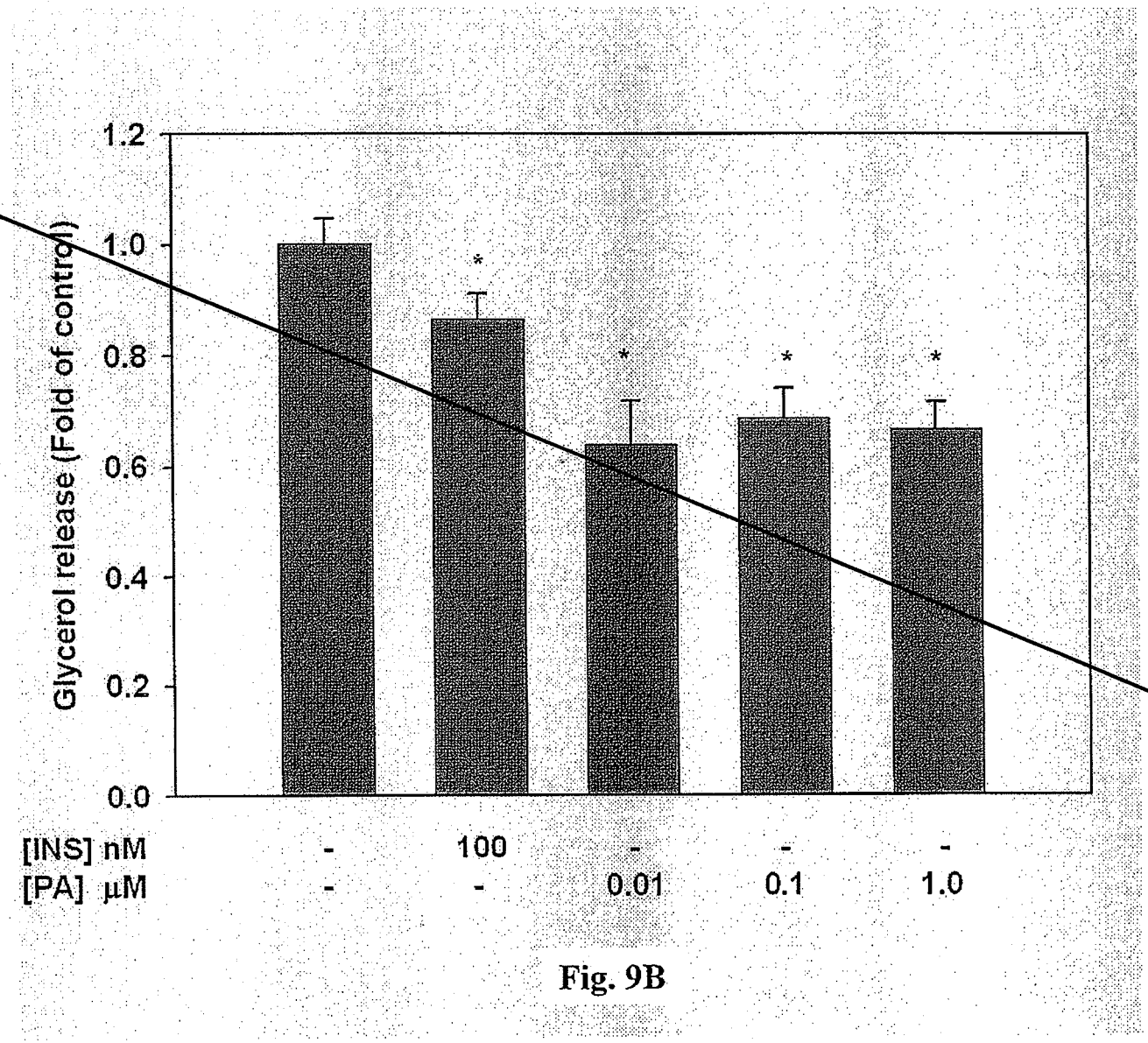
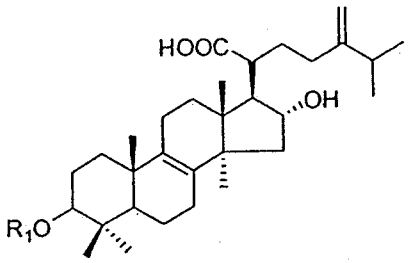
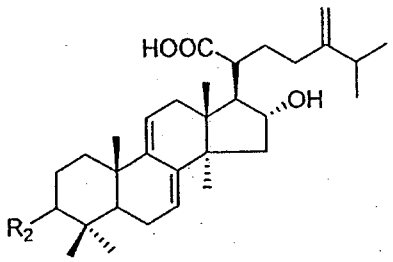

Glycerol release (Fold of control)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
*
*
*
*
[INS] nM
[PA] µM
-
-
100
-
-
0.01
-
0.1
-
1.0

Fig. 9B



R_1: $COCH_3$ (PA)

R_1: H (TA)



R_2: $OCOCH_3$ (DHPA)

R_2: OH (DHTA)

R_2: =O (PPA)

R_2: ····OH (EDHTA)

Fig. 1

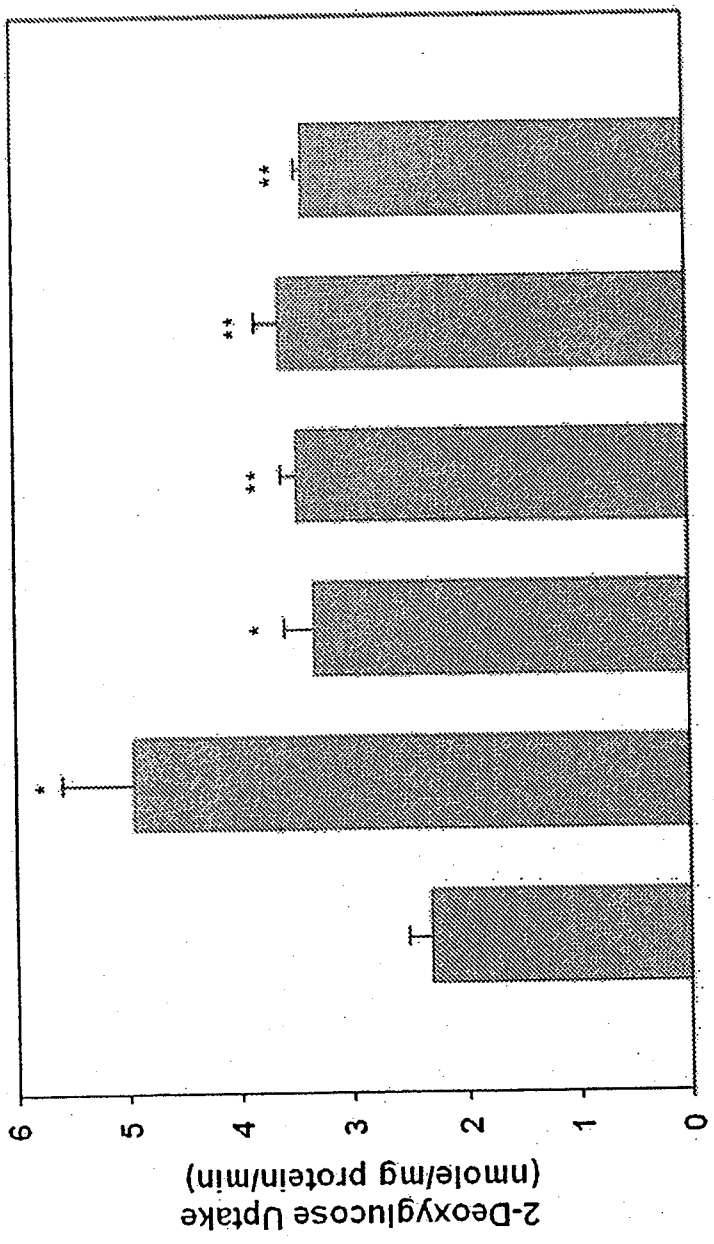

2-Deoxyglucose Uptake
(nmole/mg protein/min)
0
1
2
3
4
5
6
[Extract] µg/mL - - 100 0.003 0.03 0.3 3.0
[INS]nM - - - - - - -
*
*
**
**
**

Fig. 2A

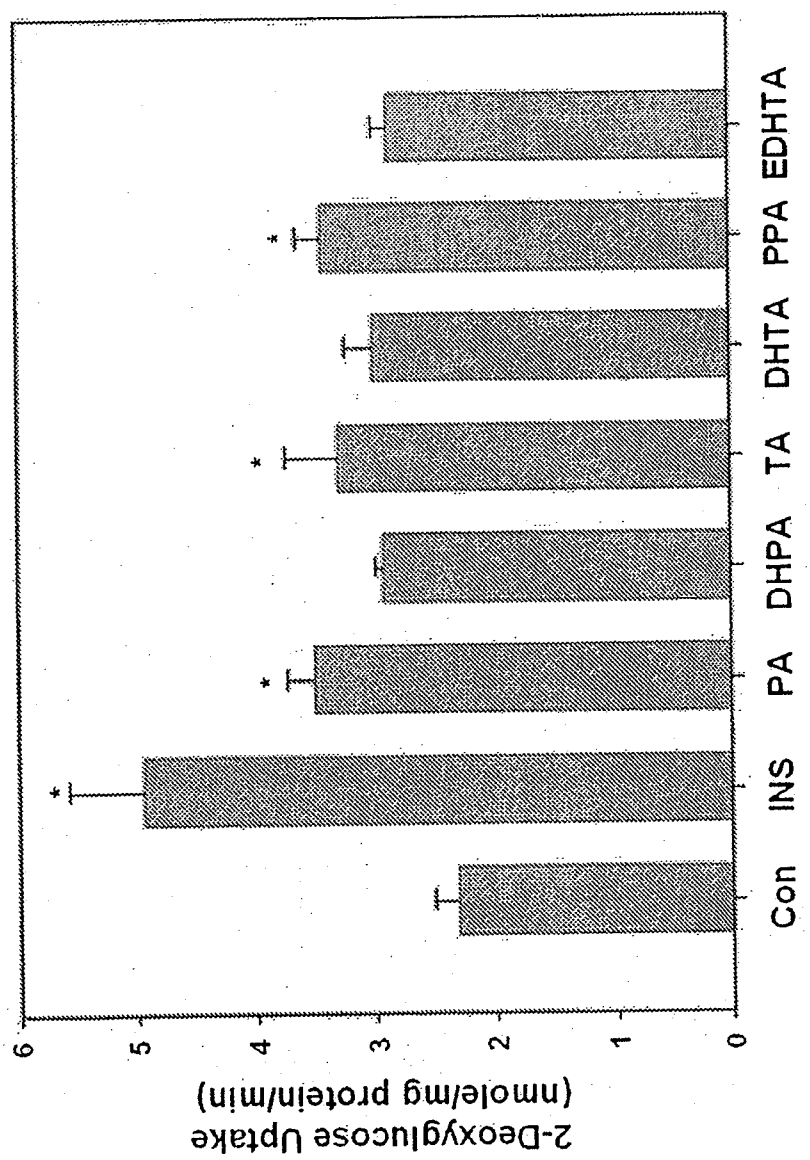

2-Deoxyglucose Uptake
(nmole/mg protein/min)
0
1
2
3
4
5
6
Con
INS
PA
DHPA
TA
DHTA
PPA
EDHTA
*
*
*
*

Fig. 2B

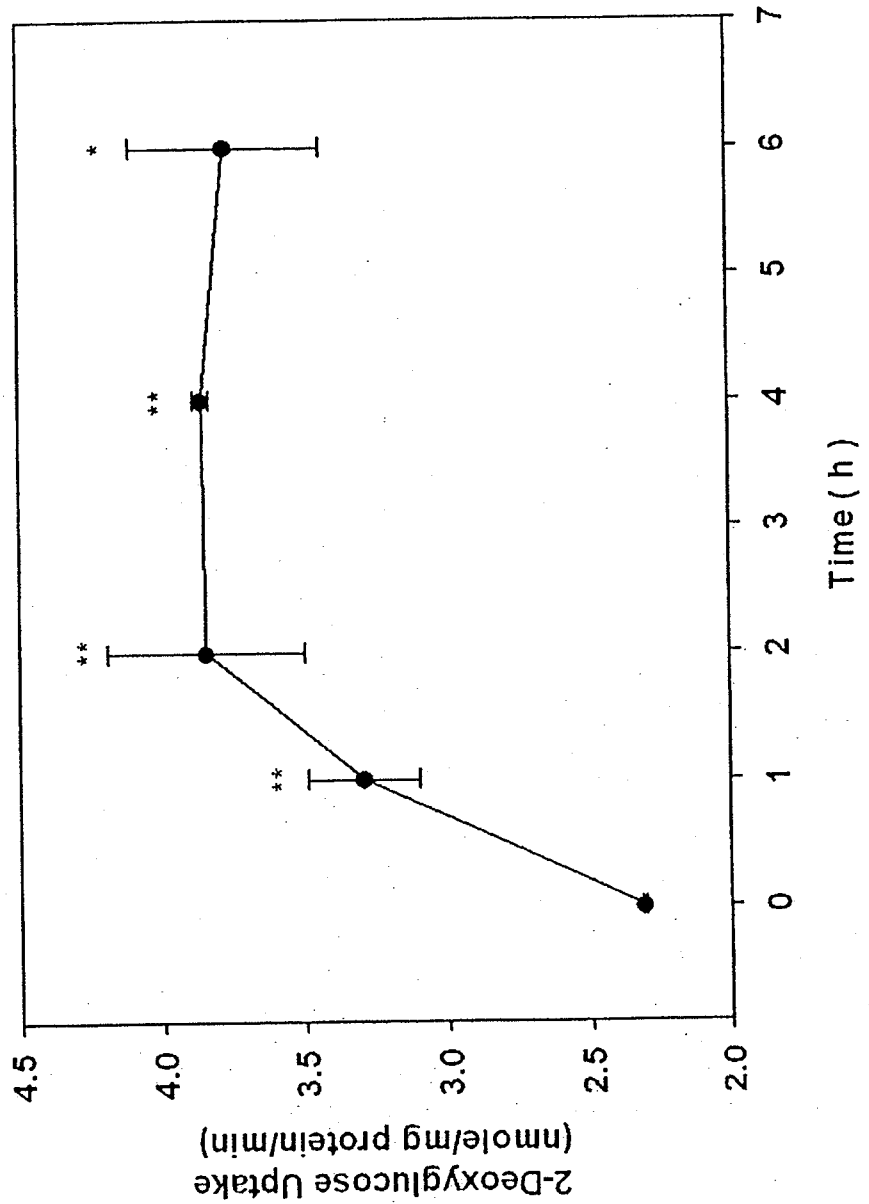

2-Deoxyglucose Uptake
(nmole/mg protein/min)
4.5
4.0
3.5
3.0
2.5
2.0
0
1
2
3
4
5
6
7
Time (h)
**
**
**
*

Fig. 3A

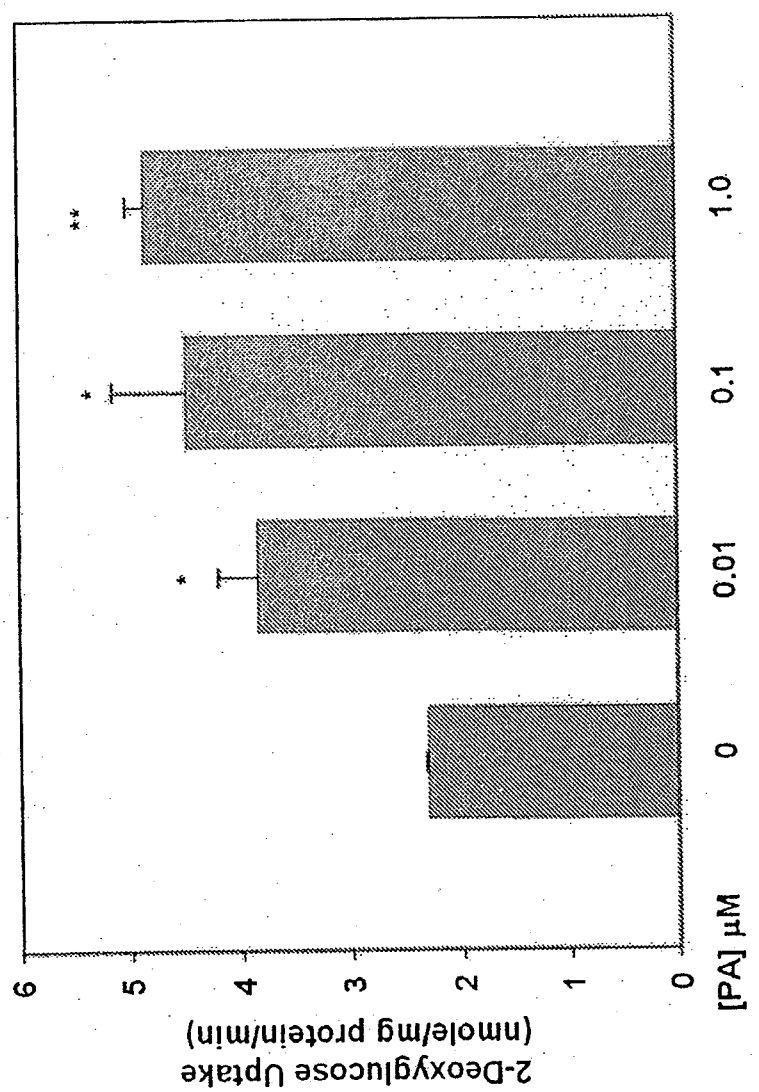

2-Deoxyglucose Uptake
(nmole/mg protein/min)
0
1
2
3
4
5
6
[PA] µM
0
0.01
0.1
1.0
*
*
**

Fig. 3B

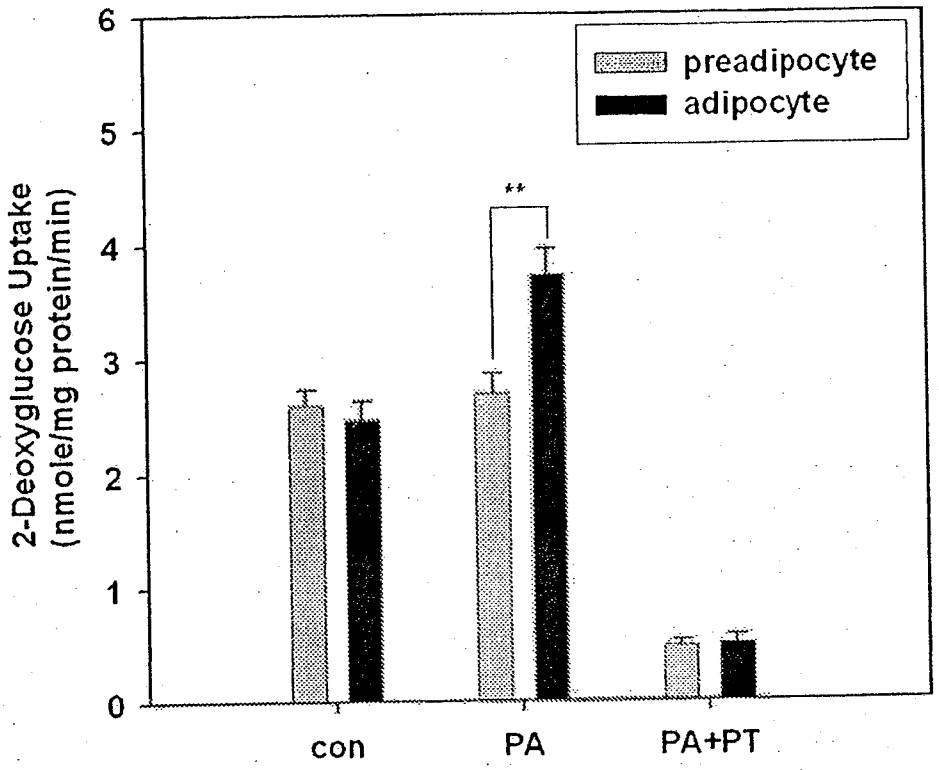

6
5
4
3
2
1
0
2-Deoxyglucose Uptake
(nmole/mg protein/min)
preadipocyte
adipocyte
**
con
PA
PA+PT

Fig. 4

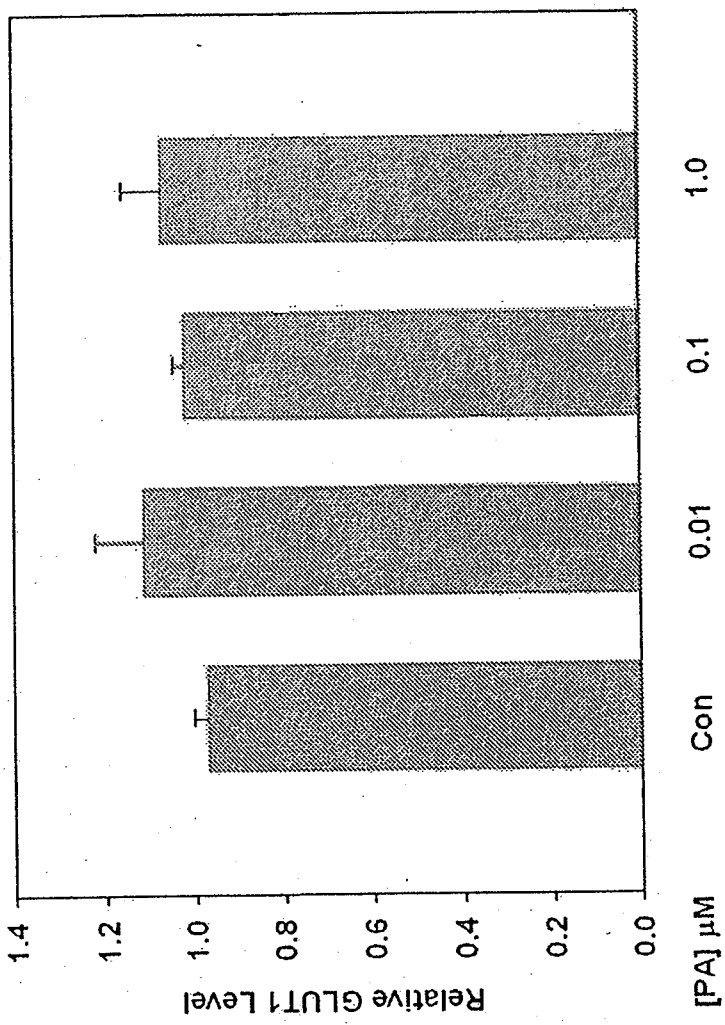


Fig. 5A

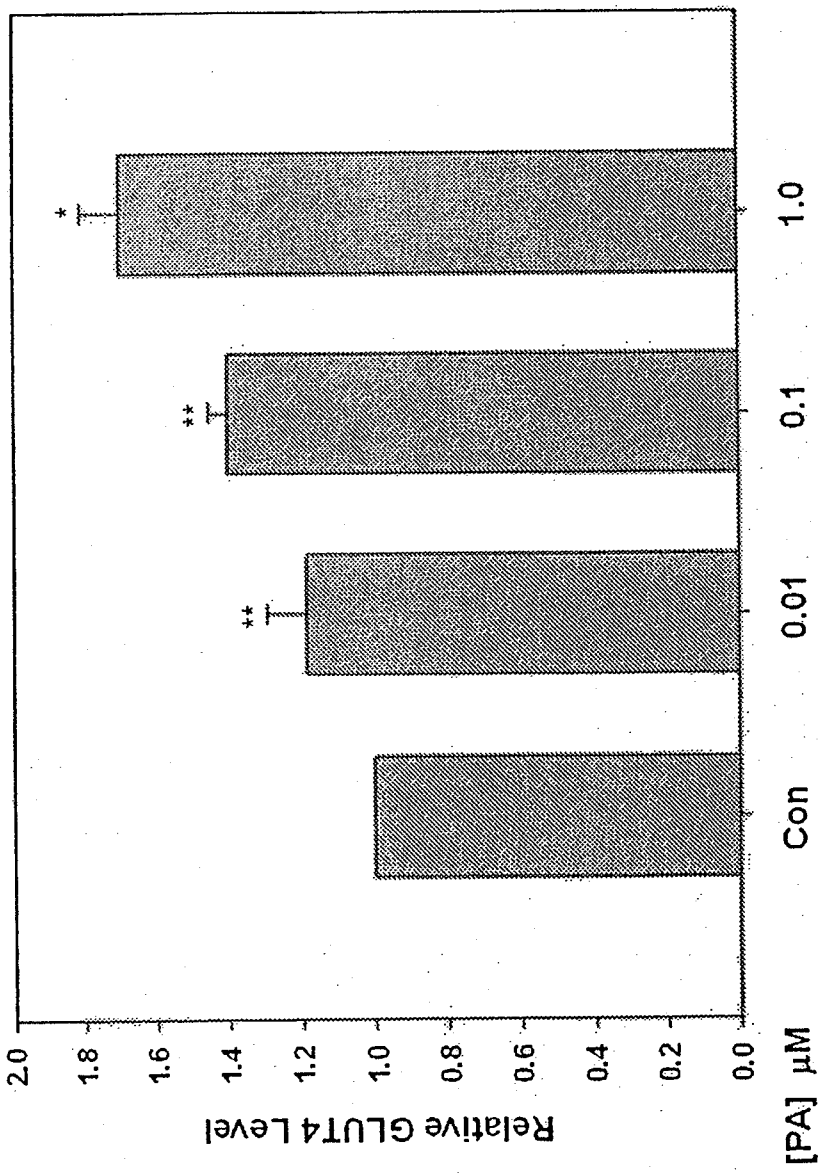

Relative GLUT4 Level
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
[PA] μM
Con
0.01
0.1
1.0
**
**
*

Fig. 5B

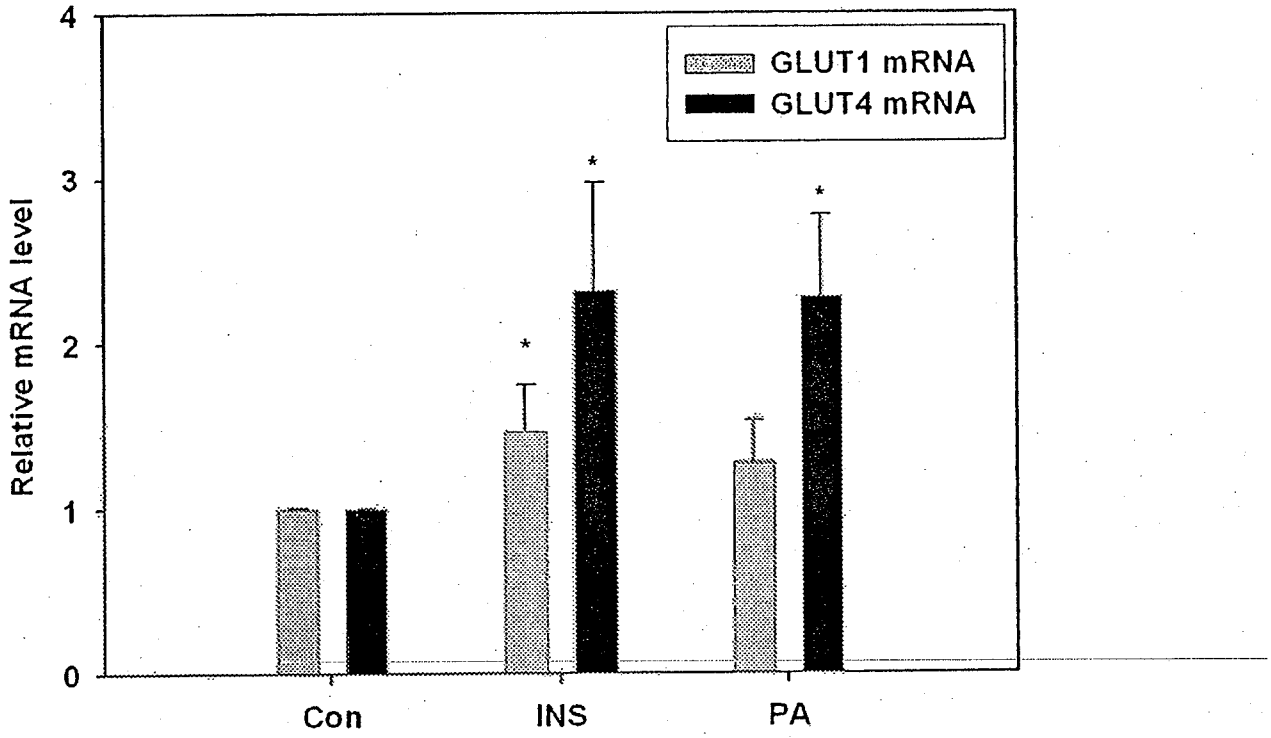


Fig. 6

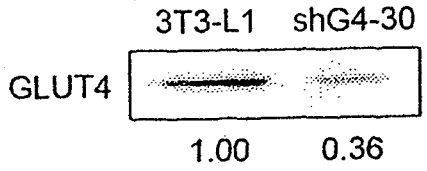

3T3-L1
shG4-30
GLUT4
1.00
0.36

Fig. 7A

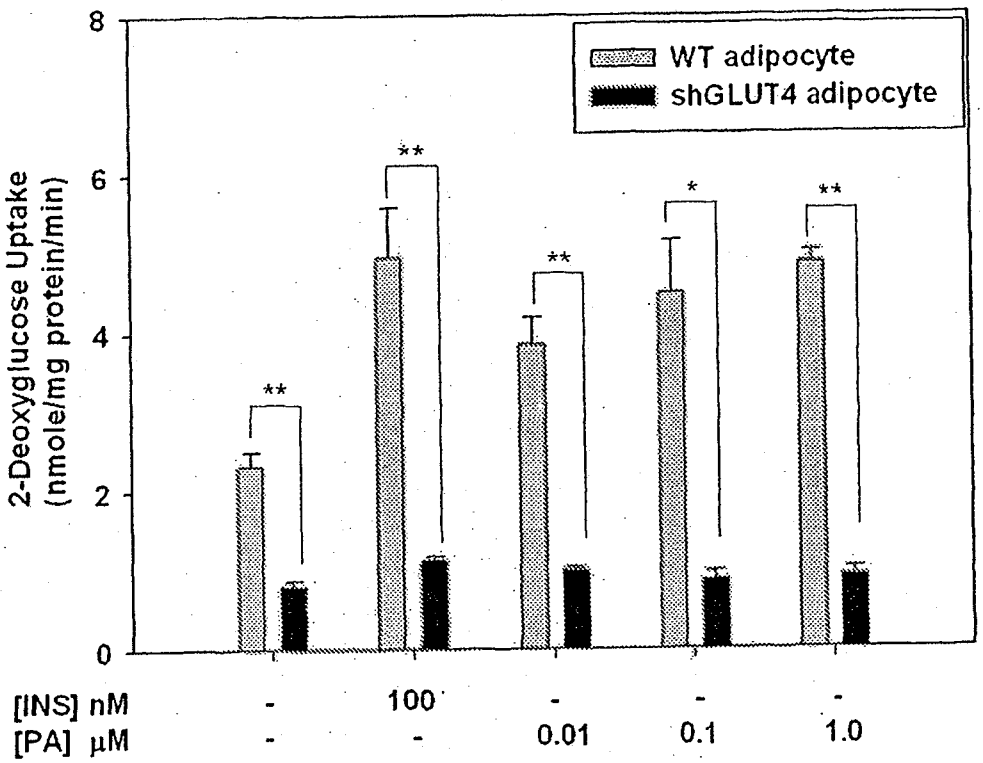

WT adipocyte
shGLUT4 adipocyte
2-Deoxyglucose Uptake
(nmole/mg protein/min)
8
6
4
2
0
**
**
**
*
**
[INS] nM
[PA] µM
-
-
100
-
0.01
-
0.1
-
1.0

Fig. 7B

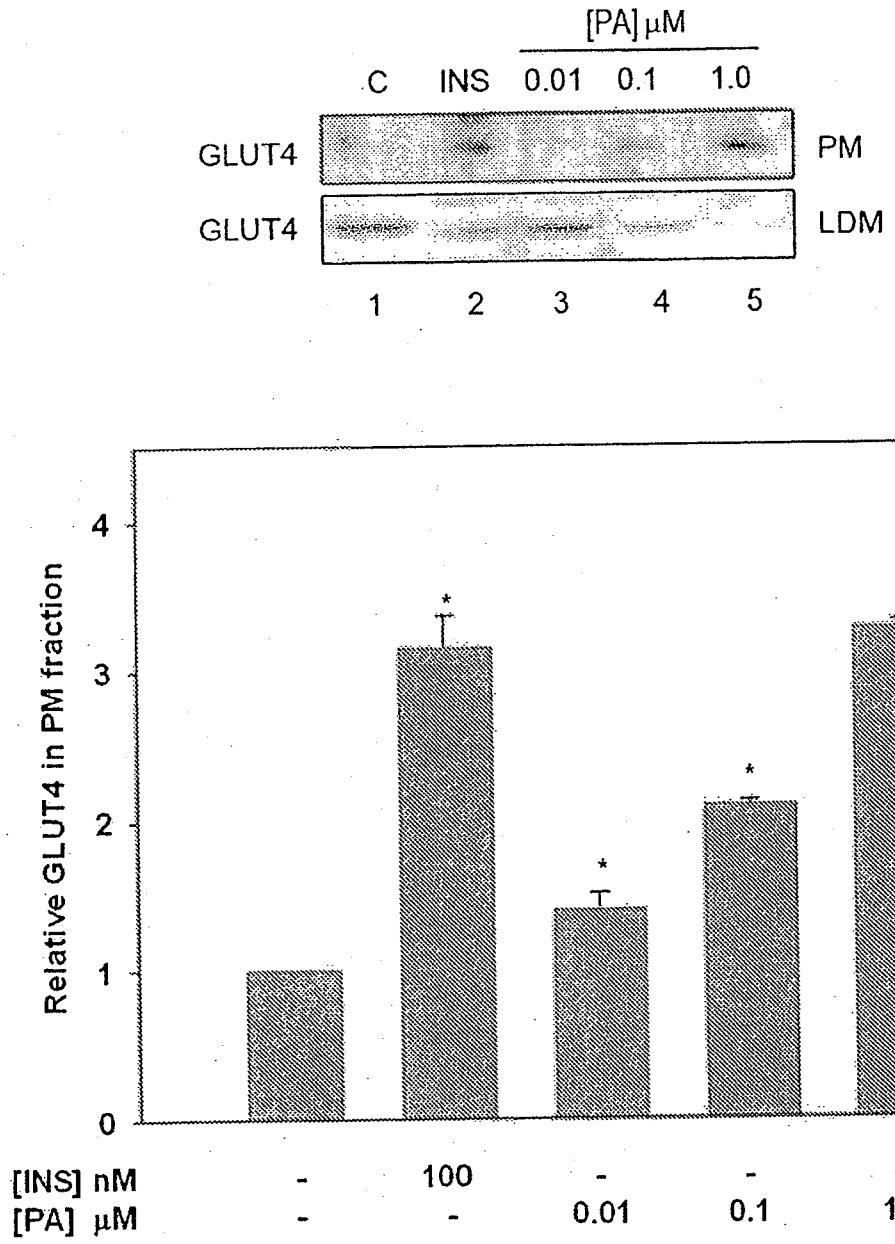

[PA] μM
C
INS
0.01
0.1
1.0
GLUT4
PM
GLUT4
LDM
1
2
3
4
5
Relative GLUT4 in PM fraction
0
1
2
3
4
*
*
*
*
[INS] nM
-
100
-
-
-
[PA] μM
-
-
0.01
0.1
1.0

Fig. 8A

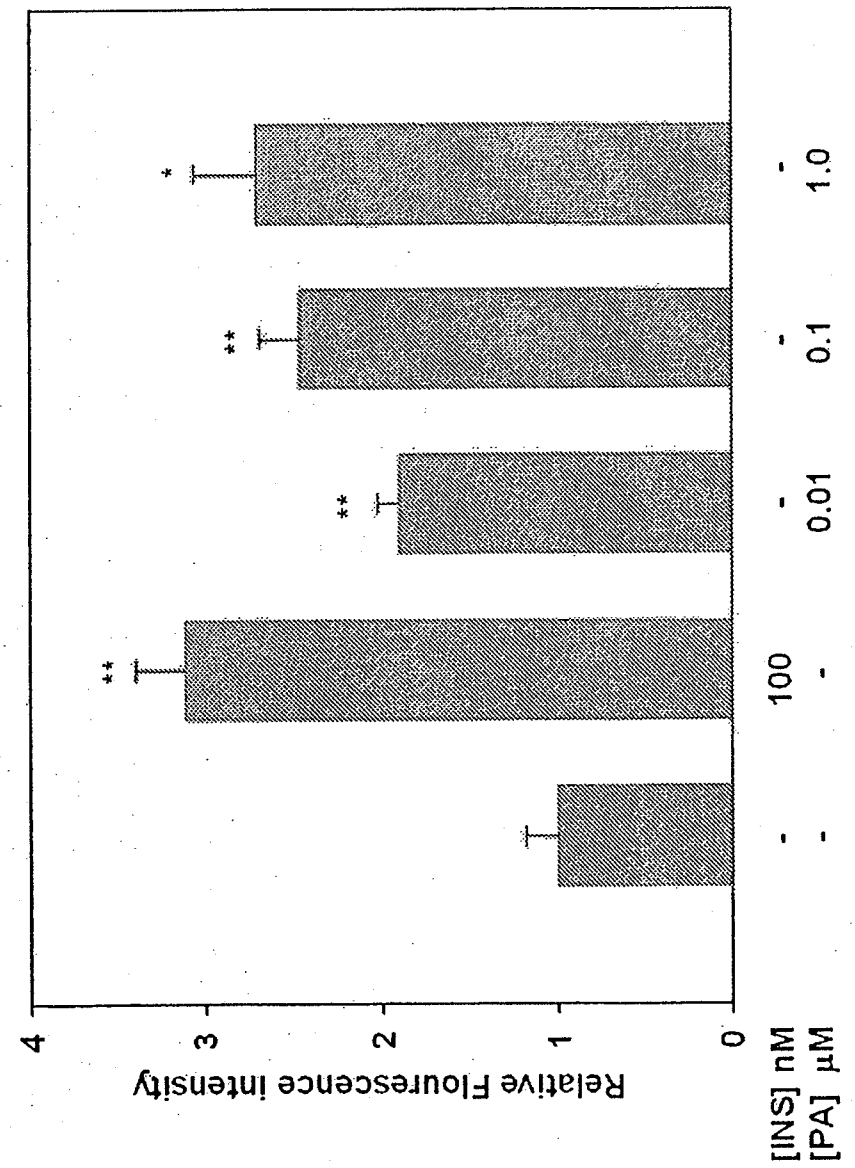

Relative Flourescence intensity
0
1
2
3
4
[INS] nM
[PA] µM
-
-
100
-
-
0.01
-
0.1
-
1.0
**
**
**
*

Fig. 8B

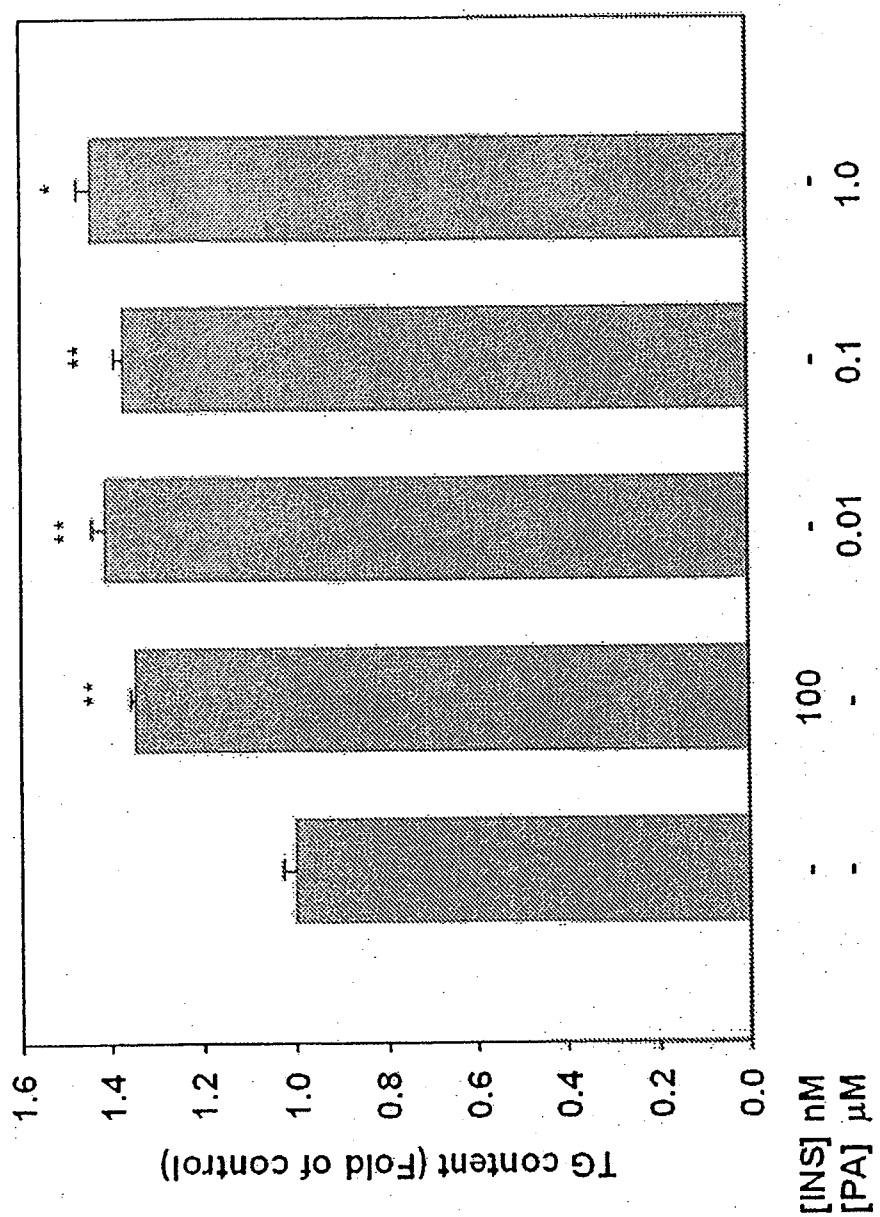

TG content (Fold of control)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
**
**
**
*
[INS] nM
[PA] µM
-
-
100
-
-
0.01
-
0.1
-
1.0

Fig. 9A

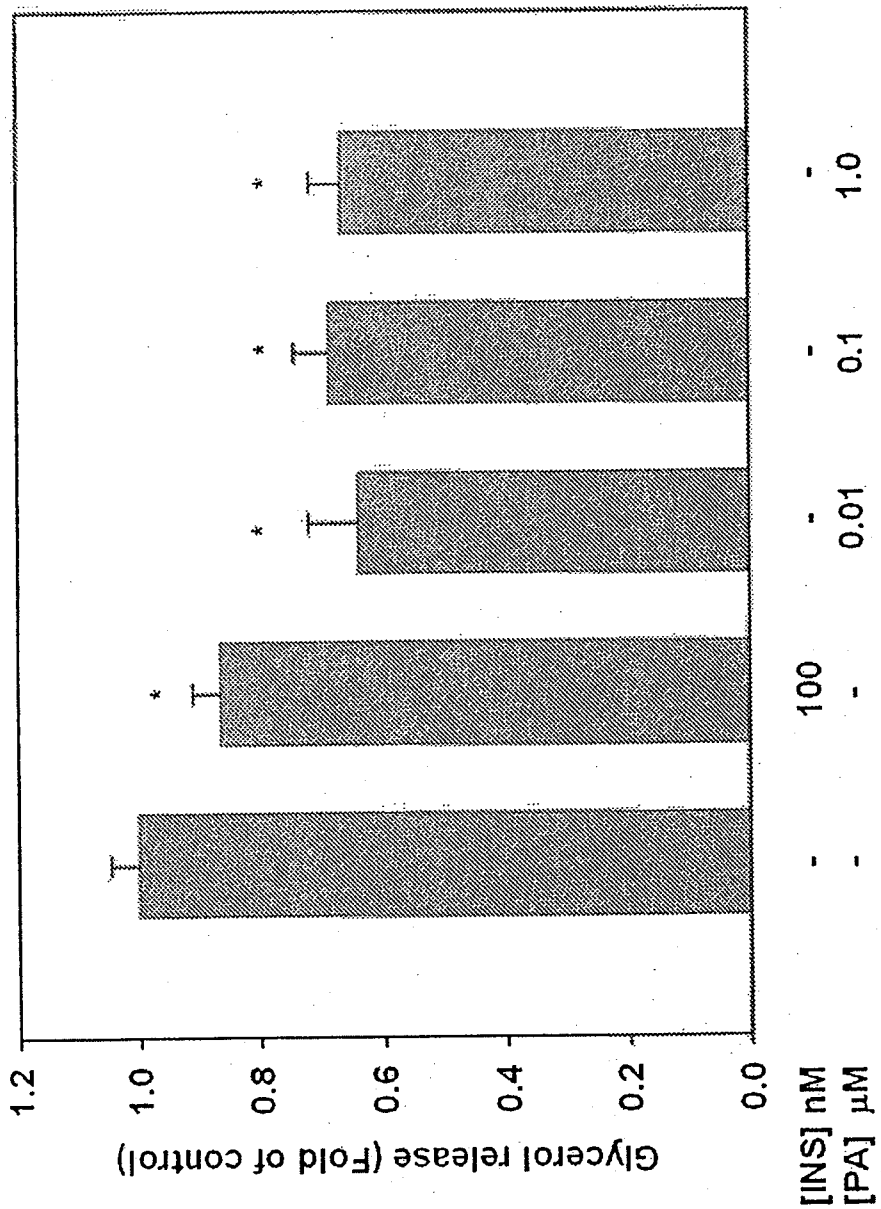

Glycerol release (Fold of control)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
[INS] nM
[PA] µM
-
-
100
-
-
0.01
-
0.1
-
1.0
*
*
*
*

Fig. 9B