Figure 2

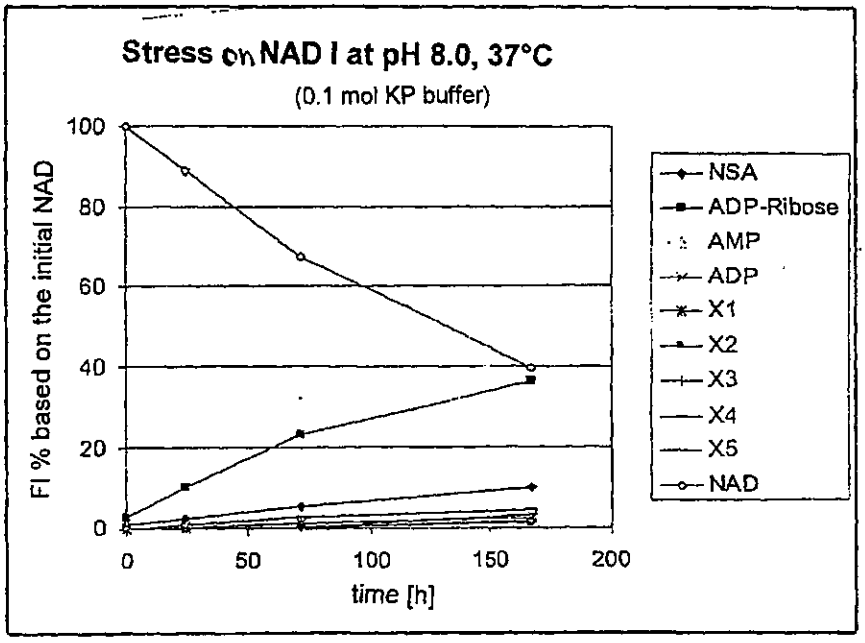

Stress on NAD I at pH 8.0, 37°C
(0.1 mol KP buffer)
FI % based on the initial NAD
100
80
60
40
20
0
0
50
100
150
200
time [h]
NSA
ADP-Ribose
AMP
ADP
X1
X2
X3
X4
X5
NAD

Figure 3

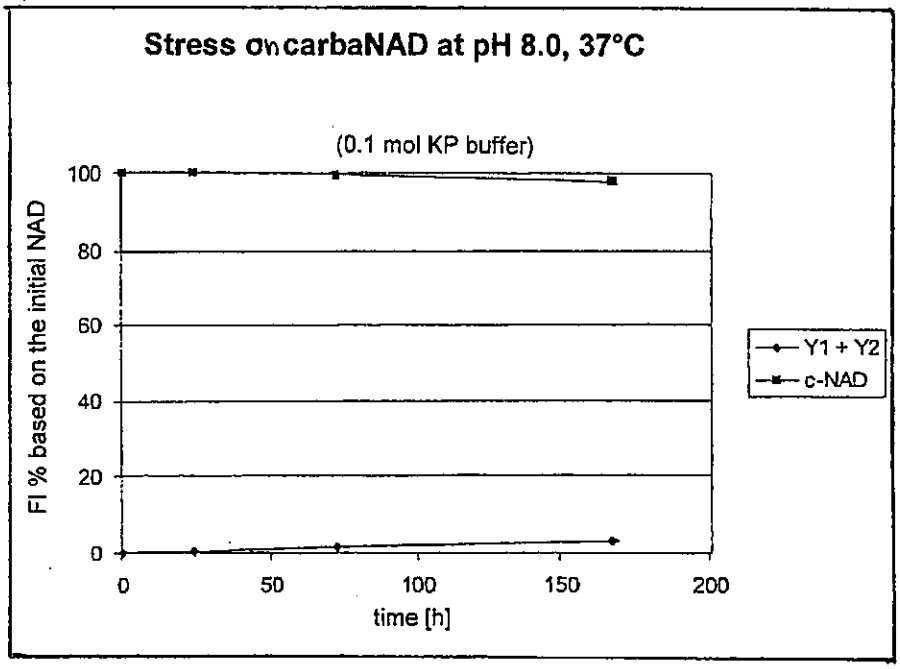

Stress on carbaNAD at pH 8.0, 37°C
(0.1 mol KP buffer)
FI % based on the initial NAD
100
80
60
40
20
0
0
50
100
150
200
time [h]
Y1 + Y2
c-NAD

Figure 4

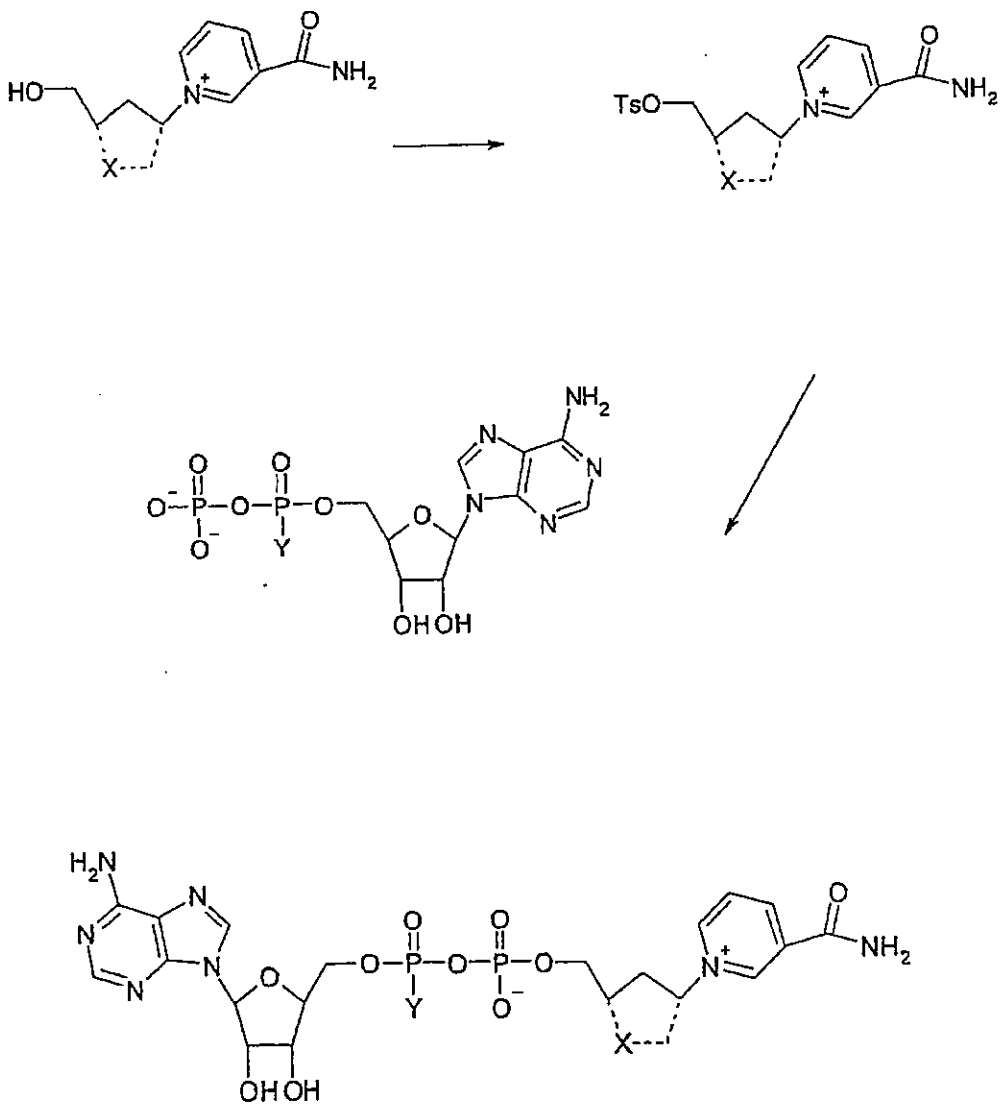


Figure 5

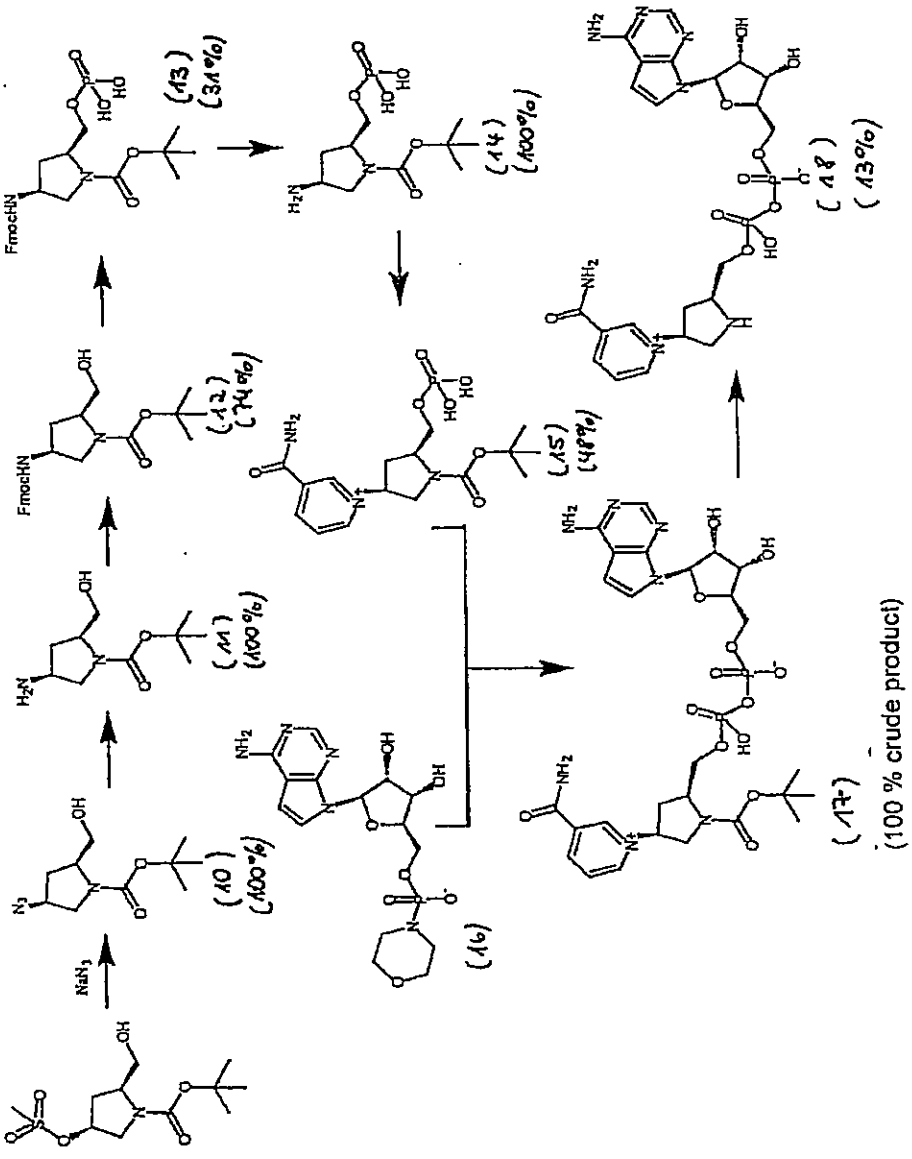

(13) (34%)
(14) (100%)
(12) (74%)
(15) (48%)
(11) (100%)
(10) (100%)
(16)
(18) (13%)
(17)
(100 % crude product)

Figure 6A

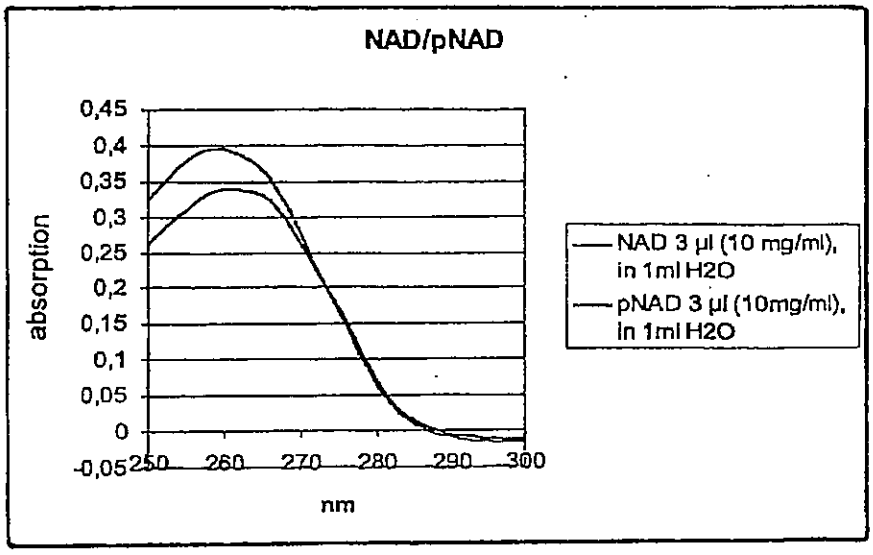


Figure 6B

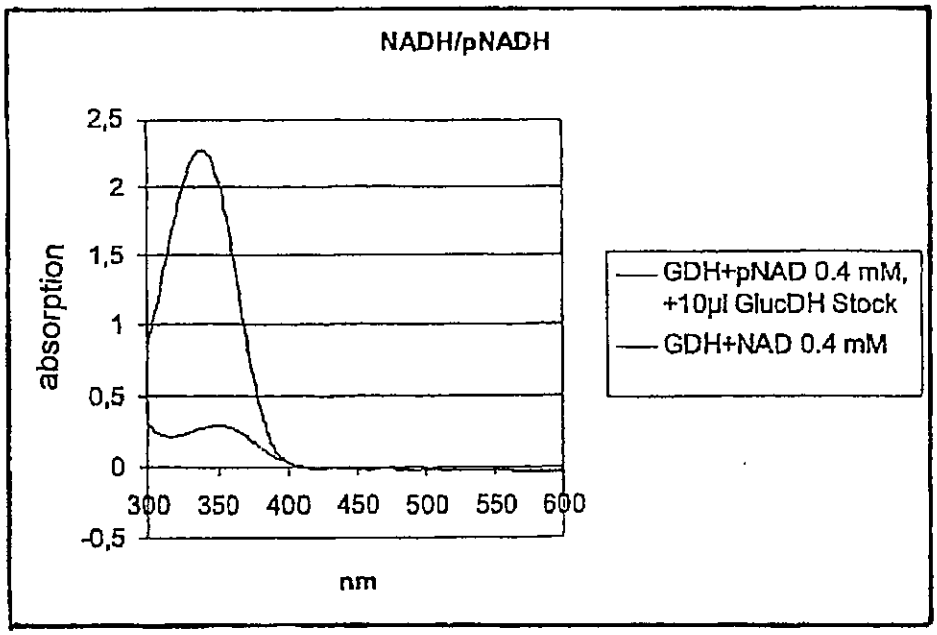


Figure 7

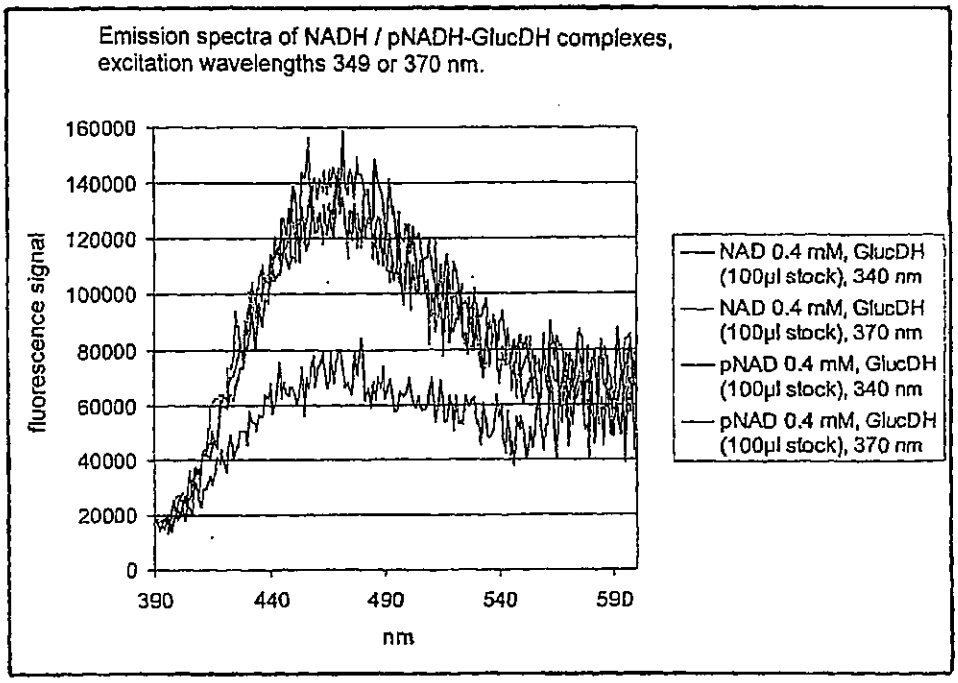

Emission spectra of NADH / pNADH-GlucDH complexes,
excitation wavelengths 349 or 370 nm.
fluorescence signal
160000
140000
120000
100000
80000
60000
40000
20000
0
390
440
490
540
590
nm
NAD 0.4 mM, GlucDH (100µl stock), 340 nm
NAD 0.4 mM, GlucDH (100µl stock), 370 nm
pNAD 0.4 mM, GlucDH (100µl stock), 340 nm
pNAD 0.4 mM, GlucDH (100µl stock), 370 nm

Figure 8

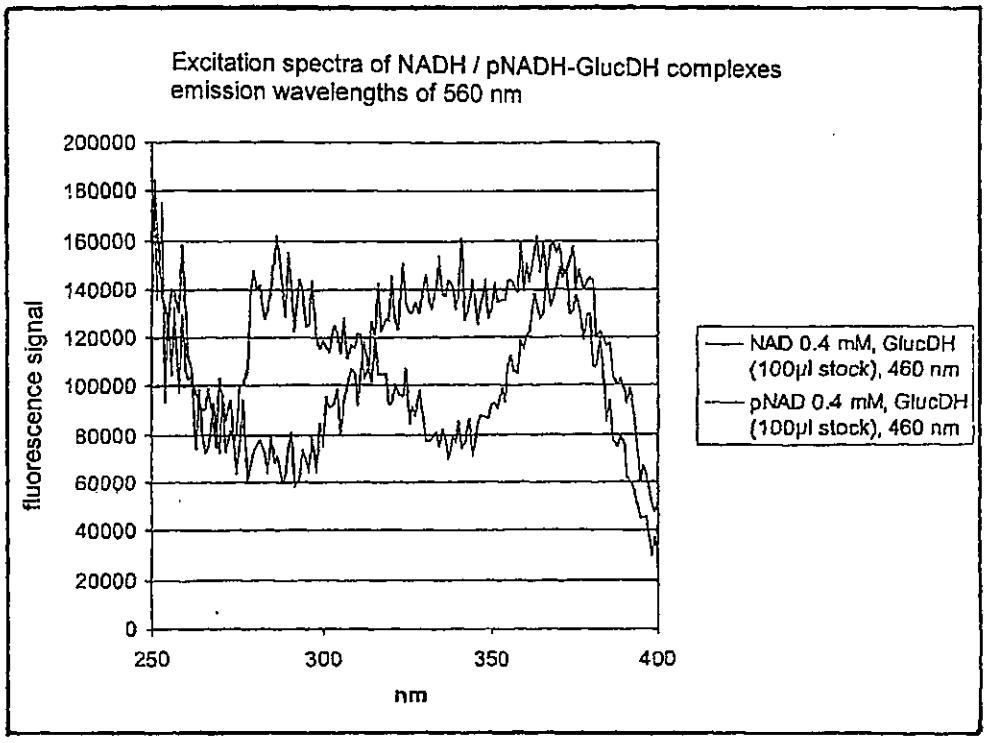

Excitation spectra of NADH / pNADH-GlucDH complexes
emission wavelengths of 560 nm
fluorescence signal
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
250
300
350
400
nm
NAD 0.4 mM, GlucDH (100µl stock), 460 nm
pNAD 0.4 mM, GlucDH (100µl stock), 460 nm

Figure 9

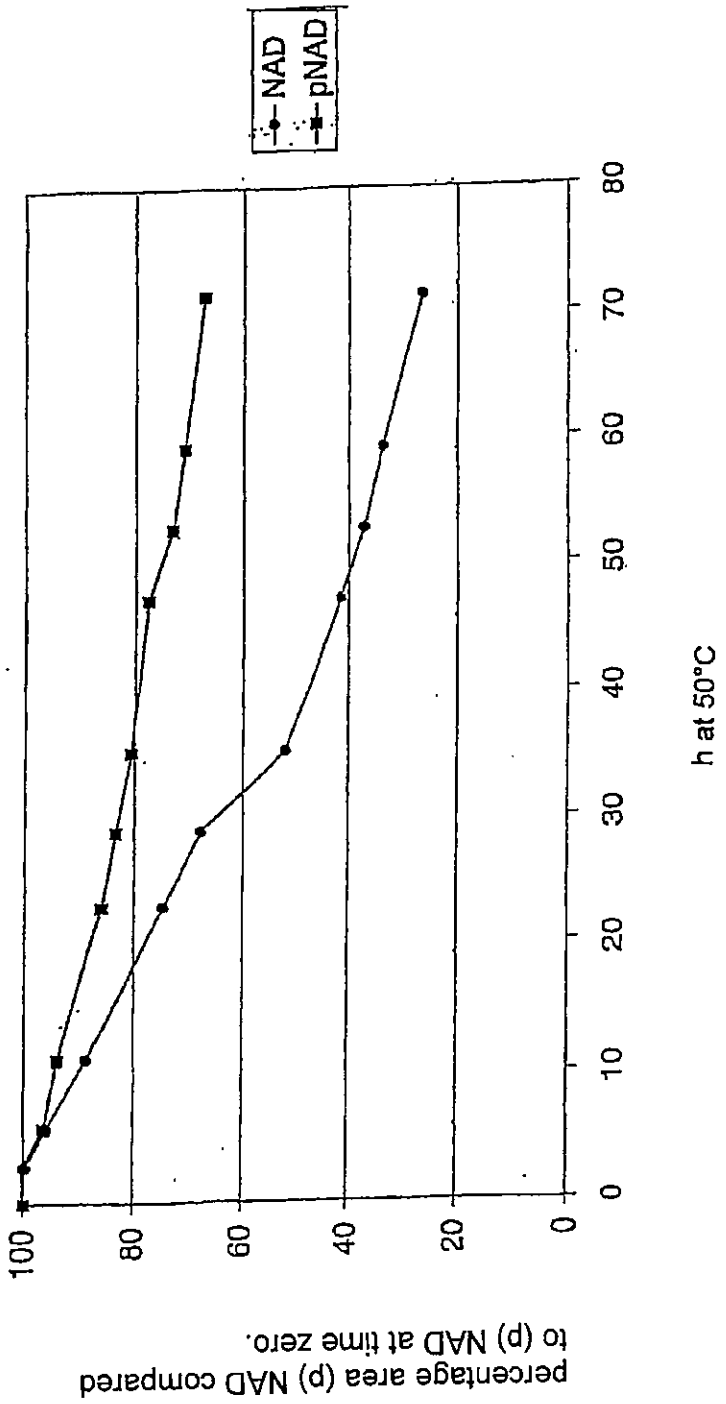

NAD
pNAD
percentage area (p) NAD compared to (p) NAD at time zero.
h at 50°C
0
20
40
60
80
100
0
10
20
30
40
50
60
70
80

Figure 10A

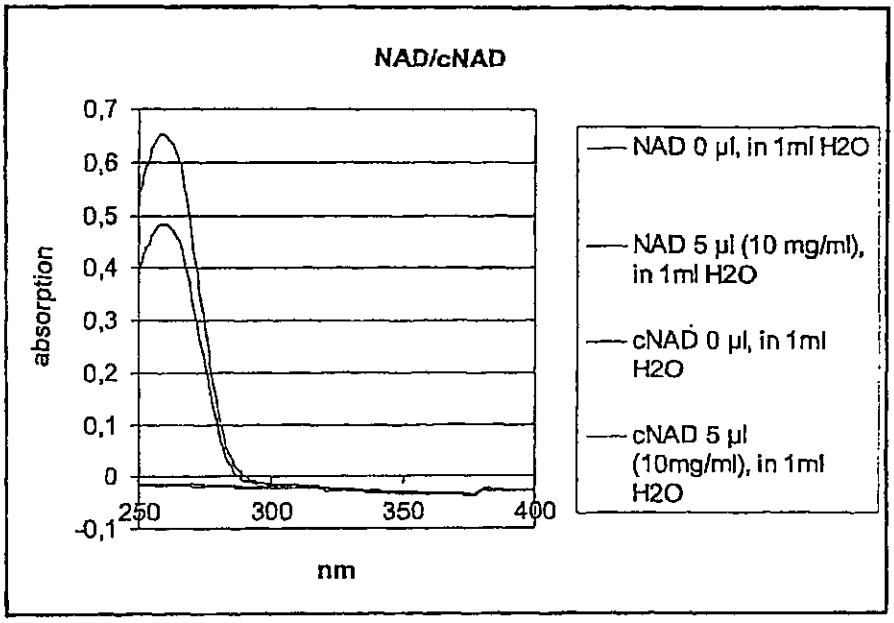


Figure 10B

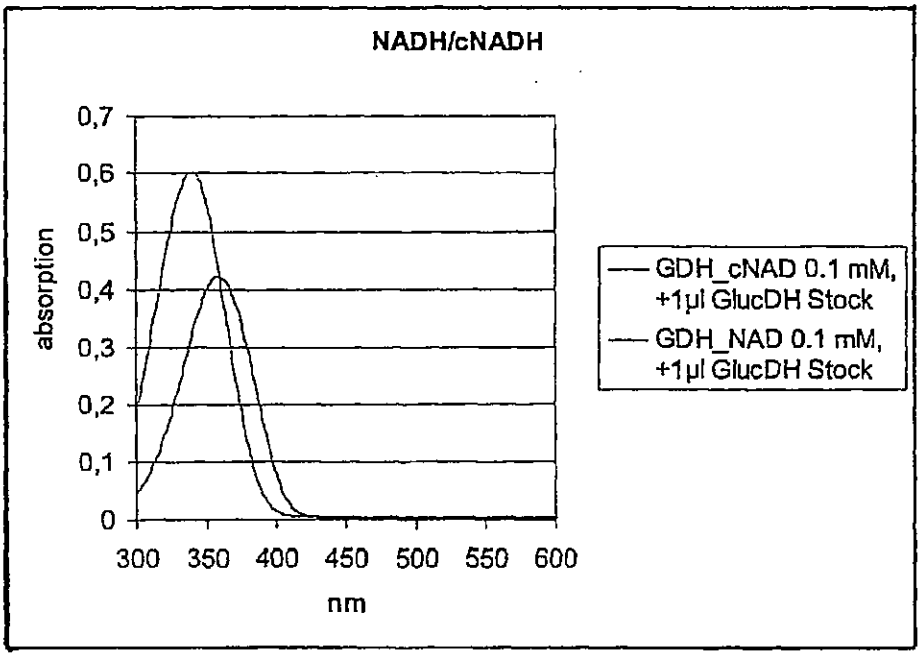


Figure 10C

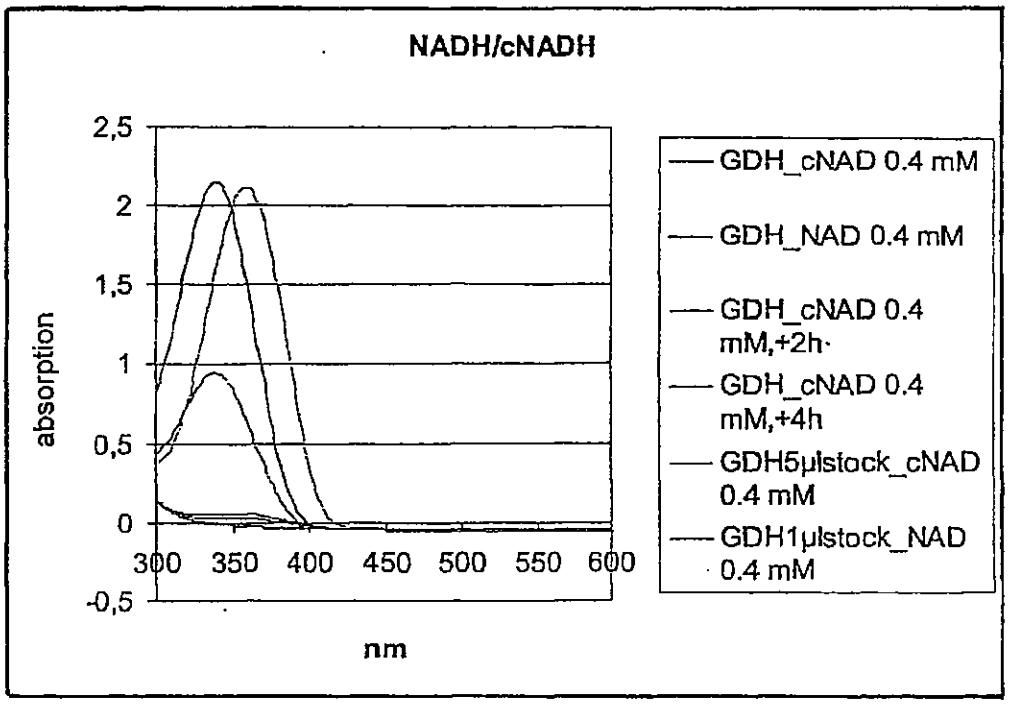
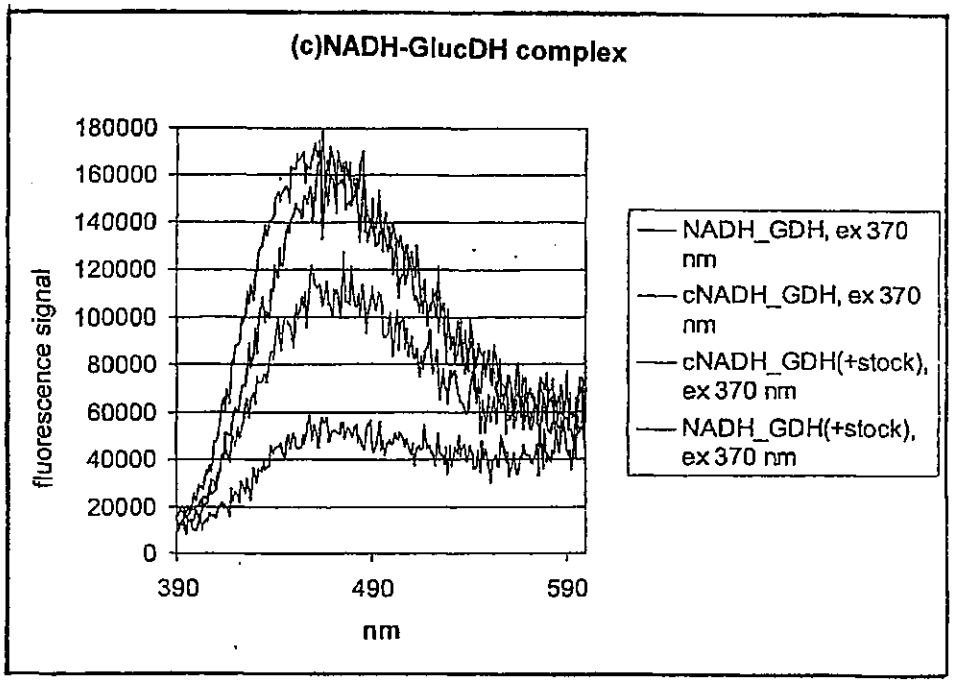

NADH/cNADH
absorption
2,5
2
1,5
1
0,5
0
-0,5
300
350
400
450
500
550
600
nm
GDH_cNAD 0.4 mM
GDH_NAD 0.4 mM
GDH_cNAD 0.4 mM,+2h
GDH_cNAD 0.4 mM,+4h
GDH5µlstock_cNAD 0.4 mM
GDH1µlstock_NAD 0.4 mM

Figure 11


(c)NADH-GlucDH complex
fluorescence signal
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
390
490
590
nm
NADH_GDH, ex 370 nm
cNADH_GDH, ex 370 nm
cNADH_GDH(+stock), ex 370 nm
NADH_GDH(+stock), ex 370 nm