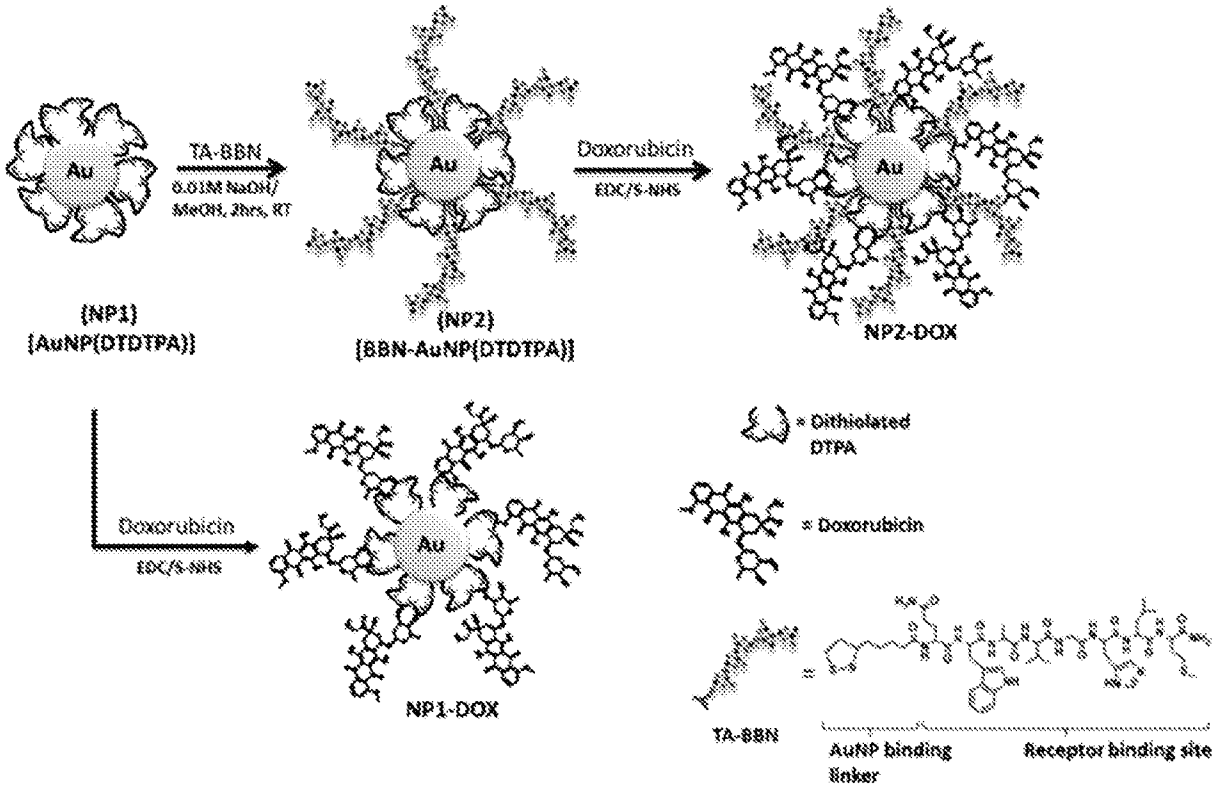



**Figure 1**

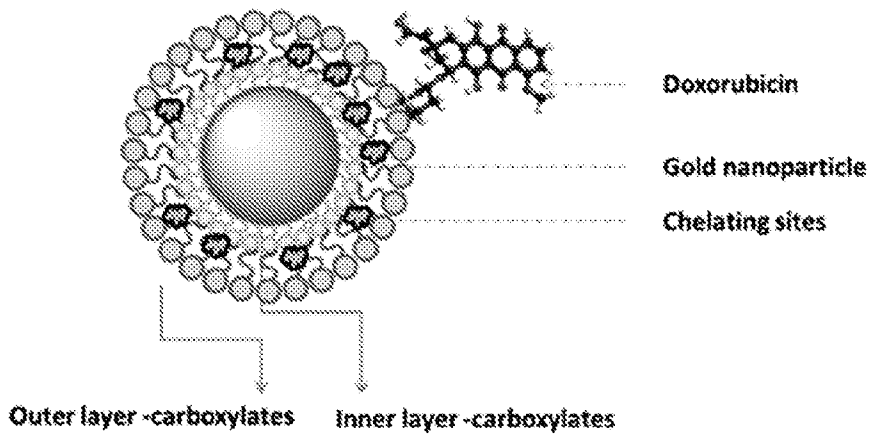



**Figure 2**

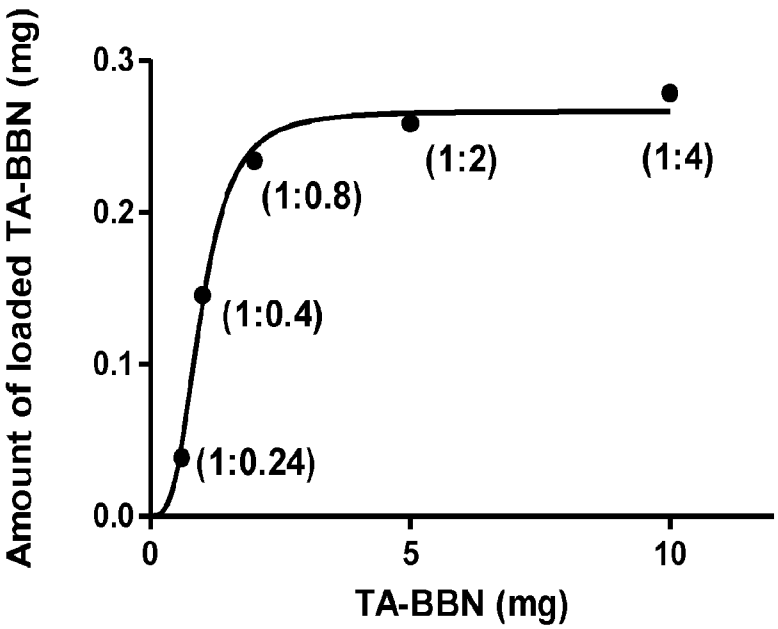

Amount of loaded TA-BBN (mg)
0.3
0.2
0.1
0.0
0
5
10
TA-BBN (mg)
(1:0.24)
(1:0.4)
(1:0.8)
(1:2)
(1:4)

**Figure 3**

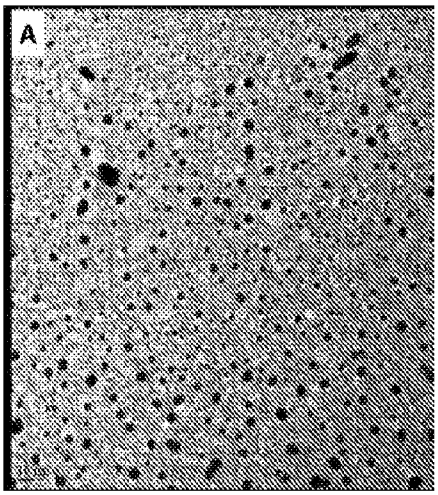



Figure 4A

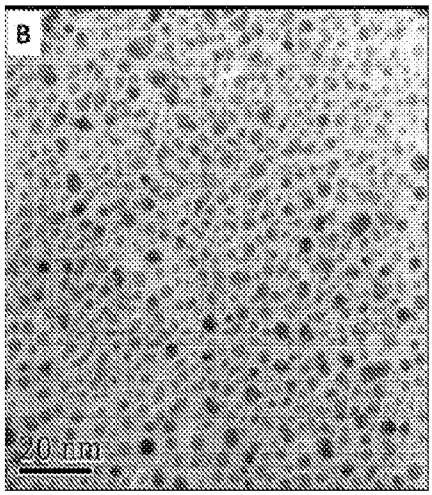



Figure 4B

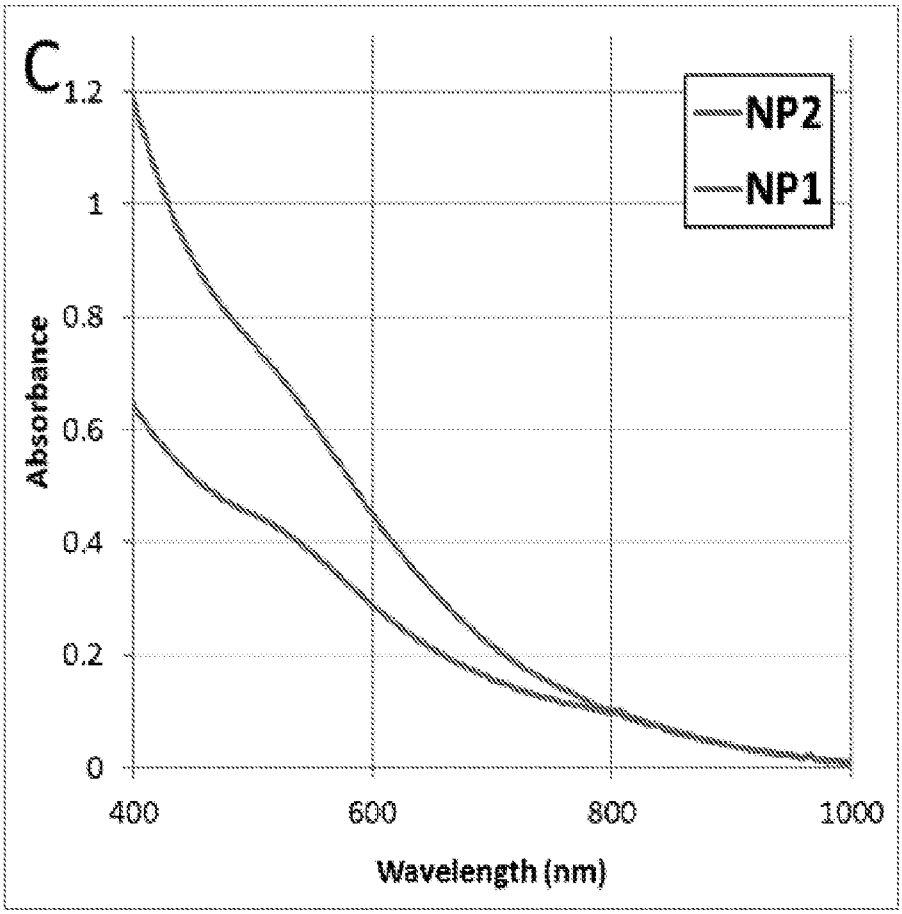



Figure 4C

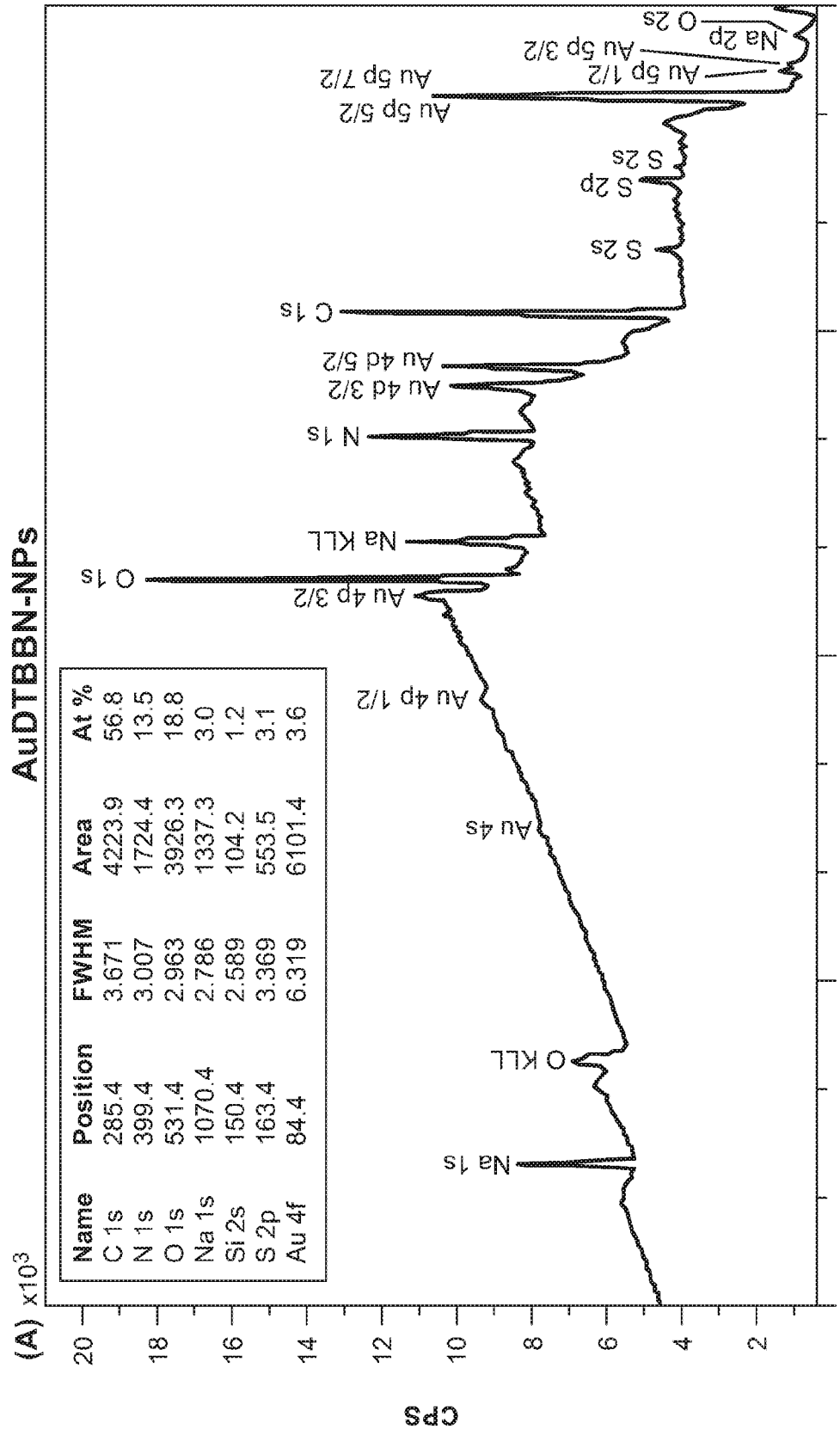

AuDTBBN-NPs
(A) x10^3
CPS
Binding Energy (eV)
Name Position FWHM Area At %
C 1s 285.4 3.671 4223.9 56.8
N 1s 399.4 3.007 1724.4 13.5
O 1s 531.4 2.963 3926.3 18.8
Na 1s 1070.4 2.786 1337.3 3.0
Si 2s 150.4 2.589 104.2 1.2
S 2p 163.4 3.369 553.5 3.1
Au 4f 84.4 6.319 6101.4 3.6
Na 1s
O KLL
Au 4s
Au 4p 1/2
Au 4p 3/2
O 1s
Na KLL
N 1s
Au 4d 3/2
Au 4d 5/2
C 1s
S 2s
S 2p
S 2s
Au 5p 5/2
Au 5p 7/2
Au 5p 1/2
Au 5p 3/2
Na 2p
O 2s

**Figure 5A**

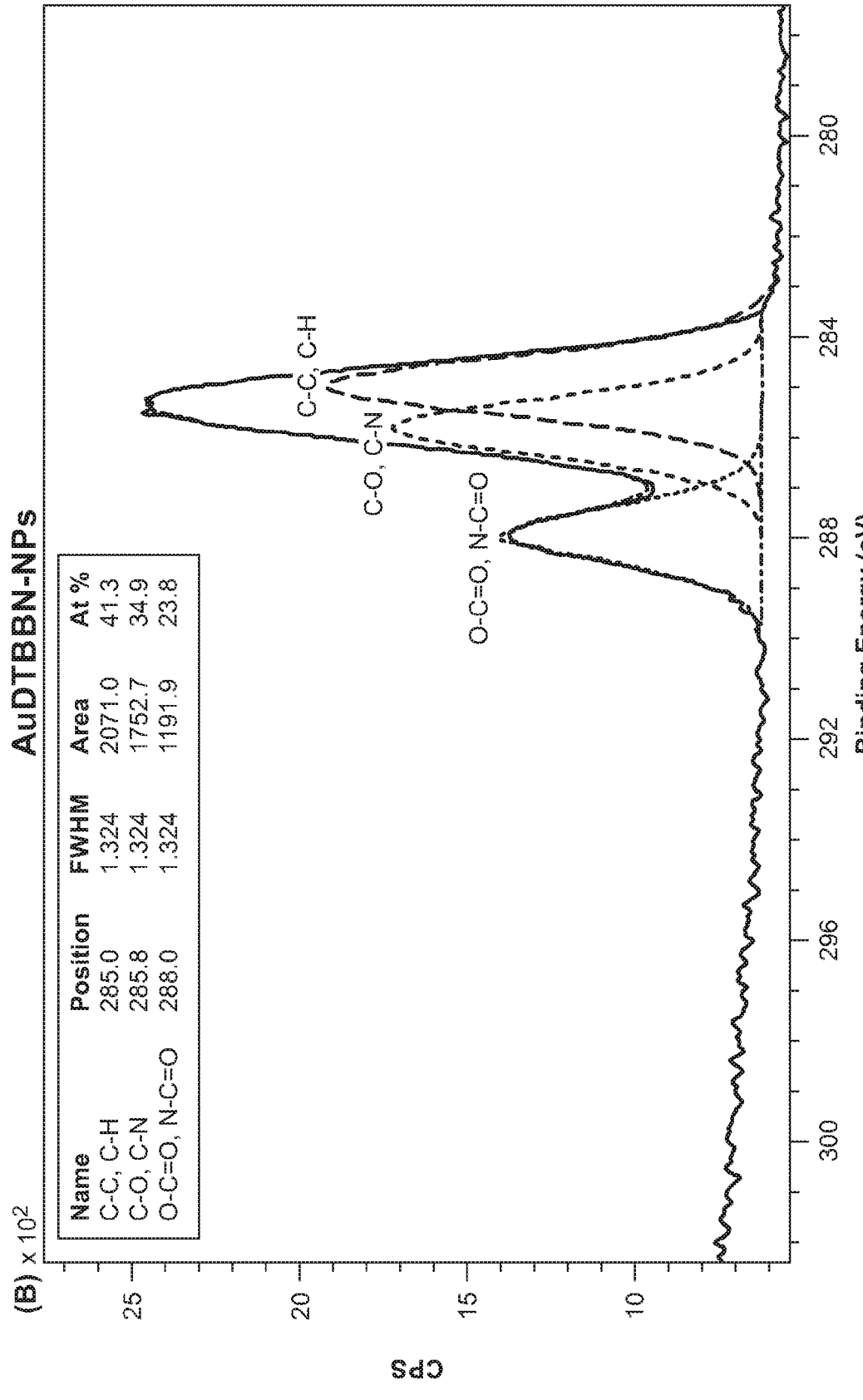

AuDTBBN-NPs
(B) x 10^2
Name Position FWHM Area At %
C-C, C-H 285.0 1.324 2071.0 41.3
C-O, C-N 285.8 1.324 1752.7 34.9
O-C=O, N-C=O 288.0 1.324 1191.9 23.8
C-C, C-H
C-O, C-N
O-C=O, N-C=O
CPS
25
20
15
10
300
296
292
288
284
280
Binding Energy (eV)

**Figure 5B**

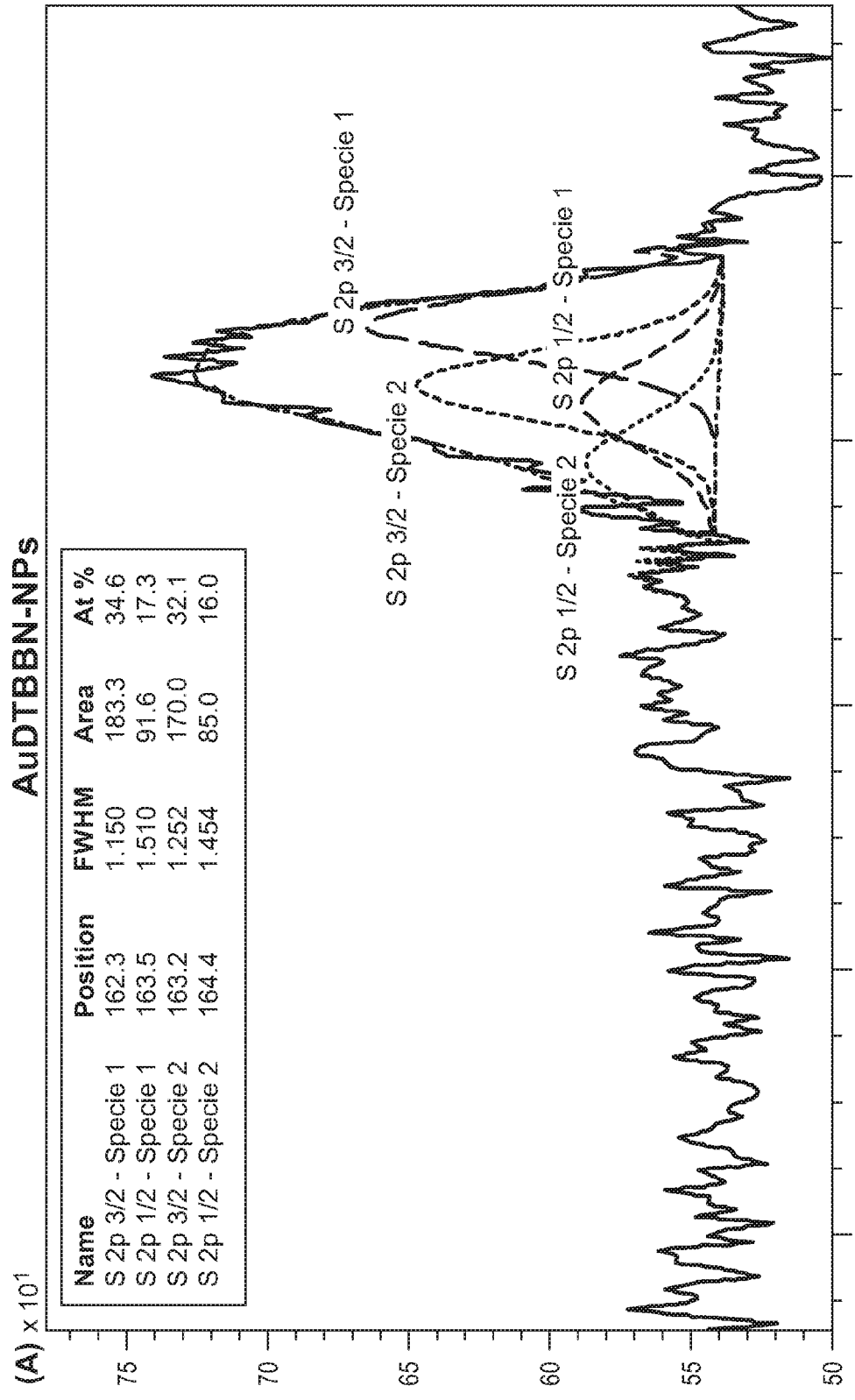

AuDTBBN-NPs
(A) x 10¹
CPS
Binding Energy (eV)
S 2p 3/2 - Specie 1
S 2p 3/2 - Specie 2
S 2p 1/2 - Specie 1
S 2p 1/2 - Specie 2
Name | Position | FWHM | Area | At %
S 2p 3/2 - Specie 1 | 162.3 | 1.150 | 183.3 | 34.6
S 2p 1/2 - Specie 1 | 163.5 | 1.510 | 91.6 | 17.3
S 2p 3/2 - Specie 2 | 163.2 | 1.252 | 170.0 | 32.1
S 2p 1/2 - Specie 2 | 164.4 | 1.454 | 85.0 | 16.0

**Figure 6A**

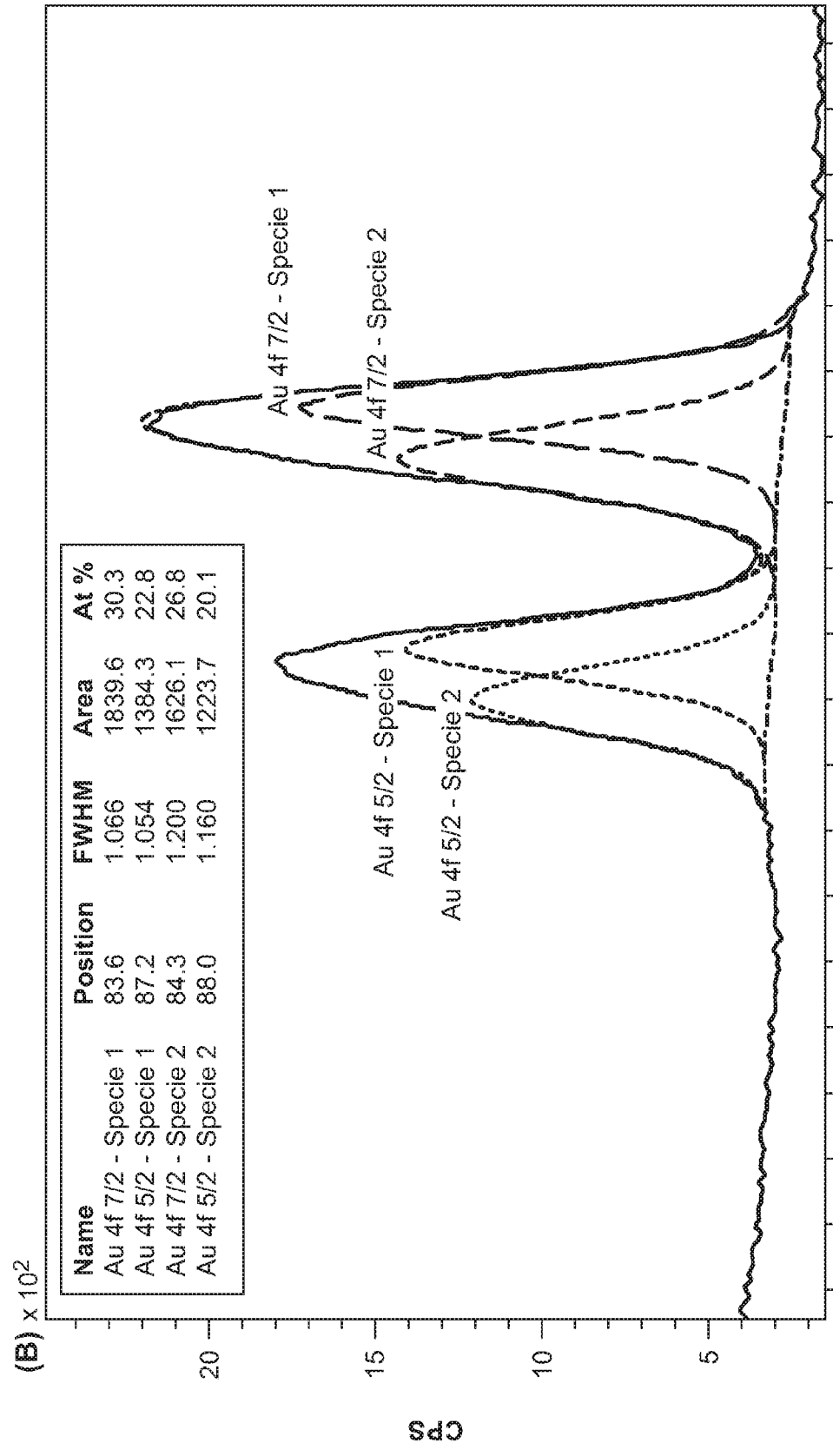

(B) x 10^2
CPS
20
15
10
5
96
92
88
84
80
Binding Energy (eV)
Au 4f 7/2 - Specie 1
Au 4f 7/2 - Specie 2
Au 4f 5/2 - Specie 1
Au 4f 5/2 - Specie 2
Name | Position | FWHM | Area | At %
Au 4f 7/2 - Specie 1 | 83.6 | 1.066 | 1839.6 | 30.3
Au 4f 5/2 - Specie 1 | 87.2 | 1.054 | 1384.3 | 22.8
Au 4f 7/2 - Specie 2 | 84.3 | 1.200 | 1626.1 | 26.8
Au 4f 5/2 - Specie 2 | 88.0 | 1.160 | 1223.7 | 20.1

**Figure 6B**

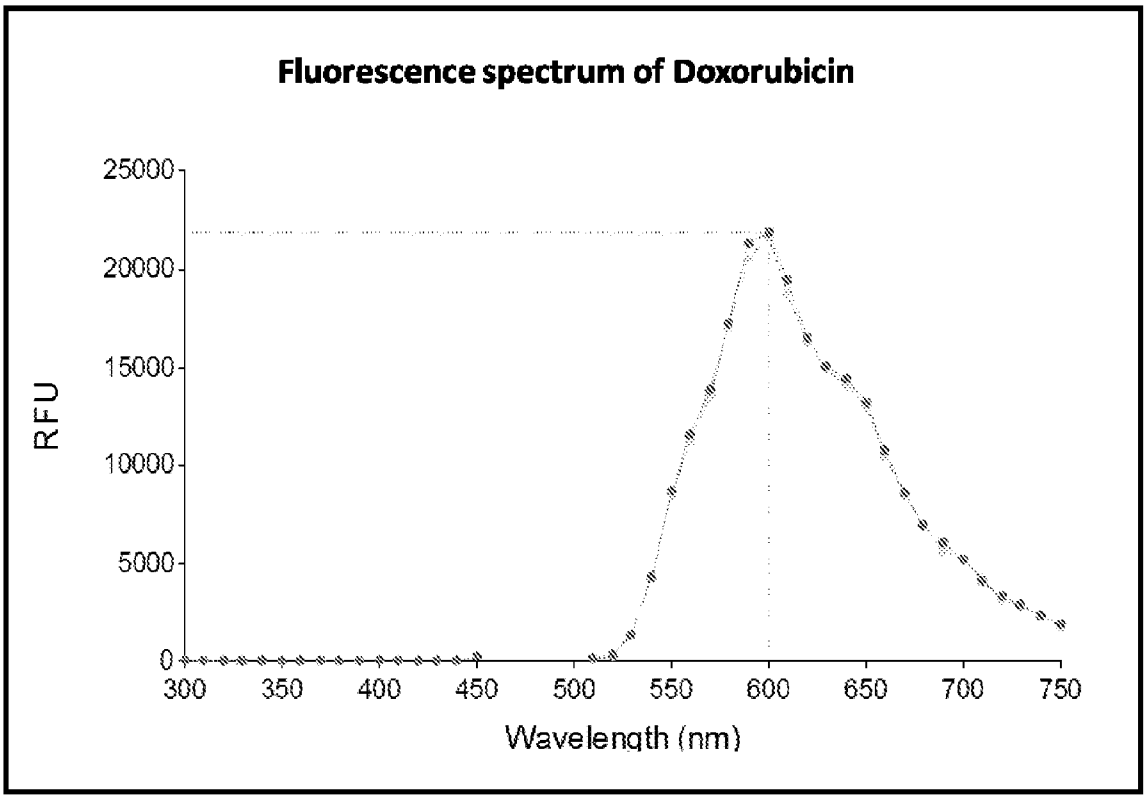

Fluorescence spectrum of Doxorubicin
RFU
25000
20000
15000
10000
5000
0
300
350
400
450
500
550
600
650
700
750
Wavelength (nm)

**Figure 7**

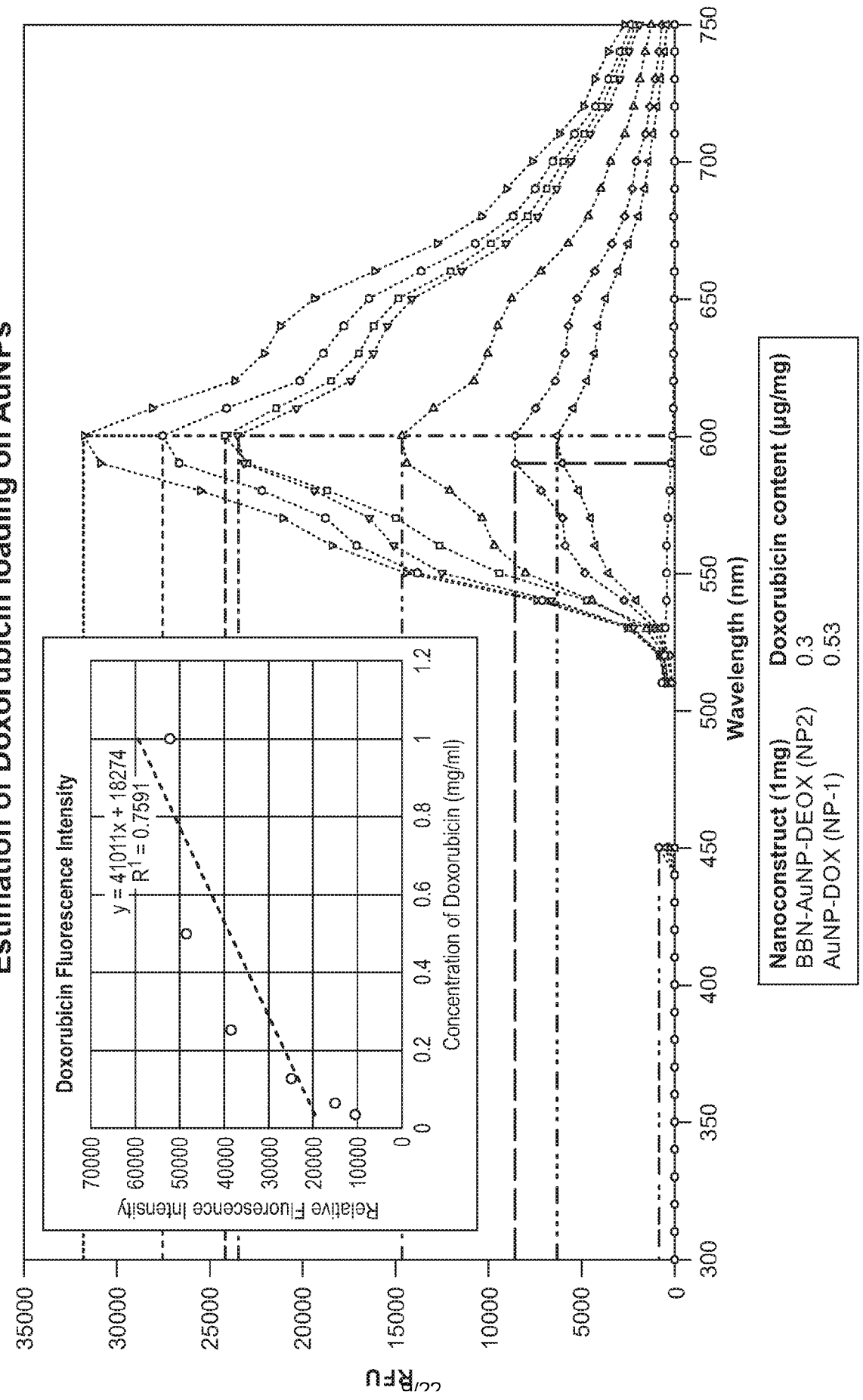

Estimation of Doxorubicin loading on AuNPs
RFU
Wavelength (nm)
Nanoconstruct (1mg)
Doxorubicin content (µg/mg)
BBN-AuNP-DEOX (NP2)
0.3
AuNP-DOX (NP-1)
0.53
Doxorubicin Fluorescence Intensity
y = 41011x + 18274
R1 = 0.7591
Relative Fluorescence Intensity
Concentration of Doxorubicin (mg/ml)

**Figure 8**

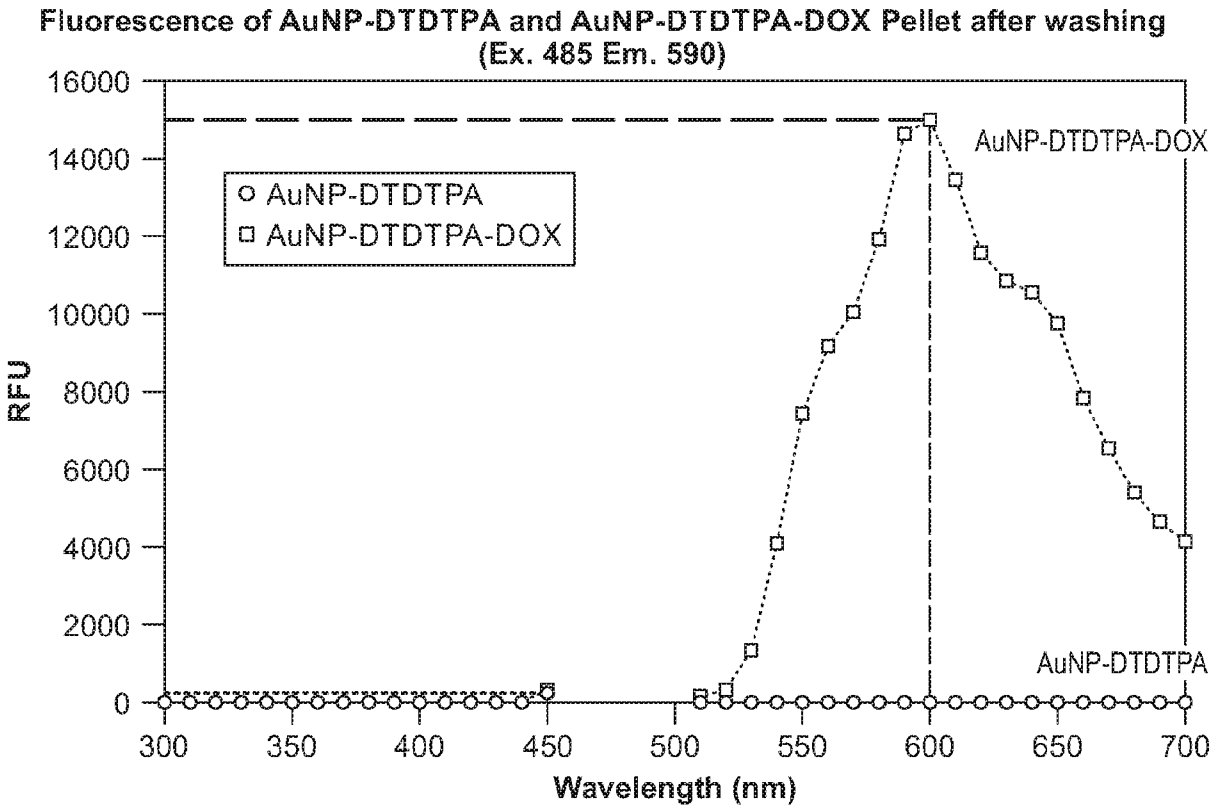



**Figure 9**

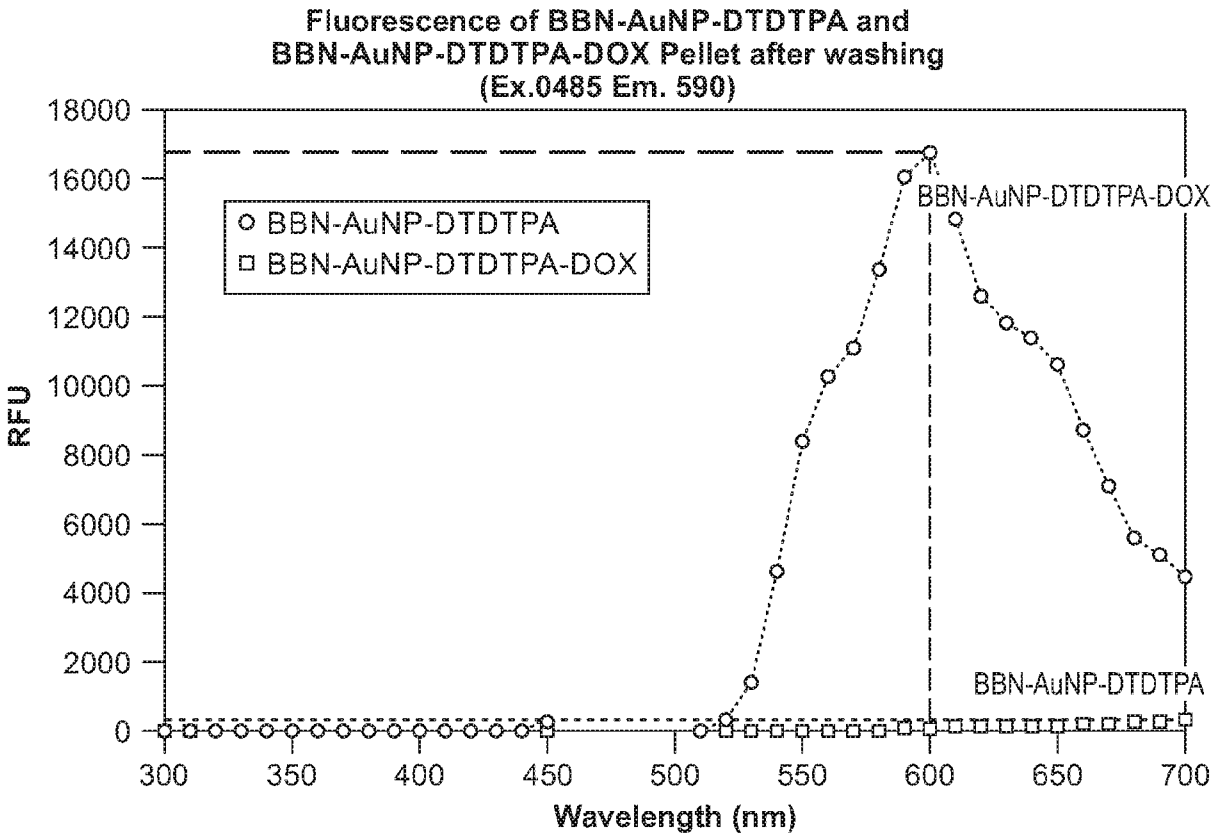



**Figure 10**

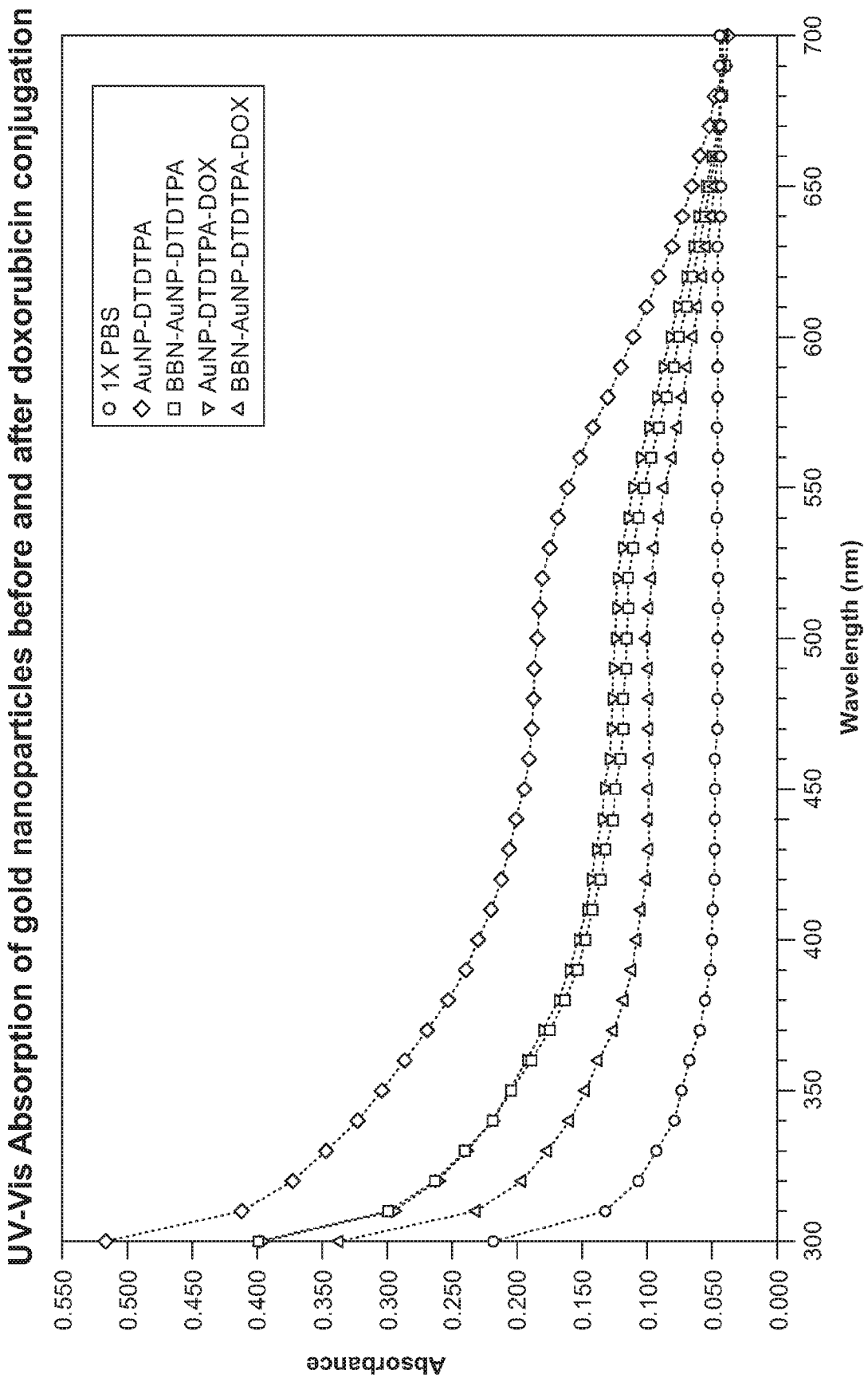

UV-Vis Absorption of gold nanoparticles before and after doxorubicin conjugation
1X PBS
AuNP-DTDTPA
BBN-AuNP-DTDTPA
AuNP-DTDTPA-DOX
BBN-AuNP-DTDTPA-DOX
Absorbance
0.550
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
0.000
300
350
400
450
500
550
600
650
700
Wavelength (nm)

**Figure 11**

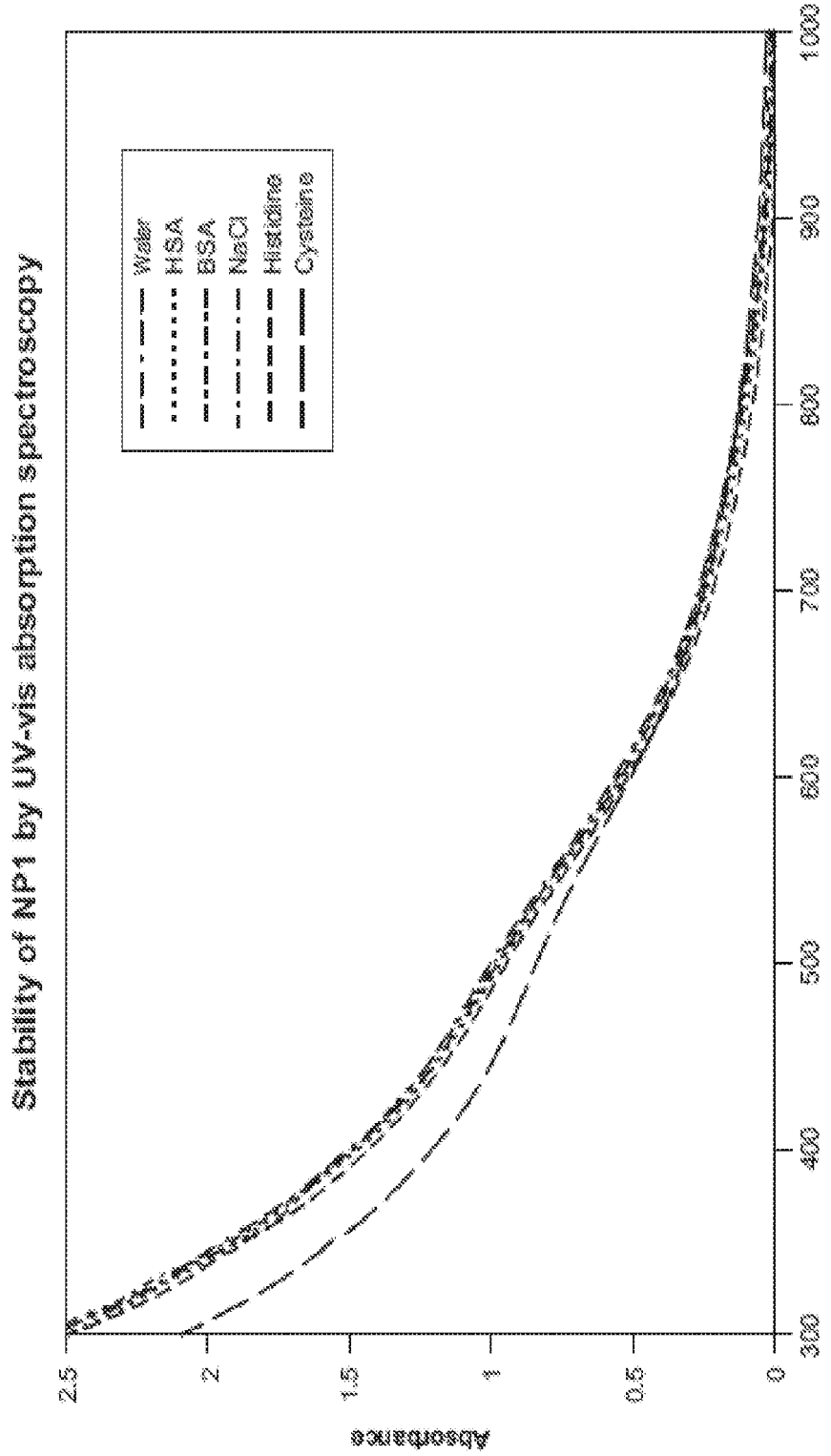

Stability of NP1 by UV-vis absorption spectroscopy
Water
HSA
BSA
NaCl
Histidine
Cysteine
Absorbance
Wavelength (nm)
2.5
2
1.5
1
0.5
0
300
400
500
600
700
800
900
1000

Figure 12A

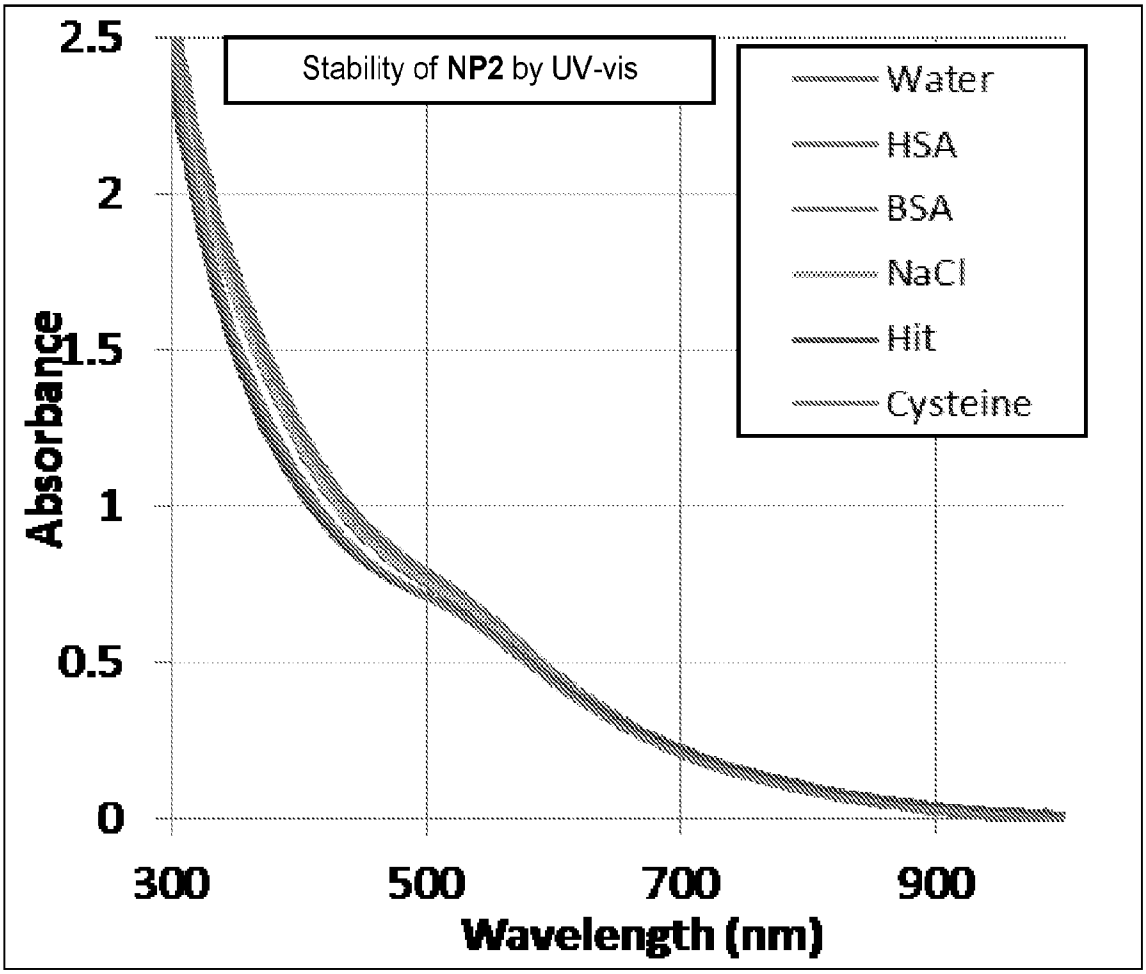

Stability of NP2 by UV-vis
Water
HSA
BSA
NaCl
Hit
Cysteine
Absorbance
2.5
2
1.5
1
0.5
0
300
500
700
900
Wavelength (nm)

Figure 12B

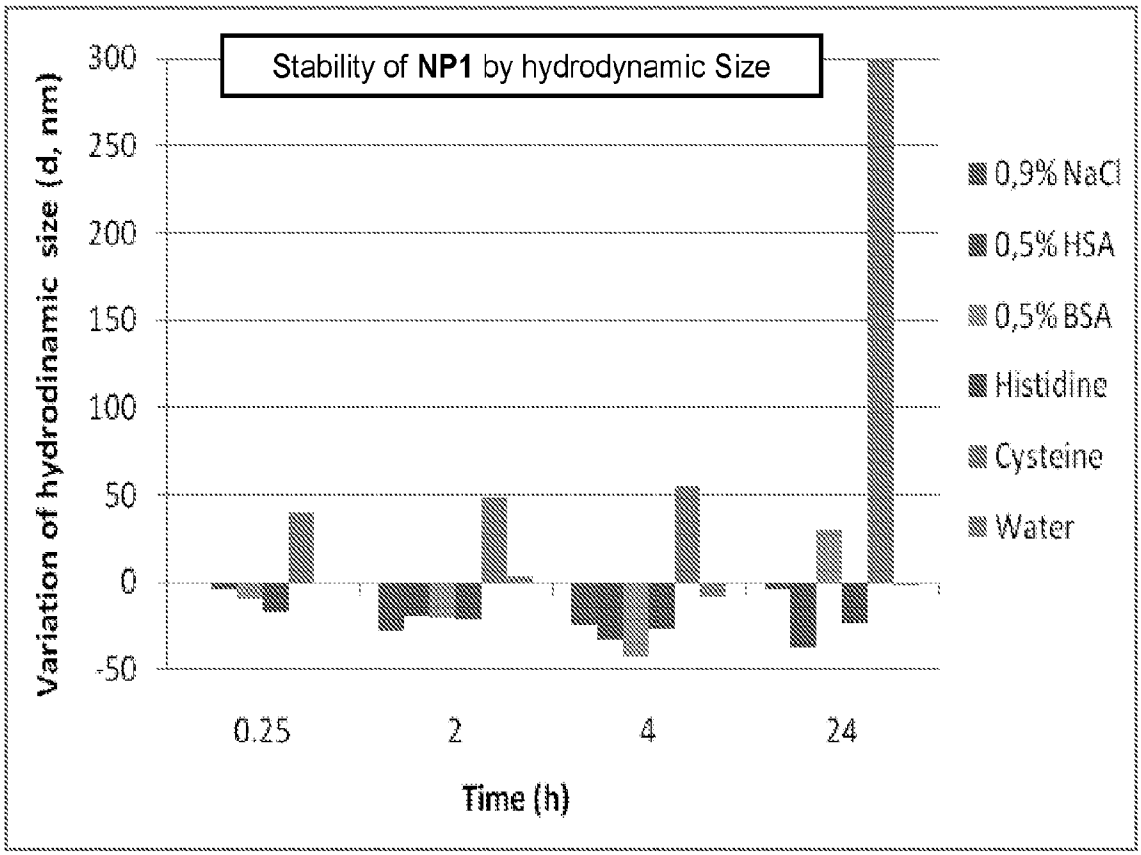

Stability of **NP1** by hydrodynamic Size
Variation of hydrodinamic size (d, nm)
300
250
200
150
100
50
0
-50
0.25
2
4
24
Time (h)
0,9% NaCl
0,5% HSA
0,5% BSA
Histidine
Cysteine
Water

**Figure 12C**

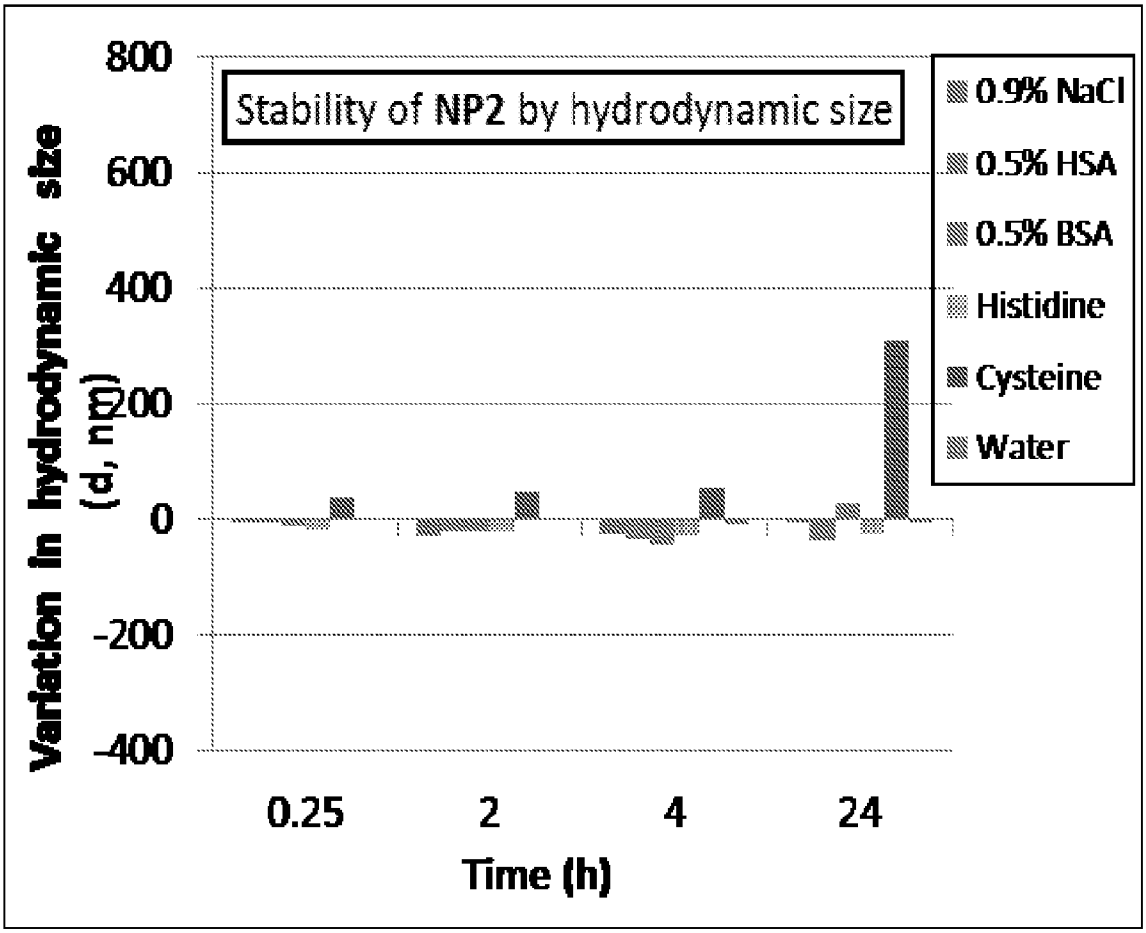

Stability of NP2 by hydrodynamic size
Variation in hydrodynamic size (d, nm)
800
600
400
200
0
-200
-400
0.25
2
4
24
Time (h)
0.9% NaCl
0.5% HSA
0.5% BSA
Histidine
Cysteine
Water

Figure 12D

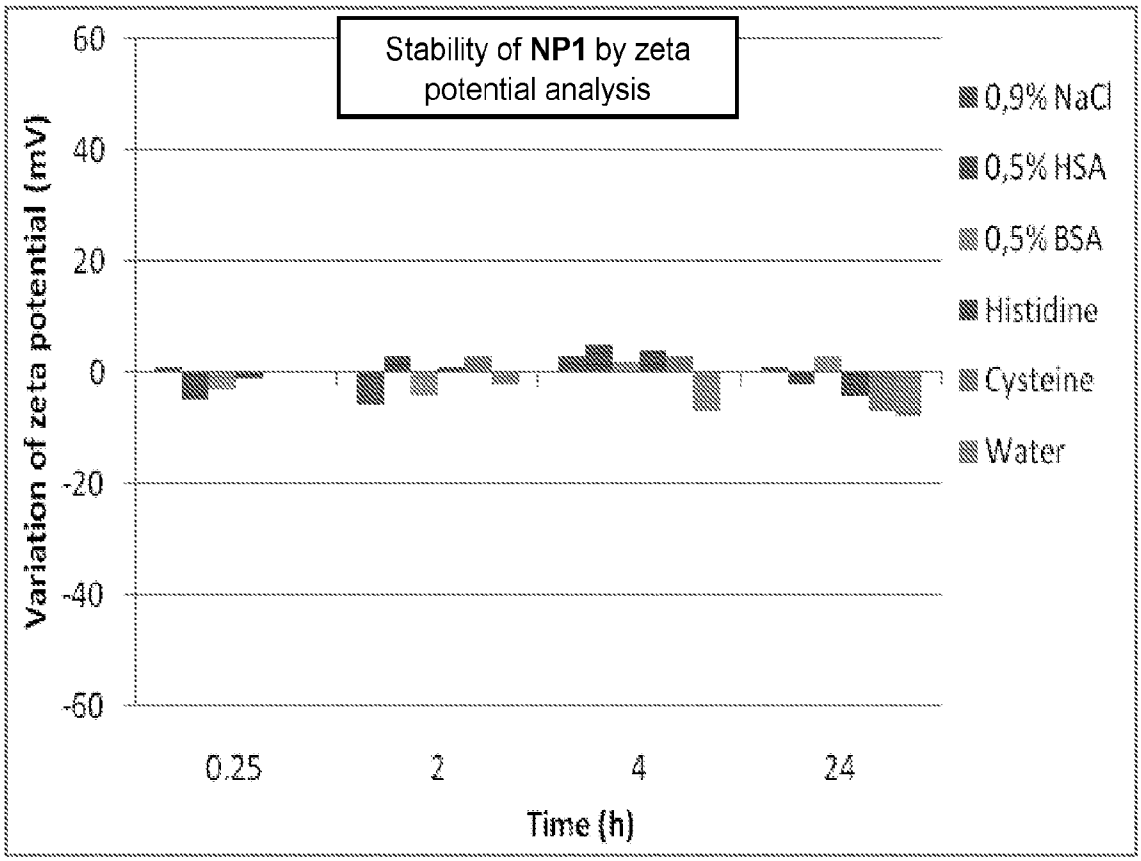

Stability of **NP1** by zeta potential analysis
Variation of zeta potential (mV)
60
40
20
0
-20
-40
-60
0.25
2
4
24
Time (h)
0,9% NaCl
0,5% HSA
0,5% BSA
Histidine
Cysteine
Water

**Figure 12E**

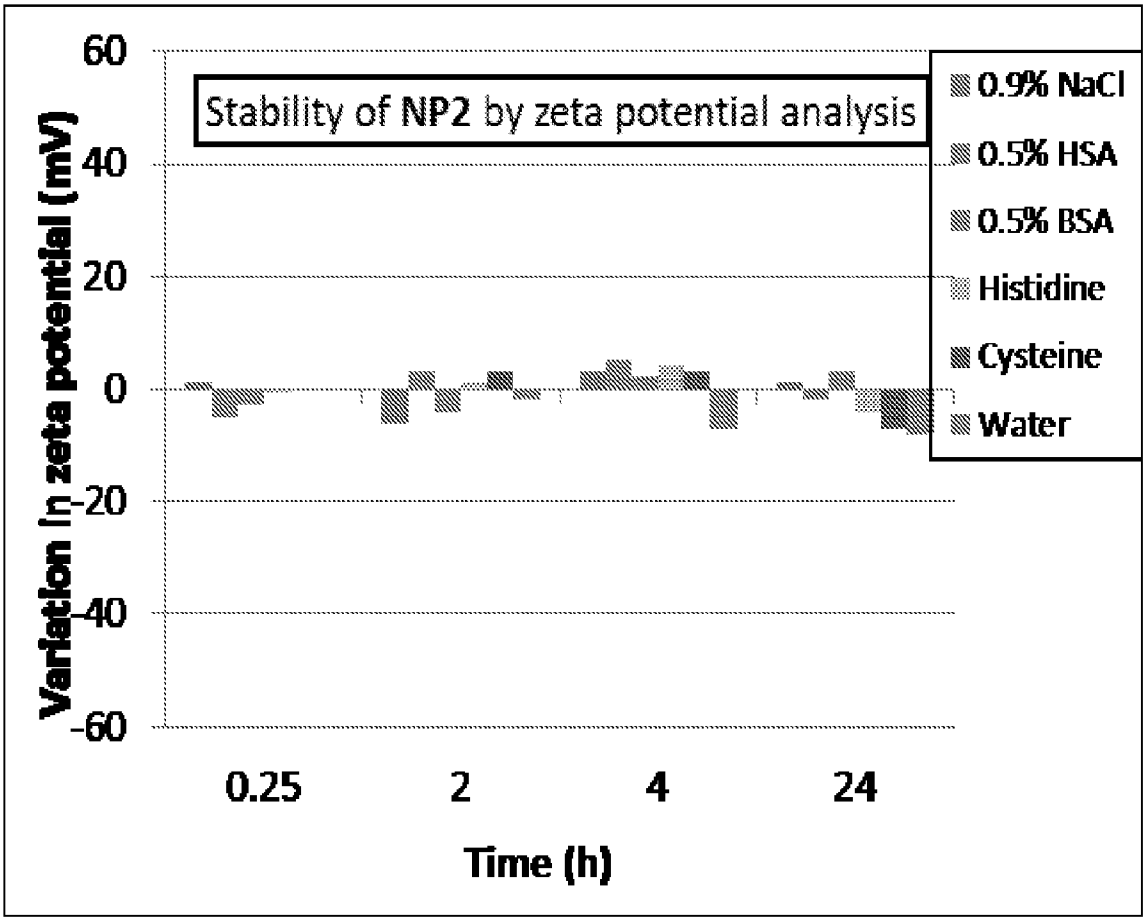

Stability of NP2 by zeta potential analysis
Variation in zeta potential (mV)
60
40
20
0
-20
-40
-60
0.25
2
4
24
Time (h)
0.9% NaCl
0.5% HSA
0.5% BSA
Histidine
Cysteine
Water

Figure 12F

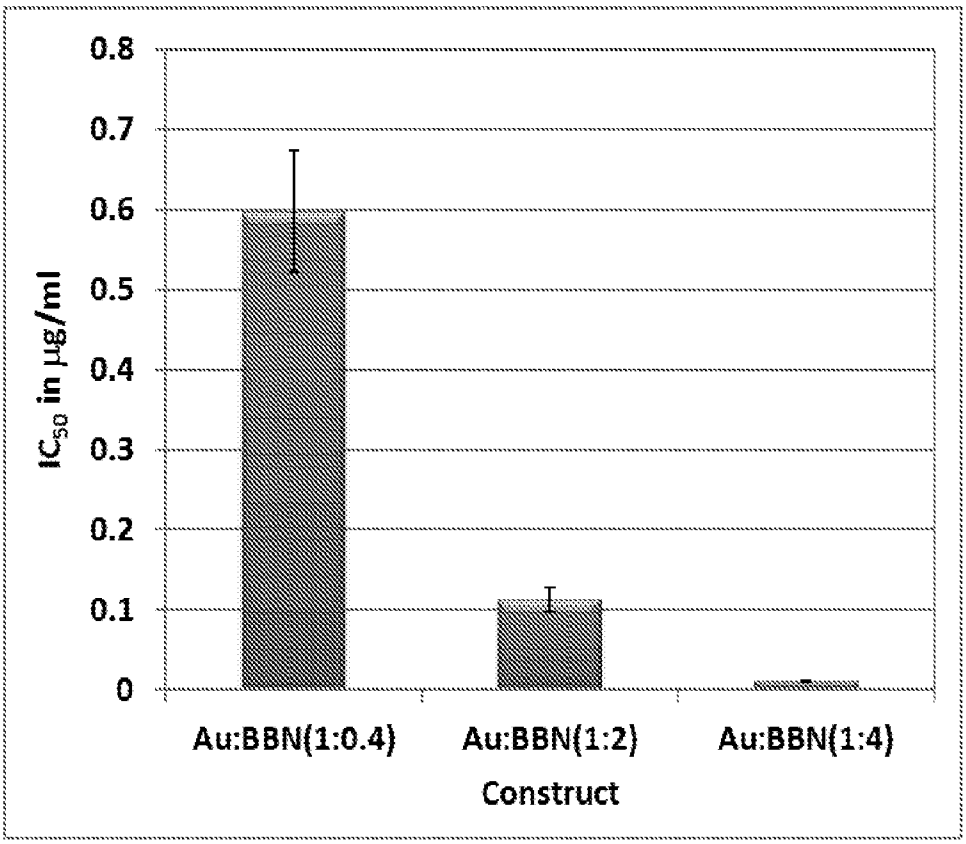

0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
IC50 in µg/ml
Au:BBN(1:0.4)
Au:BBN(1:2)
Au:BBN(1:4)
Construct

Figure 13

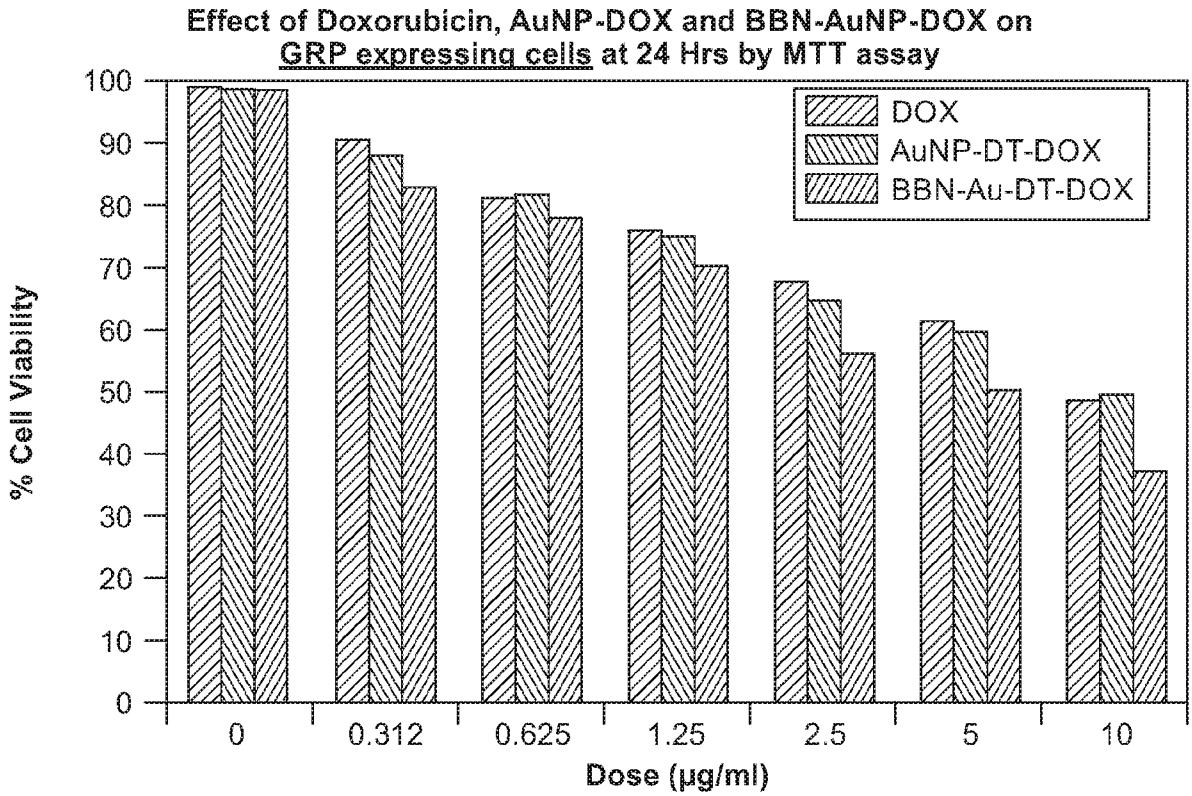



**Figure 14**

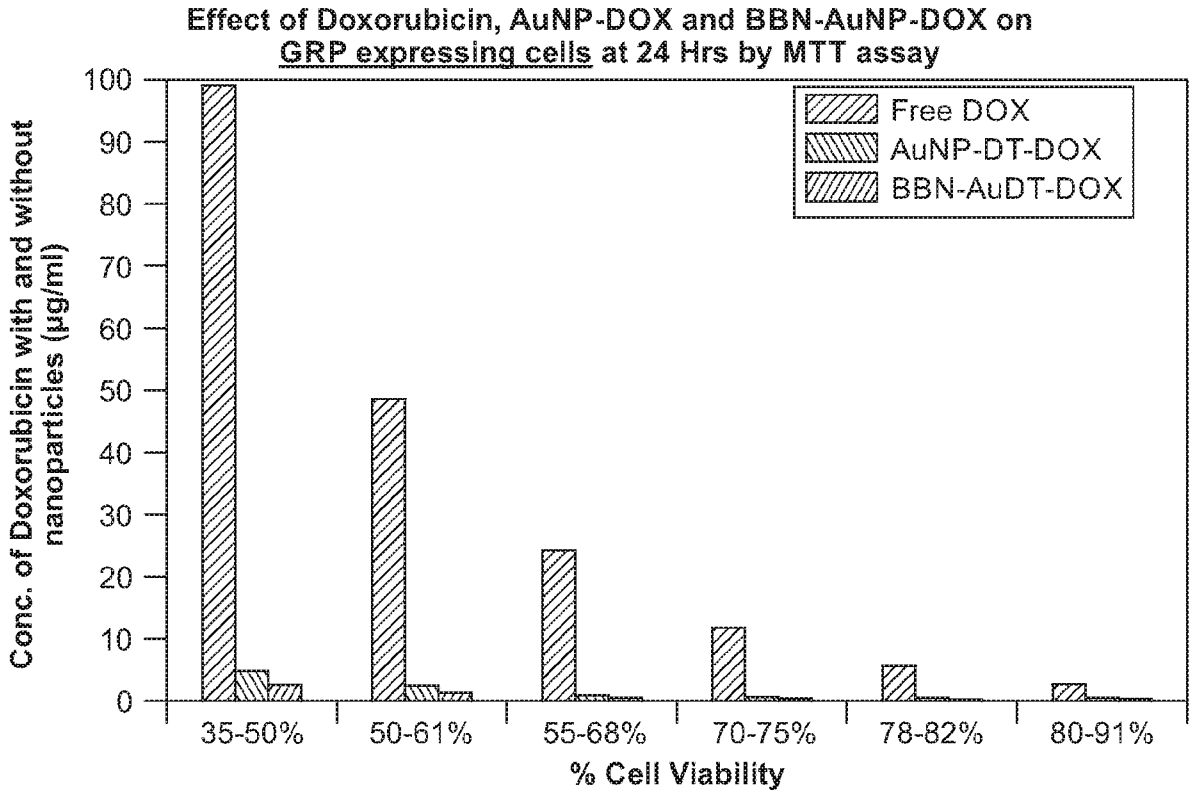



**Figure 15**

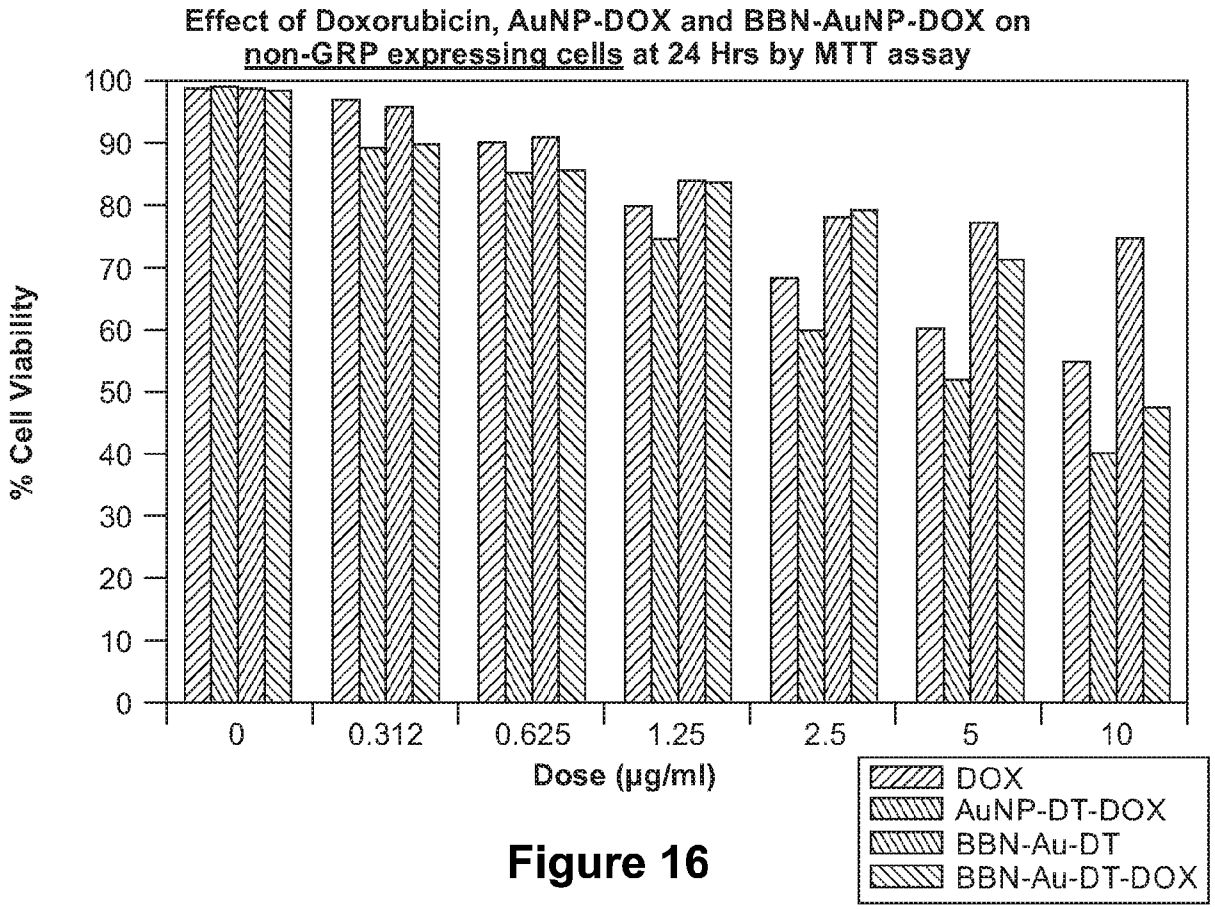



**Figure 16**

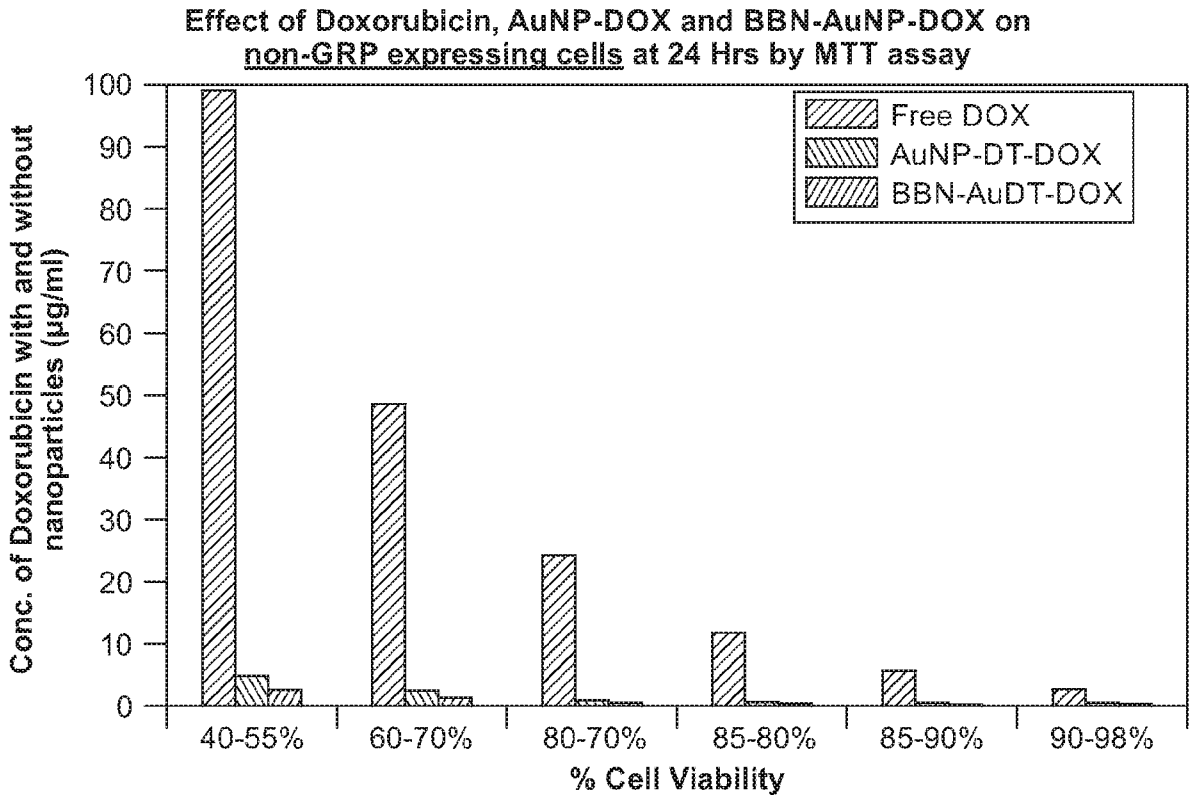



**Figure 17**

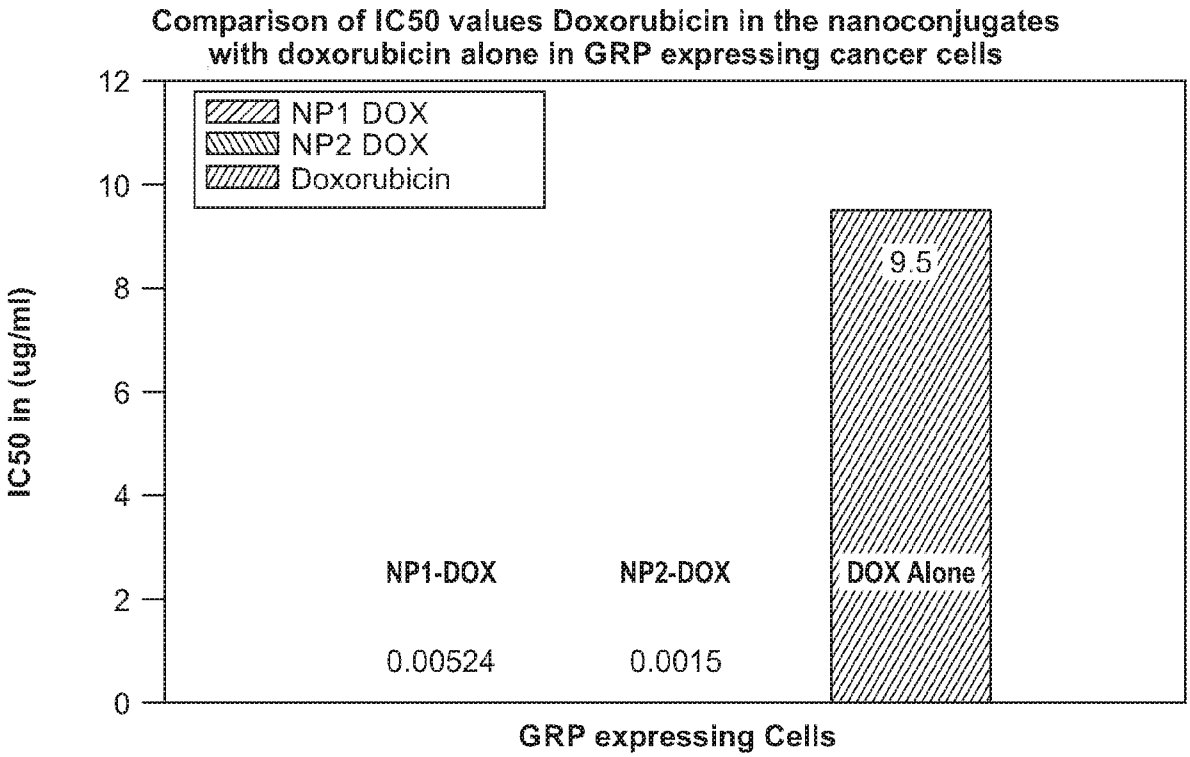



**Figure 18**

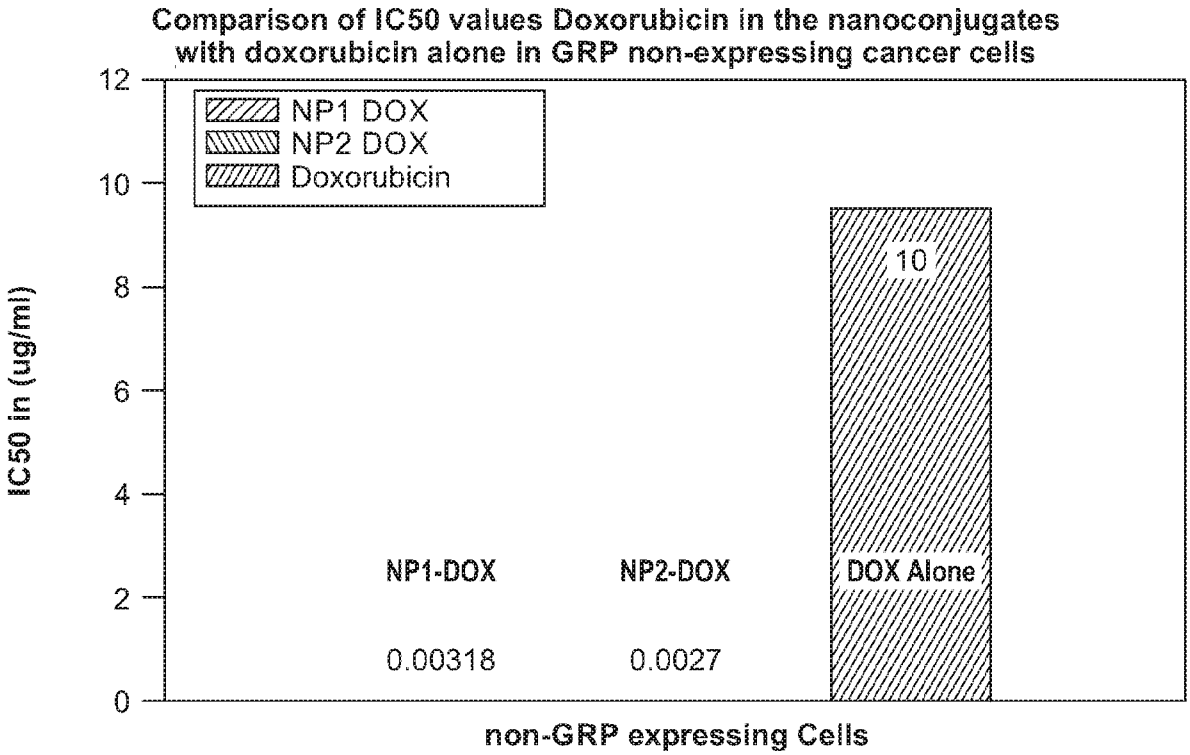



**Figure 19**

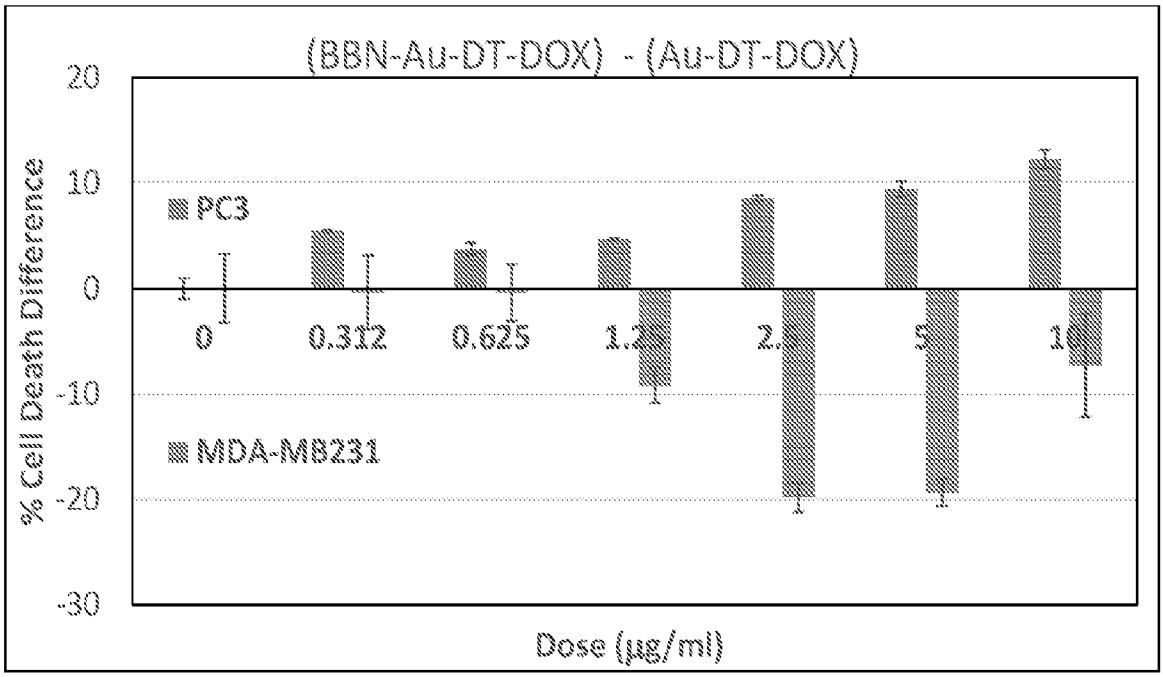

(BBN-Au-DT-DOX) - (Au-DT-DOX)
% Cell Death Difference
20
10
0
-10
-20
-30
PC3
MDA-MB231
0
0.312
0.625
Dose (µg/ml)

**Figure 20**