FIG. 1

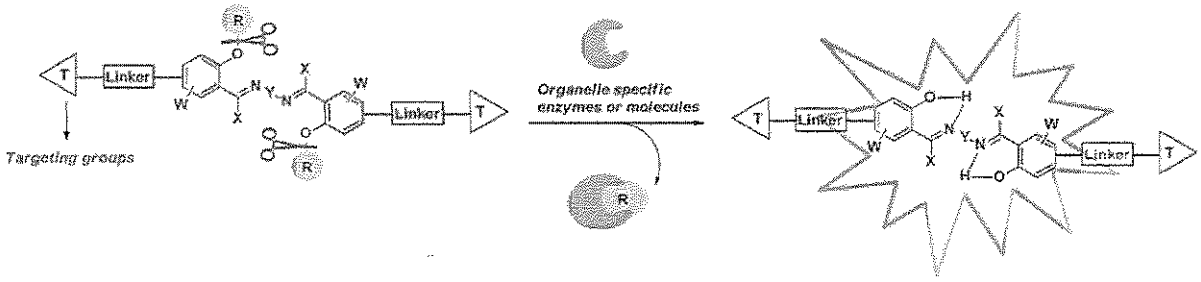

T
Linker
Targeting groups
R
O
N
Y
X
W
Linker
T
Organelle specific
enzymes or molecules
R
T
Linker
O—H
N
Y
X
W
H—O
Linker
T

FIG. 2

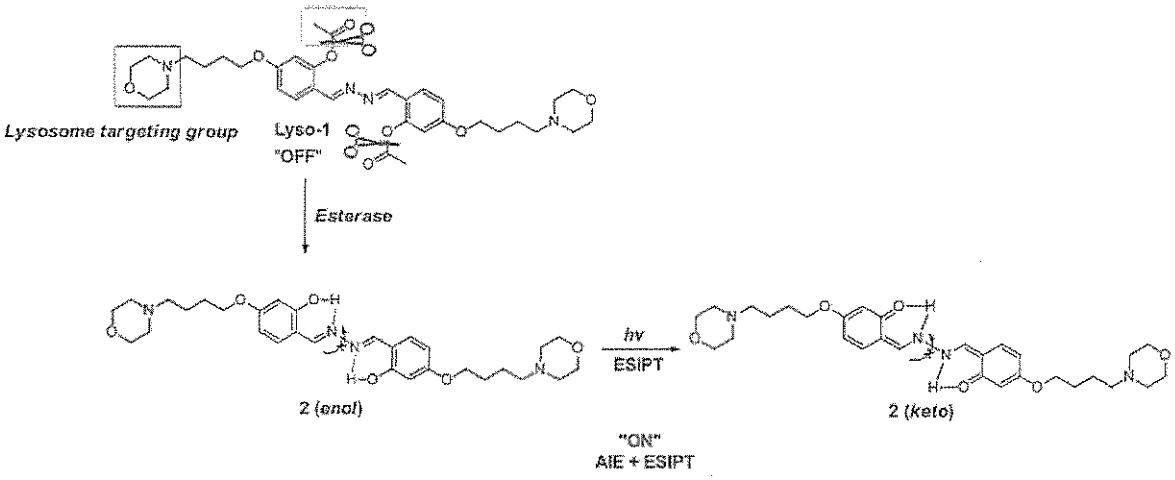

Lysosome targeting group
Lyso-1
"OFF"
Esterase
2 (enol)
hν
ESIPT
2 (keto)
"ON"
AIE + ESIPT

FIG. 3

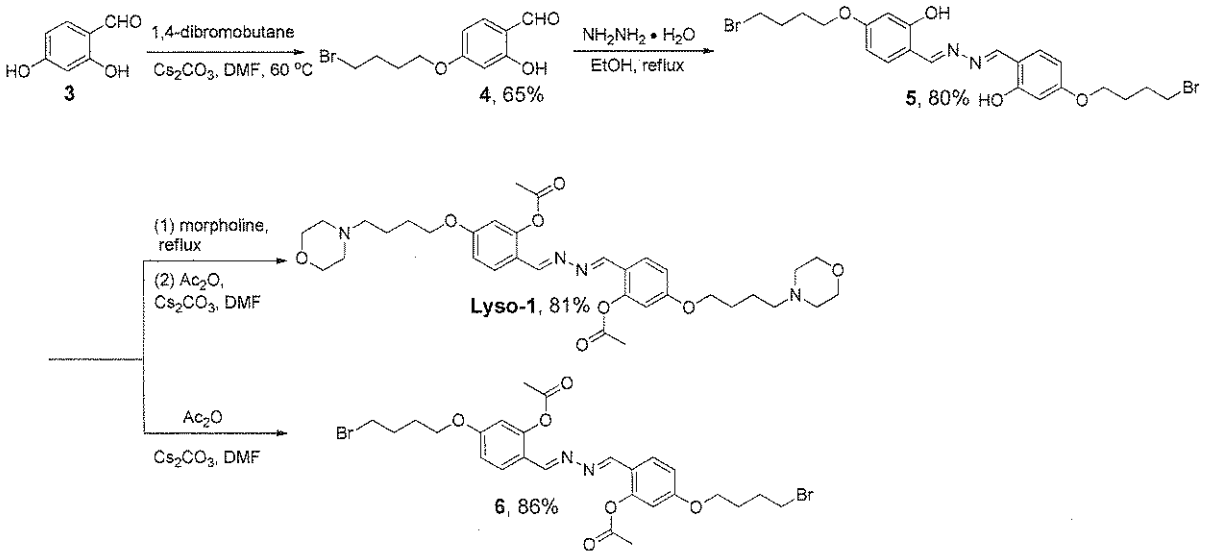

1,4-dibromobutane
Cs_2CO_3, DMF, 60 °C
$NH_2NH_2 \cdot H_2O$
EtOH, reflux
3
4, 65%
5, 80%
(1) morpholine, reflux
(2) Ac_2O, Cs_2CO_3, DMF
Lyso-1, 81%
Ac_2O
Cs_2CO_3, DMF
6, 86%

FIG. 4

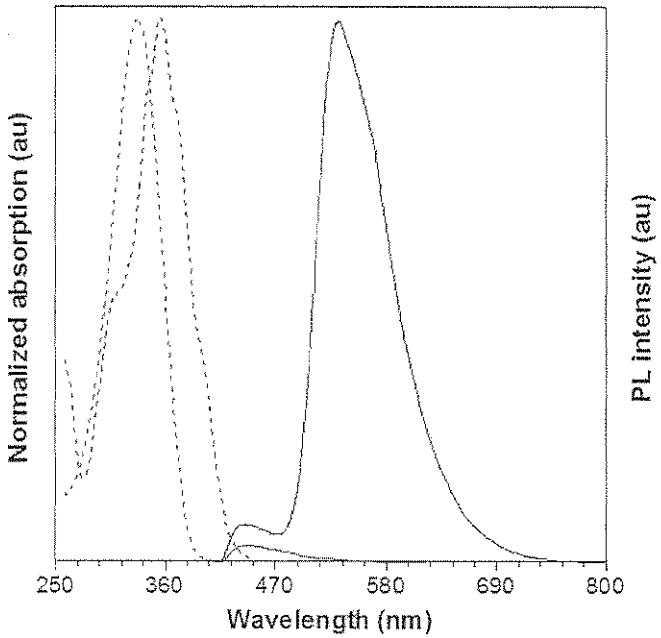

Normalized absorption (au)
PL intensity (au)
250
360
470
580
690
800
Wavelength (nm)

FIG. 5

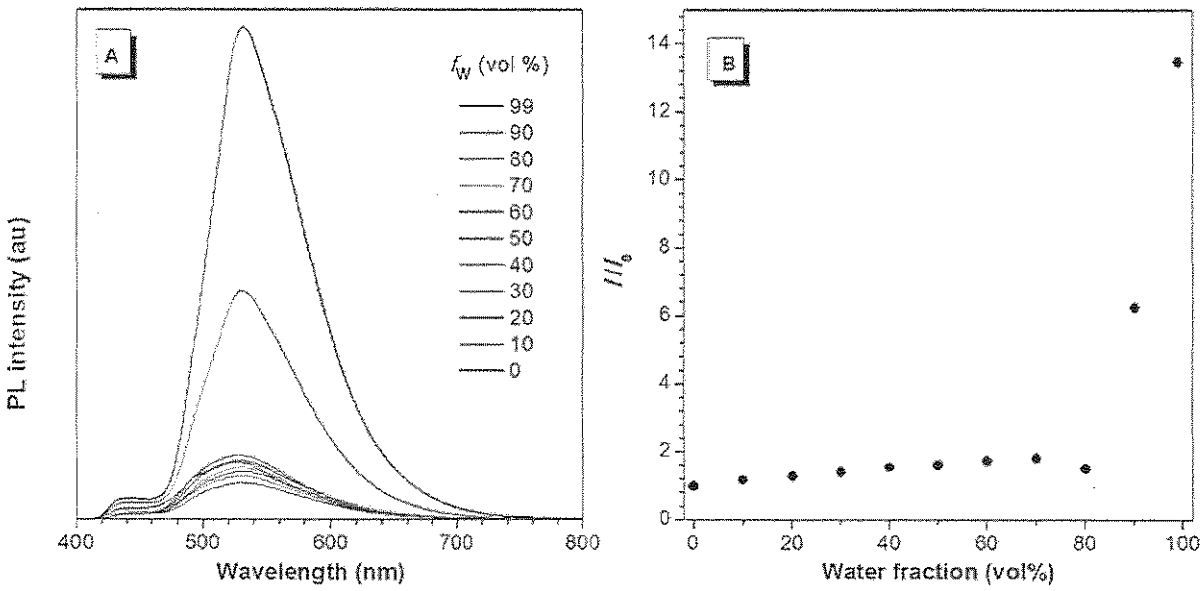

A
f_W (vol %)
99
90
80
70
60
50
40
30
20
10
0
PL intensity (au)
Wavelength (nm)
400
500
600
700
800
B
I/I_0
Water fraction (vol%)
0
2
4
6
8
10
12
14
0
20
40
60
80
100

FIG. 6

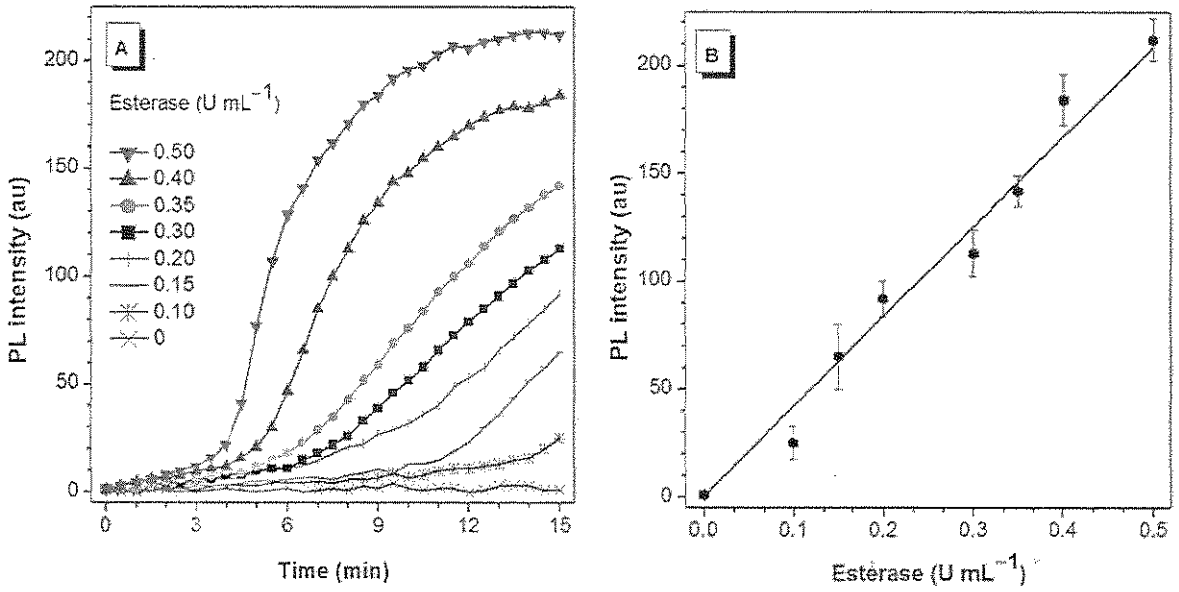

A
Esterase (U mL^{-1})
0.50
0.40
0.35
0.30
0.20
0.15
0.10
0
PL intensity (au)
Time (min)
B
PL intensity (au)
Esterase (U mL^{-1})

FIG. 7

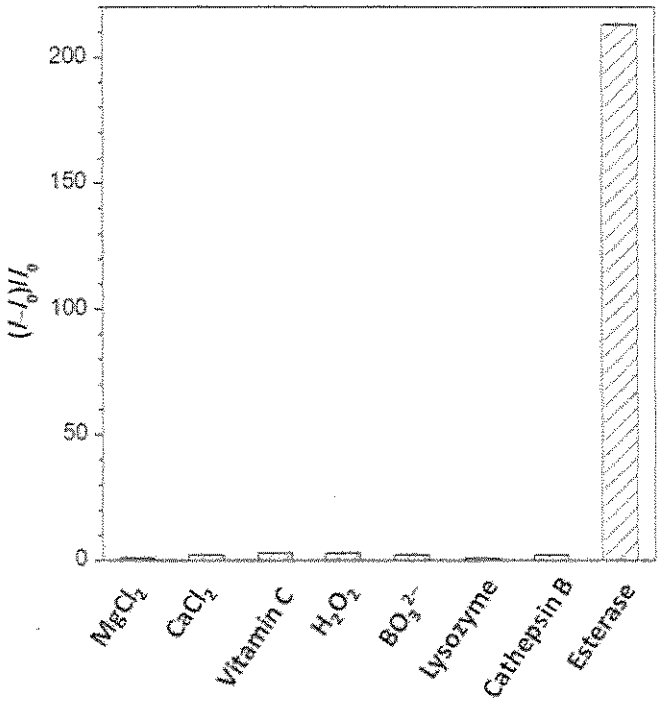

200
150
100
50
0
$(I-I_0)/I_0$
$MgCl_2$
$CaCl_2$
Vitamin C
H_2O_2
BO_3^{2-}
Lysozyme
Cathepsin B
Esterase

FIG. 8

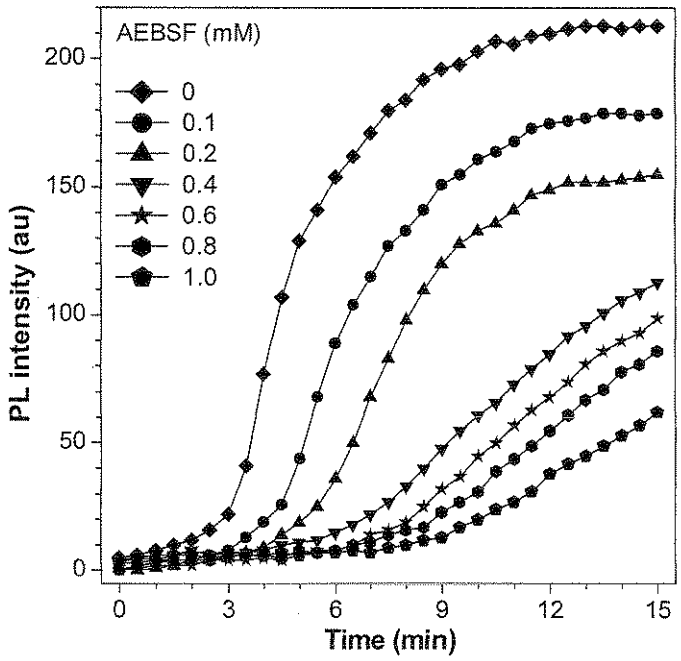

AEBSF (mM)
0
0.1
0.2
0.4
0.6
0.8
1.0
PL intensity (au)
Time (min)
0
50
100
150
200
0
3
6
9
12
15

FIG. 9

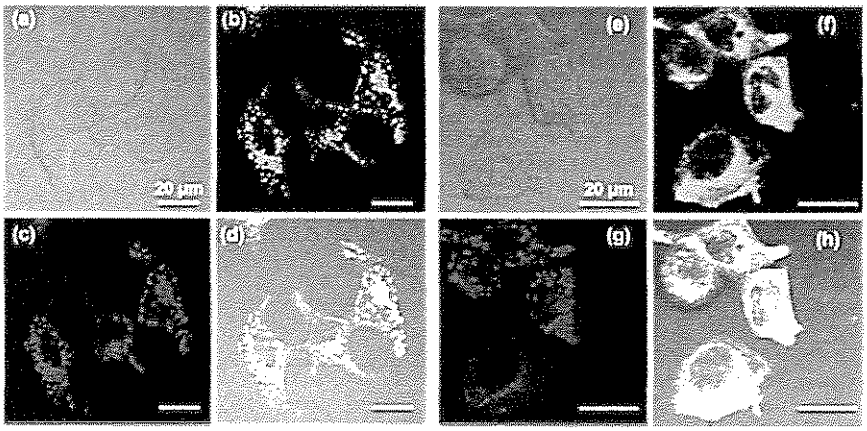


FIG. 10

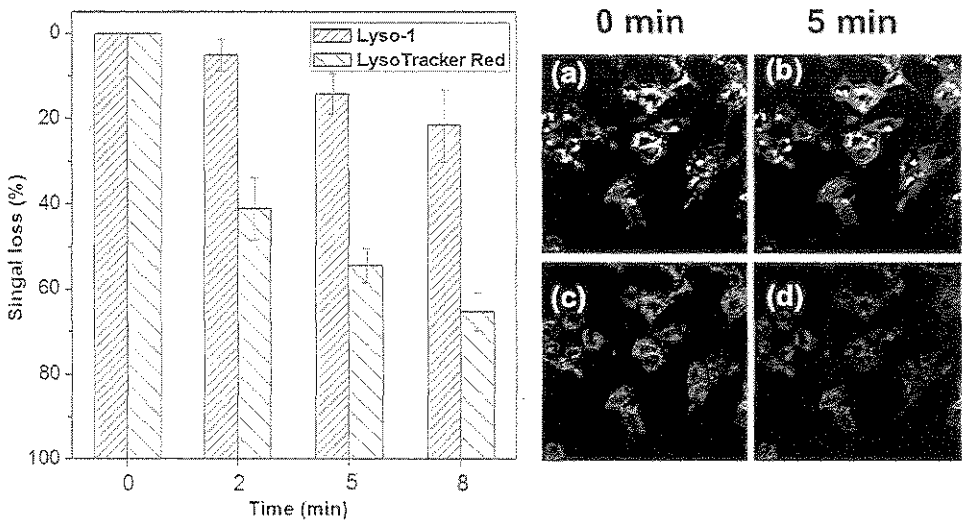

Lyso-1
LysoTracker Red
Singal loss (%)
0
20
40
60
80
100
0
2
5
8
Time (min)
0 min
5 min
(a)
(b)
(c)
(d)

FIG. 11

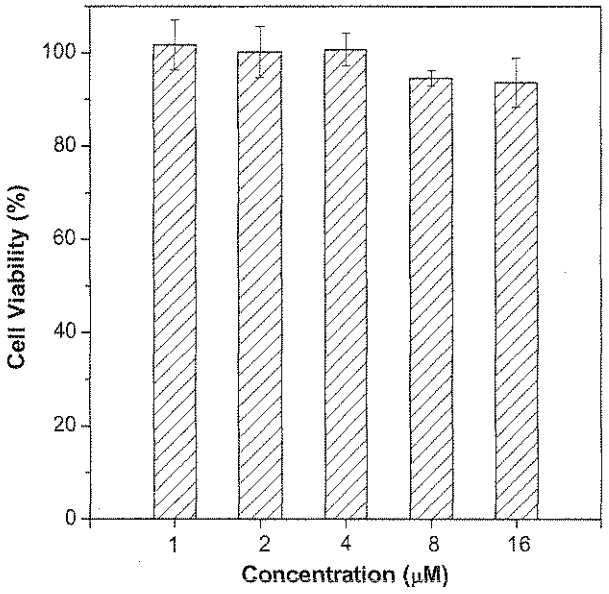


FIG. 12

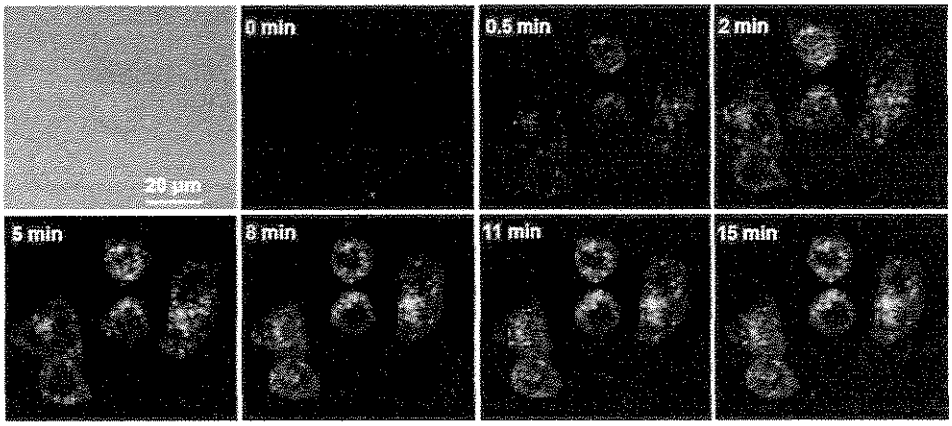


FIG. 13

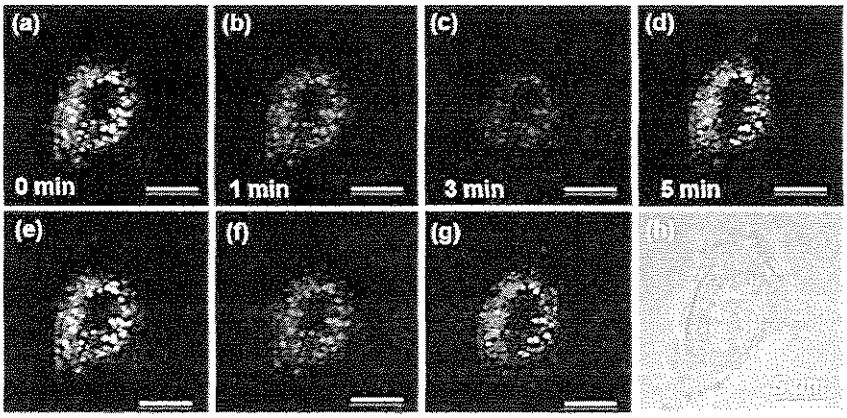


FIG. 14

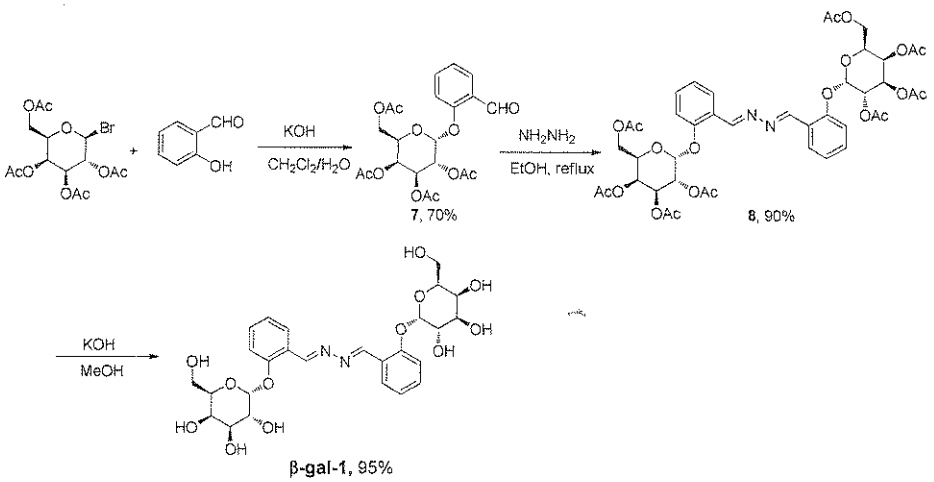


FIG. 15

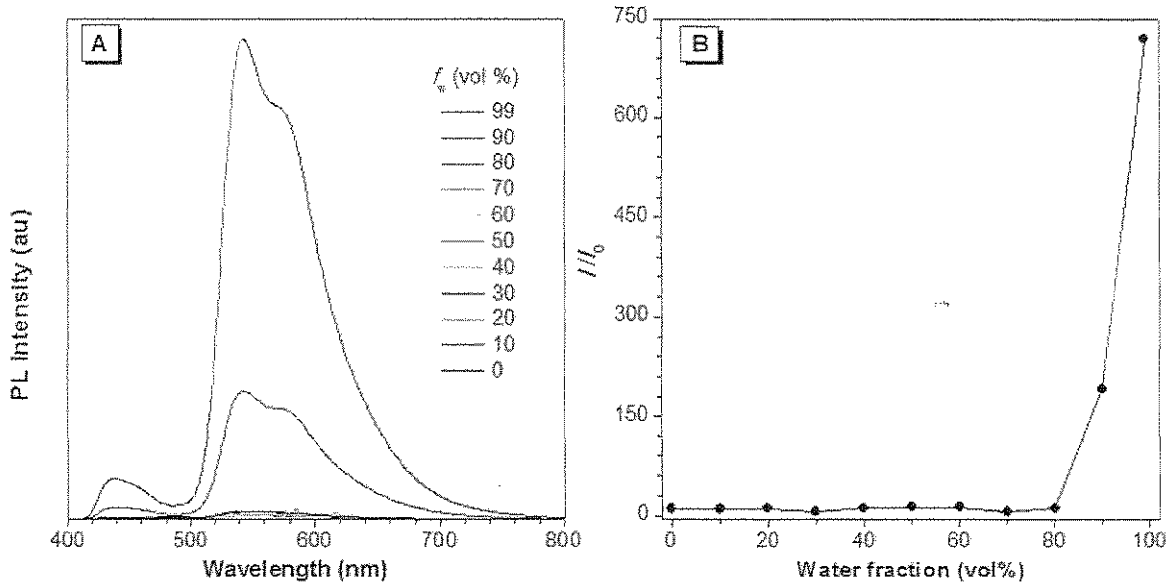

A
PL Intensity (au)
Wavelength (nm)
400
500
600
700
800
f_w (vol %)
99
90
80
70
60
50
40
30
20
10
0
B
I/I_0
Water fraction (vol%)
0
150
300
450
600
750
0
20
40
60
80
100

FIG. 16

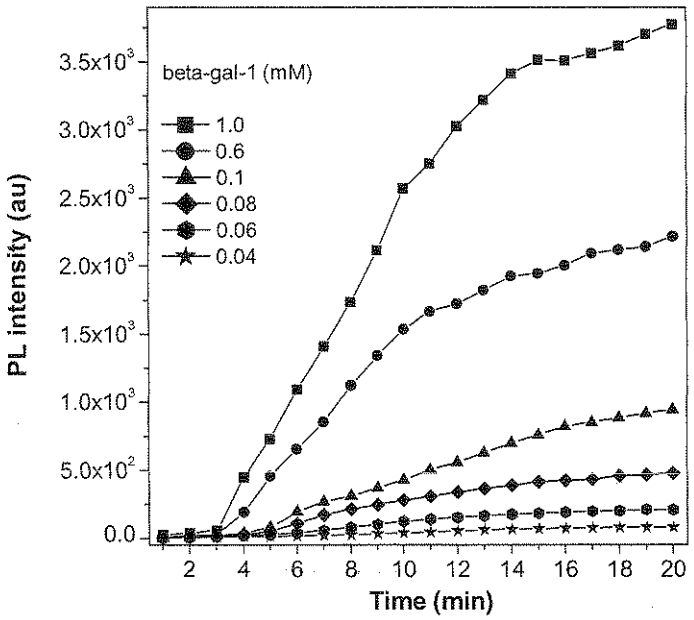

beta-gal-1 (mM)
1.0
0.6
0.1
0.08
0.06
0.04
PL intensity (au)
3.5x10^3
3.0x10^3
2.5x10^3
2.0x10^3
1.5x10^3
1.0x10^3
5.0x10^2
0.0
2
4
6
8
10
12
14
16
18
20
Time (min)

FIG. 17

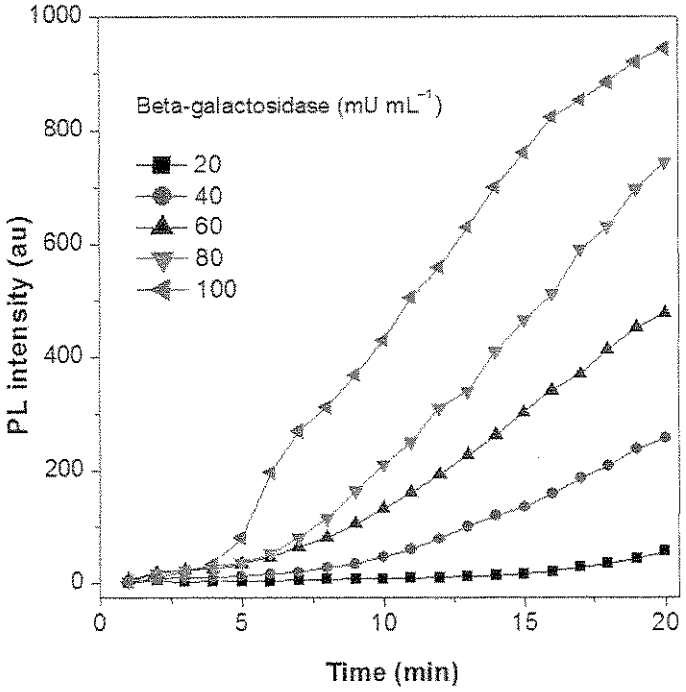

Beta-galactosidase (mU mL^{-1})
20
40
60
80
100
PL intensity (au)
Time (min)
0
200
400
600
800
1000
0
5
10
15
20

FIG. 18

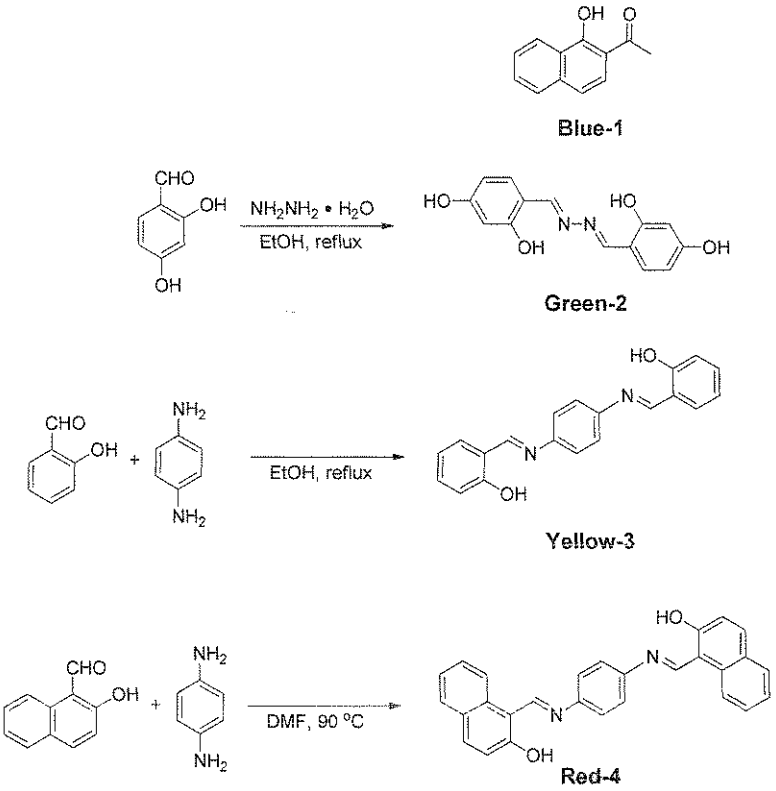

OH
O
Blue-1
CHO
OH
OH
NH2NH2 • H2O
EtOH, reflux
HO
N-N
HO
OH
OH
Green-2
CHO
OH
NH2
NH2
EtOH, reflux
HO
N
N
OH
Yellow-3
CHO
OH
NH2
NH2
DMF, 90 °C
HO
N
N
OH
Red-4

FIG. 19

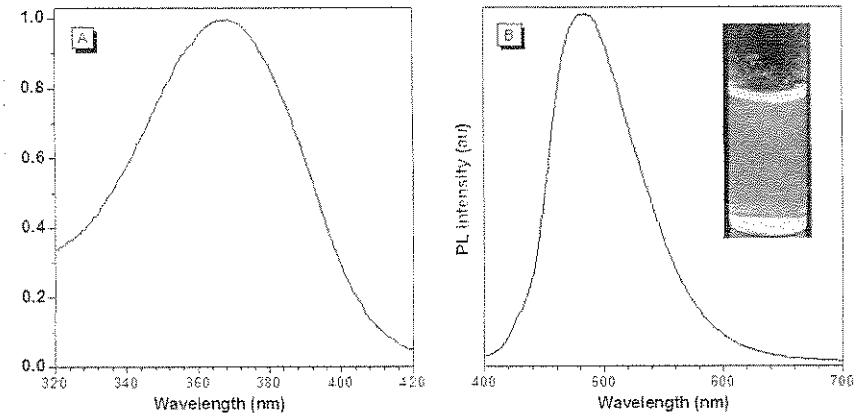

A
1.0
0.8
0.6
0.4
0.2
0.0
320
340
360
380
400
420
Wavelength (nm)
B
PL intensity (au)
400
500
600
700
Wavelength (nm)

FIG. 20

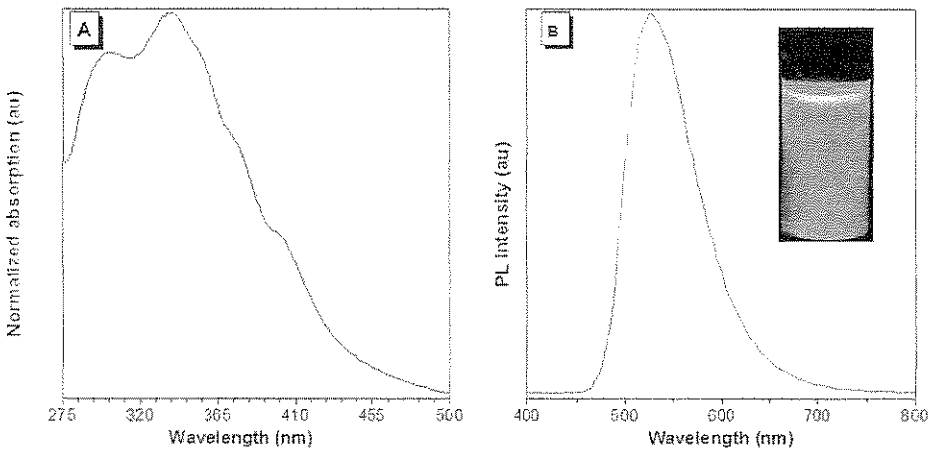

A
Normalized absorption (au)
275
320
365
410
455
500
Wavelength (nm)
B
PL intensity (au)
400
500
600
700
800
Wavelength (nm)

FIG. 21

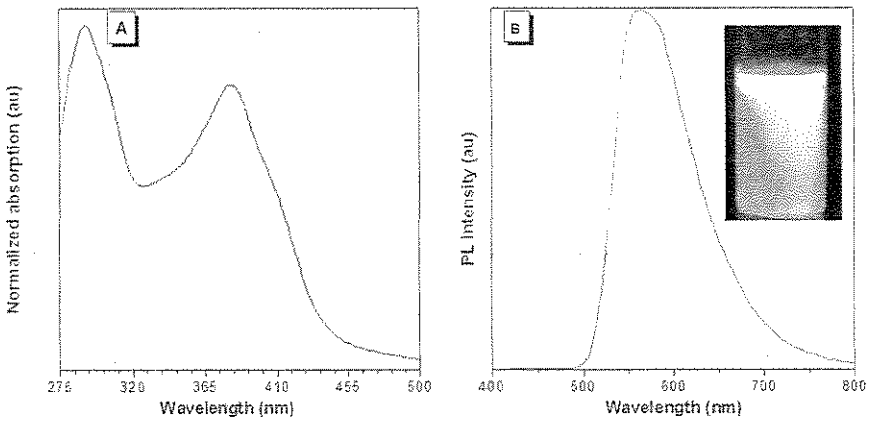

A
Normalized absorption (au)
275
320
365
410
455
500
Wavelength (nm)
B
PL Intensity (au)
400
500
600
700
800
Wavelength (nm)

FIG. 22

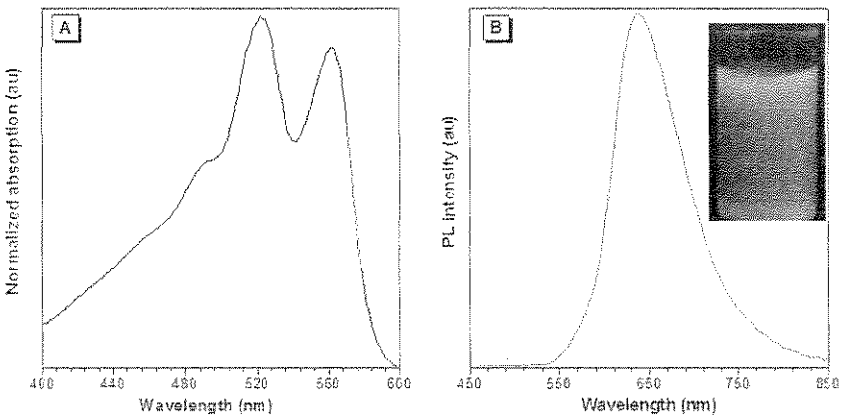

A
Normalized absorption (au)
400
440
480
520
560
600
Wavelength (nm)
B
PL intensity (au)
450
550
650
750
850
Wavelength (nm)

FIG. 23

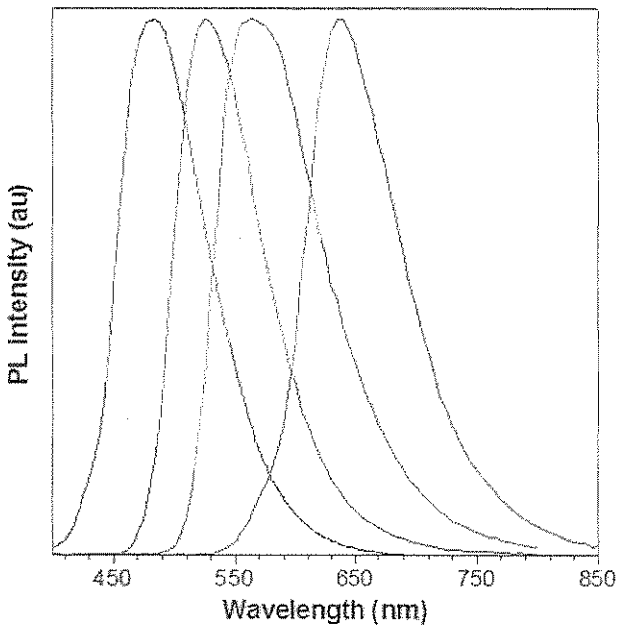


FIG. 24

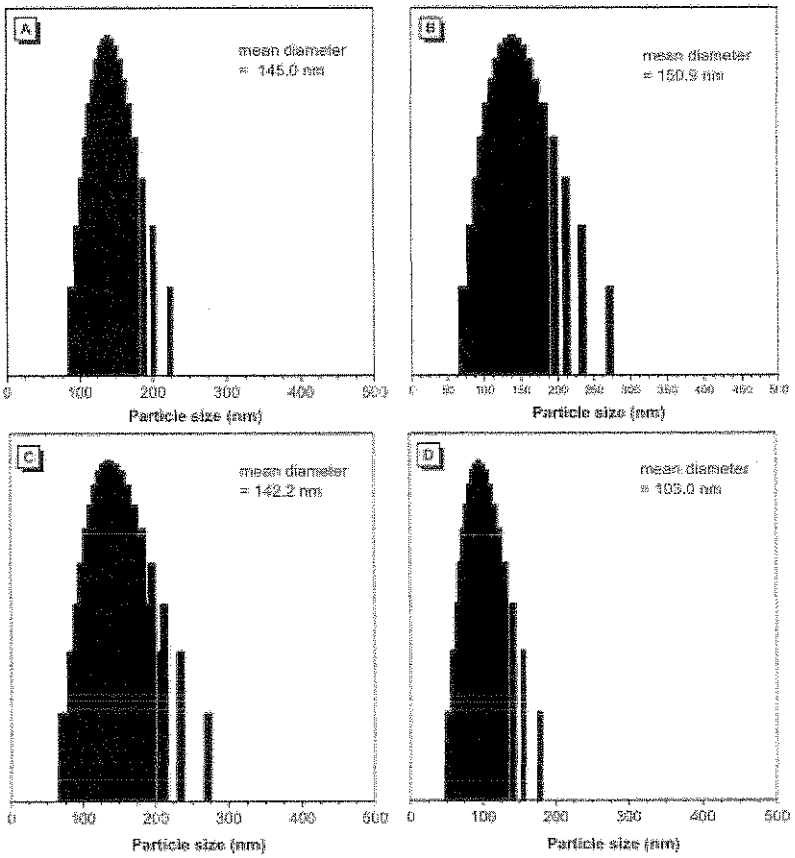

A
mean diameter
= 145.0 nm
Particle size (nm)
B
mean diameter
= 150.9 nm
Particle size (nm)
C
mean diameter
= 142.2 nm
Particle size (nm)
D
mean diameter
= 103.0 nm
Particle size (nm)

FIG. 25

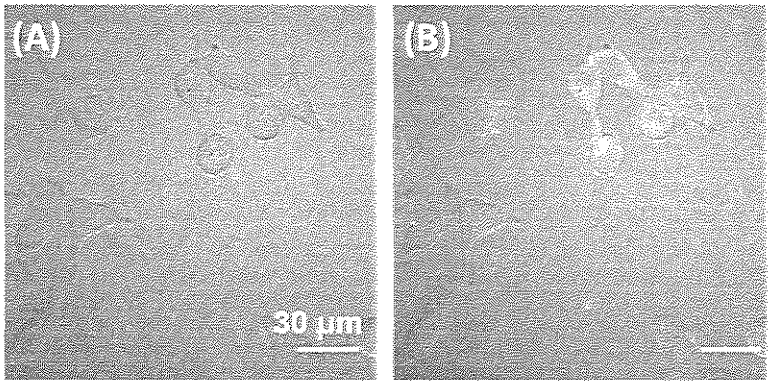


FIG. 26

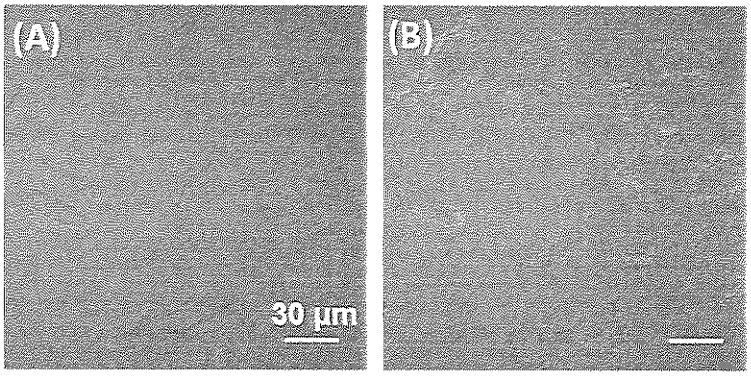


FIG. 27

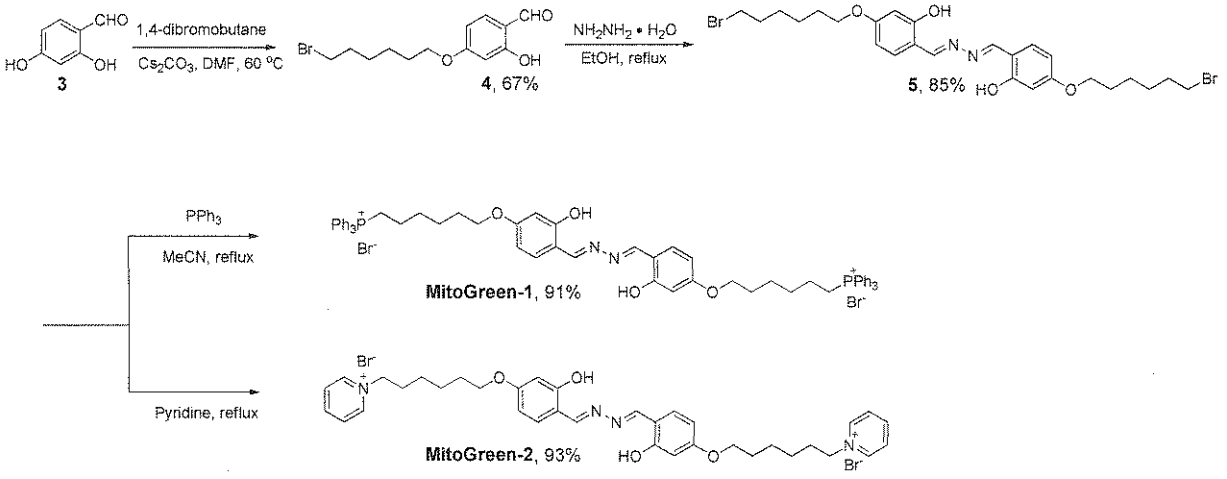

1,4-dibromobutane
Cs2CO3, DMF, 60 °C
3
4, 67%
NH2NH2 • H2O
EtOH, reflux
5, 85%
PPh3
MeCN, reflux
MitoGreen-1, 91%
Pyridine, reflux
MitoGreen-2, 93%

FIG. 28

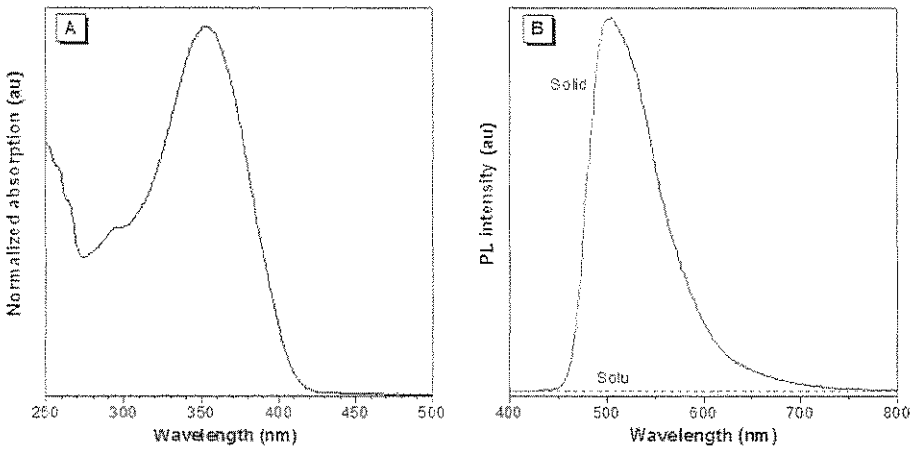

A
Normalized absorption (au)
250
300
350
400
450
500
Wavelength (nm)
B
Solid
Solu
PL intensity (au)
400
500
600
700
800
Wavelength (nm)

FIG. 29

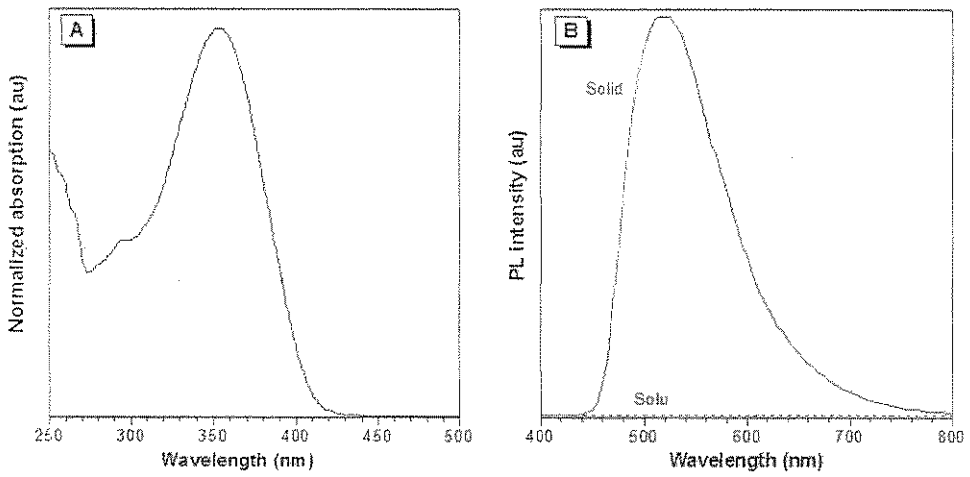

A
Normalized absorption (au)
250
300
350
400
450
500
Wavelength (nm)
B
Solid
Solu
PL intensity (au)
400
500
600
700
800
Wavelength (nm)

FIG. 30

