Supporting Information for

Azide Functionalized Porphyrin Based Dendritic Polymers for In Vivo Monitoring of Hg^{2+} Ions in Living Cells

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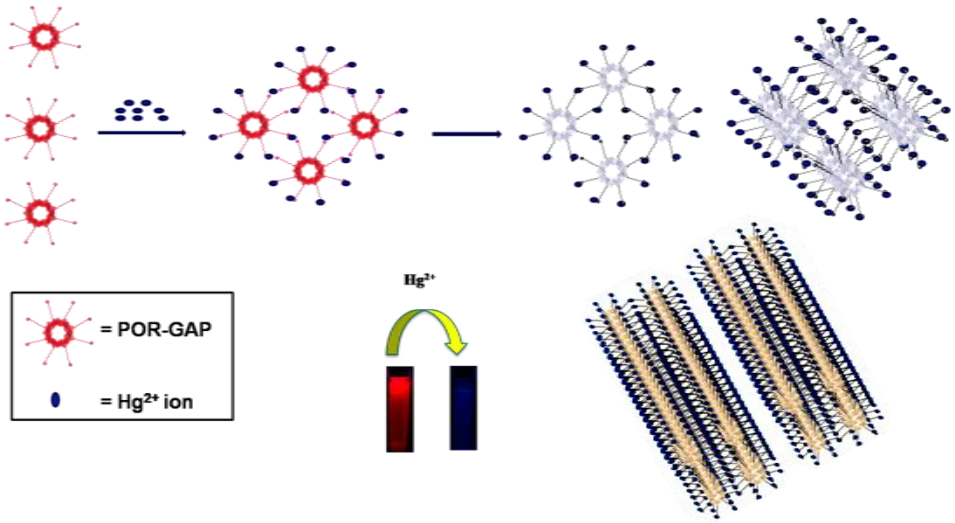
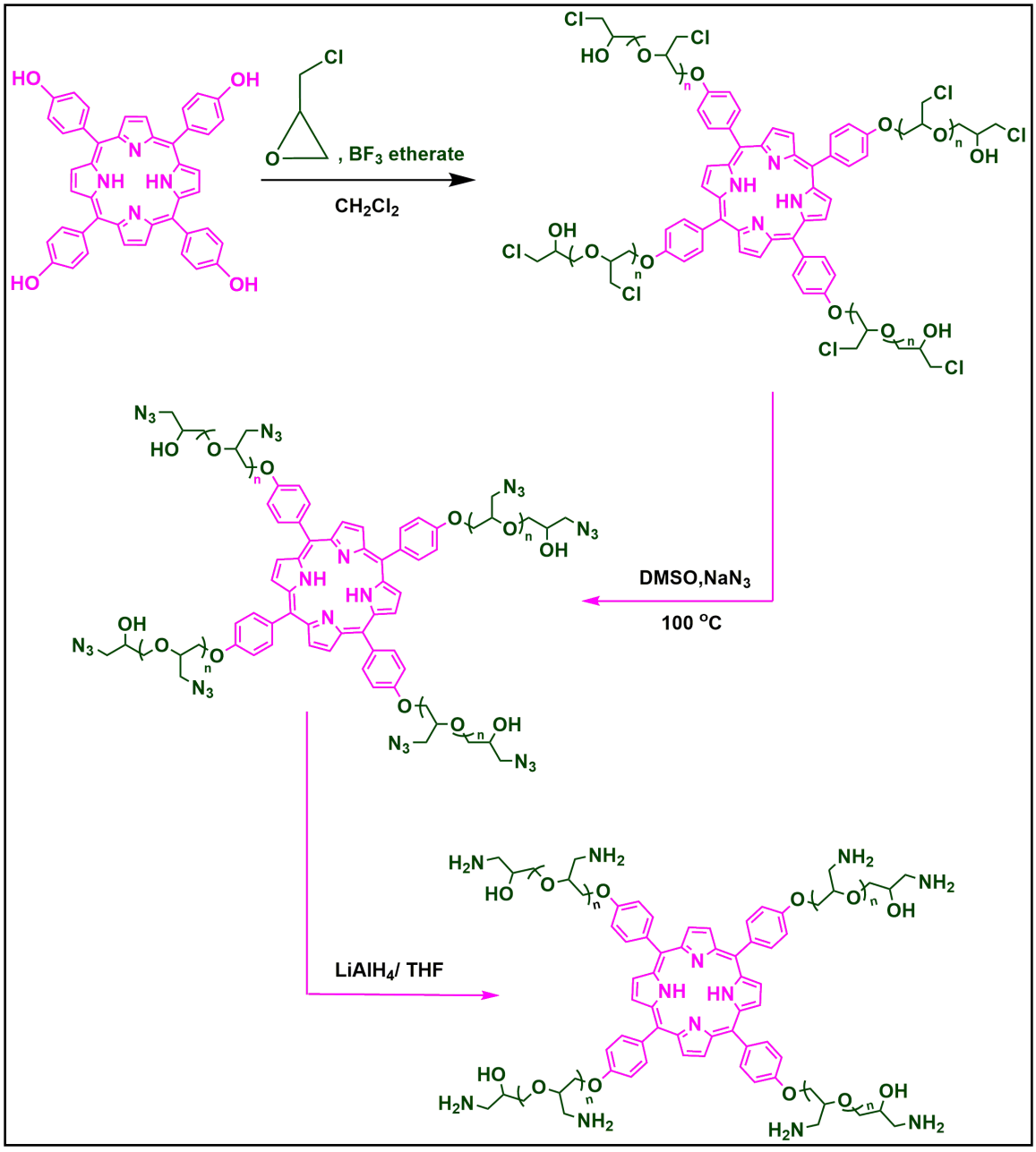
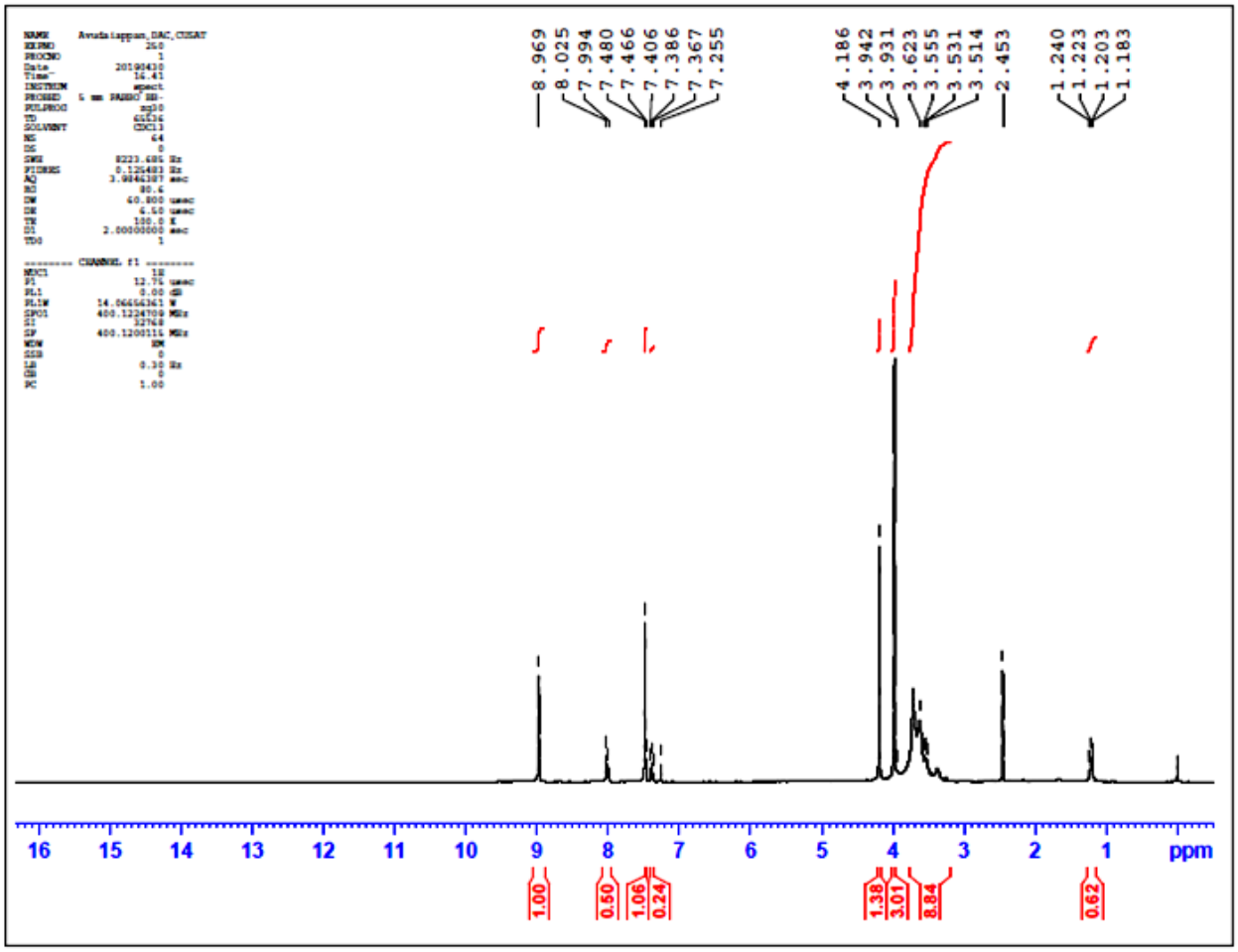
Graphical abstract



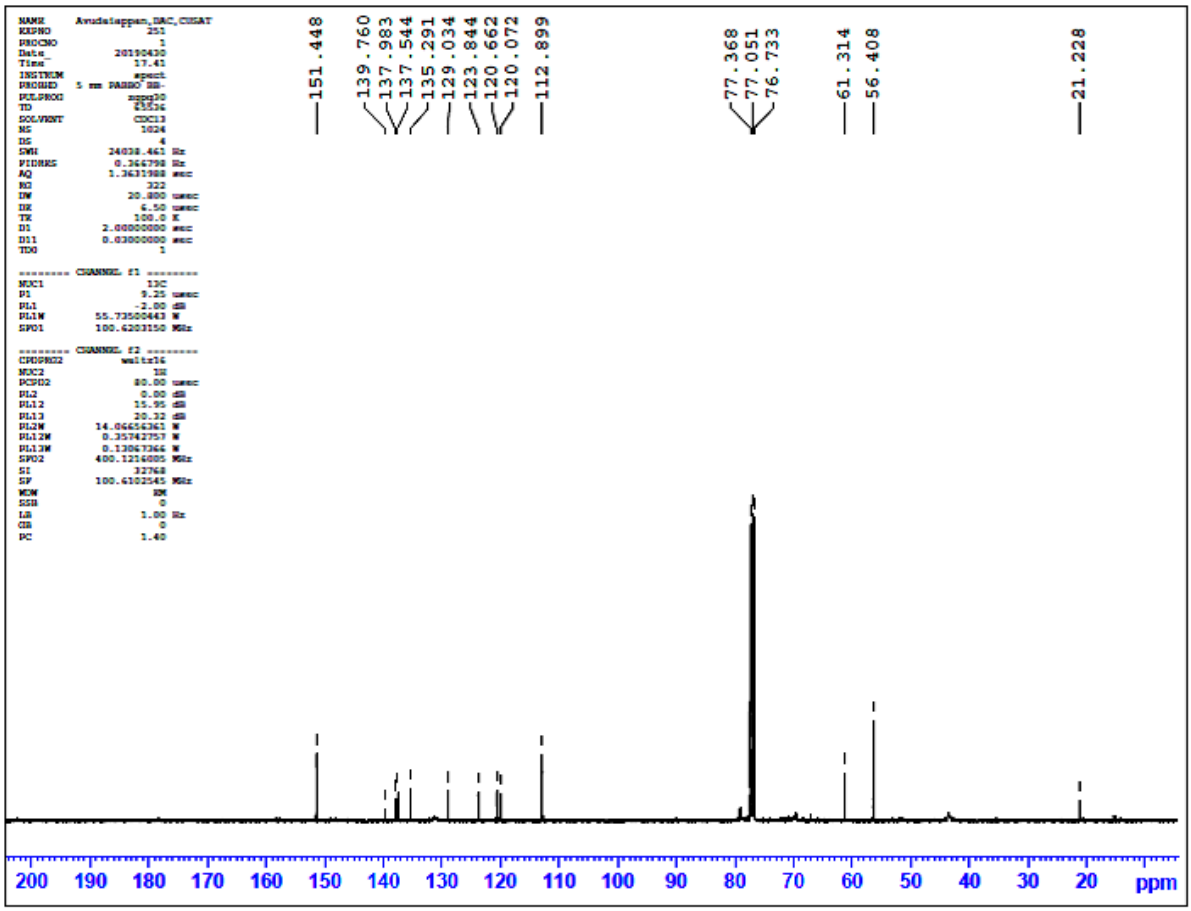
S1. Synthesis of POR-GAP



S2. ^{1}H NMR spectrum of POR-PECH



S3. ^{13}C NMR spectrum of POR-PECH

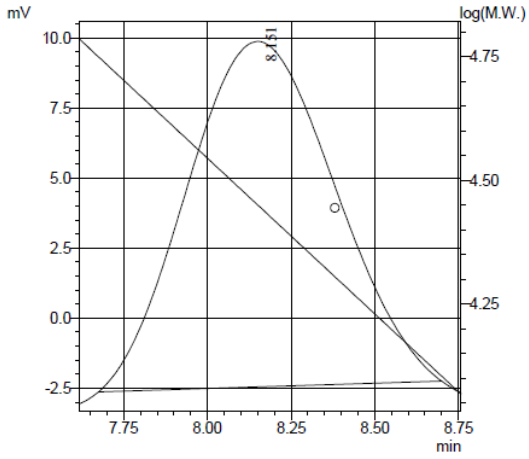


S4. GPC Report of POR-PECH

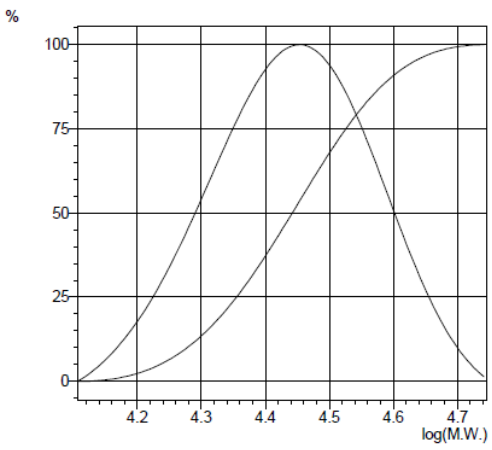
==== Shimadzu LabSolutions GPC Analysis Report ====

Acquired by	: System Administrator
Sample Name	: por-pech
Sample ID	: POR-PECH
Tray#	: 1
Vial#	: 42
Injection Volume	: 10 uL
Data Filename	: AVP1
Method Filename	: GPC Polystyrene 07022018 C.lcm
Batch Filename	: QUE.lcb
Report Filename	: DEFAULT.lsr
Date Acquired	: 3/5/2019 8:01:55 PM
Date Processed	: 7/2/2019 4:04:28 PM

Chromatogram & Calibration Curve



Molecular Weight Distribution Curve



GPC Calculation Results

Peak#:1 (Detector B Channel 1)
[Peak Information]

	Time(min)	Volume(mL)	Molecular Weight	Height
Start	8.625	8.625	14173	7989
Top	9.000	9.000	8236	1331
End	9.250	9.250	5733	7618

Area : 24557
Area% : 100.0000

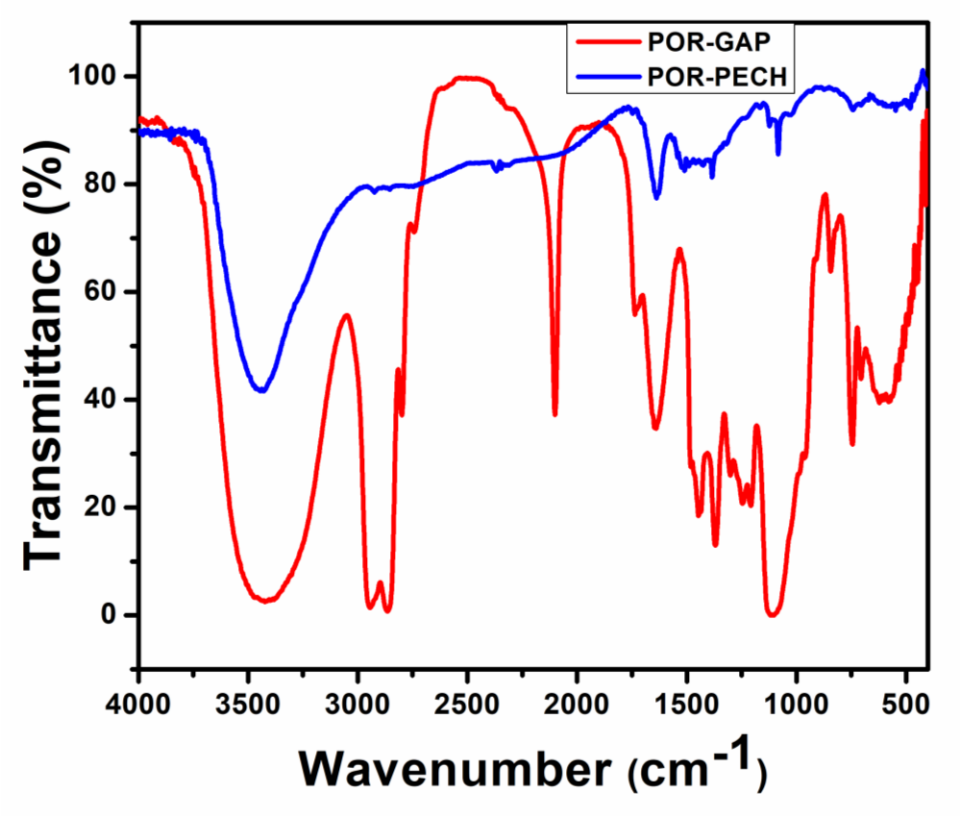
[Average Molecular Weight]

Number Average Molecular Weight(Mn)	8288
Weight Average Molecular Weight(Mw)	8572
Z Average Molecular Weight(Mz)	8885
Z+1 Average Molecular Weight(Mz1)	9224
Mw/Mn	1.03423
Mv/Mn	0.00000
Mz/Mw	1.03655

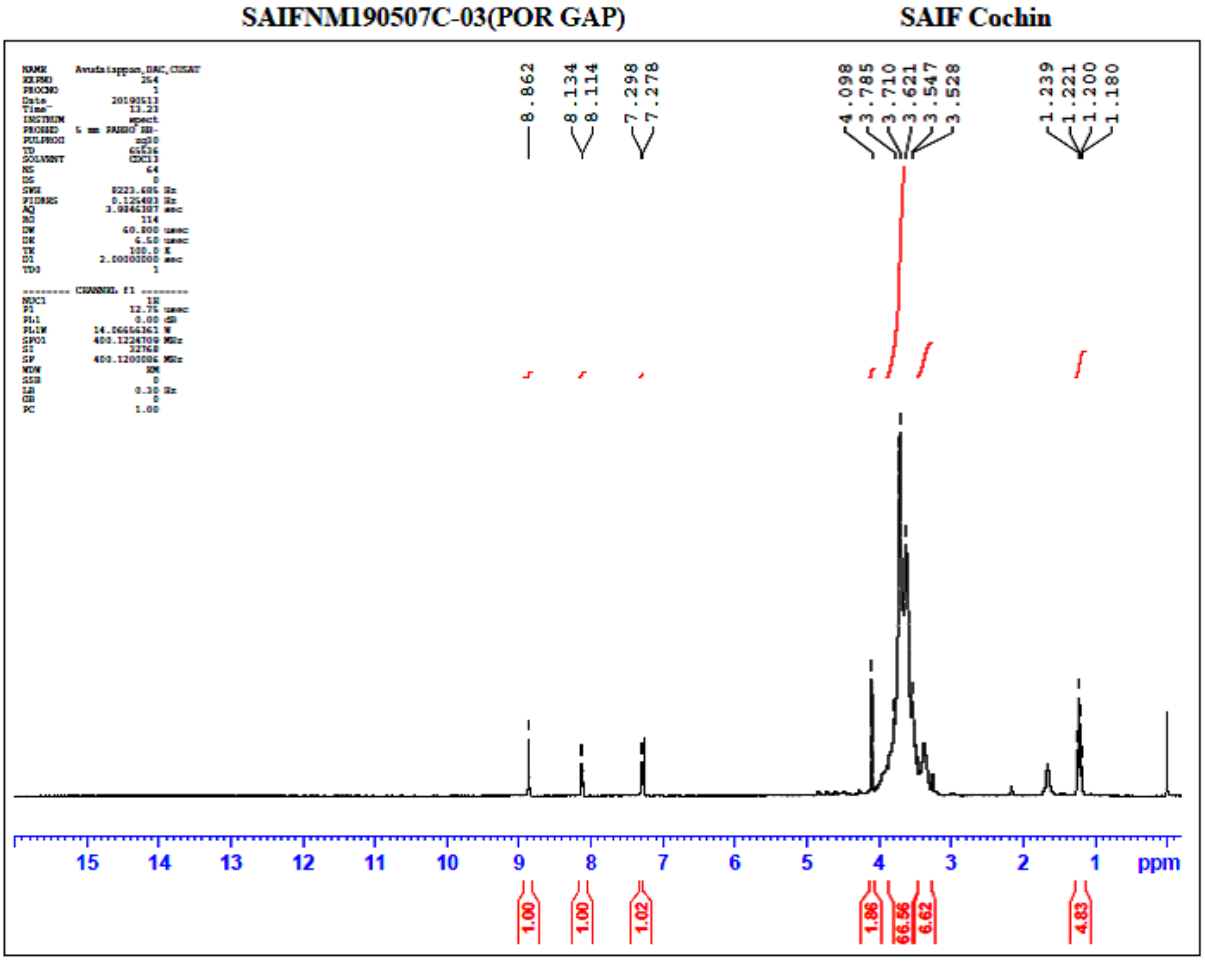
Detector B Channel 1
[Average Molecular Weight(Total)]

Number Average Molecular Weight(Mn)	8288
Weight Average Molecular Weight(Mw)	8572
Z Average Molecular Weight(Mz)	8885
Z+1 Average Molecular Weight(Mz1)	9224
Mw/Mn	1.03423
Mv/Mn	0.00000
Mz/Mw	1.03655

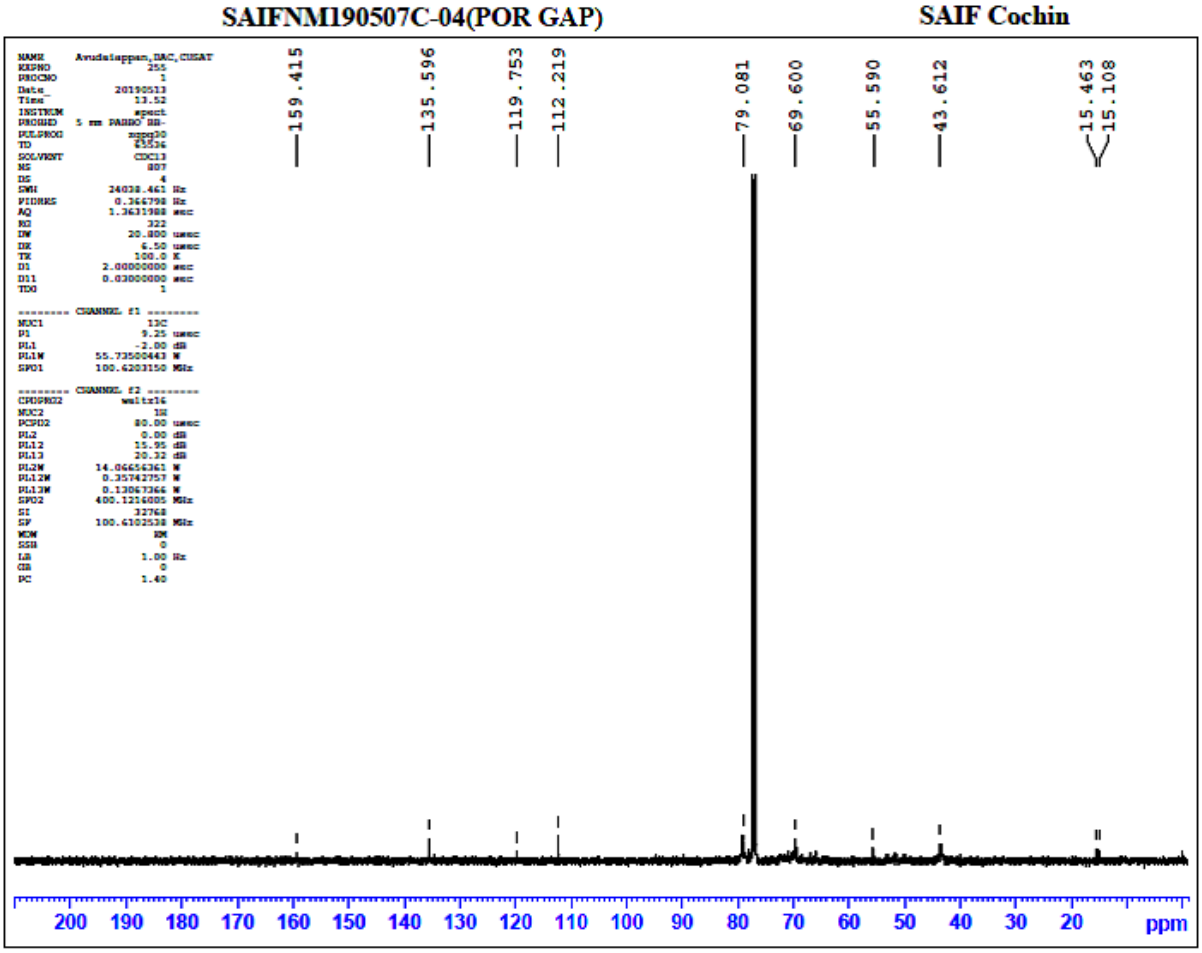
S5. IR spectrum of POR-PECH & POR-GAP



S6. ^{1}H NMR spectrum of POR-GAP



S7. ^{13}C NMR spectrum of POR-GAP

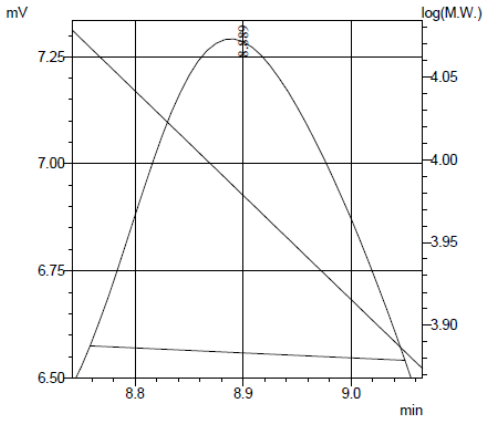


S8. GPC Report of POR-GAP

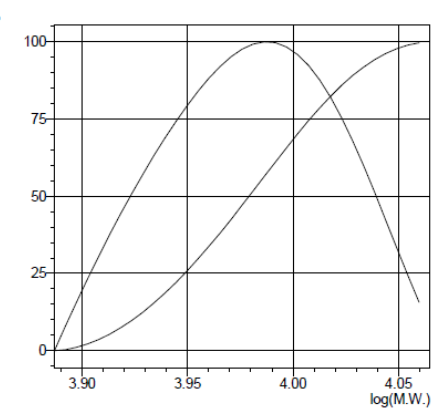
==== Shimadzu LabSolutions GPC Analysis Report ====

Acquired by	: System Administrator
Sample Name	: AZI
Sample ID	: AZI
Tray#	: 1
Vial#	: 44
Injection Volume	: 10 uL
Data Filename	: AZI.lcd
Method Filename	: GPC Polystyrene 07022018 C.lcm
Batch Filename	: QUE.lcb
Report Filename	: DEFAULT.lsr
Date Acquired	: 3/5/2019 8:32:36 PM
Date Processed	: 7/2/2019 8:07:59 PM

Chromatogram & Calibration Curve



Molecular Weight Distribution Curve



GPC Calculation Results

Peak#:1 (Detector B Channel 1)
[Peak Information]

	Time(min)	Volume(mL)	Molecular Weight	Height
Start	8.758	8.758	11685	6575
Top	8.889	8.889	9672	732
End	9.050	9.050	7659	6541

Area : 7843
Area% : 100.0000

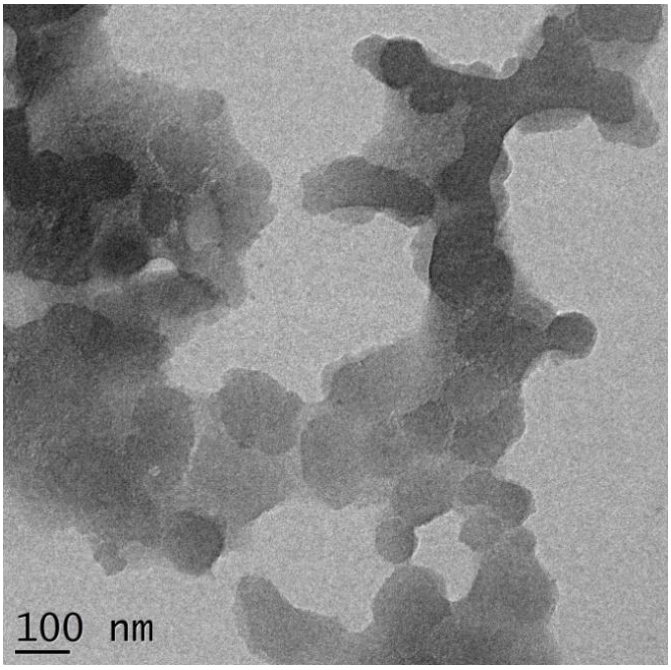
[Average Molecular Weight]

Number Average Molecular Weight(Mn)	9525
Weight Average Molecular Weight(Mw)	9603
Z Average Molecular Weight(Mz)	9680
Z+1 Average Molecular Weight(Mz1)	9757
Mw/Mn	1.00817
Mv/Mn	0.00000
Mz/Mw	1.00808

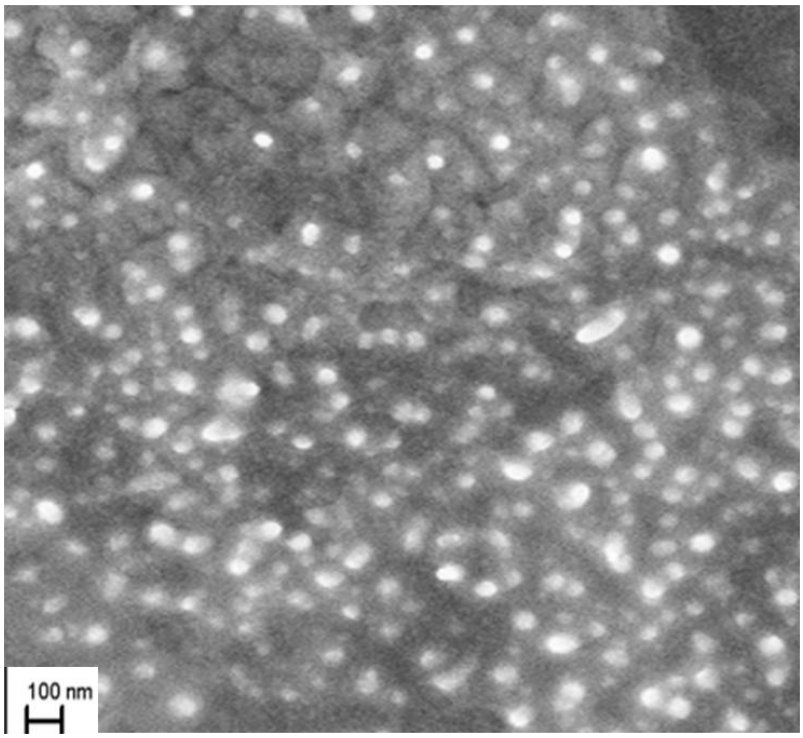
Detector B Channel 1
[Average Molecular Weight(Total)]

Number Average Molecular Weight(Mn)	9525
Weight Average Molecular Weight(Mw)	9603
Z Average Molecular Weight(Mz)	9680
Z+1 Average Molecular Weight(Mz1)	9757
Mw/Mn	1.00817
Mv/Mn	0.00000
Mz/Mw	1.00808

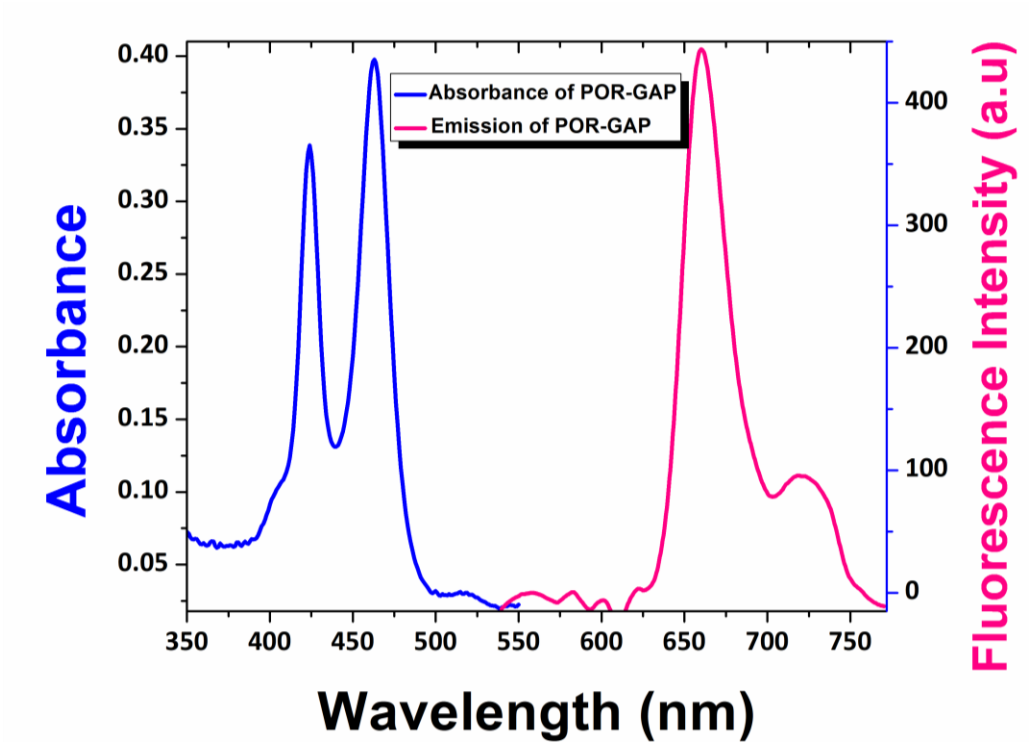
S9. HR-TEM and FE-SEM Images of POR-GAP



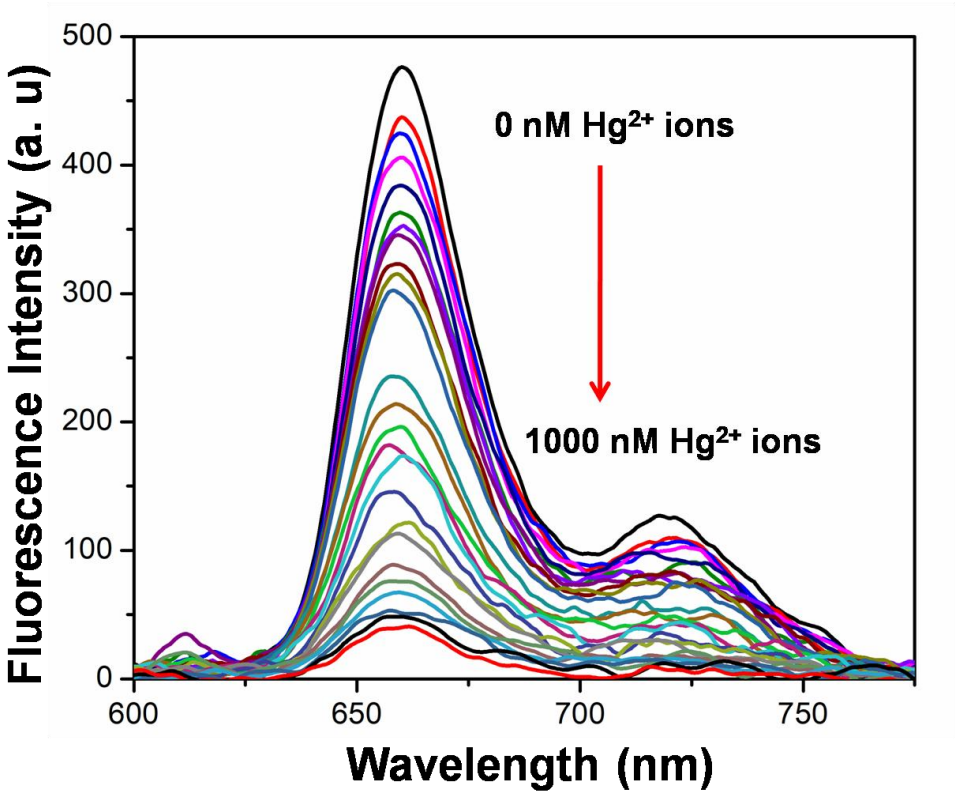
FE-SEM Image of POR-GAP



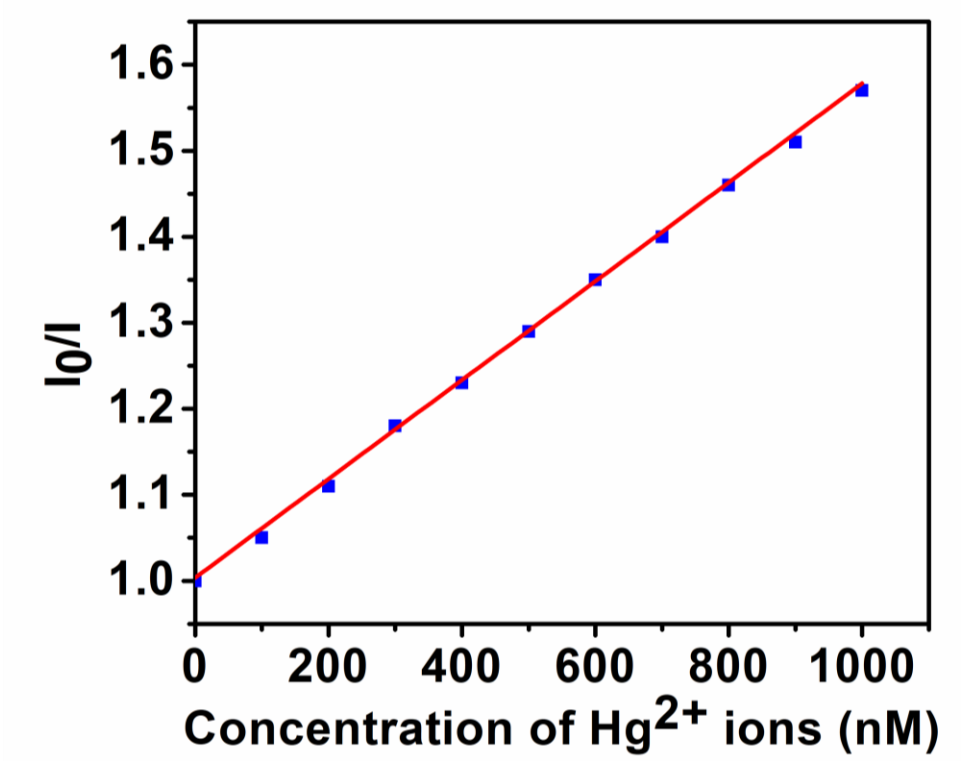
S10. UV-Vis and Fluorescence spectra of POR-GAP



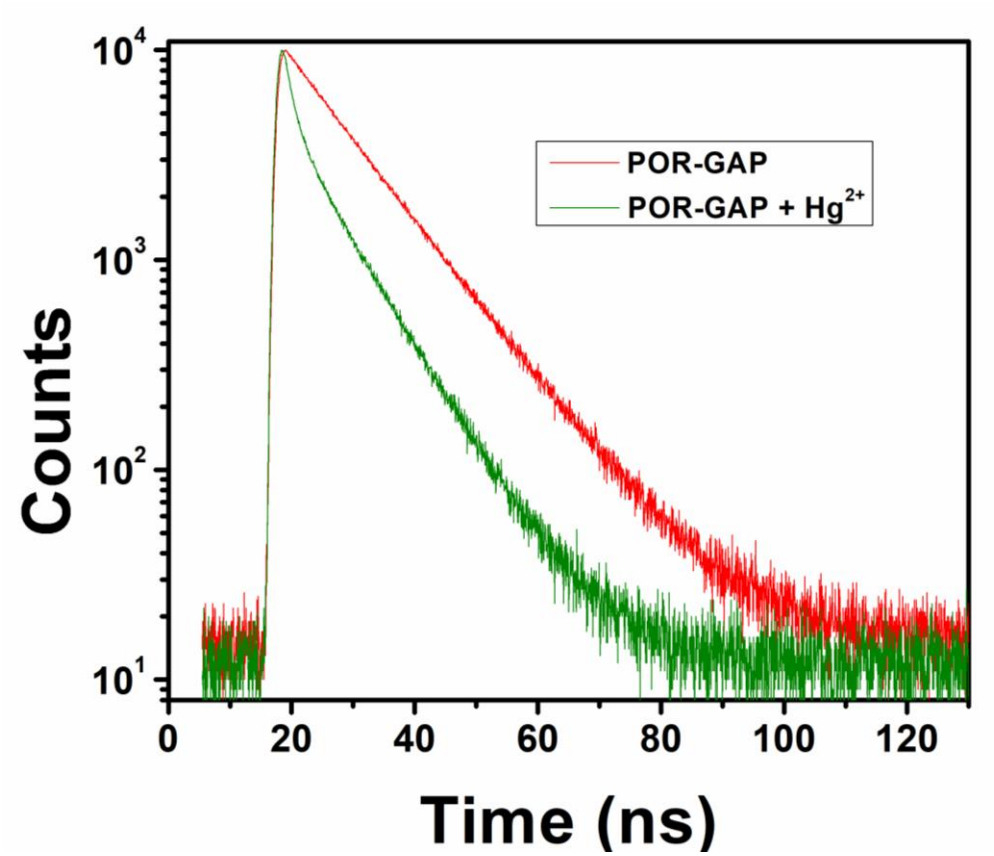
S11. Fluorescence spectra of POR-GAP with various concentration of mercuric ion



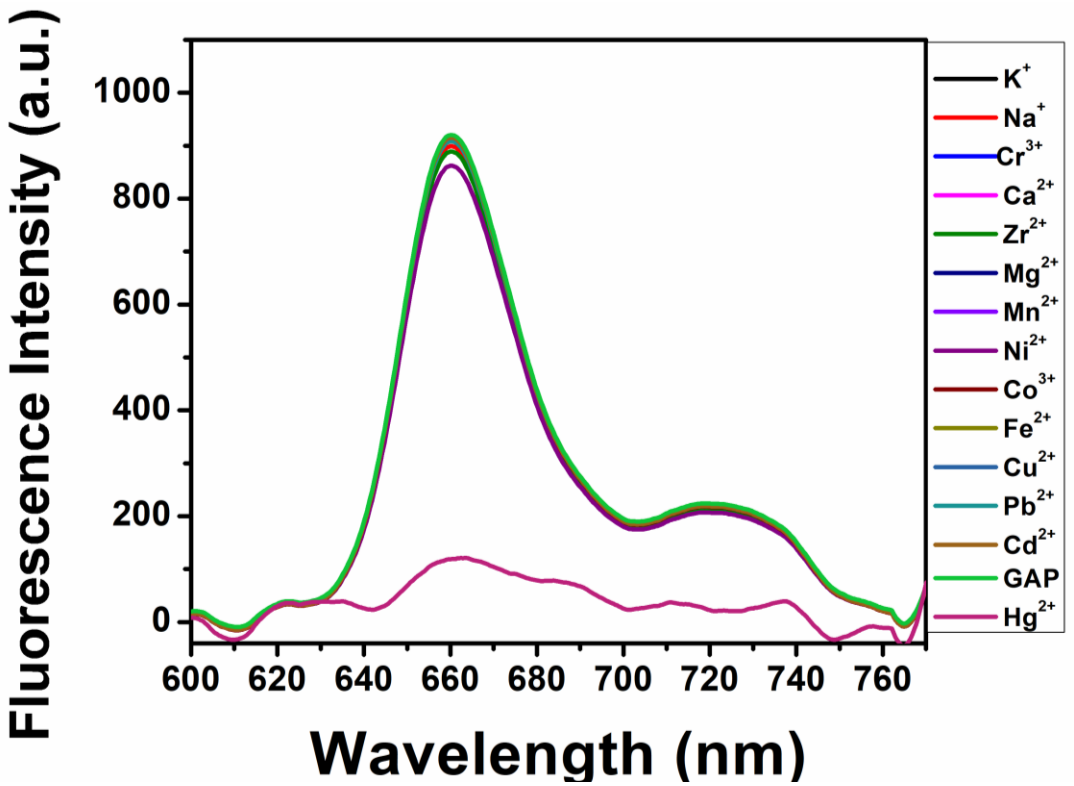
S12. Plot of ratio of fluorescence intensity against mercuric ion concentration



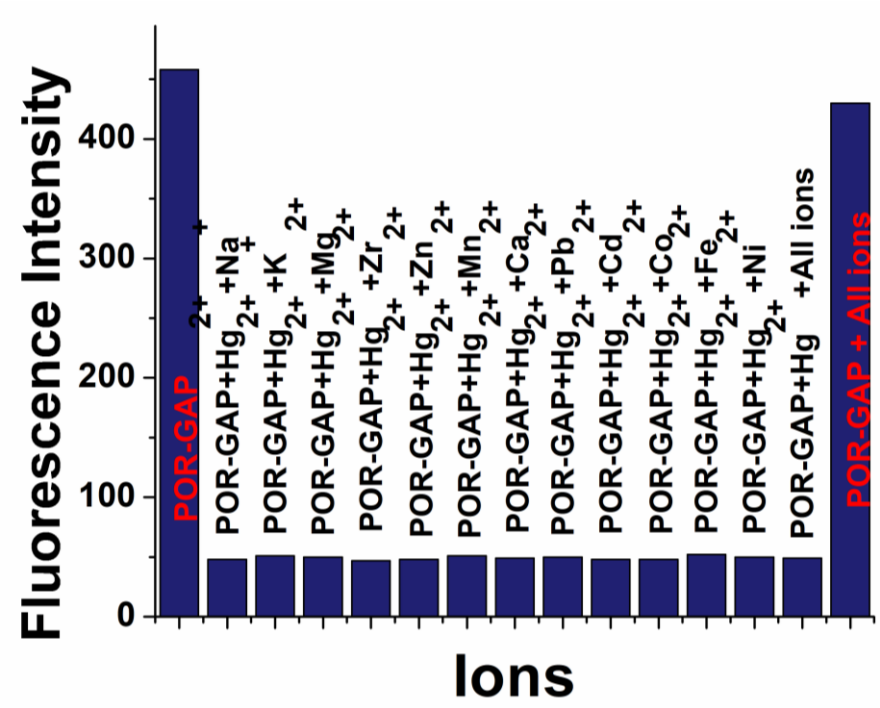
S13. Time-resolved fluorescence decay profile of POR-GAP



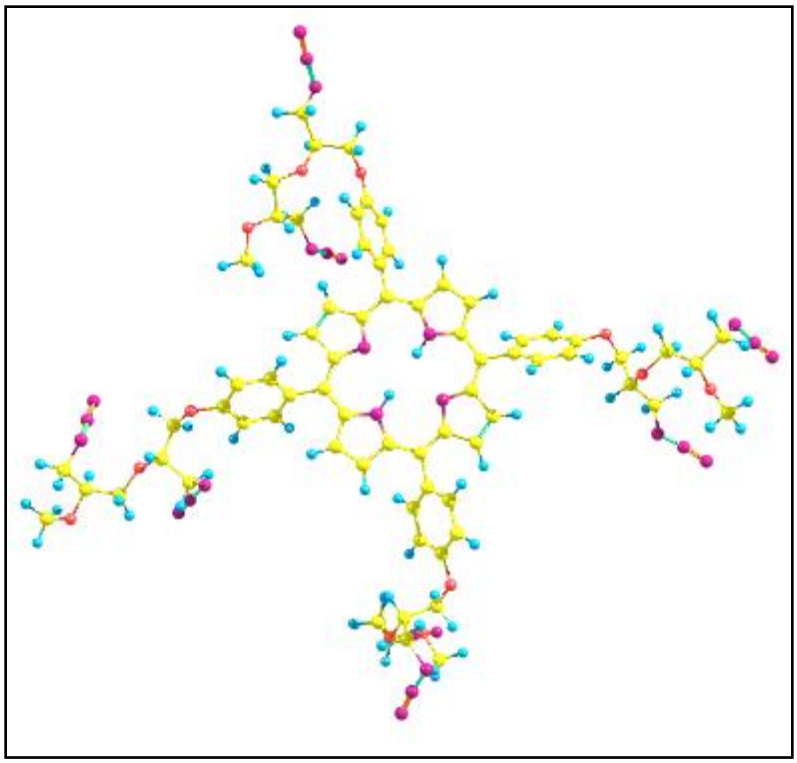
S14. Fluorescence intensity of POR-GAP with 50 equiv. of various cations.



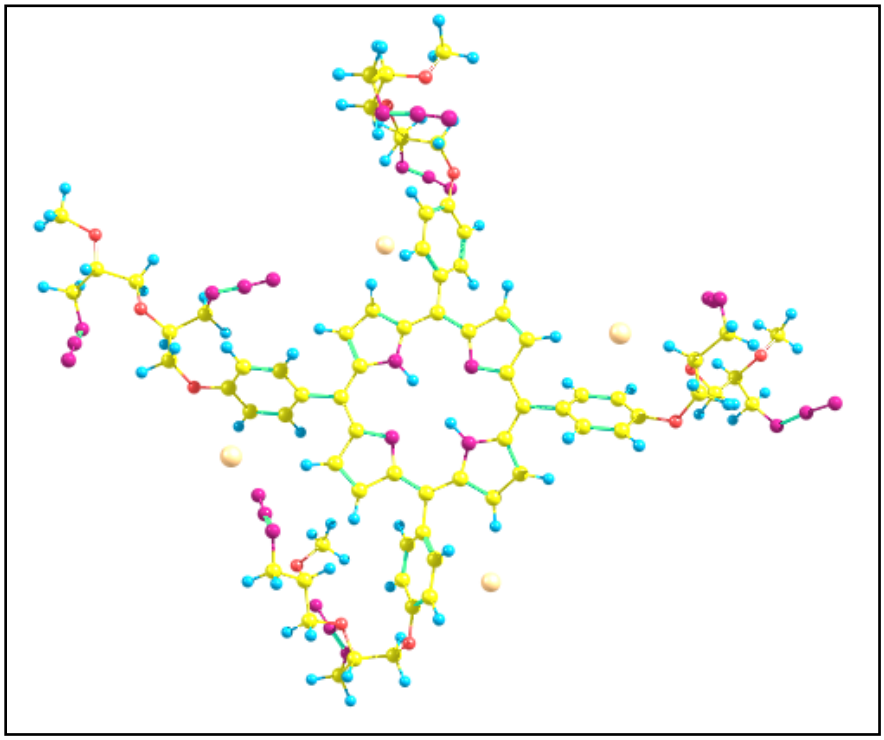
S15. Fluorescence intensity response of POR-GAP in the presence of 50 equiv. of various cations with mercuric ion



S16. Optimised structures of POR-GAP

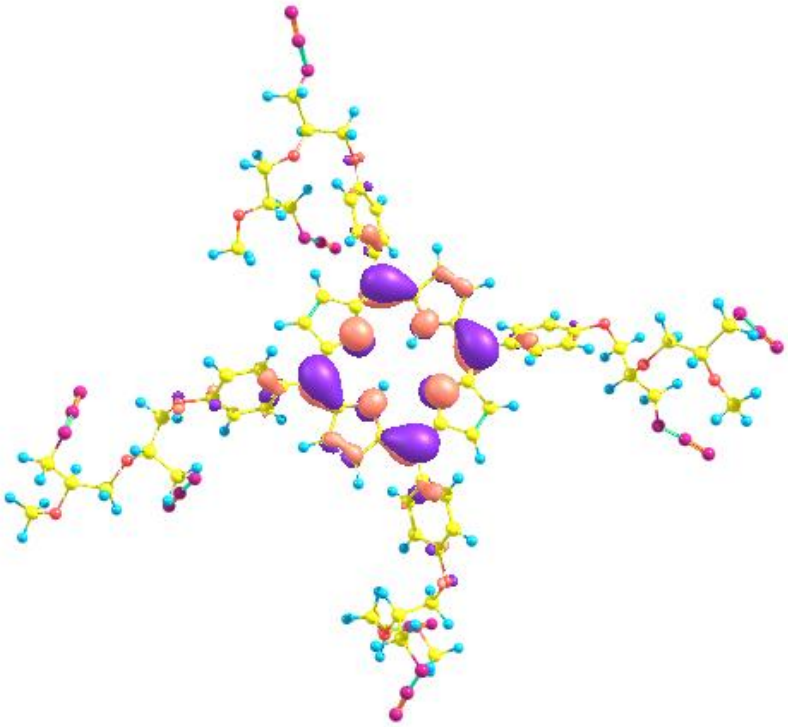


Optimised structures of POR-GAP after addition of Hg^{2+}

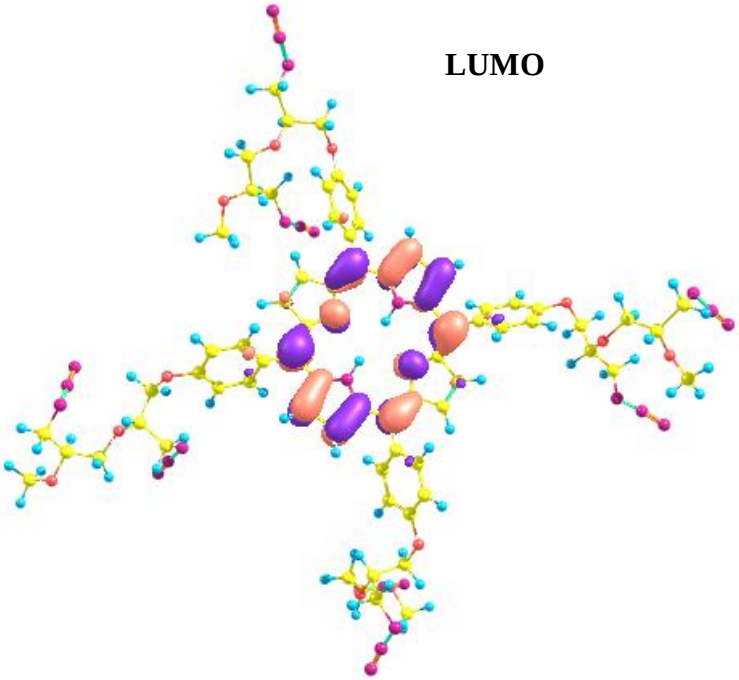


S17. DFT Molecular Orbitals of POR-GAP

HOMO

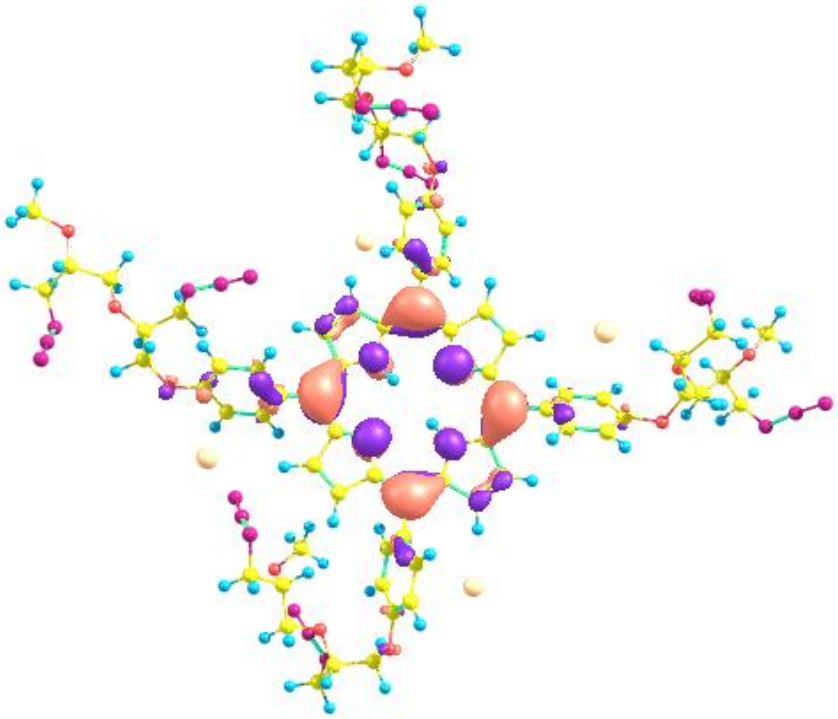


LUMO

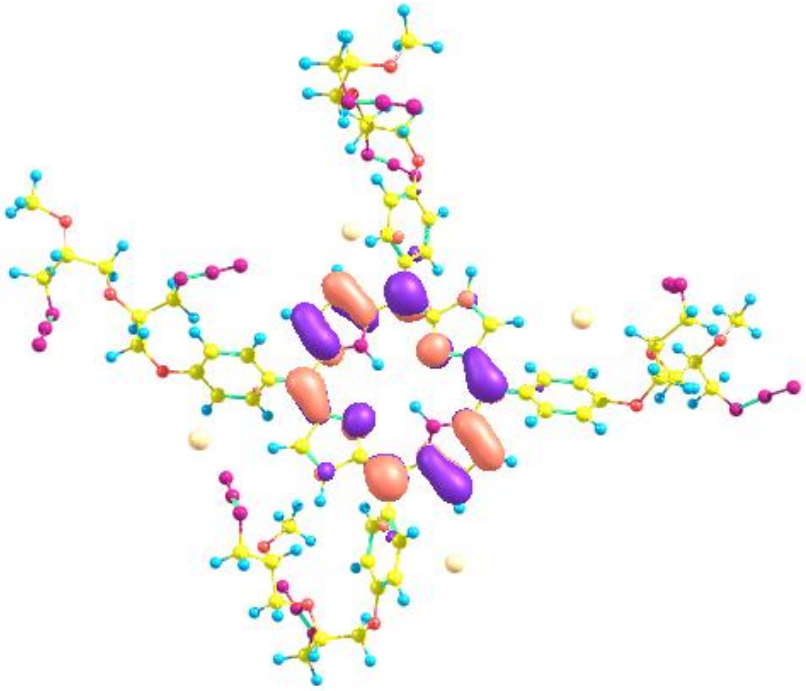


DFT Molecular Orbitals of POR-GAP after addition of Hg^{2+} ion

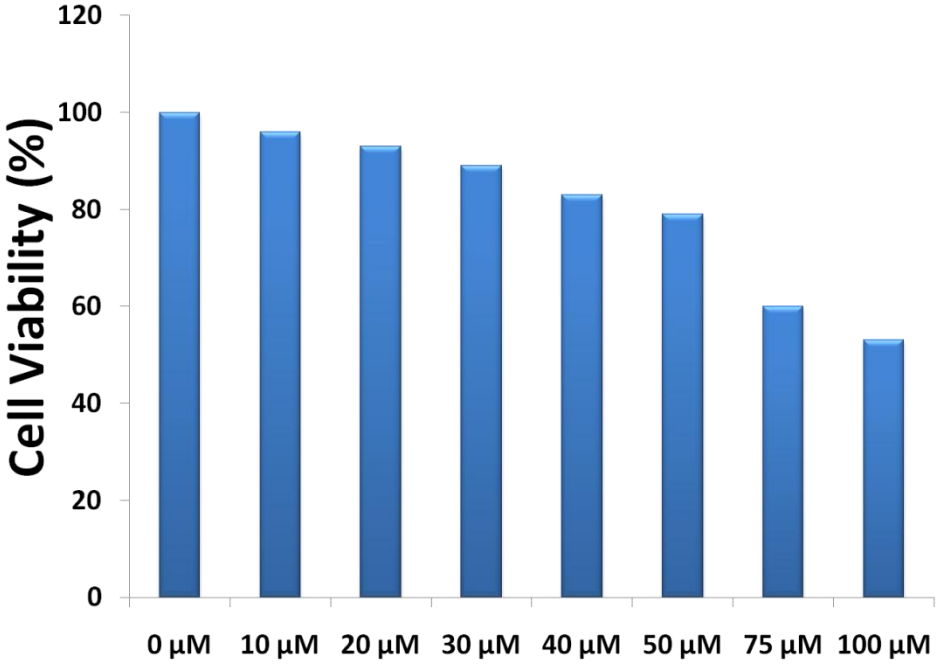
HOMO



LUMO

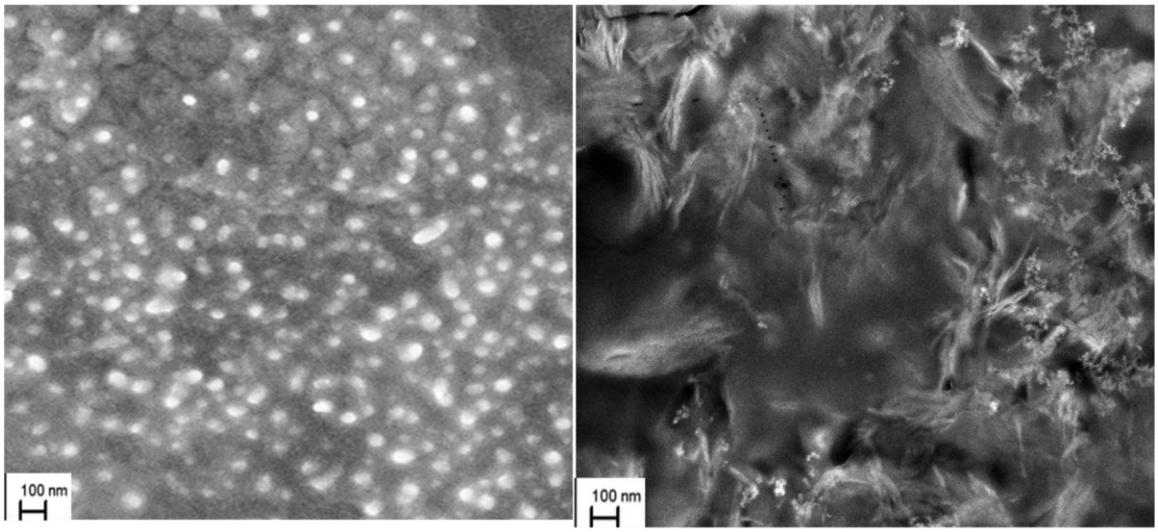


S18. Cell-viability study



S19. FE- SEM & HR-TEM image of POR-GAP after addition of Hg^{2+} ion

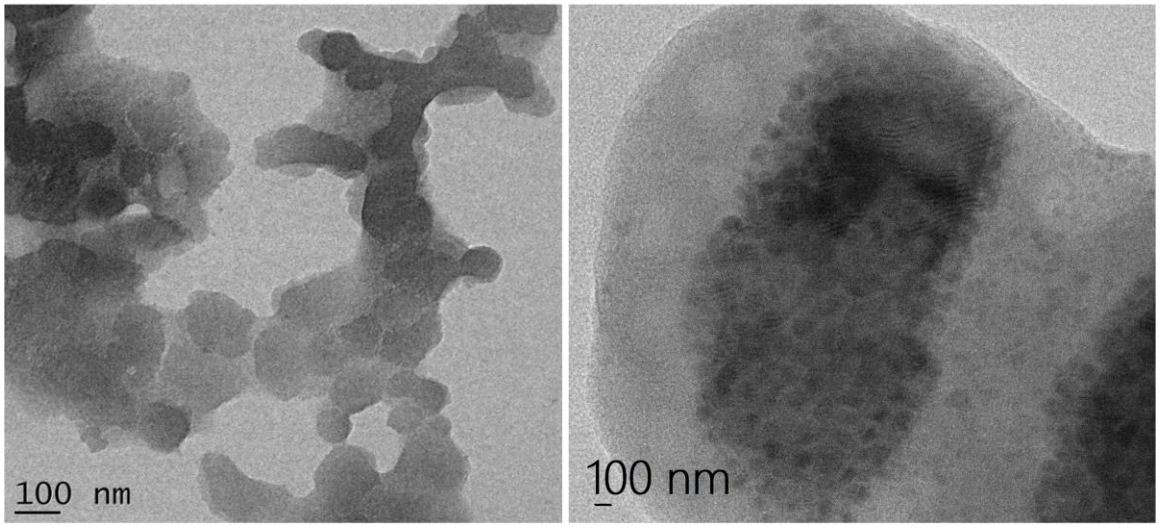
FE-SEM Image



POR-GAP

POR-GAP after addition of Hg^{2+}

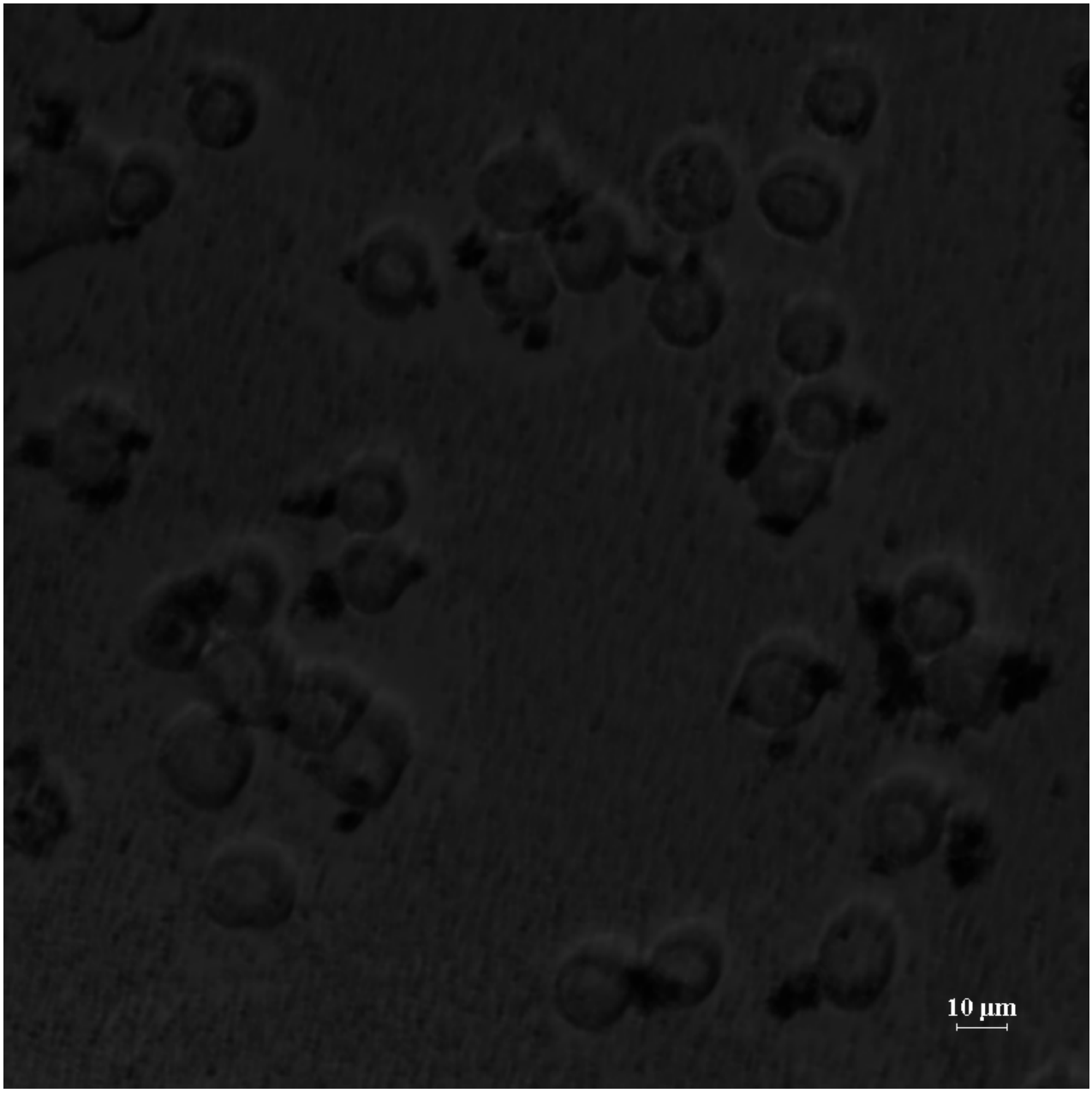
HR-TEM Image



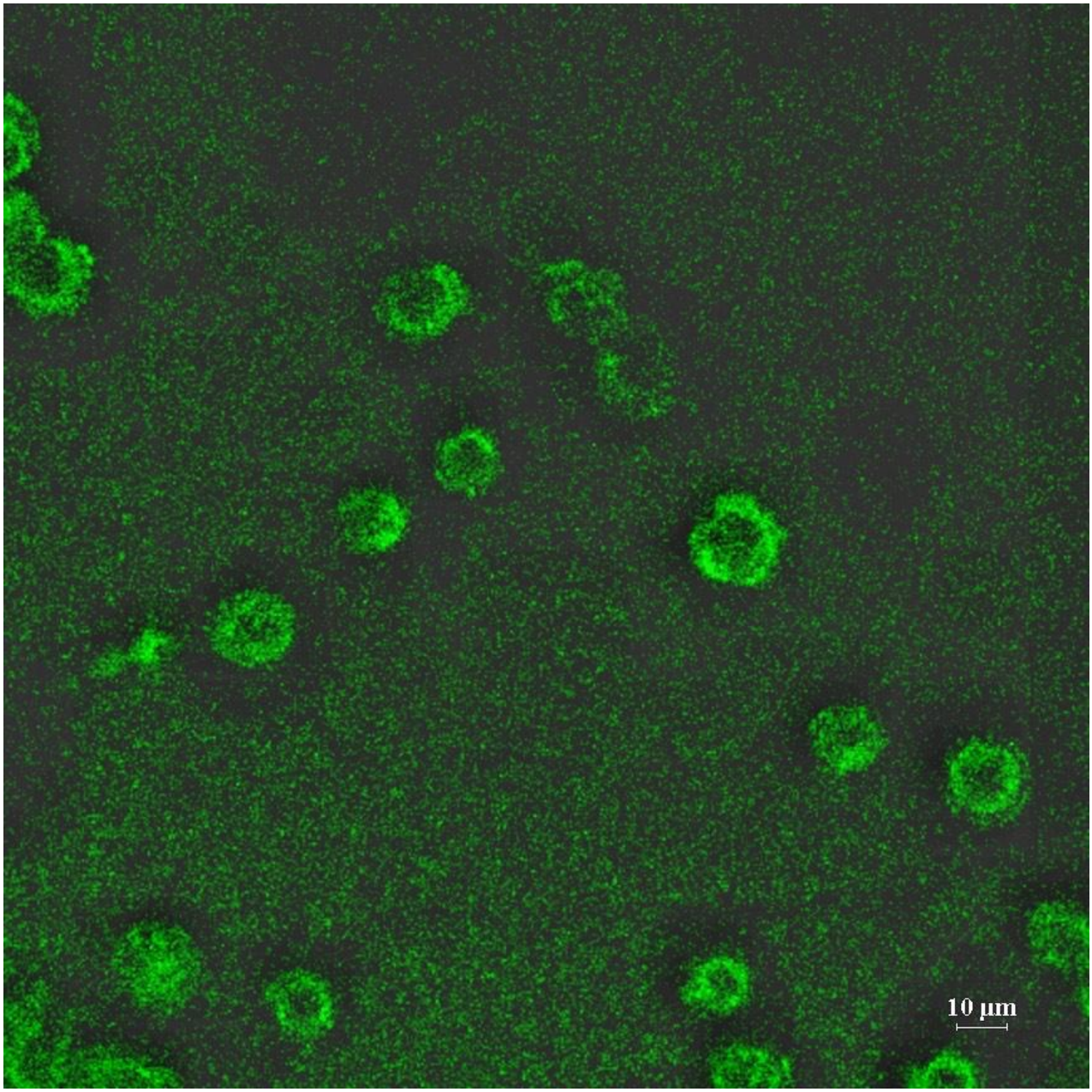
POR-GAP

POR-GAP after addition of Hg^{2+}

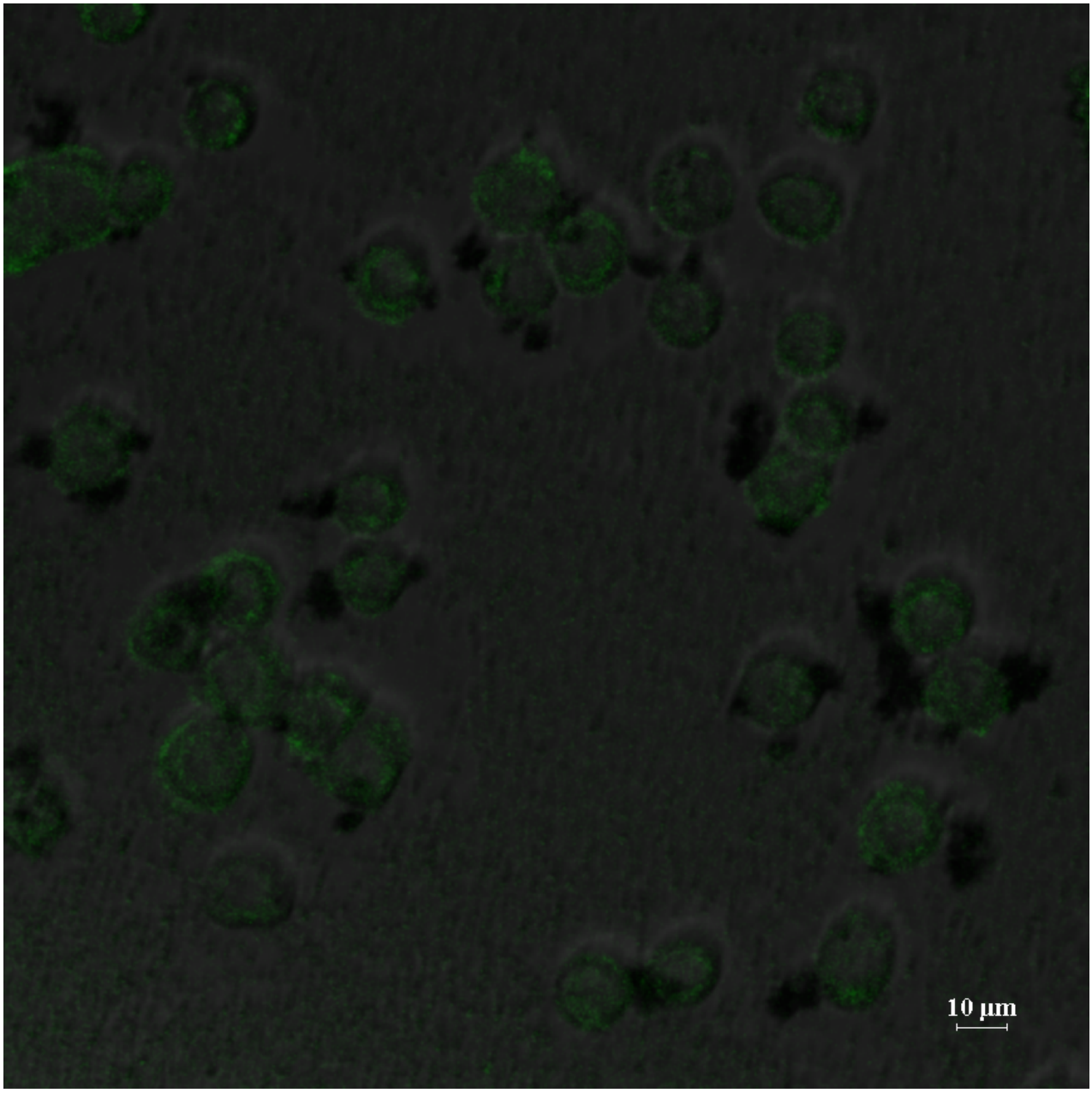
S20. A) Bright-field image of HeLa cells incubated with POR-GAP.



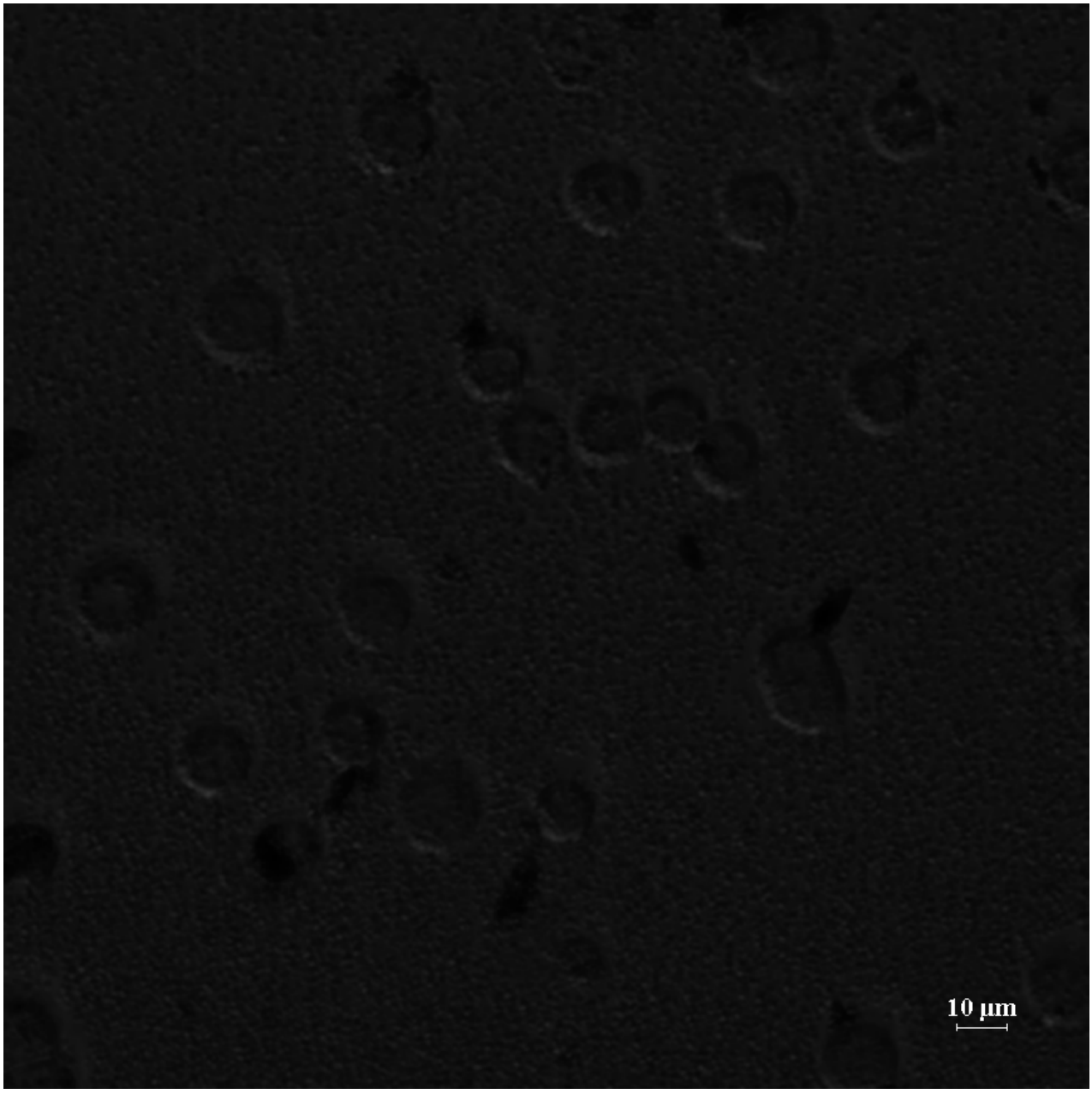
S20. B) Fluorescence image of HeLa cells incubated with POR-GAP.



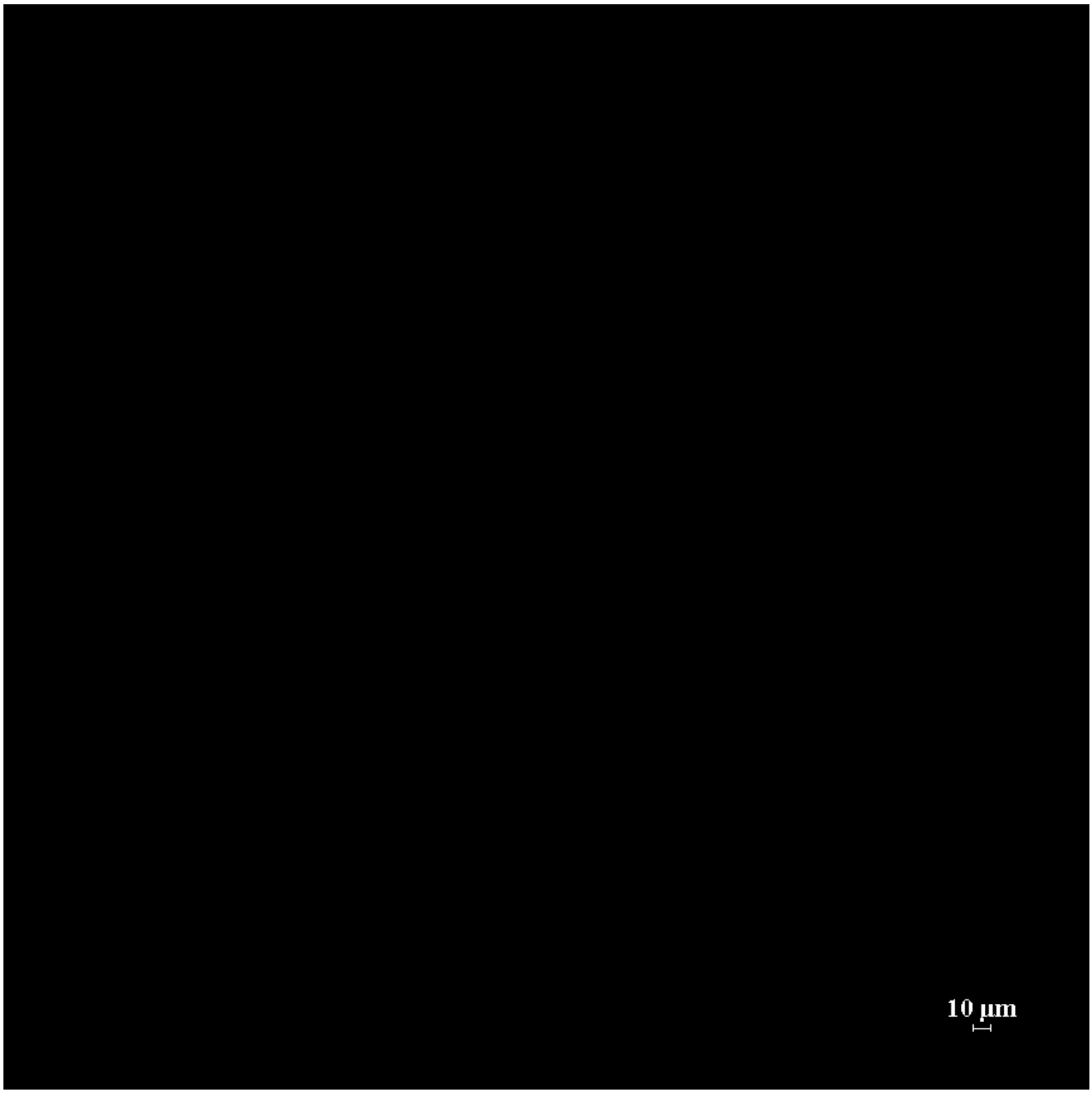
S20. C) Merged image of fluorescence and bright-field images



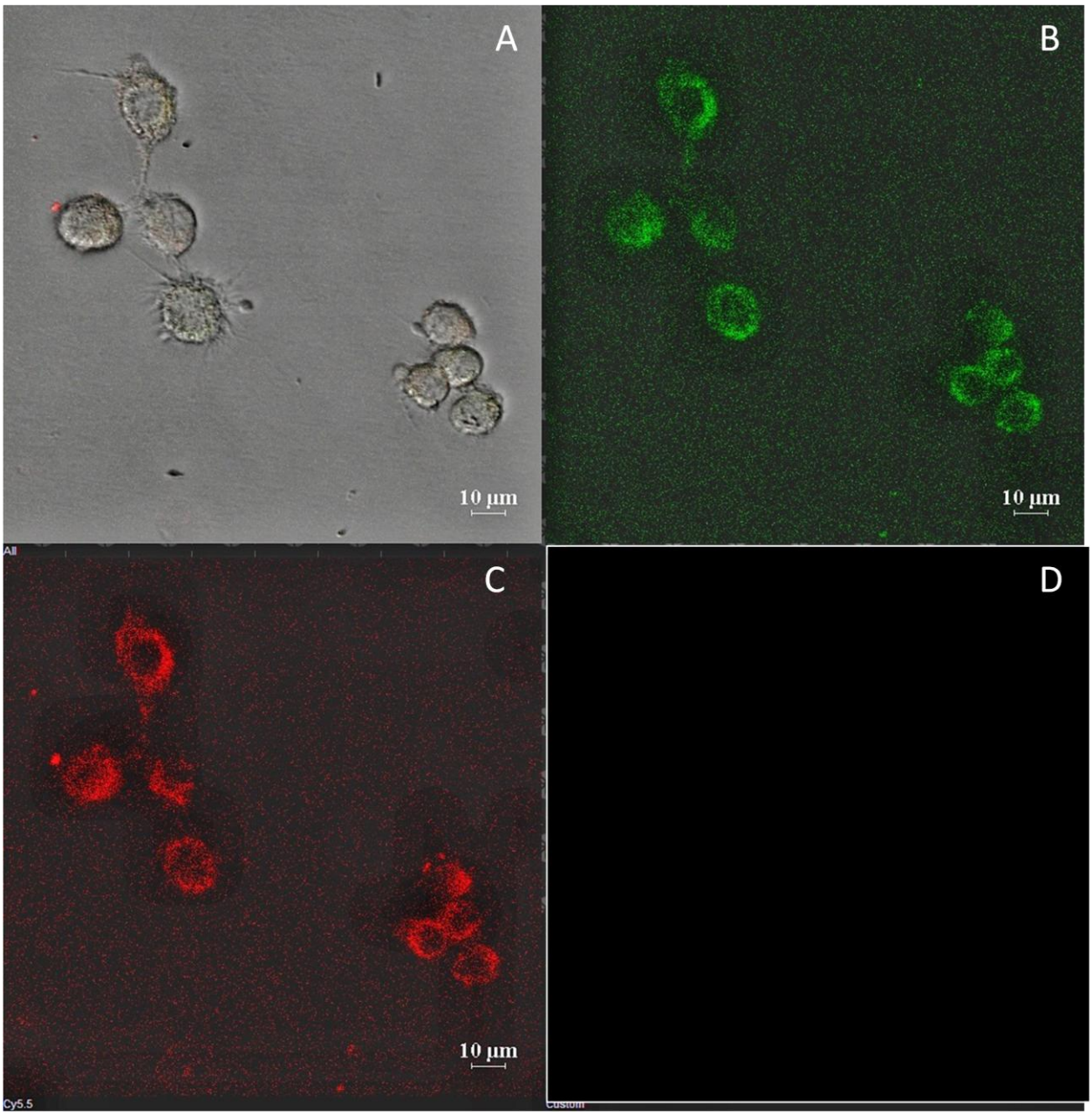
S20. D) Bright-field image of HeLa cells pre-treated with Hg^{2+} ion and incubated with POR-GAP.



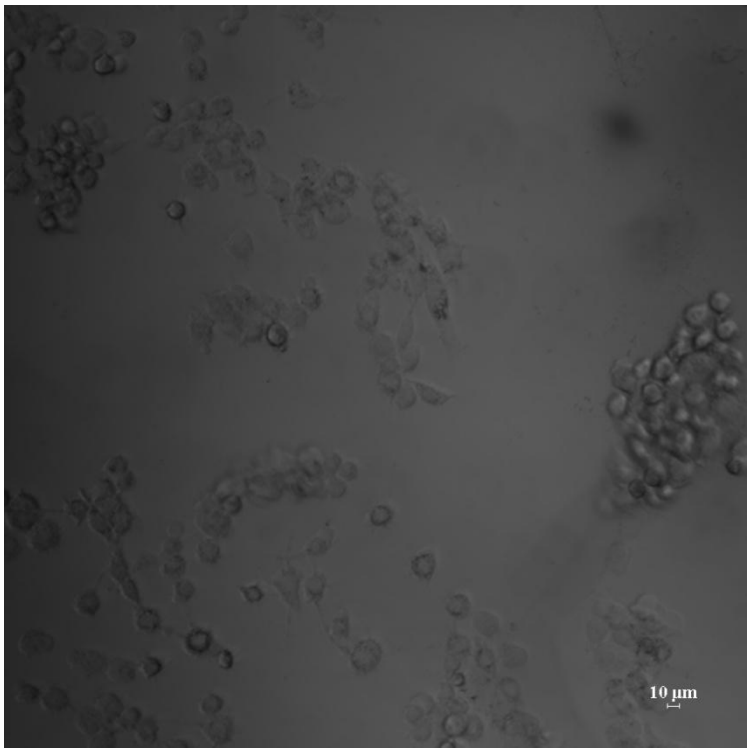
S20. E) Fluorescence image of HeLa cells pre-treated with Hg^{2+} ion and incubated with POR-GAP.

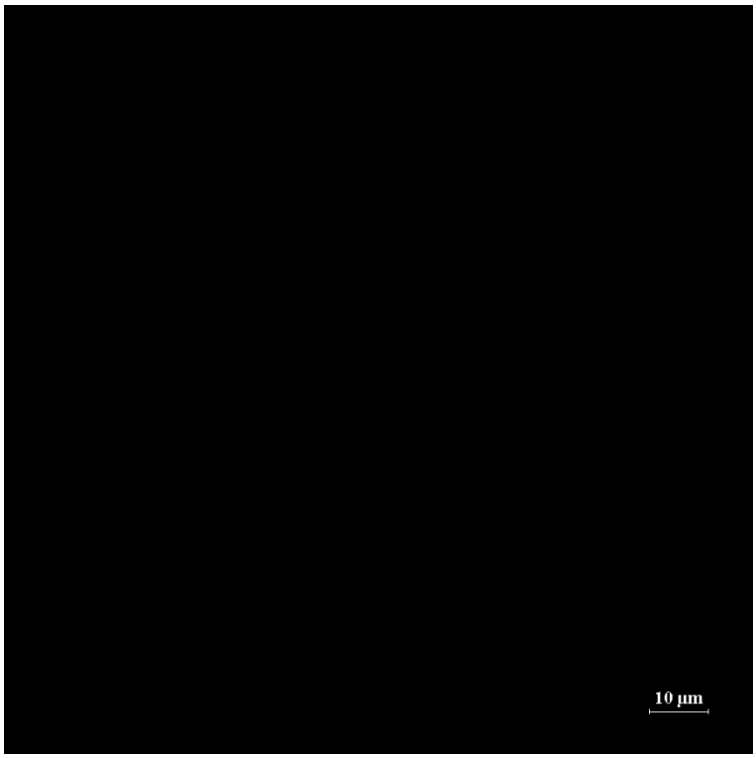


S21. Bright-field and fluorescence images of L6 cells



S21. H, K) Bright-field & Fluorescence images of L6 cells pre-treated with Hg^{2+} ion and incubated with POR-GAP


10 µm


10 µm

S22. Graphical representation to show the difference in fluorescence intensity by the addition of Hg^{2+}.