Electronic Supplementary Information

For

EDTA Capped Iron Oxide Nanoparticles Magnetic Micelles: Drug Delivery Vehicle for Treatment of Chronic Myeloid Leukemia and T_1-T_2 Dual Contrast Agent for Magnetic Resonance Imaging

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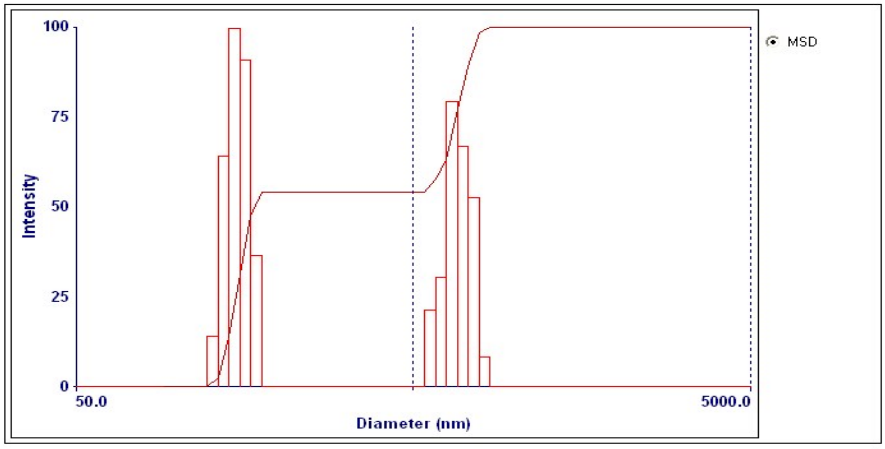
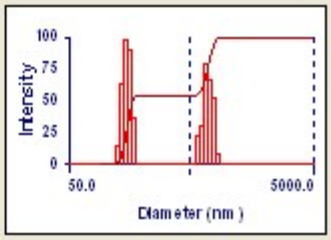
Fe3O4 Aliquot (Combined)

Effective Diameter:	**252.5 nm**
Polydispersity:	**0.251**
Avg. Count Rate:	**1.4 Mcps**
Baseline Index:	**0.0**
Elapsed Time:	**00:02:30**



Run	Eff. Diam. (nm)	Half Width (nm)	Polydispersity	Baseline Index
1	247.5	50.8	0.042	0.0
2	232.8	126.1	0.294	0.0
3	226.1	117.5	0.270	0.0
4	312.0	178.8	0.328	0.0
5	551.7	296.1	0.288	0.0
Mean	314.0	153.9	0.245	0.0
Std. Error	61.3	41.0	0.051	0.0
Combined	252.5	126.4	0.251	0.0

Sample ID	Fe3O4 Aliquot (Combined)
Operator ID	Kushan
Elapsed Time	00:02:30
Mean Diam.	390.6 nm
Rel. Var.	0.458
Skew	0.238

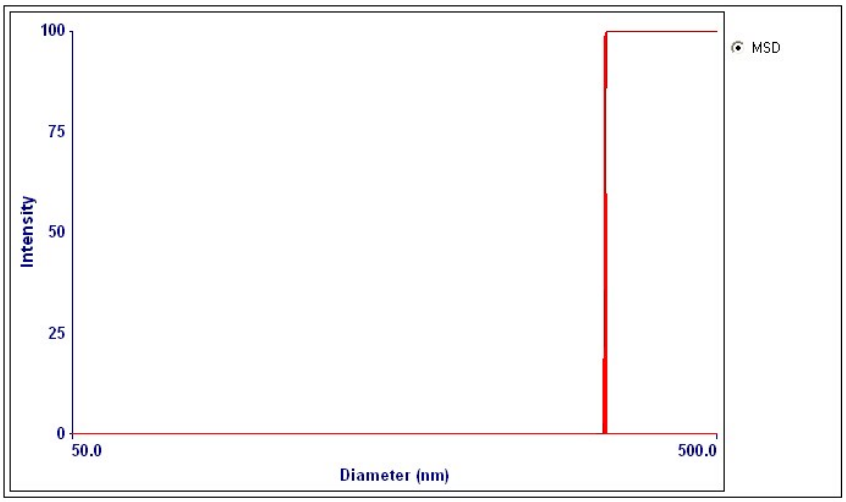


d(nm)	G(d)	C(d)	d(nm)	G(d)	C(d)	d(nm)	G(d)	C(d)
94.7	0	0	213.6	0	54	482.0	0	54
102.0	0	0	230.0	0	54	519.0	0	54
109.8	0	0	247.7	0	54	558.8	21	58
118.2	0	0	266.7	0	54	601.8	30	63
127.3	14	2	287.2	0	54	648.0	80	77
137.1	64	14	309.2	0	54	697.7	67	89
147.6	100	32	333.0	0	54	751.3	53	99
158.9	91	48	358.5	0	54	809.0	8	100
171.1	37	54	386.1	0	54	871.1	0	100
184.2	0	54	415.7	0	54	937.9	0	100
198.4	0	54	447.6	0	54	1010.0	0	100

Intensity

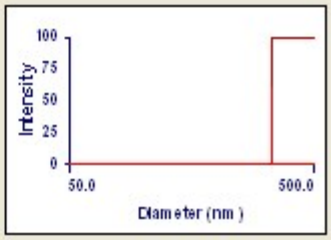
EFeP (Combined)

Effective Diameter:	**439.9 nm**
Polydispersity:	**0.005**
Avg. Count Rate:	**2.7 Mcps**
Baseline Index:	**9.0**
Elapsed Time:	**00:02:30**



Run	Eff. Diam. (nm)	Half Width (nm)	Polydispersity	Baseline Index
1	294.4	20.8	0.005	7.5
2	455.5	32.2	0.005	9.6
3	519.7	36.7	0.005	9.1
4	504.2	35.7	0.005	9.9
5	785.2	55.5	0.005	7.4
Mean	511.8	36.2	0.005	8.7
Std. Error	79.2	5.6	0.000	0.5
Combined	439.9	31.1	0.005	9.0

Sample ID	EFeP (Combined)
Operator ID	Kushan
Elapsed Time	00:02:30
Mean Diam.	334.9 nm
Rel. Var.	0.000
Skew	0.004



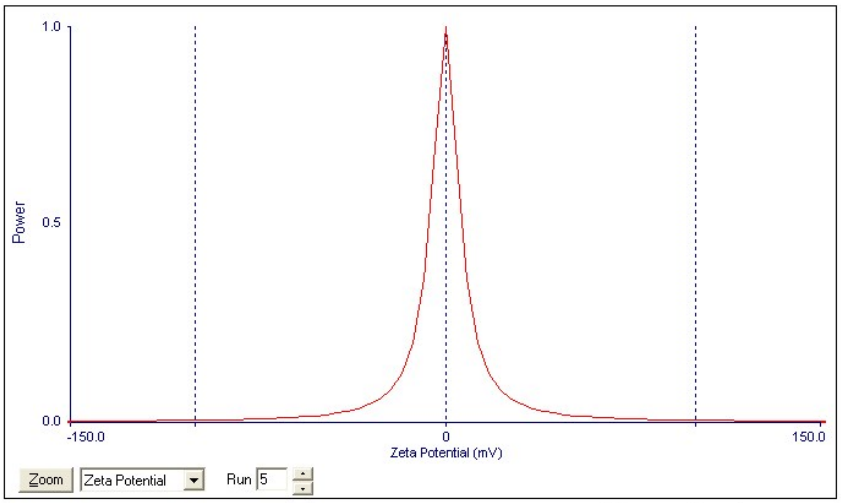
d(nm)	G(d)	C(d)	d(nm)	G(d)	C(d)	d(nm)	G(d)	C(d)
325.7	0	0	334.5	99	50	343.6	0	100
326.5	0	0	335.3	100	78	344.4	0	100
327.3	0	0	336.1	60	95	345.2	0	100
328.1	0	0	337.0	20	100	346.1	0	100
328.9	0	0	337.8	0	100	346.9	0	100
329.7	0	0	338.6	0	100	347.8	0	100
330.5	0	0	339.4	0	100	348.6	0	100
331.3	0	0	340.2	0	100	349.5	0	100
332.1	0	0	341.1	0	100	350.3	0	100
332.9	19	5	341.9	0	100	351.2	0	100
333.7	59	22	342.7	0	100	352.0	0	100

Intensity

Zeta Potential

Fe3O4 Aliquot (Run 5)

Measurement Completed



Zeta Potential | Zoom | Zeta Potential | Run 5

Run	Zeta Potential (mV)	Half Width (mV)
1	0.00	4.94
2	0.00	4.88
3	-2.15	4.80
4	-6.51	7.31
5	0.00	6.53
Mean	-1.73	5.69
Std. Error	1.27	0.52

Measurement Parameters:

Conductance	= 17688 µS
Current	= 95.63 mA
Electric Field	= 13.01 V/cm
Sample Count Rate	= 341 kcps
Ref. Count Rate	= 714 kcps
Uncorrected Temp.	= 26.0 °C

Start | Runs | Hide Graph

Clear | Parameters | Copy To Clipboard

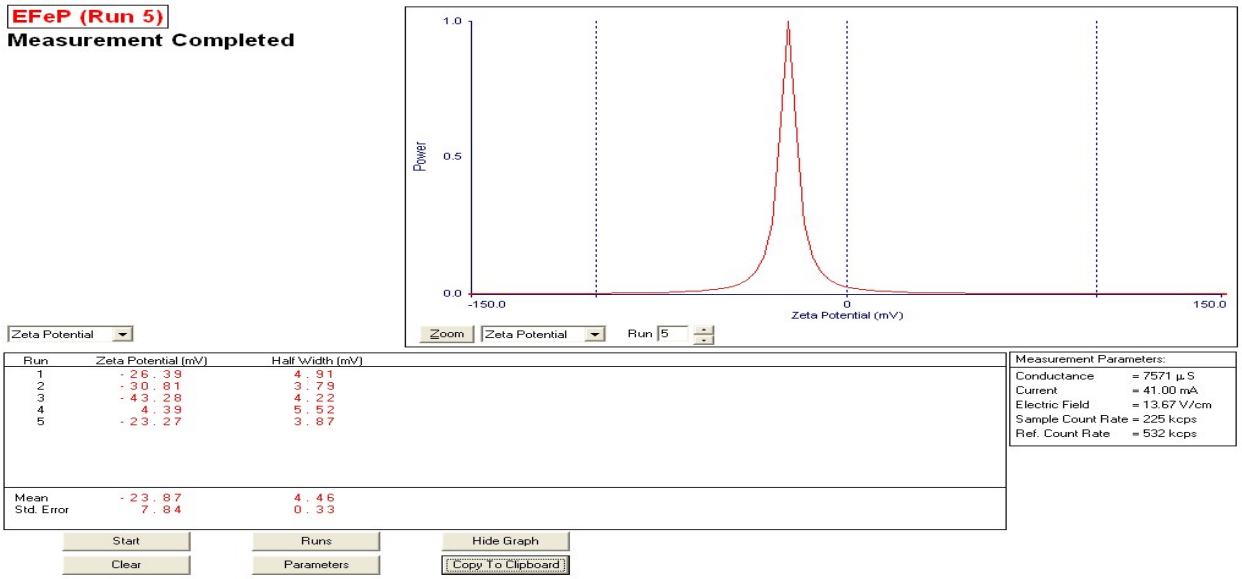


Figure S1. DLS and Zeta potential measurements of (a) Fe_3O_4/edta and (b) Fe_3O_4/edta/P NPs.

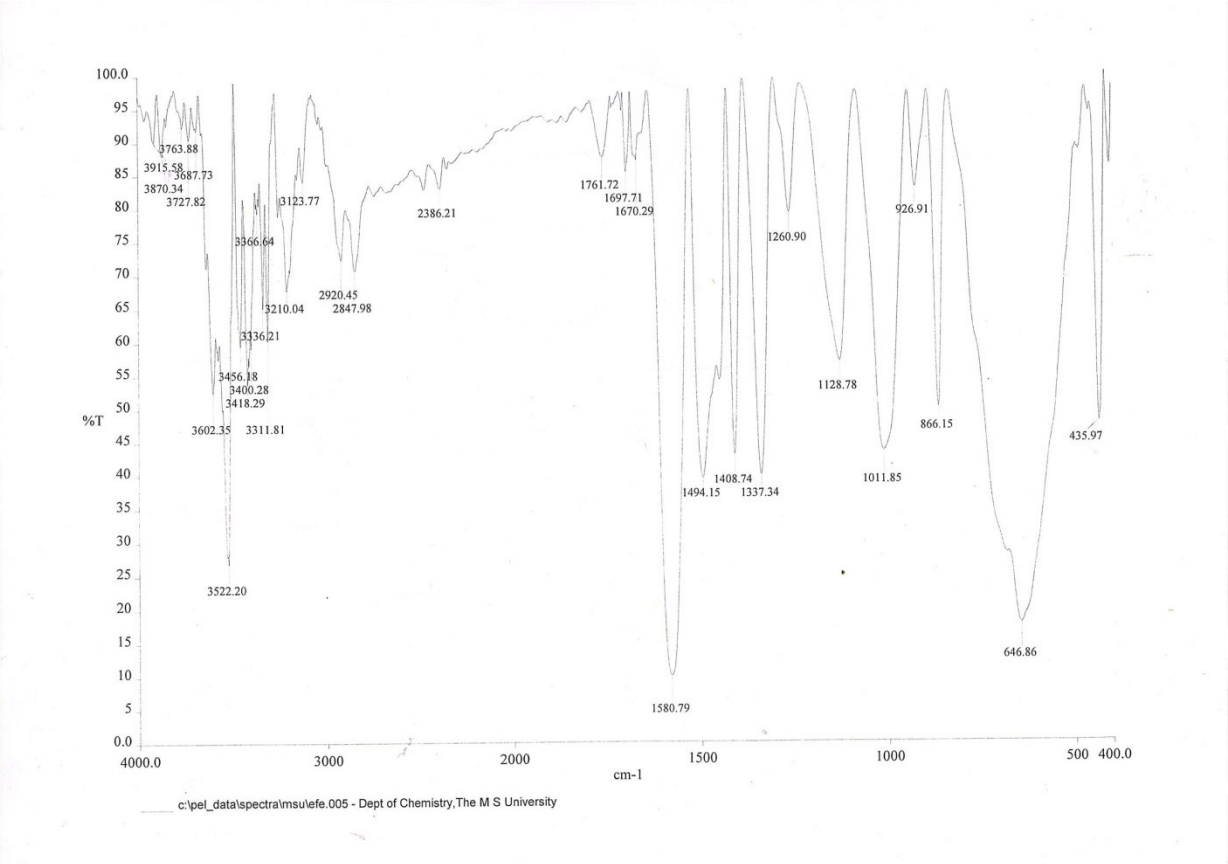


Figure S2: FTIR spectra of Fe_3O_4/*edta* NPs.

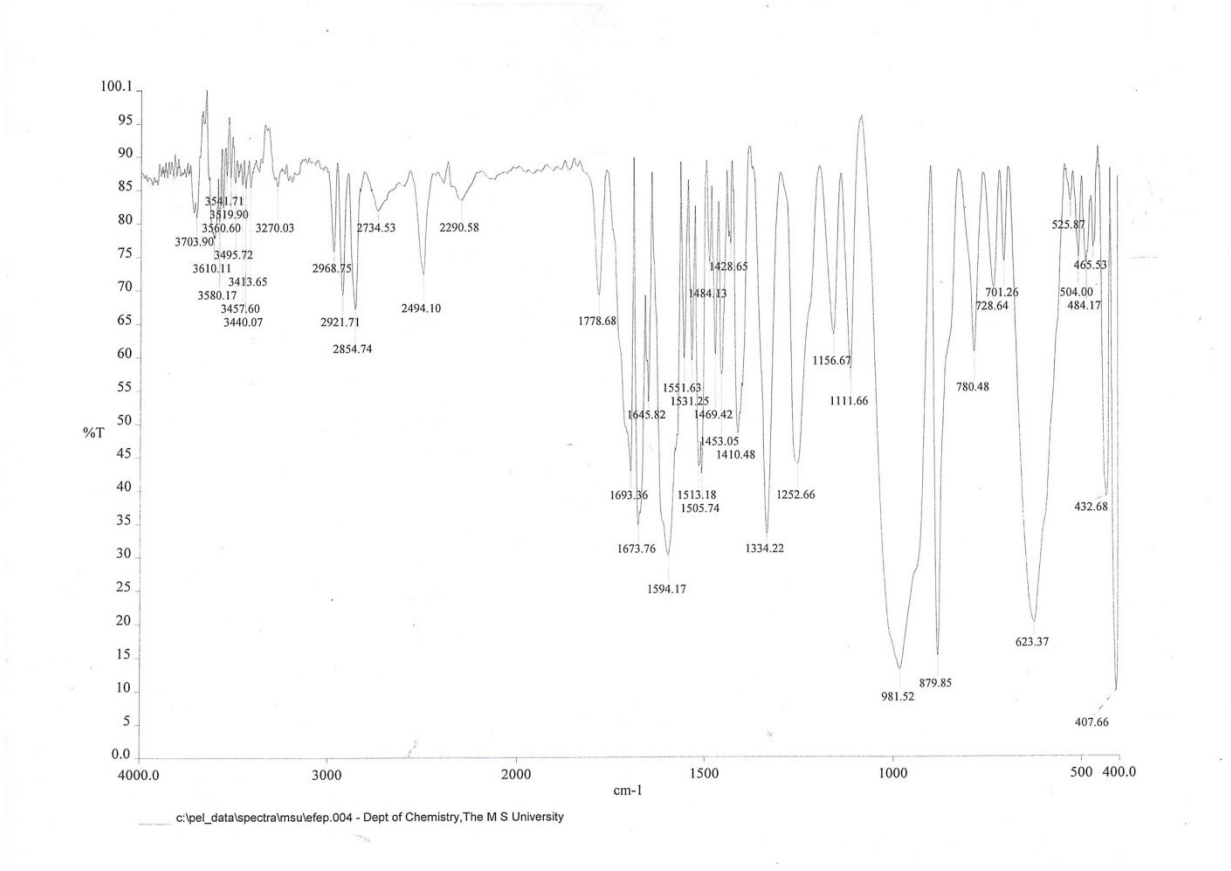


Figure S3: FTIR spectra of Fe_3O_4/*edta*/P magnetic micellar NPs.

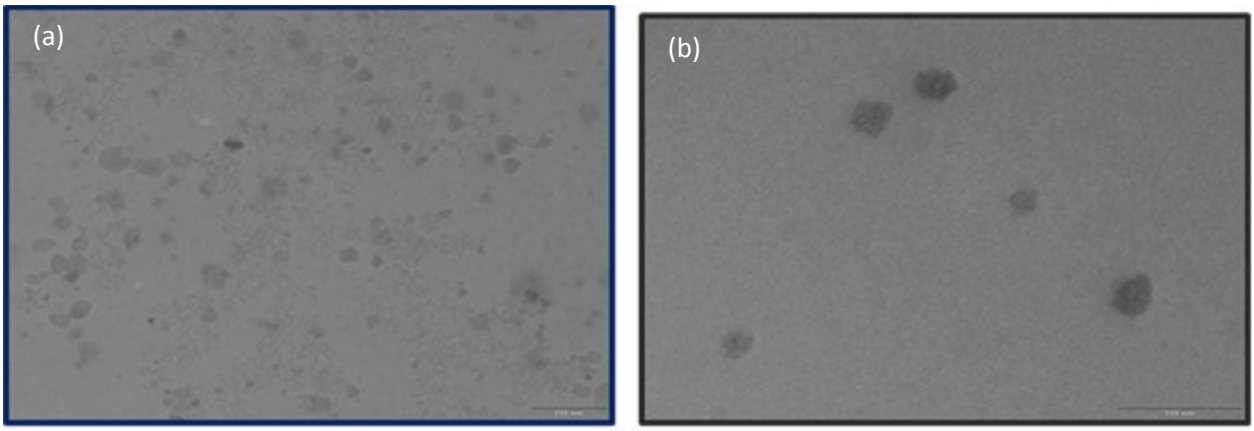


Figure S4. TEM images of (a) controlled k562 cells (b, c, and d) k562 cells transfected with Fe_3O_4/edta/P NPs.