

Additional Material

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1 Uncoated Nanoparticles - Zeta Potential

Sample	Zeta Potential in water (mV)
ZnO Nanoparticles	$21 \pm 0,34$
ZnO-Gd Nanoparticles	$24 \pm 1,4$
Amine-funct ZnO Nanoparticles	$28 \pm 0,4$
Amine-funct ZnO-Gd Nanoparticles	$27 \pm 0,5$

Table 1: Zeta Potential of inorganic NPs

2 Coated Nanoparticles - Zeta Potential

Initial Loading	Sample	Zeta Potential in water (mV)
20 μg	ZnO-PU	$-28,7 \pm 4,3$
	ZnO-Gd-PU	$-27,6 \pm 1,6$
	ZnO-PU-funct	$-27,5 \pm 3,7$
	ZnO-Gd-funct	$-32,5 \pm 5,1$
50 μg	ZnO-PU	$-26,5 \pm 9,3$
	ZnO-Gd-PU	$-30,2 \pm 0,34$
	ZnO-PU-funct	$-23,1 \pm 1,3$
	ZnO-Gd-funct	$-26,3 \pm 1,8$
100 μg	ZnO-PU	$-29,2 \pm 5,6$
	ZnO-Gd-PU	$-27,7 \pm 6,5$
	ZnO-PU-funct	$-22,8 \pm 1,1$
	ZnO-Gd-funct	$-22,1 \pm 1,6$

Table 2: Zeta Potential of coated NPs

3 Percentage Yield

Sample	Effective Yield (mg)	Percentage Yield (%)
ZnO-PU	0,71	67,6
	0,76	72,4
ZnO-Gd-PU	0,79	75,2
	0,65	62

Table 3: Percentage Yield

4 Loading of Zinc Oxide

Initial Loading	Sample	Effective Loading (μg)	Percentage Loading
20 μg	ZnO-PU	12,6	63 %
	ZnO-Gd-PU	24	100 %
	ZnO-PU-funct	28,7	100 %
	ZnO-Gd-funct	18,5	92,5 %
50 μg	ZnO-PU	35,2	70,4 %
	ZnO-Gd-PU	14	28 %
	ZnO-PU-funct	18,8	38 %
	ZnO-Gd-funct	11,2	22,4 %
100 μg	ZnO-PU	32,6	32,6 %
	ZnO-Gd-PU	27,2	27,2 %
	ZnO-PU-funct	17,3	17,3 %
	ZnO-Gd-funct	16,6	16,6 %

Table 4: Loading of ZnO

5 Viability Assay

Time Point	Sample	Concentration ($\mu\text{g/mL}$)	% Of viable cells
24 hours	ZnO	5	$76,7 \pm 12,4$
		10	$78 \pm 12,2$
		25	$92,6 \pm 20$
		50	$5,9 \pm 0,9$
	ZnO-PU	5	$94,9 \pm 1,3$
		10	$89,9 \pm 8,2$
		25	$82,8 \pm 6,1$
		50	$59,6 \pm 3,5$
	ZnO-Gd	5	$89,1 \pm 1,8$
		10	$87,2 \pm 2,3$
		25	$84,1 \pm 5,8$
		50	$62,5 \pm 11,9$
	ZnO-Gd-PU	5	$97,8 \pm 0,2$
		10	$92,4 \pm 0,6$
		25	$80,2 \pm 2,5$
		50	$62,9 \pm 2,5$
48 hours	ZnO	5	$83,8 \pm 10,9$
		10	$39,1 \pm 5,1$
		25	$22,8 \pm 8,8$
		50	$1,2 \pm 0,5$
	ZnO-PU	5	$79,1 \pm 5,2$
		10	$79,3 \pm 6,7$
		25	$85,2 \pm 3,5$
		50	$70,3 \pm 9$
	ZnO-Gd	5	$79,4 \pm 11,1$
		10	$77,4 \pm 13,6$
		25	$58,8 \pm 9,8$
		50	$43 \pm 20,7$
	ZnO-Gd-PU	5	$87,3 \pm 4,7$
		10	86 ± 7
		25	$63,8 \pm 11,1$
		50	$36,3 \pm 6,4$

Table 5: Percentage of viable treated cells after 24h and 48h