Supporting Information

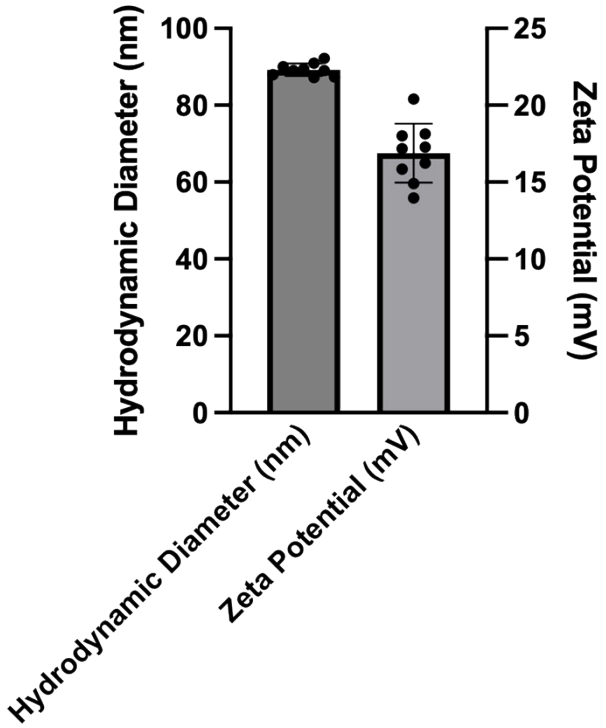

Figure S1. Characterization of 20 μg/mL fluorescent polystyrene nanoplastics for hydrodynamic diameter in ultrapure DI water with 15 minute sonication and zeta potential in PBS with 15 minute sonication.

Table S1. One-Way ANOVA with Tukey's post-test comparisons for dynamic light scattering and zeta potential comparisons. Statistical significance is determined by $p < 0.05$ and is denoted by bold text

Tukey's multiple comparisons test	Adjusted P Value DLS	Adjusted P Value ζ-potential
0 minutes vs. 15 minutes	0.1947	0.9868
0 minutes vs. 30 minutes	>0.9999	0.9127
0 minutes vs. 45 minutes	>0.9999	>0.9999
0 minutes vs. 60 minutes	0.9990	0.4530
0 minutes vs. 75 minutes	0.9993	0.9989
0 minutes vs. 90 minutes	0.9995	0.9379
15 minutes vs. 30 minutes	0.1521	0.4815
15 minutes vs. 45 minutes	0.1370	0.9276
15 minutes vs. 60 minutes	0.4383	0.1101
15 minutes vs. 75 minutes	0.0715	0.8655
15 minutes vs. 90 minutes	0.0761	0.5354
30 minutes vs. 45 minutes	>0.9999	0.9820
30 minutes vs. 60 minutes	0.9966	0.9823
30 minutes vs. 75 minutes	0.9999	0.9947
30 minutes vs. 90 minutes	>0.9999	>0.9999
45 minutes vs. 60 minutes	0.9948	0.6607
45 minutes vs. 75 minutes	>0.9999	>0.9999
45 minutes vs. 90 minutes	>0.9999	0.9897
60 minutes vs. 75 minutes	0.9655	0.7639
60 minutes vs. 90 minutes	0.9699	0.9711
75 minutes vs. 90 minutes	>0.9999	0.9975
1000 µg/mL vs. 500 µg/mL	**0.0225**	**0.0043**
1000 µg/mL vs. 100 µg/mL	**0.0321**	**<0.0001**
1000 µg/mL vs. 20 µg/mL	0.0504	**<0.0001**
1000 µg/mL vs. 10 µg/mL	**0.0343**	**<0.0001**
1000 µg/mL vs. 1 µg/mL	0.0549	**<0.0001**
500 µg/mL vs. 100 µg/mL	>0.9999	**<0.0001**
500 µg/mL vs. 20 µg/mL	0.9996	**<0.0001**
500 µg/mL vs. 10 µg/mL	>0.9999	**<0.0001**
500 µg/mL vs. 1 µg/mL	0.9993	**<0.0001**
100 µg/mL vs. 20 µg/mL	>0.9999	**<0.0001**
100 µg/mL vs. 10 µg/mL	>0.9999	**<0.0001**
100 µg/mL vs. 1 µg/mL	>0.9999	**<0.0001**
20 µg/mL vs. 10 µg/mL	>0.9999	0.9496
20 µg/mL vs. 1 µg/mL	>0.9999	**<0.0001**
10 µg/mL vs. 1 µg/mL	>0.9999	**<0.0001**

Table S2. Two-way ANOVA with Tukey's post-test comparisons for Calcein AM viability assays. Statistical significance is determined by $p < 0.05$ and is denoted by bold text.

Concentration 1 vs. Concentration 2 (μg/mL)	p-value HeLa WT	p-value HeLa *MSH2* KO	p-value HeLa *MLH1* KO
0.000 vs. 10.000	>0.9999	0.9921	0.8557
0.000 vs. 31.000	>0.9999	0.9945	0.9626
0.000 vs. 100.000	0.9920	0.9998	>0.9999
0.000 vs. 316.000	0.9930	0.9945	>0.9999
0.000 vs. 1000.000	>0.9999	0.9982	0.9103
0.000 vs. 1584.000	0.4631	>0.9999	0.7661
0.000 vs. 2511.000	**0.0013**	>0.9999	0.9851
0.000 vs. 3981.000	0.8983	>0.9999	**0.0017**
0.000 vs. 6309.000	**<0.0001**	0.2672	**<0.0001**
0.000 vs. 10000.000	**<0.0001**	**<0.0001**	**<0.0001**
10.000 vs. 31.000	0.9990	>0.9999	>0.9999
10.000 vs. 100.000	0.9999	>0.9999	0.7851
10.000 vs. 316.000	>0.9999	>0.9999	0.4925
10.000 vs. 1000.000	>0.9999	>0.9999	0.0613
10.000 vs. 1584.000	0.2128	0.9983	**0.0249**
10.000 vs. 2511.000	**0.0002**	0.9996	0.1549
10.000 vs. 3981.000	0.6628	0.9543	**<0.0001**
10.000 vs. 6309.000	**<0.0001**	**0.0140**	**<0.0001**
10.000 vs. 10000.000	**<0.0001**	**<0.0001**	**<0.0001**
31.000 vs. 100.000	0.9197	>0.9999	0.9301
31.000 vs. 316.000	0.9257	>0.9999	0.7202
31.000 vs. 1000.000	0.9955	>0.9999	0.1447
31.000 vs. 1584.000	0.7519	0.9990	0.0665
31.000 vs. 2511.000	**0.0066**	0.9998	0.3101
31.000 vs. 3981.000	0.9878	0.9642	**<0.0001**
31.000 vs. 6309.000	**<0.0001**	**0.0165**	**<0.0001**
31.000 vs. 10000.000	**<0.0001**	**<0.0001**	**<0.0001**
100.000 vs. 316.000	>0.9999	>0.9999	>0.9999
100.000 vs. 1000.000	>0.9999	>0.9999	0.9496
100.000 vs. 1584.000	**0.0382**	>0.9999	0.8401
100.000 vs. 2511.000	**<0.0001**	>0.9999	0.9942
100.000 vs. 3981.000	0.2368	0.9965	**0.0028**
100.000 vs. 6309.000	**<0.0001**	**0.0495**	**<0.0001**
100.000 vs. 10000.000	**<0.0001**	**<0.0001**	**<0.0001**
316.000 vs. 1000.000	>0.9999	>0.9999	0.9969
316.000 vs. 1584.000	**0.0404**	0.9990	0.9748
316.000 vs. 2511.000	**<0.0001**	0.9998	>0.9999

Concentration 1 vs. Concentration 2 (μg/mL)	p-value HeLa WT	p-value HeLa *MSH2* KO	p-value HeLa *MLH1* KO
316.000 vs. 3981.000	0.2461	0.9643	**0.0135**
316.000 vs. 6309.000	**<0.0001**	**0.0165**	**<0.0001**
316.000 vs. 10000.000	**<0.0001**	**<0.0001**	**<0.0001**
1000.000 vs. 1584.000	0.1466	0.9998	>0.9999
1000.000 vs. 2511.000	**0.0001**	>0.9999	>0.9999
1000.000 vs. 3981.000	0.5475	0.9827	0.2054
1000.000 vs. 6309.000	**<0.0001**	**0.0250**	**0.0001**
1000.000 vs. 10000.000	**<0.0001**	**<0.0001**	**<0.0001**
1584.000 vs. 2511.000	0.6346	>0.9999	0.9999
1584.000 vs. 3981.000	0.9998	>0.9999	0.3682
1584.000 vs. 6309.000	**0.0008**	0.1792	0.0005
1584.000 vs. 10000.000	**<0.0001**	**<0.0001**	**<0.0001**
2511.000 vs. 3981.000	0.1947	>0.9999	0.0864
2511.000 vs. 6309.000	0.3695	0.1324	**<0.0001**
2511.000 vs. 10000.000	0.0590	**<0.0001**	**<0.0001**
3981.000 vs. 6309.000	**<0.0001**	0.4493	0.5673
3981.000 vs. 10000.000	**<0.0001**	**<0.0001**	**0.0412**
6309.000 vs. 10000.000	0.9994	**<0.0001**	0.9819