Perturbation of Hyperthermia Resistance in Gastric Cancer by Hyperstimulation of Autophagy using Artemisinin-protected Iron-oxide Nanoparticles

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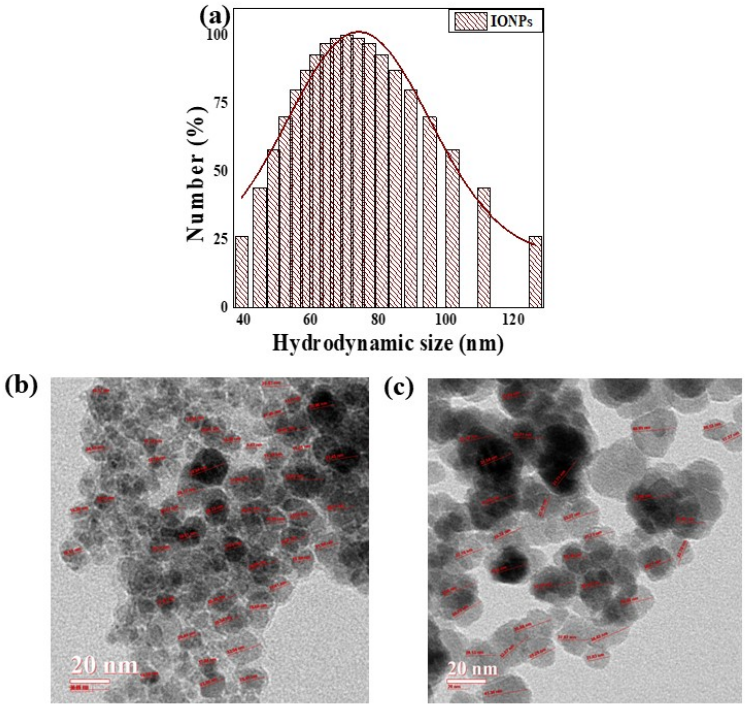

Figure S1: DLS and HRTEM figures of IONPs and ART-MNPs (a) It represents the DLS graph of IONPs having a size of 74 nm (b) HR-TEM image showing the size measurement of each particle of IONPs (c) HR-TEM image showing the size measurement of each particle of ART-MNPs.

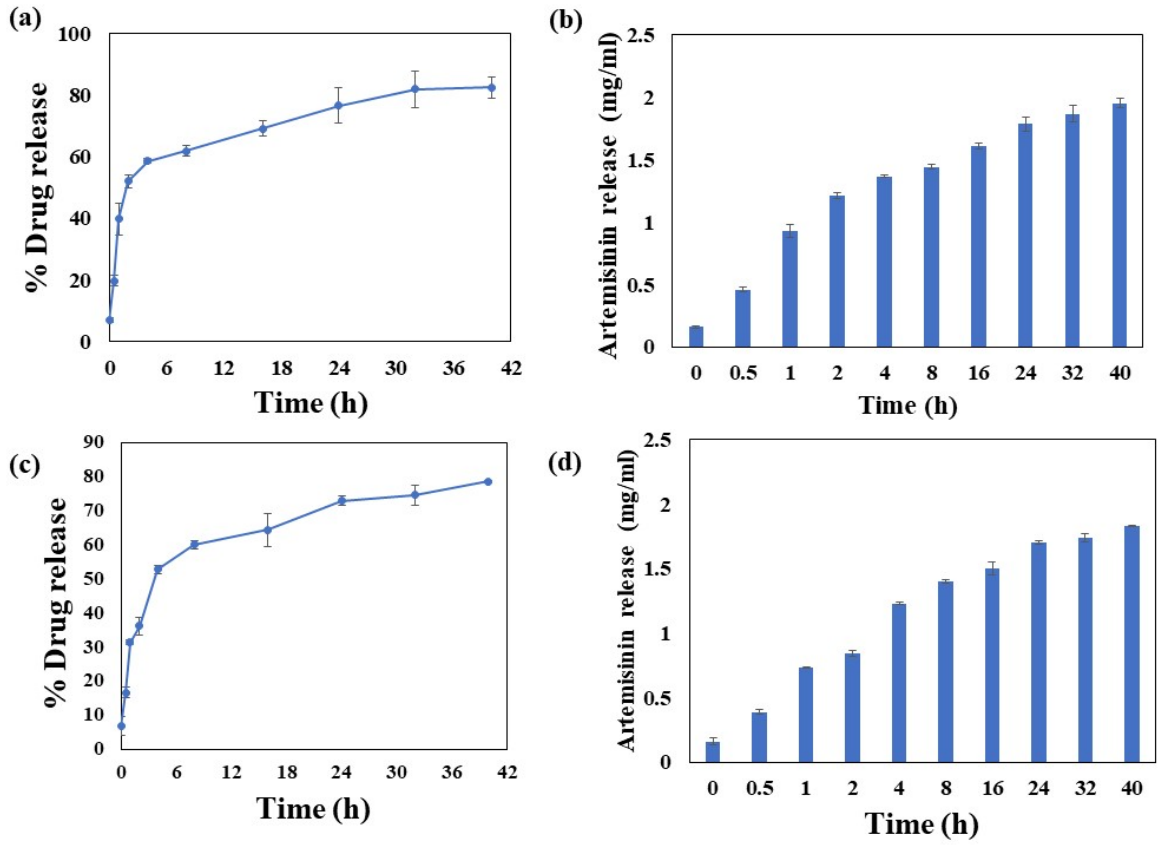

Figure S2: Release kinetics of Artemisinin in gastric and tumor pH. (a) The graph presents the drug release studies performed for assessing the percentage of ART released from ART-MNPs at gastric pH (3) (b) It illustrates the release rate of the drug in mg/ml at pH 3 per hour (c) The graph depicts the drug release studies conducted to evaluate the percentage of ART released from ART-MNPs at tumor pH (5.5) (d) It depicts the drug release rate in mg/ml per hour at tumor pH (5.5).

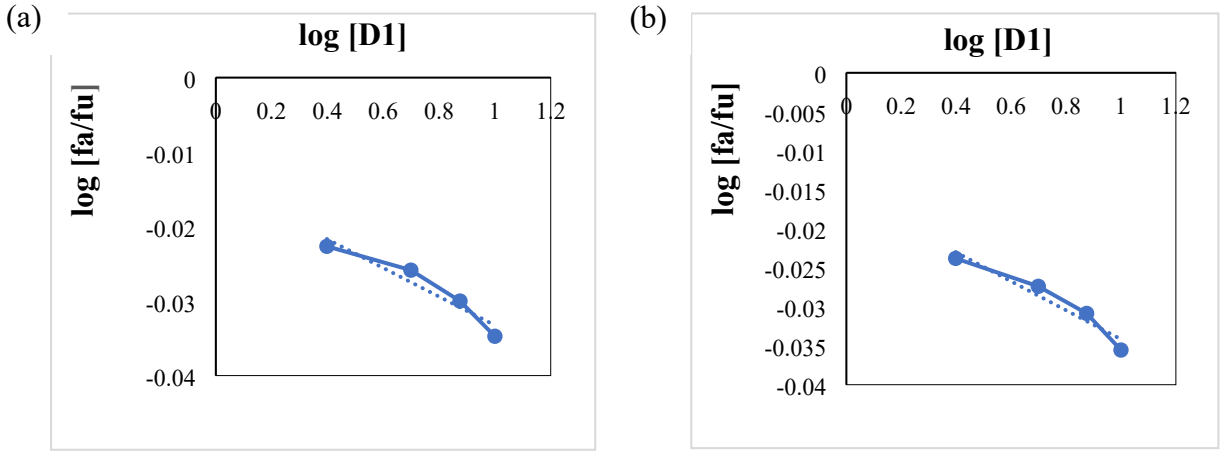

Figure S3: Median plots of (a) ART **and (b)** MNPs for finding the y-intercept and m values to calculate Dm and determine the combination index of ART and MNPs.

Table S1 shows the p values calculated for % variation in cell viability after treatment with 2.5, 5, 7.5, and 10 µg/mL of ART, MNPs, and ART-MNPs without hyperthermia. The statistical significance of data is considered when the $p < 0.05$

P value for checking the statistical significance of data (Without Hyperthermia)			
Concentration	**ART**	**MNPs**	**ART-MNPs**
2.5µg/mL	0.002413	0.002773	0.00112
5µg/mL	0.000477	0.008284	0.000152
7.5 µg/mL	8.06E-05	0.017229	0.000152
10 µg/mL	1.39E-06	0.002665	9.43E-07

Table S2 shows the p values calculated for % variation in cell viability after treatment with 2.5, 5, 7.5, and 10 µg/mL of ART, MNPs, and ART-MNPs with hyperthermia. The statistical significance of data is considered when the $p < 0.05$

P value for checking the statistical significance of data (With Hyperthermia)			
Concentration	**ART**	**MNPs**	**ART-MNPs**
2.5µg/mL	0.009367	0.009526	1.4201E-05
5µg/mL	0.000869	0.000836	3.04E-05
7.5 µg/mL	0.000336	0.000139	4.13E-06
10 µg/mL	0.000212	6.07E-05	2.65E-06

Table S3 shows the p values calculated for % variation in scratch diameter after treatment with 10 µg/ml of ART, MNPs, and ART-MNPs. The statistical significance of data is considered when the $p < 0.05$.

P value for checking the statistical significance of data			
Time	**ART**	**MNPs**	**ART-MNPs**
6h	0.054767	0.792443	0.004362
12h	0.000305	0.041174	0.000243
24h	0.004036	0.023064	0.001396
36h	0.01039	0.027416	0.004124
48h	0.00749	0.043244	0.006911

Table S4 shows the p values calculated for % variation in the absorbance value of *H. pylori* after treatment with varying concentrations (2.5, 5, 7.5, 10 µg/ml) of ART, MNPs, and ART-MNPs. The statistical significance of data is considered when the $p < 0.05$.

P value is used to check the statistical significance of data for anti-*H. pylori* activity			
	ART	**MNPs**	**ART-MNPs**
2.5µg/mL	0.004458	0.00133	5.46E-05
5µg/mL	2.09E-05	7.73E-05	1.56E-05
7.5 µg/mL	1.1E-05	1.5E-05	5.43E-06
10 µg/mL	5.46E-06	0.000213	2.48E-06