Table S3.   Single factor experiments

(A) Investigated factor 1: the mass of IL-MNPs

IL-MNPs	Co	Ce	V	t	T	PH	E%
(g)	(mg mL-1)	(mg mL-1)	(ml)	(min)	(℃)		
10	0.500	0.394	2.00	30	30	7	21.15
20	0.500	0.335	2.00	30	30	7	32.94
30	0.500	0.264	2.00	30	30	7	47.21
40	0.500	0.224	2.00	30	30	7	55.27
50	0.500	0.118	2.00	30	30	7	76.37
60	0.500	0.093	2.00	30	30	7	81.33
70	0.500	0.089	2.00	30	30	7	82.26

Note: 1. Co and Ce are the initial and equilibrium protein concentrations (in mg mL-1), separately.

2. V is the volume of the protein solution (in ml)

3. E% was represented the extraction efficiency, which was calculated from equation (1).

(B) Investigated factor 2: the concentration of BSA

Co (mg/ml)	Ce	V	t	T	IL-MNPs	PH	E%
	(mg mL-1)	(ml)	(min)	(℃)	(g)		
0.500	0.096	2.00	30	30	60	7	81.33
0.750	0.338	2.00	30	30	60	7	54.88
1.000	0.593	2.00	30	30	60	7	40.72
1.250	0.843	2.00	30	30	60	7	32.60
1.500	1.100	2.00	30	30	60	7	26.67
1.750	1.342	2.00	30	30	60	7	23.31

Note: 1. Co and Ce are the initial and equilibrium protein concentrations (in mg mL-1), separately.

2. V is the volume of the protein solution (in ml)

3. E% was represented the extraction efficiency, which was calculated from equation (1).

(C) Investigated factor 3: the pH of solution

PH	Ce	Co	V	t	T	IL-MNPs	E%
	(mg mL-1)	(mg mL-1)	(ml)	(min)	(℃)	(g)	
3.00	0.252	0.500	2.00	30	30	60	49.69
4.00	0.158	0.500	2.00	30	30	60	68.30
5.00	0.143	0.500	2.00	30	30	60	71.41
6.00	0.065	0.500	2.00	30	30	60	86.92
7.00	0.096	0.500	2.00	30	30	60	81.33
8.00	0.174	0.500	2.00	30	30	60	65.20
9.00	0.283	0.500	2.00	30	30	60	43.49

(D) Investigated factor4: the extraction time

t (min)	Ce (mg mL-1)	Co (mg mL-1)	V (ml)	T (℃)	IL-MNPs (g)	PH	E%
5	0.283	0.500	2.00	30	60	6	43.49
10	0.174	0.500	2.00	30	60	6	65.20
15	0.096	0.500	2.00	30	60	6	80.71
20	0.069	0.500	2.00	30	60	6	86.92
25	0.067	0.500	2.00	30	60	6	86.61
30	0.065	0.500	2.00	30	60	6	86.92
35	0.067	0.500	2.00	30	60	6	86.61

(f) Investigated factor 5: the temperature

T (℃)	Ce (mg mL-1)	Co (mg mL-1)	V (ml)	IL-MNPs (g)	PH	t (min)	E%
20	0.158	0.500	2.00	60	6	20	68.30
25	0.112	0.500	2.00	60	6	20	77.61
30	0.096	0.500	2.00	60	6	20	86.92
35	0.127	0.500	2.00	60	6	20	74.51
40	0.174	0.500	2.00	60	6	20	65.20
50	0.329	0.500	2.00	60	6	20	34.18