Table S2. Five single factor experiments

(A) Investigated factor 1: the mass of IL

IL (g)	Ct (mg/ml)	Cb (mg/ml)	K	Vt (ml)	Vb (ml)	R	E%
0.9	13.05	5.05	2.58	1.95	0.90	2.17	84.84
1	12.61	1.80	7.00	2.25	0.90	2.50	94.59
1.2	11.63	2.08	5.60	2.40	1.00	2.40	93.07
1.4	10.75	2.04	5.27	2.60	1.00	2.60	93.20
1.6	10.46	2.28	4.58	2.65	1.00	2.65	92.39
1.8	9.68	2.04	4.75	2.90	0.95	3.05	93.54
2	9.53	1.99	4.80	2.95	0.95	3.11	93.71

Note: 1. k was represented the partition coefficient, R was represented the phase volume ratio, E% was represented the extraction efficiency, which was calculated from equation (1), (2), (3), respectively.

(B) Investigated factor 2: the mass of K_2HPO_4

K_2HPO_4 (g)	Ct (mg/ml)	Cb (mg/ml)	K	Vt (ml)	Vb (ml)	R	E%
1.4	11.63	2.31	5.04	2.40	0.90	2.67	93.07
1.5	12.56	1.39	9.07	2.25	1.25	1.80	94.23
1.6	13.59	1.04	13.04	2.10	1.40	1.50	95.14
1.7	15.30	0.62	24.84	1.90	1.50	1.27	96.92
1.8	15.84	0.42	37.68	1.85	1.65	1.12	97.69
1.9	16.92	0.23	75.08	1.75	1.75	1.00	98.69
2	17.99	0.17	107.32	1.65	1.85	0.89	98.97
2.2	18.24	0.82	22.13	1.55	2.10	0.74	94.23
2.4	17.80	1.50	11.86	1.50	2.20	0.68	88.99
2.6	17.46	2.04	8.56	1.45	2.30	0.63	84.37
2.8	15.79	3.29	4.80	1.40	2.40	0.58	73.70
3	15.60	3.58	4.36	1.35	2.50	0.54	70.19

Note: 1. k was represented the partition coefficient, R was represented the phase volume ratio, E% was represented the extraction efficiency, which was calculated from equation (1), (2), (3), respectively.

(C) Investigated factor 3: the concentration of BSA

BSA (mg/ml)	Ct (mg/ml)	Cb (mg/ml)	K	Vt (ml)	Vb (ml)	R	E%
5	2.89	0.12	23.62	1.65	1.85	0.89	95.47
10	6.03	0.03	225.04	1.65	1.85	0.89	99.50
15	9.02	0.06	145.48	1.65	1.85	0.89	99.24
20	12.00	0.11	107.32	1.65	1.85	0.89	98.97
25	14.95	0.18	84.93	1.65	1.85	0.89	98.70
30	17.897	0.26	70.20	1.65	1.85	0.89	98.43
35	20.71	0.45	46.00	1.65	1.85	0.89	97.62

Note: 1. k was represented the partition coefficient, R was represented the phase volume ratio, E% was represented the extraction efficiency, which was calculated from equation (1), (2), (3), respectively.

(D) Investigated factor4: the separation time

t (min)	Ct (mg/ml)	Cb (mg/ml)	K	Vt (ml)	Vb (ml)	R	E%
2	4.14	1.71	2.42	1.65	1.85	0.89	68.29
4	5.00	0.94	5.31	1.65	1.85	0.89	82.55
8	5.72	0.30	18.87	1.65	1.85	0.89	94.39
10	5.77	0.26	22.23	1.65	1.85	0.89	95.20
15	5.90	0.14	41.22	1.65	1.85	0.89	97.35
20	6.01	0.04	145.48	1.65	1.85	0.89	99.24
25	6.01	0.04	145.48	1.65	1.85	0.89	99.24
30	6.03	0.03	225.04	1.65	1.85	0.89	99.50

Note: 1. k was represented the partition coefficient, R was represented the phase volume ratio, E% was represented the extraction efficiency, which was calculated from equation (1), (2), (3), respectively.

(E) Investigated factor 5: the temperature

T (℃)	Ct (mg/ml)	Cb (mg/ml)	K	Vt (ml)	Vb (ml)	R	E%
15	5.25	0.73	7.24	1.65	1.85	0.89	86.59
20	5.67	0.35	16.36	1.65	1.85	0.89	93.59
25	6.01	0.04	145.48	1.65	1.85	0.89	99.24
30	6.00	0.06	107.32	1.65	1.85	0.89	98.97
35	5.82	0.22	26.95	1.65	1.85	0.89	96.07
40	5.66	0.36	15.65	1.65	1.85	0.89	93.32
50	5.30	0.68	7.77	1.65	1.85	0.89	87.40

Note: 1. k was represented the partition coefficient, R was represented the phase volume ratio, E% was represented the extraction efficiency, which was calculated from equation (1), (2), (3), respectively.