

Table S1 Raman signal value of AMP series concentration (n=3)

concentration (n g/mL)	0	10	20	50	100	200
Raman	42458	34065	31347	25085	19826	12888
Intensity $\pm$ SD	± 980.6	± 927.3	± 716.4	± 513.4	± 506.7	± 417.7

n: number of parallel experiments

SD: standard deviation

Table S2 Repeatability experiment (n=10)

AMP (ng/mL)	Raman intensity $\pm$ SD	Measured value $\pm$ SD (ng/mL)	RSD (%)
10.0	34145 $\pm$ 684.6	10.2 $\pm$ 1.7	17.3
50.0	24789 $\pm$ 693.7	53.5 $\pm$ 4.9	9.3
200.0	13233 $\pm$ 590.5	194.2 $\pm$ 10.9	5.6

RSD:relative standard deviation

Table S3 Precision experiment (n=10)

	AMP (ng/mL)	Raman intensity $\pm$ SD	Measured value $\pm$ SD (ng/mL)	RSD (%)
The first batch	10	34145 $\pm$ 684.6	10.2 $\pm$ 1.7	17.3
	50	24789 $\pm$ 693.7	53.5 $\pm$ 4.9	9.3
	200	13233 $\pm$ 590.5	194.2 $\pm$ 10.9	5.6
The second batch	10	51808 $\pm$ 624.1	9.3 $\pm$ 0.9	10.3
	50	31477 $\pm$ 2028	54.7 $\pm$ 7.7	14.0
	200	18013 $\pm$ 693.4	195.2 $\pm$ 21.6	11.0
The third batch	10	30982 $\pm$ 501.4	9.1 $\pm$ 1.6	18.4
	50	22305 $\pm$ 701.5	52.4 $\pm$ 5.1	9.7
	200	12646 $\pm$ 821.2	203.3 $\pm$ 25.5	12.5
inter-batch	10	38978 $\pm$ 11222	9.5 $\pm$ 0.5	6.1
	50	26190 $\pm$ 4743	53.6 $\pm$ 1.1	2.1
	200	14630 $\pm$ 2943	197.5 $\pm$ 4.9	2.5

Table S4 Spike recovery experiment(n=3)

	Theoretical value (ng/mL)	Raman intensity $\pm$ SD	Measured value $\pm$ SD (ng/mL)	Recovery rate (%)
A	27.2	29995 $\pm$ 764.6	24.2 $\pm$ 3.3	88.9
B	54.5	23889 $\pm$ 1332	60.5 $\pm$ 10.5	111.0
C	109.1	18841 $\pm$ 2038	110.7 $\pm$ 25.6	101.4

Table S5 Interfering experiment (n=3)

Interfering substances	AMP (ng/mL)	Raman intensity $\pm$ SD	Measured value $\pm$ SD (ng/mL)	Recovery (%)
Bilirubin	10	34737 $\pm$ 1611	9.0 $\pm$ 3.8	90.2
	50	26334 $\pm$ 382.2	43.1 $\pm$ 2.3	86.3
	200	13307 $\pm$ 1136	193.3 $\pm$ 20.9	96.6
EDTA	10	34959 $\pm$ 429.4	8.2 $\pm$ 0.9	82.3
	50	25966 $\pm$ 640.0	45.5 $\pm$ 4.1	91.1
	200	12838 $\pm$ 720.5	201.8 $\pm$ 13.7	100.9
Triglyceride	10	33955 $\pm$ 617.5	10.7 $\pm$ 1.6	107.0
	50	25049 $\pm$ 919.2	51.7 $\pm$ 6.4	103.6
	200	13077 $\pm$ 790.7	198.4 $\pm$ 15.1	99.2
Hemoglobin	10	33579 $\pm$ 176.5	11.6 $\pm$ 0.4	116.7
	50	24596 $\pm$ 645.3	54.9 $\pm$ 4.7	109.8
	200	14122 $\pm$ 882.4	178.3 $\pm$ 15.6	89.1
Trisodium citrate	10	34619 $\pm$ 1200	9.1 $\pm$ 2.7	91.6
	50	24772 $\pm$ 946.5	53.7 $\pm$ 6.8	107.5
	200	14288 $\pm$ 1226	175.7 $\pm$ 21.3	87.8