

Electronic Supplementary Information

Automated salting-out assisted single-phase liquid-liquid extraction of Cr(VI) from river water samples prior to its atomic absorption spectrometric determination

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Table S1. Electrothermal heating program for the determination of Cr(VI) in river samples.

Temperature (°C)	Time(s)	Heating Mode	Flow gas
150	20	Ramp	ON
250	10	Ramp	ON
900	10	Ramp	ON
950	10	Step	ON
950	3	Step	ON
2300	2	Step (measure)	OFF
2500	2	Step	ON

Table S2. The channel flow equations.

Channel	Equation	R ²
Saline solution	$v = 0.0661t + 0.0021$	0.9997
Sample	$v = 0.0667t + 0.0039$	0.9997
Buffer	$v = 0.0679t + 0.0002$	0.9992
NaDDTC	$v = 0.0616t + 0.0002$	0.9992
Amyl alcohol	$v = 0.0633t + 0.0146$	0.9987

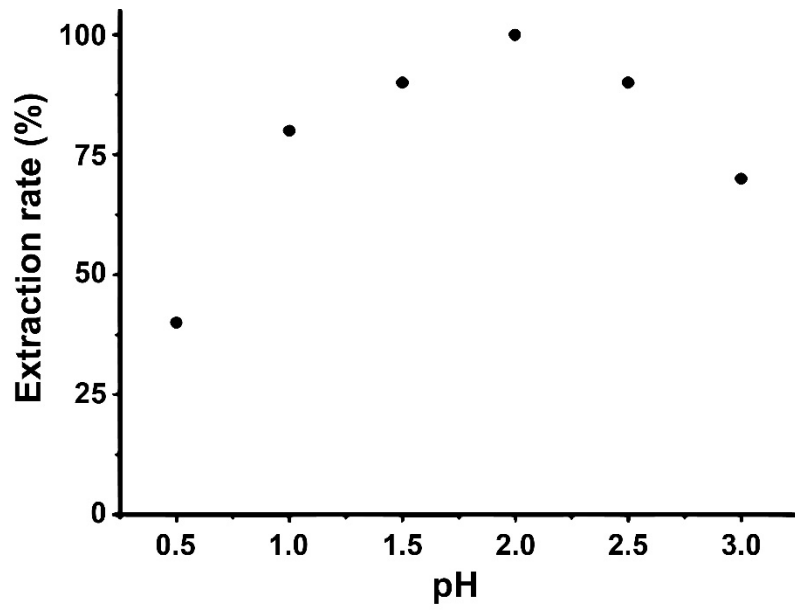


Fig. S1. Influence of pH on the extraction rate of Cr(VI)-DDTC complex.

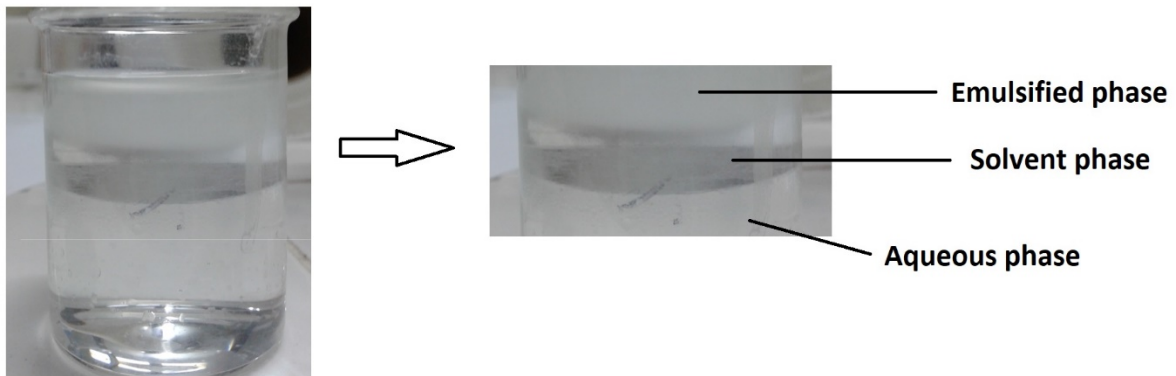


Fig. S2. Photograph of three-phase system formation after single-phase breakdown.

Table S3. ANOVA for the fit to a linear model of the analytical curve.

Source	Square Sum (SS)	Degrees of Freedom (DF)	Mean Square (MS)
Regression	$2.9 \cdot 10^{-2}$	1	$2.9 \cdot 10^{-2}$
Residual	$3.3 \cdot 10^{-3}$	13	$2.5 \cdot 10^{-4}$
Lack of fit	$7.7 \cdot 10^{-4}$	3	$2.6 \cdot 10^{-4}$
Pure error	$2.5 \cdot 10^{-3}$	10	$2.5 \cdot 10^{-4}$

Table S4. Extraction of Cr(VI) in the presence of different concentrations of Cr(III) at pH 2.

Cr(VI) present (μgL^{-1})	Cr(III) added (μgL^{-1})	Cr (VI) Recovery rate (%)
	1.0	100
1.0	5.0	99
	10	101