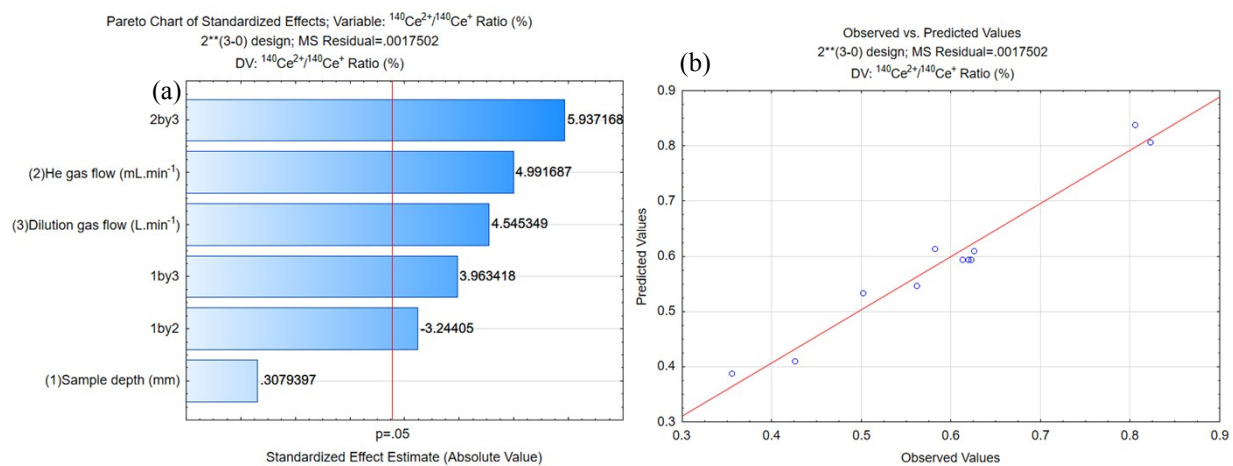


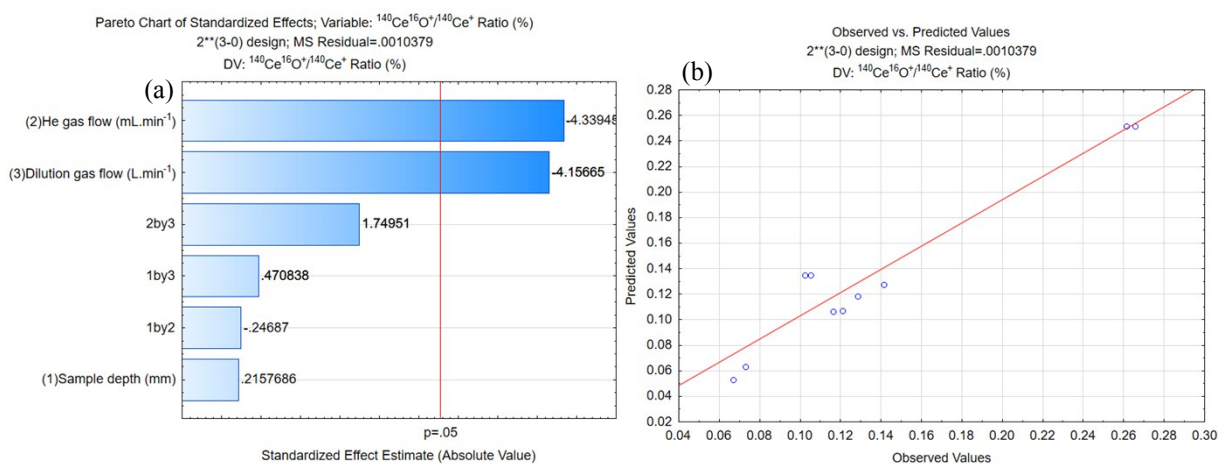
## SUPPLEMENTARY INFORMATION

**Table SM1.** Samples composition given by manufacturer

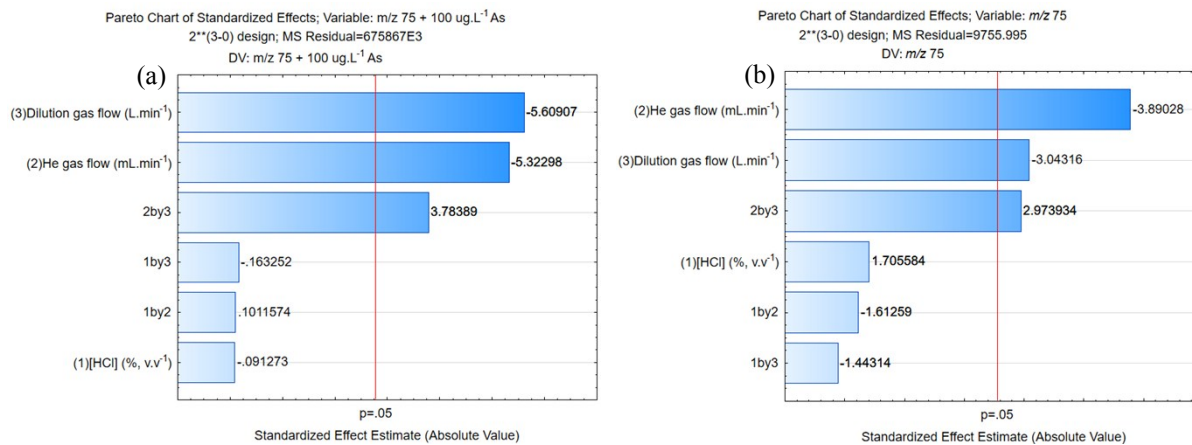
Sample	Presentation	Composition as given by manufacturer (API and Vehicle)
A	Yellow solution	100 mg mL <sup>-1</sup> choline citrate, 50 mg mL <sup>-1</sup> betaine, 10 mg mL <sup>-1</sup> racemethionine. Vehicle: sorbitol, sodium saccharin dihydrate, quinoline yellow, methylparaben, propylparaben, artificial pineapple flavor and water.
B	Pink suspension	75 mg L <sup>-1</sup> simethicone. Vehicle: xanthan gum, carmellose sodium, microcrystalline cellulose, soluble red colouring 40, sodium saccharin, sodium cyclamate, propylene glycol, propylparaben, methylparaben, strawberry essence, ethoxylated hydrogenated castor oil, citric acid and purified water.
C	High viscosity red syrup	13.3 mg mL <sup>-1</sup> guaifenesin 1.33 mg mL <sup>-1</sup> dextromethorphan monohydrate hydrobromide. Vehicle: propylene glycol, ethyl alcohol, sodium hydrate dihydrate, carmellose sodium, citric acid, polyoxyl 40 stearate, DM heat flavor (ethyl alcohol, rum, natural pepper flavor, propylene glycol, water and artificial spice flavor), macrogol, sodium benzoate, artificial chocolate flavor, sodium saccharin, levomenthol, artificial cherry flavor, menthoxypropanediol, FD&C 40 red colouring, sucrose and purified water.
D	Medium viscosity red syrup	0.8 mg mL <sup>-1</sup> bromhexine hydrochloride. Vehicle: sodium benzoate, sodium cyclamate, sodium metabisulfite, heitelose, glycerol, sorbitol, tartaric acid, ponceau red, cherry aroma, strawberry aroma and purified water.
E	Purple solution	1757 mg L <sup>-1</sup> NaCl 60 mg L <sup>-1</sup> zinc glyconate 11.88 g L <sup>-1</sup> glucose monohydrate, 2892 mg L <sup>-1</sup> sodium citrate dihydrate 1506 mg L <sup>-1</sup> KCl and 1,757 mg mL <sup>-1</sup> sodium chloride. Vehicle: acesulfame potassium, sucralose, grape aroma, red colouring, blue colouring, anhydrous citric acid and purified water.



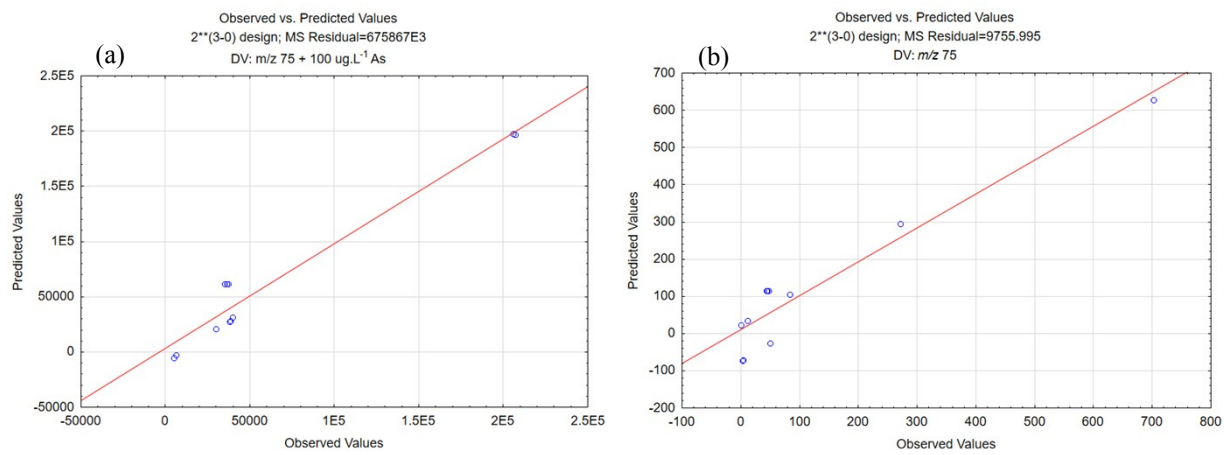
**Fig. SM1.** (a) Pareto Chart of standardized effects for doubly charged ( $^{140}\text{Ce}^{2+}/^{140}\text{Ce}^+$ ) ion formation and (b) Observed *versus* predicted values for doubly charged ( $^{140}\text{Ce}^{2+}/^{140}\text{Ce}^+$ ) ion formation.



**Fig. SM2.** (a) Pareto Chart of standardized effects for oxide ( $^{140}\text{Ce}^{16}\text{O}^+ / ^{140}\text{Ce}^+$ ) ion formation and (b) Observed versus predicted values for oxide ( $^{140}\text{Ce}^{16}\text{O}^+ / ^{140}\text{Ce}^+$ ) ion formation.



**Fig. SM3.** Pareto Chart of standardized effects for  $m/z\ 75$  ion formation in HCl solutions (a) with  $100\ \mu\text{g}\ \text{L}^{-1}$  As and (b) without As addition.



**Fig. SM4.** Observed *versus* predicted values for m/z 75 ion formation in HCl solutions (a) with 100 µg L<sup>-1</sup> As and (b) without As addition.