

## SUPPLEMENTARY MATERIAL

### Perspectives on the Future of Multi-dimensional Platforms

Gino Groeneveld<sup>a</sup>, Bob W.J. Pirok<sup>a,b</sup>, Peter J. Schoenmakers<sup>a,\*</sup>

<sup>a</sup> University of Amsterdam, van 't Hoff Institute for Molecular Sciences, Analytical-Chemistry Group, Science Park 904, 1098 XH Amsterdam, The Netherlands.

<sup>b</sup> TI-COAST, Science Park 904, 1098 XH Amsterdam, The Netherlands.

(\*) Corresponding author

E-mail: [P.J.Schoenmakers@uva.nl](mailto:P.J.Schoenmakers@uva.nl)

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### **S-1 Information regarding experimental conditions for polysorbate analysis**

Polysorbate-20 and polysorbate-80 (*i.e.* Tween-20 and Tween-80) were purchased from Sigma-Aldrich and analysed on a Agilent 1290 infinity 2D-LC system. 3  $\mu$ L of 0.5 mg/mL solutions in ACN were injected onto the <sup>1</sup>D HILIC column (Phenomenex Kinetex HILIC 150 $\times$ 2.1 mm, 2.6  $\mu$ m) operated at 5  $^{\circ}$ C and a flowrate of 0.020 mL/min. The following gradient from acetonitrile (A) to buffer (B, 10 mM ammonium formate @ pH 3.2) was employed: 0.0-10.0-100.0-160.0-300.0-320.0 min 5-5-25-50-50-5% B. The modulation period was 1.1 min, corresponding to a modulation volume of 22  $\mu$ L alternating collected in two 40  $\mu$ L loops attached to two distinct multiple heart-cutting valves [G4242-64000] installed on a 2D-LC ASM Valve Head [G4243A]. The <sup>2</sup>D employed a Waters Acquity UPLC BEH phenyl-hexyl column (50 $\times$ 2.1 mm, 1.7  $\mu$ m) operated at a flowrate of 1.2 mL/min and thermostatted at 50  $^{\circ}$ C. A gradient of 0.1% ammonium formate in water (A) to acetonitrile (B) was run from 0.0-0.1-0.75-0.85-1.1 min at 40-60-100-100-40% B. The <sup>2</sup>D was coupled the an Agilent MS Q-TOF G6545 mass spectrometer employed with an Dual Jet Stream Electrospray Ionization (AJS ESI) ion source operated in positive mode from 100-3200 *m/z*.