

Electronic Supplementary Information (ESI)

On line kinetic analysis of permeation profiles for UV filter loaded microemulsions using an automatic system with spectroscopic detection and a chemometric approach

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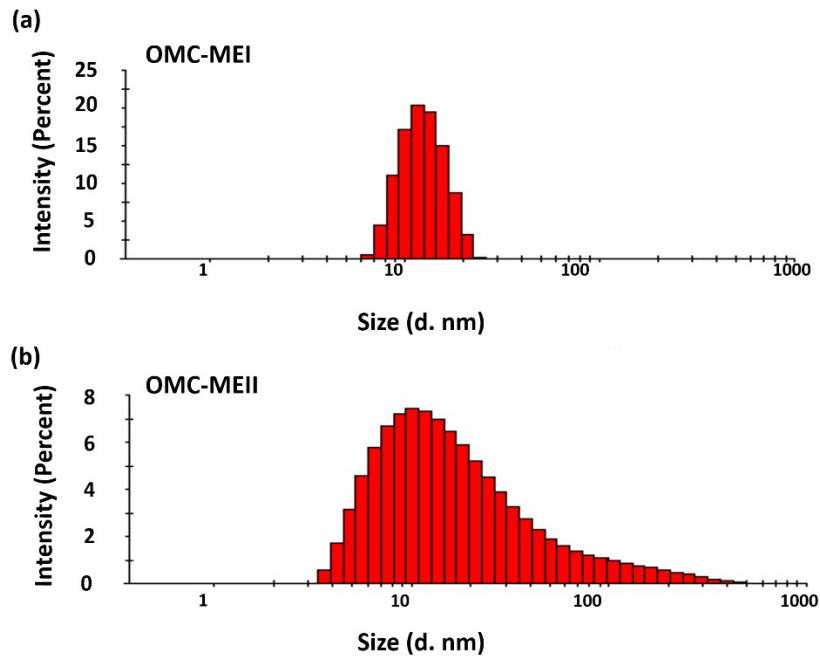
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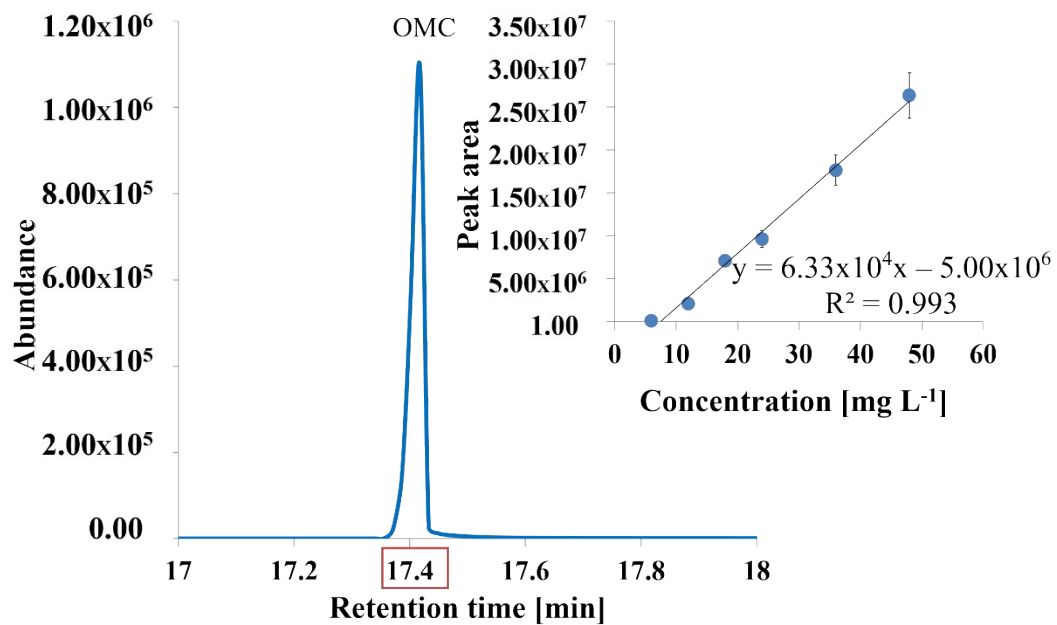
S1. Full-factorial experimental design (3^2) used for PLS calibration.

Experiments	OMC (mg L ⁻¹)	BEO (mg L ⁻¹)
1	6.0	24.0
2	6.0	132.0
3	6.0	240.0
4	33.0	24.0
5	33.0	132.0
6	33.0	240.0
7	60.0	24.0
8	60.0	132.0
9	60.0	240.0

S2. The particle size distribution histogram obtained through DLS measurements on the OMC loaded o/w microemulsions. (a) OMC-MEI and (b) OMC-MEII



S3. Chromatogram (retention time: 17.4 min) and the calibration curve (6.0-60.0 mg L⁻¹) obtained for OMC from GC-MS analysis.



S4. Fitting functions for the different permeation profiles corresponding to OMC-MEI and OMC-MEII samples obtained by the proposed (UVS and FS) and the reference (GC-MS) methods.

	Fitting equations	R ²
	GC-MS	
	$y = (17.32 \pm 0.02) \ln[\text{OMC mg L}^{-1}] - (19.50 \pm 0.04)$	0.991
	FS	
OMC-MEI	$y = (37.59 \pm 0.02) \ln[\text{OMC mg L}^{-1}] - (9.26 \pm 0.01)$	0.991
	UVS	
	$y = (18.91 \pm 0.01) \ln[\text{OMC mg L}^{-1}] - (18.96 \pm 0.03)$	0.994
	GC-MS	
	$y = (9.76 \pm 0.02) \ln[\text{OMC mg L}^{-1}] - (0.56 \pm 0.01)$	0.976
OMC-MEII	SFS	
	$y = (21.39 \pm 0.02) \ln[\text{OMC mg L}^{-1}] - (36.64 \pm 0.01)$	0.952