Electronic Supplementary Information

Metallosomes for biomedical applications by mixing molybdenum carbonyl metallosurfactants and phospholipids

M. Marín-García,[a] N. Benseny-Cases,[b] M. Camacho [c], Y. Perrie[d], J. Suades*[e] and R. Barnadas-Rodriguez*[a]

This file includes: ESI FIGURES S1-S5

[a.] *Biophysics Unit/Center for Biophysical Studies, Department of Biochemistry and Molecular Biology, Faculty of Medicine, Universitat Autònoma de Barcelona, Avda. de Can Domènech, 08193 Cerdanyola, Spain. E-mail: Ramon.Barnadas@uab.cat.*
[b.] *ALBA Synchrotron, Carrer de la Llum 2-26, 08290 Cerdanyola, Spain.*
[c.] *Laboratory of Angiology, Vascular Biology and Inflammation / Institute of Biomedical Research, Hospital de la Santa Creu i de Sant Pau, Universitat Autònoma de Barcelona, Sant Antoni Maria Claret, 167, 08025 Barcelona, Spain.*
[d.] *Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow G4 0RE, UK.*
[e.] *Departament de Química, Edifici C, Universitat Autònoma de Barcelona, 08193 Cerdanyola, Spain. E-mail: Joan.Suades@uab.cat*

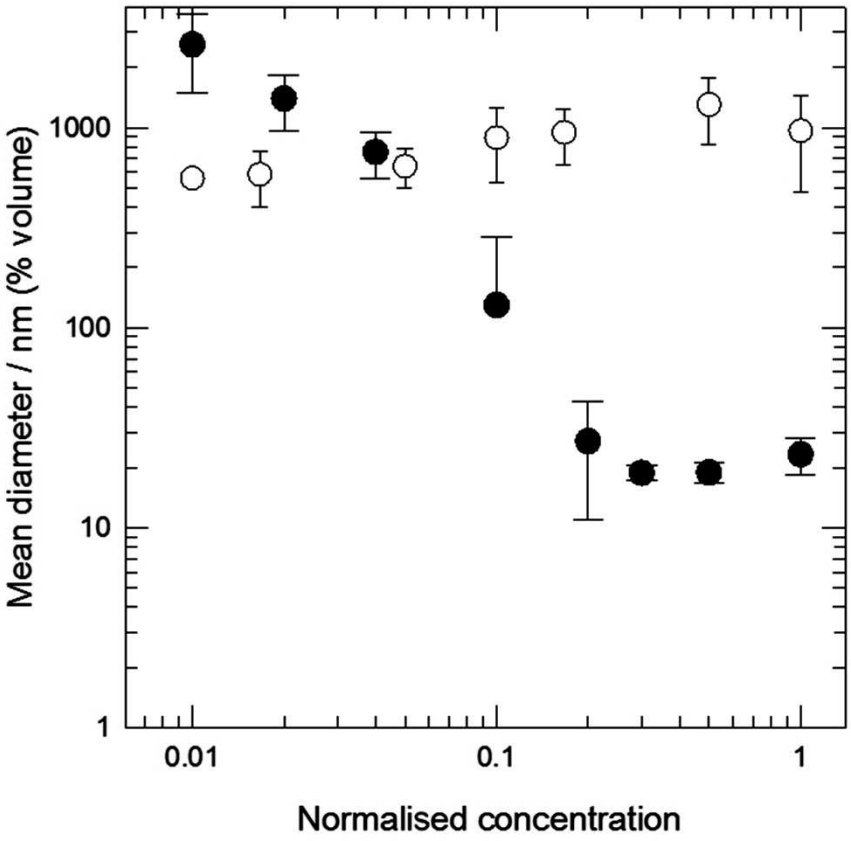
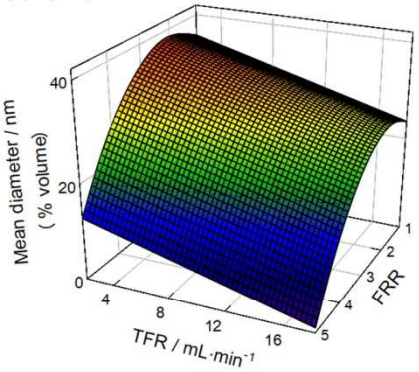


Figure S1. Size SPC liposomes (18 mM) (white circles) and bicelles of dimyristoyl PC/dihexanoyl PC (302:100 mM/mM) (black circles) upon dilution. The given concentrations correspond to the initial concentrations (normalized concentration = 1).

A) Methanol

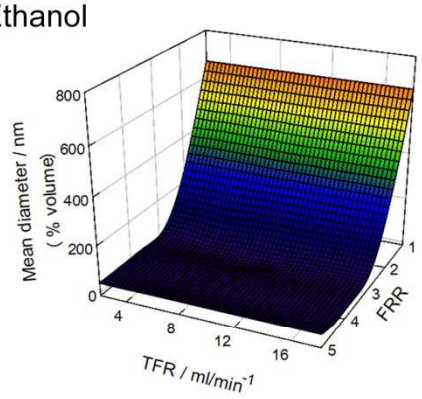


Mean diameter / nm (% volume)

FRR	TFR (mL· min^{-1}) 2	6	10	14	18
1			27.2 ± 1.1		
2		34.7 ± 8.5		35.5 ± 6.3	
3	33.0 ± 4.81		38.4 ± 4.5		21.9 ± 2.4
4		26.2 ± 1.7		4.07 ± 0.8	
5			10.9 ± 4.5		

Diameter (mm) = 29.7-5.65·FRR-2.98·TFR-2.84·FRR^2
r^2 = 0.60; standard error = 7.79

B) Ethanol



Mean diameter / nm (% volume)

FRR	TFR (mL· min^{-1}) 2	6	10	14	18
1	893 ± 507		615 ± 223		780 ± 553
2		55.4 ± 33.7		28.9 ± 1.7	
3	41.2 ± 4.1		18.9 ± 4.5		32.0 ± 5.7
4		22.1 ± 1.7		23.5 ± 7.21	
5	28.9 ± 2.2		10.3 ± 2.9		24.5 ± 7.39

Diameter (mm) = -0.23+1.93· TFR^2+0.16·FRR·TFR
r^2 = 0.73; standard error = 178

FIGURE S2. Mean diameter of TCOL6/SPC 1:3 mM/mM vesicles obtined by microfluidics using methanol (A) or ethanol (B) as solvent as function of the Flow Rate Ratio (FRR) and the Total Flow Rate (TFR). Fitted surface responses obtained from the experimental points (mean ± std; n ≥ 2) are given.

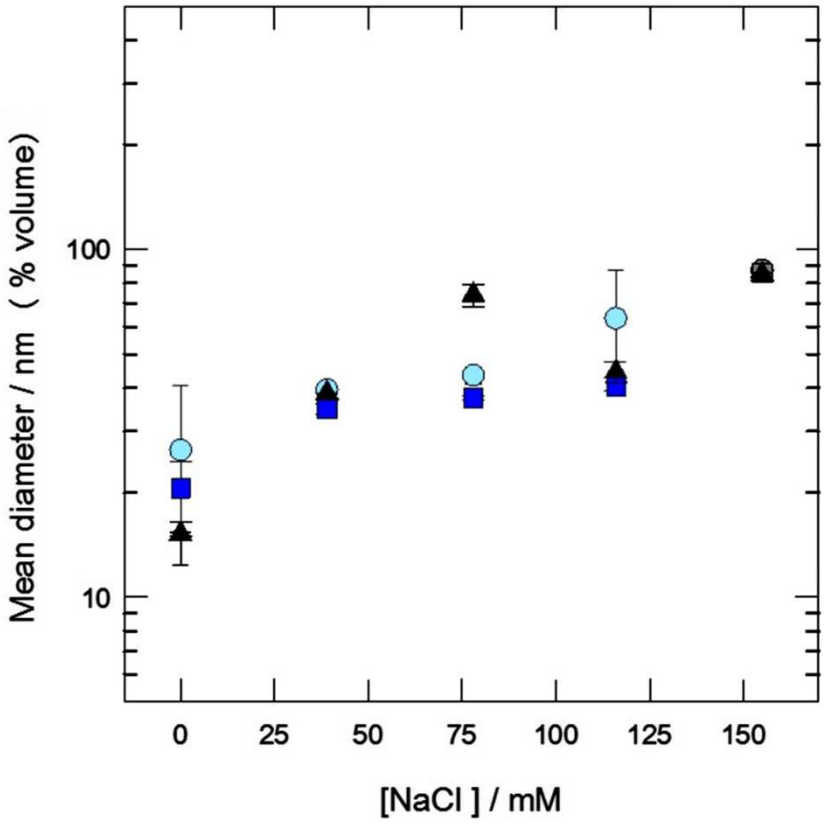


Figure S3. Mean diameter of TCOL6/SPC 1:3 mM/mM vesicles obtained by microfluidics using methanol as solvent, a FRR = 3, as function of the ionic strenght at different TFR. The TFR was 2 (circles), 10 (squares) and 18 $mL \cdot min^{-1}$ (triangles). Mean ± std; n ≥ 2.

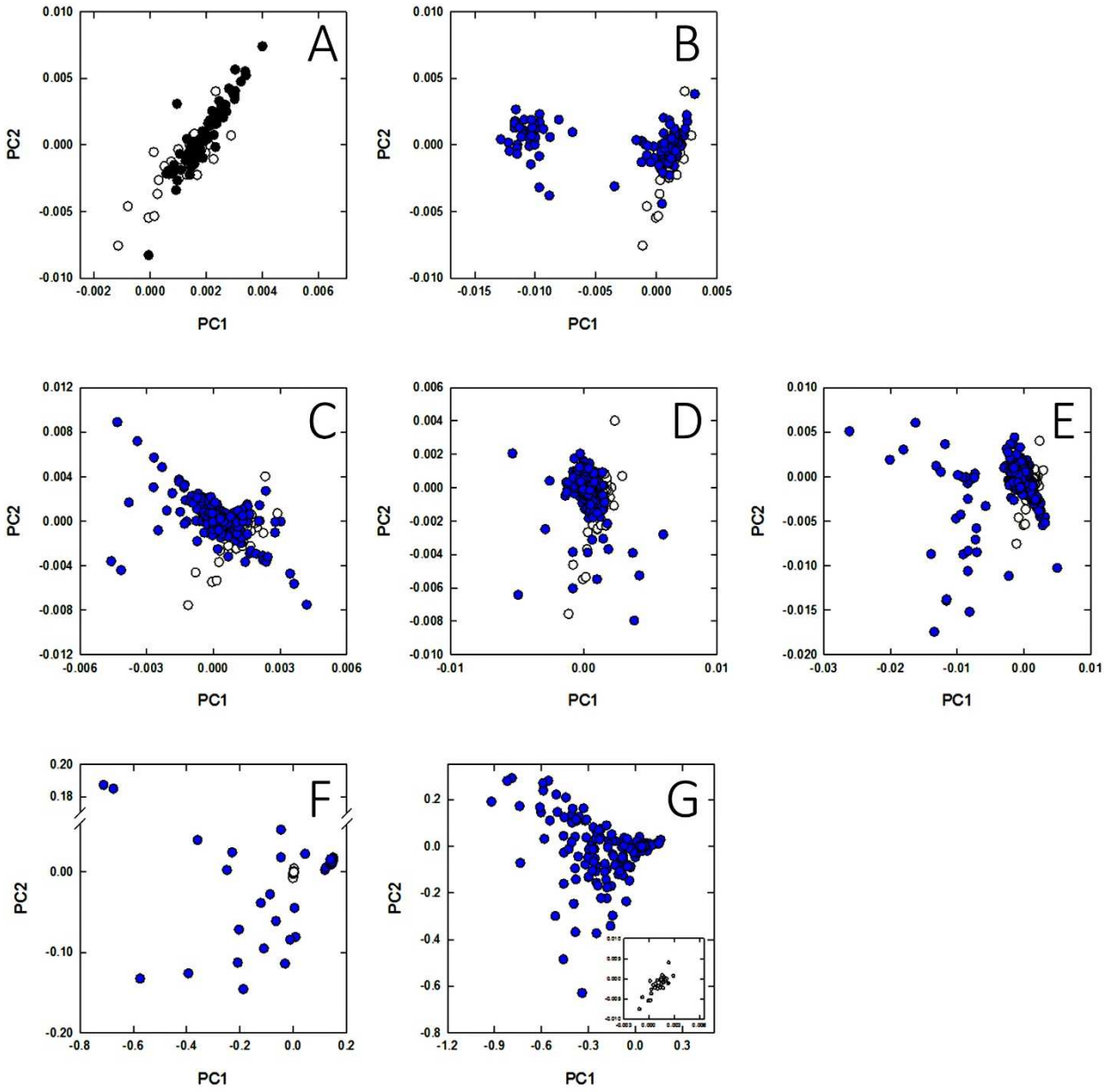


Figure S4. Principal Component Analysis of the CO region of the MTS after treatment of cell cultures for 12 h with TCOL6/SPC aggregates (blue circles) at several MTS concentrations: non-treated cells (control) is shown in white circles in all the figures; liposomes 150 µM SPC (A, black circles); bicelles at 250 µM of TL6 (B); vesicles at 250 (C), 500 (D) and 1000 µM (E); rods at 250 (F) and 500 µM (G). The corresponding MTS to SPC molar ratio were 3:3 for bicelles; 1:3 for vesicles; and 10:3 for rods. Inset G: detail of the region where the control point are located.

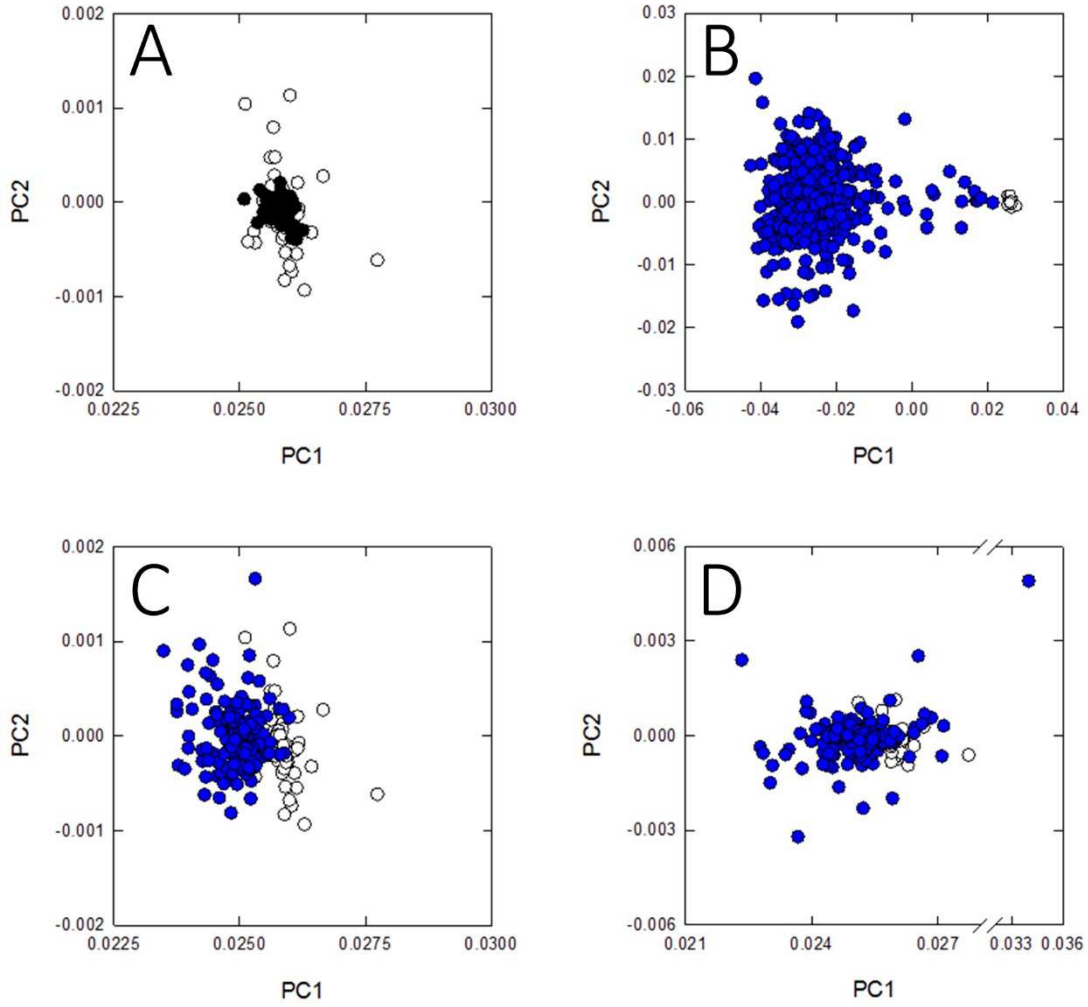


Figure S5. Principal Component Analysis of the CO region of the MTS after treatment of cell cultures for 12 h with PCOL6/SPC aggregates (blue circles) at several MTS concentrations: non-treated cells (control) is shown in white circles in all the figures; liposomes 150 µM SPC (A, black circles); NS-vesicles 500 µM (B); stable vesicles at 250 (C) and 500 µM (D). The corresponding MTS to SPC molar ratio were 10:3 for NS-vesicles and 1:3 for stable vesicles.