# Electroformation of giant unilamellar vesicles on stainless steel electrodes

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**Supporting Information**.

The cost of the Pt wires was calculated from the price of two 200 mm ⌀0.8mm electrodes from Goodfellow, UK obtained on 22 October 2014 (£292). The cost of the injection needles was calculated on 8* 21G 50mm ⌀0.8mm needles from Becton, Dickinson and Company, UK. The price of ITO covered glass electrodes was calculated on an equivalent surface area of 8 needles, using the price of ITO square glass slides (~25 mm x 25 mm) from Sigma-Aldrich, UK.

The following table details the full cost breakdown of the custom-built electroformation chamber used in the experiments.

**Table S1.** Cost breakdown details on the items, materials and costs of the components of the electroformation chamber. Prices were obtained 14/12/2016.

| Item | Manufacturer | Price per item | Total price (£) |
|---|---|---|---|
| Delrin block | theplasticshop | 9.75 | 9.75 |
| Brass screws | RS Components | 0.116 | 2.08 |
| Brass nut | Westfield Fasteners | 0.0058 | 1.04 |
| Brass sheet | Macc Models | 0.408 | 0.816 |
| Total cost of electroformation chamber (£) | | | 13.69 |

**Limit of detection of oxidized DOPC**

The limit of detection of oxidized lipids was estimated as the ratio of the concentration of an oxidized DOPC reference in $CDCl_3$ corresponding to a peak height of the aldehyde proton (9.75 ppm) equal to three times the baseline noise, and the concentration of DOPC in a typical analytical sample (340 μM). The concentrations were calculated using benzoic acid (Sigma Aldrich, UK) as an internal standard.

The oxidized reference was synthesized by photooxidation of 1 mL of a 10 mg/mL solution of DOPC in oxygen saturated $CD_3OD$ in the presence of $[Ru(bpy)_3]^{2+}$ immobilized on a

Dowex 50WX2 resin (50-100 mesh, 0.6 meq/mL, 4% $[Ru(bpy)_3]^{2+}$ loading) prepared according to a literature procedure.[1] A glass vial containing the resin and the DOPC solution was sealed and left to rotate on a rotator while illuminated with a fluorescent lamp (49315 FML27/65 GX10q-4, Eiko) from a distance of 10 cm. After 48 hours the solution was filtered and the resin was rinsed with methanol and chloroform. The solvent was removed with a nitrogen stream to afford a colorless oil that was dried under vacuum, redissolved in $CDCl_3$ and used without further purification. The $^1$H-NMR spectrum shows the presence of secondary oxidation products (including the aldehyde used to estimate the limit of detection), presumably from the decomposition of hydroperoxides, and hydrolysis products.

**Unilamellarity experiments data**

**Table S2.** Fluorescence measurements and calculations for fluorescence quenching assay.

| Experiment | Pre-quenching | Quenched | Lysed | Unilamellarity |
|---|---|---|---|---|
| 1 | 72.6 | 50.5 | 24.0 | 0.545 |
| 2 | 96.0 | 60.0 | 24.4 | 0.497 |
| 3 | 112 | 67.3 | 24.0 | 0.495 |

**Photograph of GUV electroformation chamber**

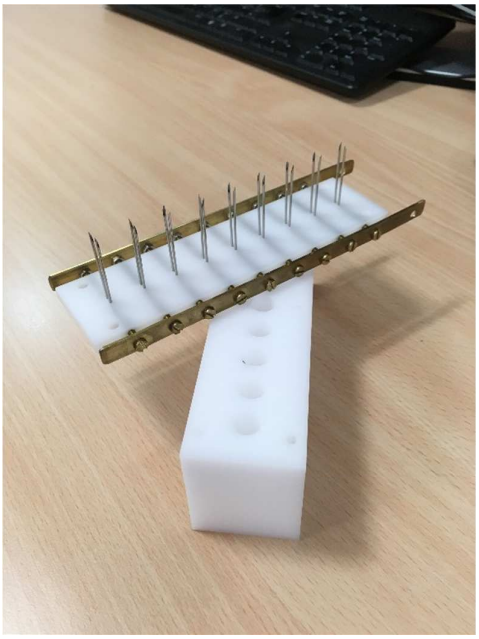

**Figure S1.** Photograph of a GUV electroformation chamber containing nine pairs of needles and nine chambers.

**References**

(1) Buell, S. L.; Demas, J. N. Heterogeneous Preparation of Singlet Oxygen Using an Ion-Exchange-Resin-Bound tris(2,2'-bipyridine)ruthenium(II) Photosensitizer. *J. Phys. Chem.* **1983**, *87*, 4675–4681.