Biochimica et Biophysica Acta 1848 (2015) 433

Contents lists available at ScienceDirect

Biochimica et Biophysica Acta

journal homepage: www.elsevier.com/locate/bbamem

Corrigendum

Corrigendum to "The dynamics of giant unilamellar vesicle oxidation probed by morphological transitions" [Biochim. Biophys. Acta 1838 (2014) 2615–2624]

Shalene Sankhagowit [a], Shao-Hua Wu [b], Roshni Biswas [b], Carson T. Riche [a], Michelle L. Povinelli [b], Noah Malmstadt [a,*]

[a] Mork Family Department of Chemical Engineering, Materials Science, University of Southern California, Los Angeles, CA 90089-1211, USA
[b] Ming Hsieh Department of Electrical Engineering, University of Southern California, Los Angeles, CA 90089-2560, USA

The authors regret that Section 3.4 of the article referenced above has a small error in terminology.

In Section 3.4, in the second and third paragraphs, cholesterol should be referred to as having 'a cone shape' while the lipid oxidation products that stabilize pore edges should be referred to as having 'an inverted-cone shape'.

The corrected paragraphs are given below (altered text underlined):

Sandre and coworkers [45] were able to observe pores by prolonging their durations. They formed GUVs in a mixture of water and glycerol, increasing the viscosity to 32.1 ± 0.4 mPa·s and slowing down the leakage process to delay pore closure. The pores formed could be resolved by optical microscopy and remained opened for seconds. Another way that pore duration can be modified is altering membrane line tension by adding molecules with non-zero spontaneous curvatures. Surfactants and phospholipids with relatively large head groups can more easily be organized at the pore edge than cylindrical lipids can. Treatment of DOPC GUVs with the surfactant triton X-100 resulted in pores that could last tens of seconds [46]. The opposite effect is observed for cholesterol, which has a cone shape [47].

Using glycerol to raise the viscosity of the aqueous phase ten-fold to 10.3 mPa·s, we increased the duration of pore opening from less than a second to 3–4 s, giving us 20–40 frames of epifluorescent micrographs for each pore occurrence. We observed pore formation for three different compositions of decreasing DOPC concentration. As DOPC concentration decreased from 90% to 68%, membrane line tension increased from ~6 pN to ~10 pN and pore occurrence became less frequent with shorter duration. Karatekin and coworkers [34] also observed pores during prolonged illumination of fluorescently labeled DOPC GUVs, with measured line tension of 8.1 pN; the connection to lipid oxidation had not been made in this earlier work. In comparison, the line tension of non-oxidized DOPC membranes was estimated with electroporation experiments to be between 25 and 27 pN [48, 49]. This indicates that a DOPC oxidation product resulting from lipid tail scission during the membrane-contracting phase decreases membrane line tension. This result suggests that these lipid products have edge-stabilizing inverted cone geometry. The distributions, confirmed to be normal by the Kolmogorov–Smirnov test, of the line tension values for all three conditions are summarized in Fig. 8.

The authors would like to apologize for any inconvenience caused.

DOI of original article: http://dx.doi.org/10.1016/j.bbamem.2014.06.020.
* Corresponding author. Tel.: +1 213 821 2034; fax: +1 213 740 1056.
E-mail address: malmstad@usc.edu (N. Malmstadt).

http://dx.doi.org/10.1016/j.bbamem.2014.10.034
0005-2736/© 2014 Elsevier B.V. All rights reserved.