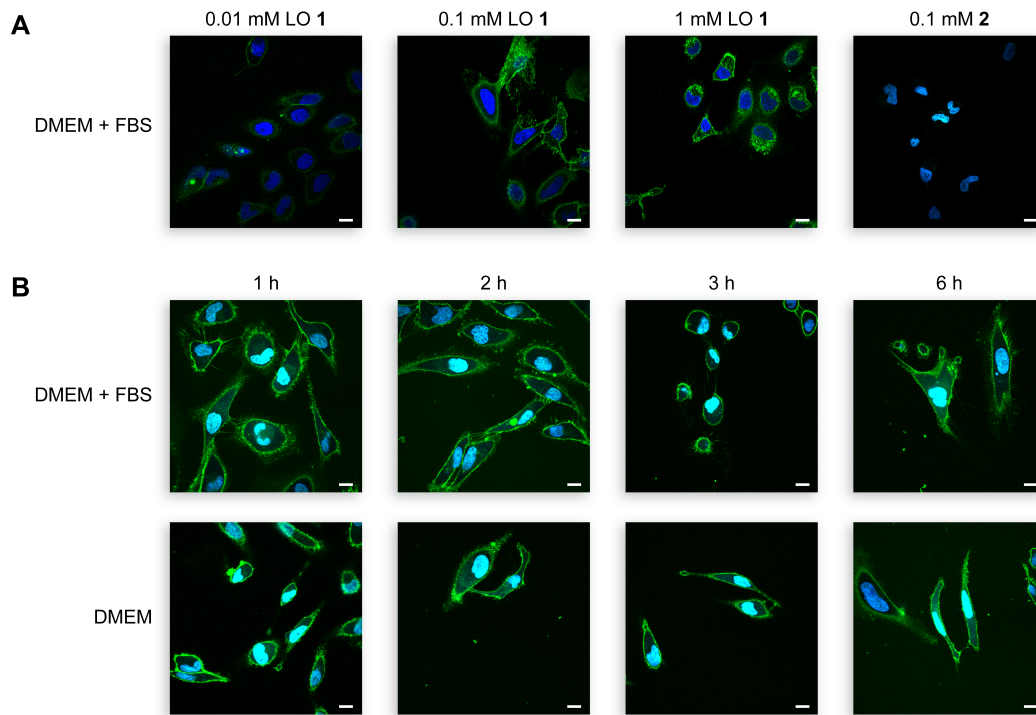


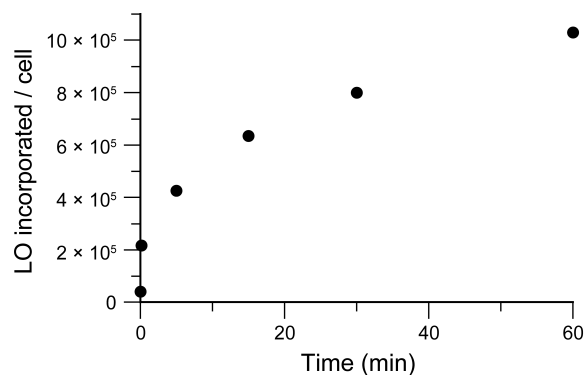
## Interaction of Nucleic Acids with the Glycocalyx

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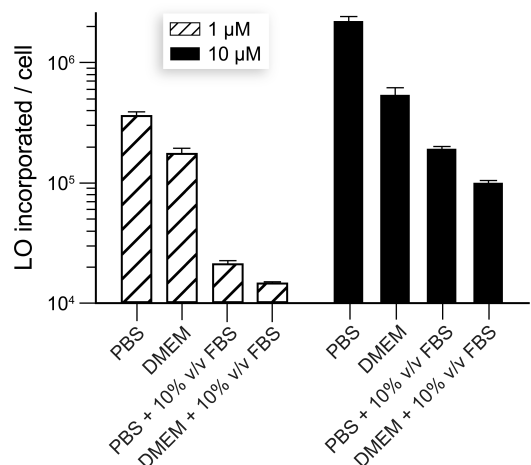
<b>Contents</b>	<b>Page</b>
Table of Contents	S1
<b>Figure S1.</b> Cells incorporate a LO but not a lipid-free oligonucleotide in their plasma membrane	S2
<b>Figure S2.</b> Cellular incorporation of a LO depends on time	S2
<b>Figure S3.</b> Cellular incorporation of a LO is affected by the medium	S3
<b>Figure S4.</b> Cellular incorporation of LOs is affected by hydrophobicity	S3
<b>Figure S5.</b> Cells release a long LO after incorporation	S3
NMR spectra	S4–S6



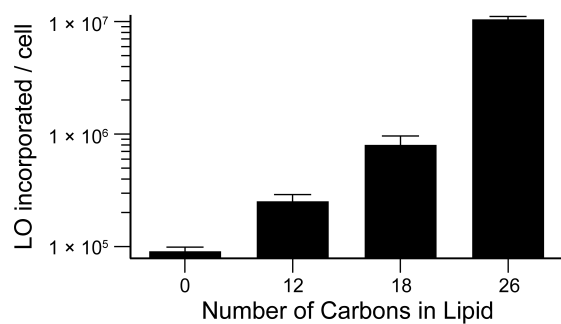
**Figure S1.** Cells incorporate a LO but not a lipid-free oligonucleotide in their plasma membrane. Images were obtained by confocal microscopy. LO 1 and oligonucleotide 2 are green (fluorescein); cell nuclei are blue (Hoechst 33342). (A) LO 1 was suspended in DMEM containing 10% v/v FBS and incubated with HeLa cells at the indicated concentration for 12 h. Oligonucleotide 2 was likewise incubated with HeLa cells for 4 h. (B) LO 1 (0.1 mM) was incubated with or without 10% v/v FBS for the indicated times. Scale bars: 10  $\mu$ m.



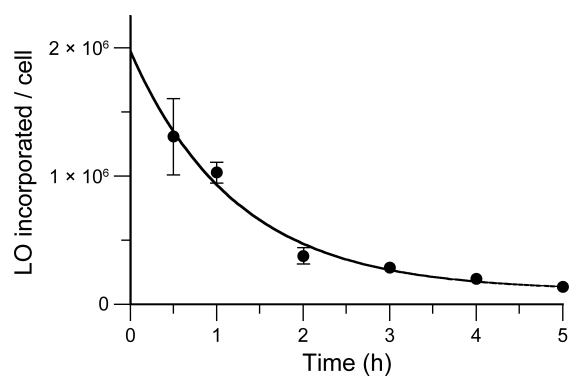
**Figure S2.** Cellular incorporation of a LO depends on time. LO 3 (10 mM) was incubated with HeLa cells for the indicated times, and incorporation was measured by flow cytometry.



**Figure S3.** Cellular incorporation of a LO is affected by the medium. LO 3 (1 or 10  $\mu$ M) was incubated with HeLa cells for 15 min in the indicated media, and incorporation was measured by flow cytometry.  $n = 3$ ; error bars:  $\pm$ SD.



**Figure S4.** Cellular incorporation of LOs is affected by hydrophobicity. LO 9 (no lipid), LO 10 (C<sub>12</sub>), LO 3 (C<sub>18</sub>), and LO 11 (C<sub>26</sub>) at 10  $\mu$ M were incubated with HeLa cells for 15 min, and incorporation was measured by flow cytometry. Error bars:  $\pm$ SD.



**Figure S5.** Cells release a long LO after incorporation. Fluorescent LO 11 (10  $\mu$ M), which has a C<sub>26</sub> lipid tail, was incorporated into the plasma membrane of HeLa cells, and retention was measured by flow cytometry. Error bars:  $\pm$ SD.

