Supporting Information

Photo-induced molecular-recognition-mediated adhesion of giant vesicles

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Gel Filtration

Fig. S1 Elution profiles of egg PC and 1a upon gel filtration.

Dynamic light scattering

Fig. S2 Dynamic light scattering traces of 5 mM egg PC vesicles with and without 5 mol% cis- or trans-1a before and after addition of guests 2 or 3.
**Fluorescence titration**

![Graph](image)

**Fig. S3** Fluorescence titration for determining the apparent binding constant of *cis*-1a to 3. (a) Quenching of isoquinolinium fluorescence upon addition of egg PC vesicles containing 5 mol% *cis*-1a to a 50µM solution of polymeric guest 3. (b) Fit of the data using a naive 1:1 binding model.

![Graph](image)

**Fig. S4** Fluorescence titration for determining the apparent binding constant of *trans*-1a to 2. (a) Quenching of isoquinolinium fluorescence upon addition of egg PC vesicles containing 5 mol% *trans*-1a to a 2 µM solution of monovalent guest 2. (b) Fit of the data using a 1:1 binding model.
**Fusion Assay**

**Fig. S5** Fusion assay for LUVs containing 5 mol% 1a in (a) the *trans*- and (b) the *cis*- conformation after addition of polyvalent guest 3. Fluorescence emission intensities of NBD (at 530nm, triangles) and Rh (at 590nm, circles) were followed upon excitation at 470nm. The addition of 3 had no influence on fluorescence intensity.

**NMR spectra and HPLC analysis of 1a**

$^1$H-NMR of 1a
NMR of 1a

HPLC analysis of 1a

Conditions. Column: Eclipse XDB C8 150×4.6mm; Solvent A: water (0.1% formic acid), Solvent B:THF; gradient 0-20min 40-100% B; flow rate: 1 mL / min; λ 350 nm; ambient temperature