Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting Information:

A Bio-orthogonal functionalization strategy for site-specific coupling of antibodies on liposome surfaces after self-assembly

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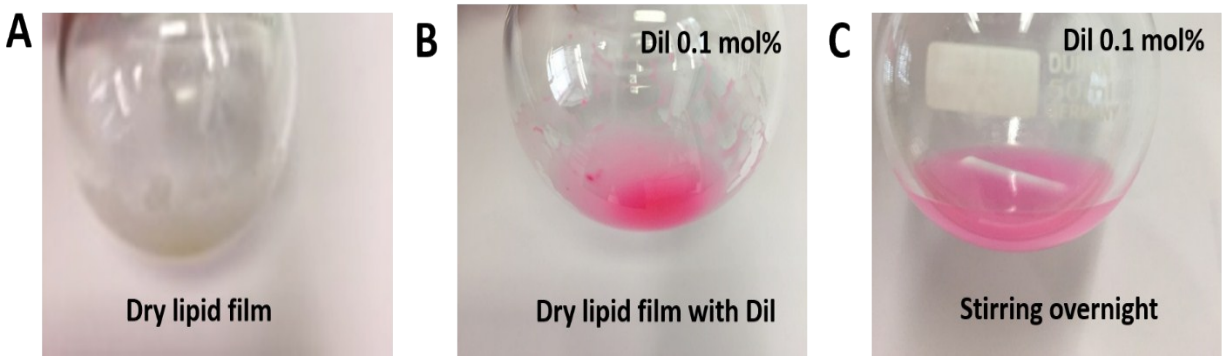

Figure S1: Images of liposome synthesis: A) Egg PC:DOPE:Chol = 1:1:1 lipid dry film after the process of rotary evaporation in a round bottom flask; B) same lipid dry film with an addition of 0.1 mol% DiI; C) rehydration and stirring overnight (stirring speed: 700 rpm) in PBS buffer.

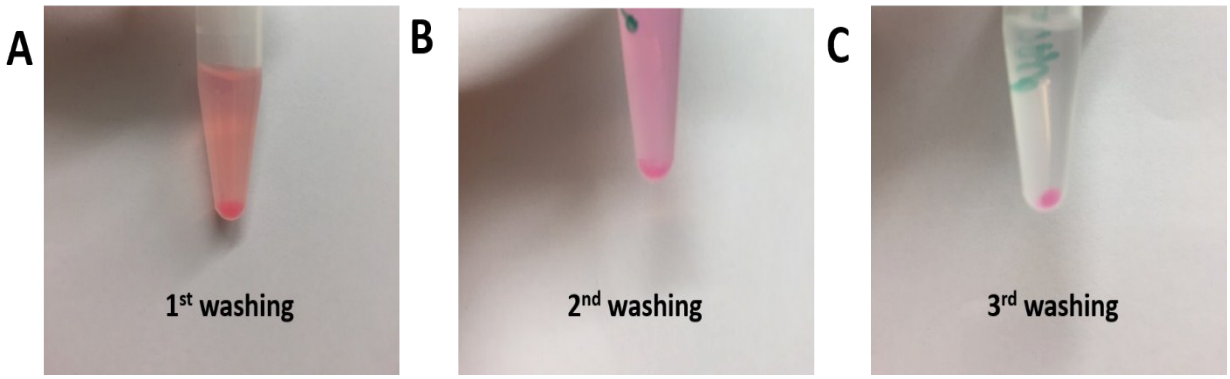

Figure S2: Purification of DBCO functionalized liposomes by centrifugation at 20000 g, 1 h and 4 °C and subsequent redispersion in PBS buffer for a total of 3 times.

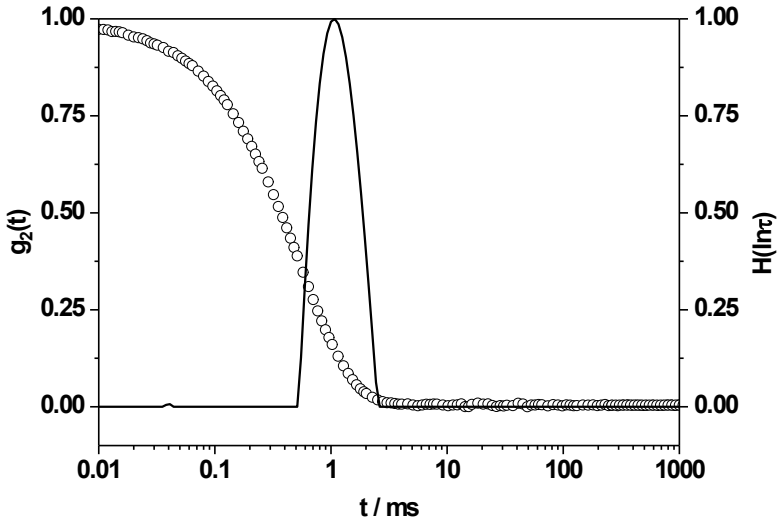

Figure S3: Autocorrelation function $g_2(t)$ of non-functionalized liposomes in PBS buffer for an exemplary scattering angle of 90° together with the distribution of relaxation times $H(\ln\tau)$ obtained from the CONTIN algorithm.

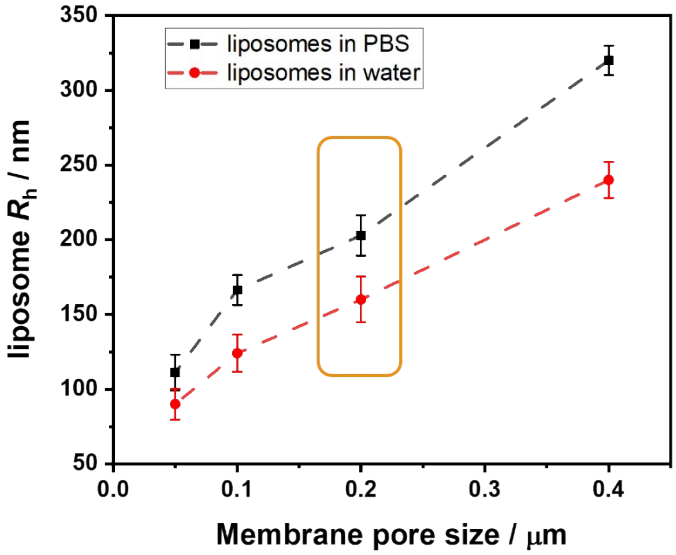

Figure S4: DLS measurements of liposomes in PBS buffer or water depending on different membrane pore sizes used for extrusion (dotted lines are a guide to the eye). The membrane pore size of 200 nm (highlighted with a box) was chosen for further synthesis of all liposome samples presented in the manuscript.

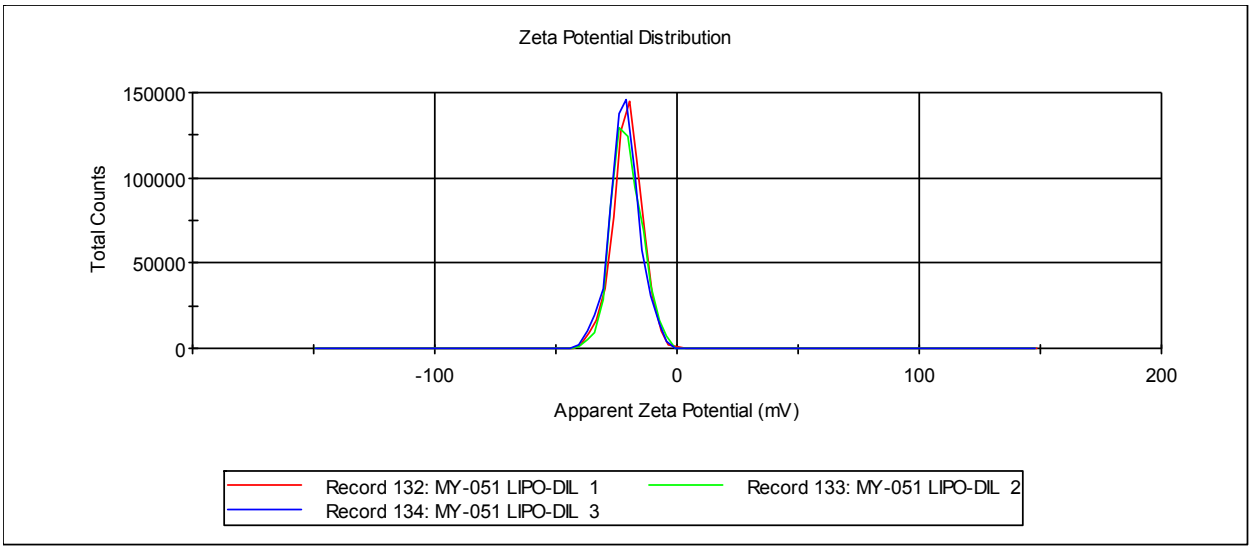

Figure S5: Zeta potential analysis of liposomes in 0.1 M KCl solution measured in triplicate.

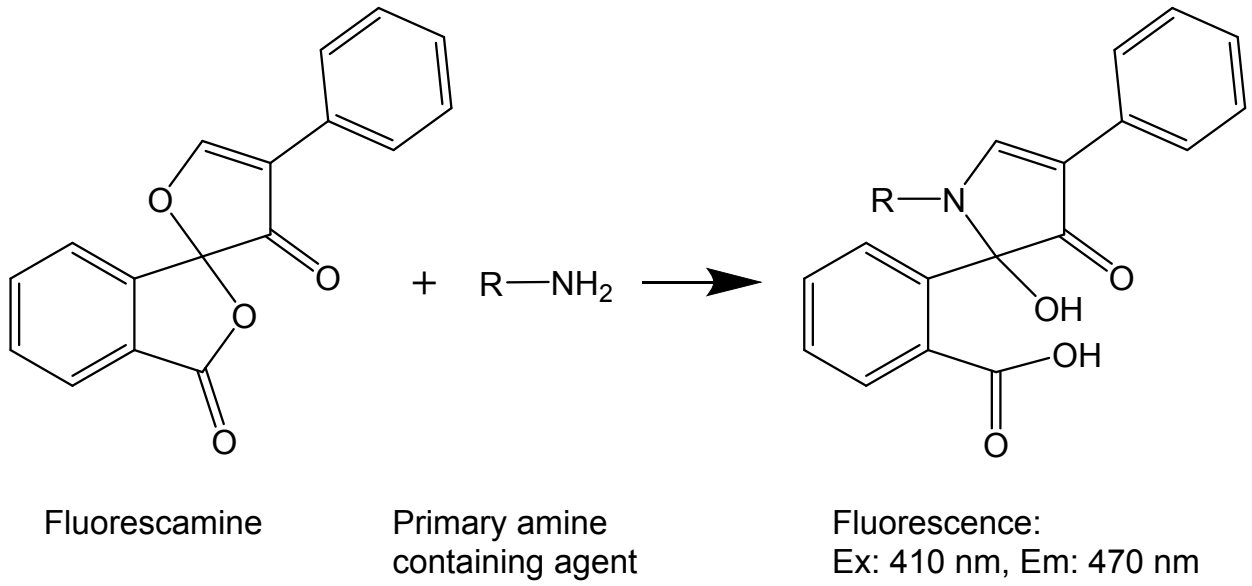

Figure S6: Reaction scheme for the fluorescamine assay (FA assay). The fluorescamine can react with primary amine groups (-NH_2) of liposomes and the fluorescent product can be excited and detected by plate reader (λ_{Ex} = 410 nm, λ_{Em} = 470 nm). Hexylamine which contains primary amine groups can be used as a reference for making the standard calibration curve.

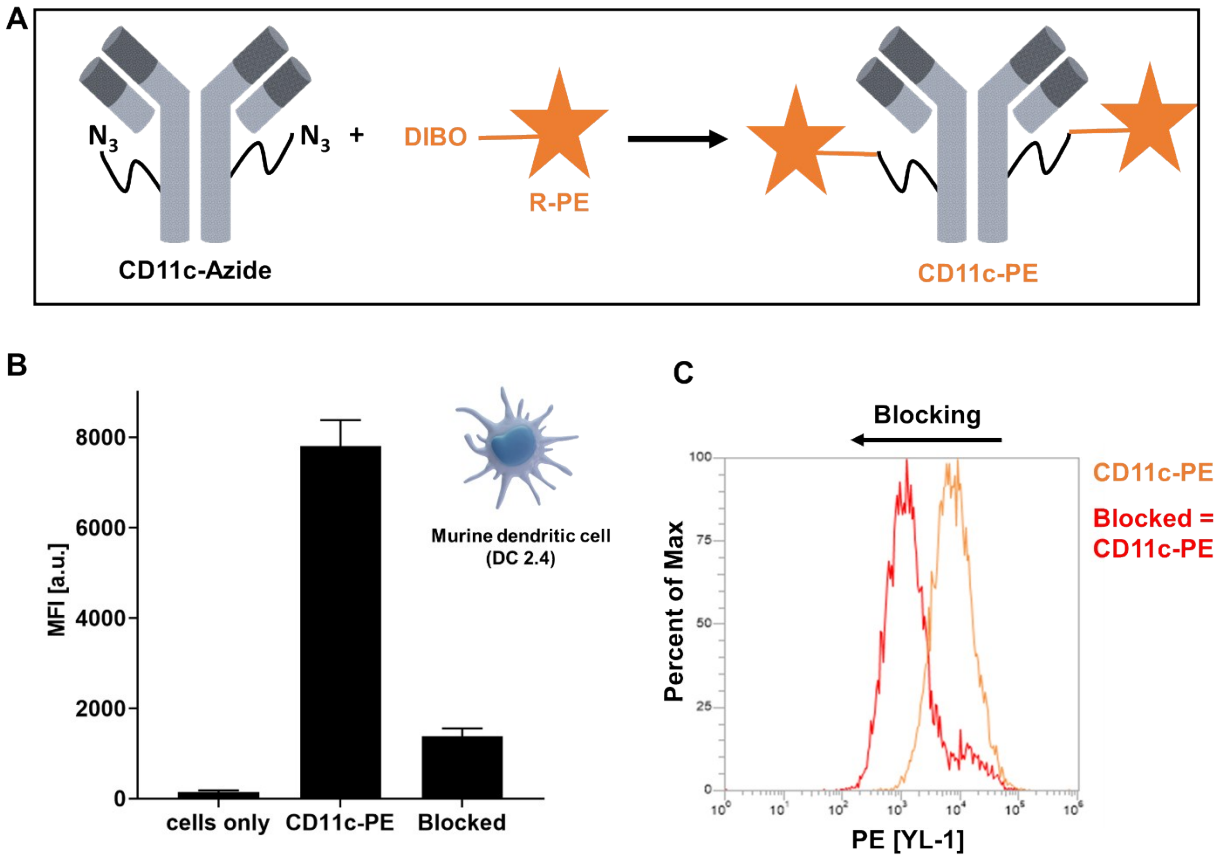

Figure S7. Functionalization of azide-modified antibodies with a fluorescent dye. A) Azide-modified anti-mouse CD11c antibodies (0.5 mg mL^{-1}, 15 µL) were incubated with DIBO-conjugated R-phycoerythrin (DIBO R-PE, 11.25 µL) overnight in the dark at room temperature. **B)** and **C)** Flow cytometry analysis of DC2.4 cells, which were incubated with anti-mouse CD11-PE antibodies (0.34 mg mL^{-1}, 1 µL). For blocking: Cells were pre-treated with free unlabeled anti-mouse CD11c antibody (2 mg mL^{-1}, 5 µL) and afterwards anti-mouse CD11-PE antibodies were added. The median fluorescent intensity (MFI) from two independent measurements is shown.

Table S1. Concentration and absolute amount of antibodies per liposome

Liposome concentration	$1*10^{13}$ liposomes/mL
Solid content	0.3 wt% (3 mg/mL)
M_w Antibody	150,000 g/mol

Coupling	
500 µg Liposomes-DBCO	17.5 µg CD11c-Azide
$1.67*10^{12}$ Liposomes-DBCO	$7*10^{13}$ CD11c-Azide
~ 42 Antibodies per Liposome	