Supporting Information for:

High Affinity Glycopolymer Binding to Human DC-SIGN and Disruption of DC-SIGN Interactions with HIV Envelope Glycoprotein

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Materials and Methods

Proteins

Soluble recombinant DC-SIGN extracellular domain was generated in *E. coli* and purified via affinity chromatography and anion exchange chromatography as described previously [Mitchell, Fadden, Drickamer 2001, J Biol Chem 276: 28939-45]. Recombinant HIV gp120 was a gift from Dr Chris Scanlan, Oxford Glycobiology Institute.

Surface Plasmon Resonance (SPR)

SPR Sensorgrams were recorded in a Biorad ProteOn XPR36 SPR biosensor (Biorad, Hercules CA). Soluble DC-SIGN and gp120 were immobilized to 6000 response units (RU) on discrete channels within Biorad GMC sensor chips via amine coupling. Soluble-phase analytes were prepared in 25 mM HEPES pH 7.4, 150 mM NaCl, 5 mM $CaCl_2$, 0.01% Tween-20 and flowed over the immobilized materials at a rate of 25 µL/min at 25˚C. Regeneration of the sensor chip surfaces was performed using 10 mM glycine pH 2.5. Datasets were exported to BIAcore BIAevaluation software for kinetic calculations. Kinetic parameters were obtained by fitting curves to a 1:1 Langmuir model with correction for baseline drift where necessary. Competition assays were evaluated using Origin software.

Synthesis and Characterization of Glycopolymers

All glycopolymers show similar hydrodynamic volume according to the size exclusion chromatography measurements as the same polymer backbone was used for the synthesis of each glycopolymer. There is a very slight difference between the peaks which might be correlated to the mannose content in the glycopolymers. It can

be seen that the ones with higher content of mannose have slightly higher elution time.

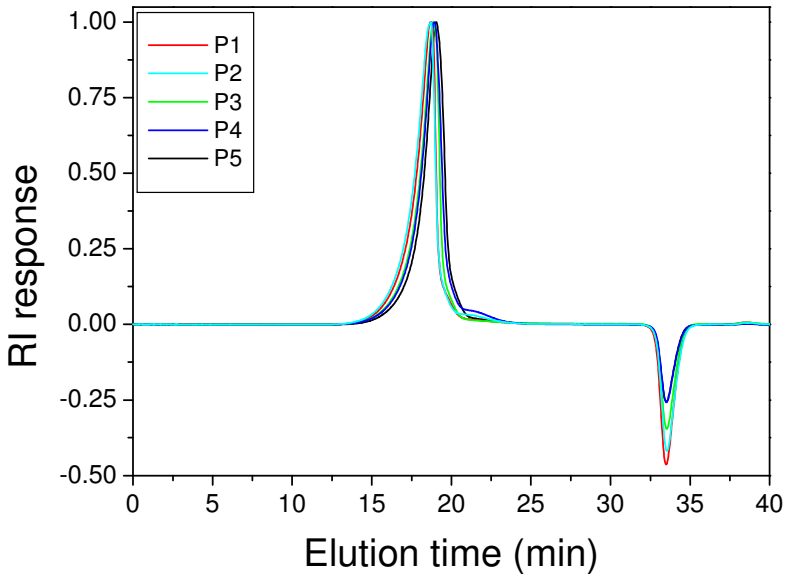

Figure S1. Size exclusion chromatogram of the glycopolymers; measured in *N,N*-dimethylacetamide eluent at a flow rate of 0.3 mL.min^{-1}.

All details on the synthesis and characterization of these glycopolymers library have been previously published by our group.[1]

(1) Ladmiral, V.; Mantovani, G.; Clarkson, G. J.; Cauet, S.; Irwin, J. L.; Haddleton, D. M. *J. Am. Chem. Soc.* **2006**, *128*, 4823.

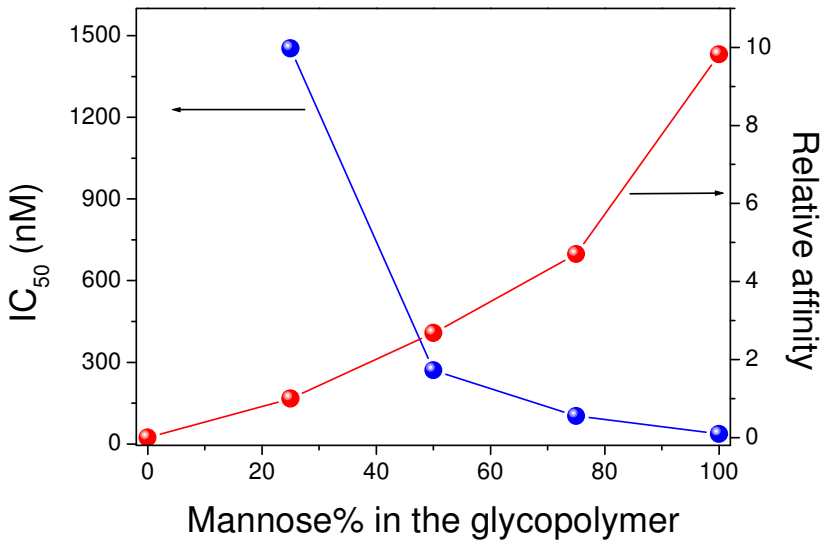

Figure S2. The trend between the relative affinity and IC_{50} versus mannose percentage in the glycopolymers.