# Supplementary Information

# Synthesis of mannosylated lipopeptides with receptor targeting properties

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## RP-HPLC Trace and Mass spectrometry Data

### Peptide 3

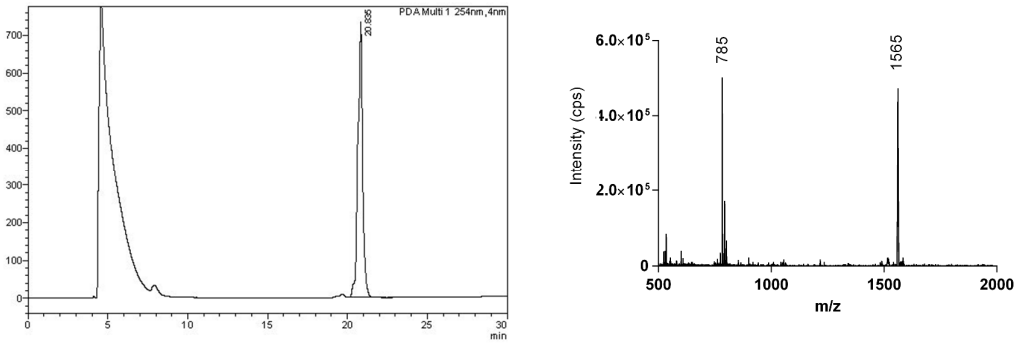


**Figure S-1** RP-HPLC trace and mass spectra for Peptide **3** (54 % yield). Rt=20.835 min (C8 column, 0-100% solvent B, 30 min). A solvent peak was observed between 4-10 min. Exact mass of Peptide **3** $[M+1H]^{+1}$ calculated: 1562.51 and found 1565; calculated $[M+2H]^{+2}$ 782.255 and found 785.

### Peptide 4

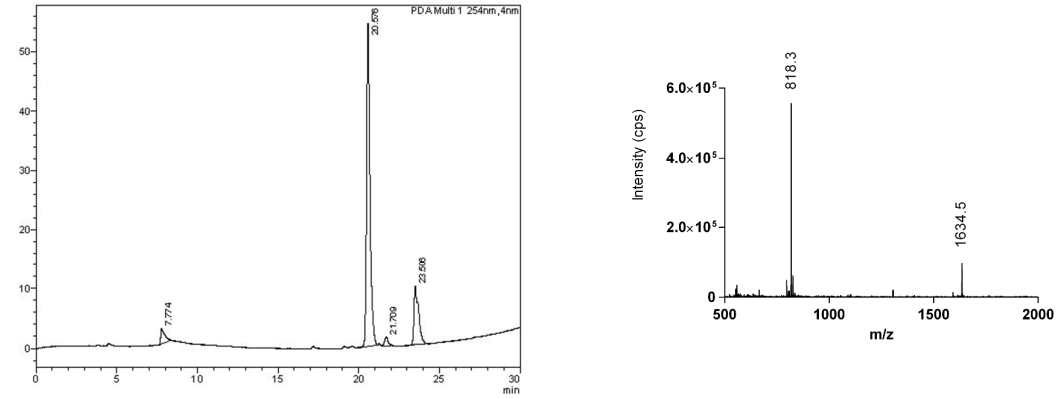


**Figure S-2** RP-HPLC trace and mass spectra for Peptide **4** (62 % yield). Rt=20.576 min (C8 column, 0-100% solvent B, 30 min). A solvent peak was observed at 8 min. Peaks observed at Rt=21.7 min and 23.5 min were impurities. Exact mass of Peptide **4** $[M+1H]^{+1}$ calculated: 1633.55 and found 1634.5; calculated $[M+2H]^{+2}$ 8173.77 and found 818.3.

### Peptide 5

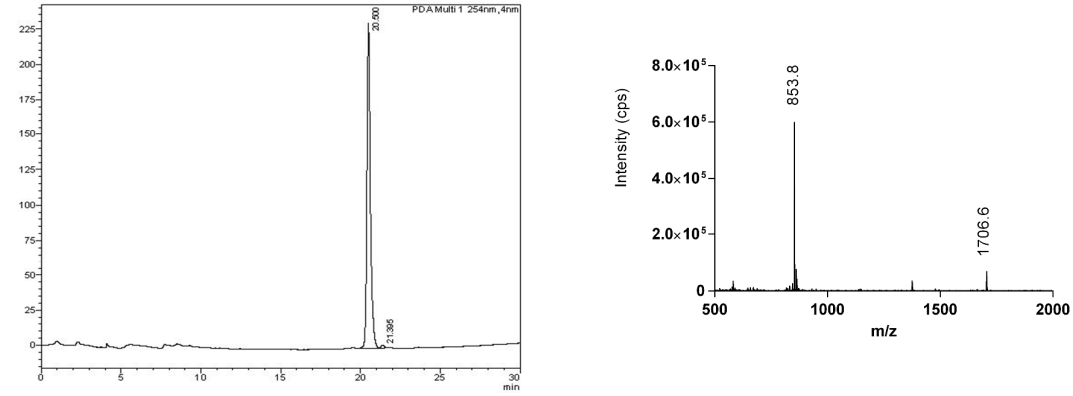


**Figure S-3** RP-HPLC trace and mass spectra for Peptide **5** (68 % yield). Rt=20.50 min (C8 column, 0-100% solvent B, 30 min). Exact mass of Peptide **5** $[M+1H]^{+1}$ calculated: 1704.58 and found 1706.6; calculated $[M+2H]^{+2}$ 853.29 and found 853.8.

## Peptide 6

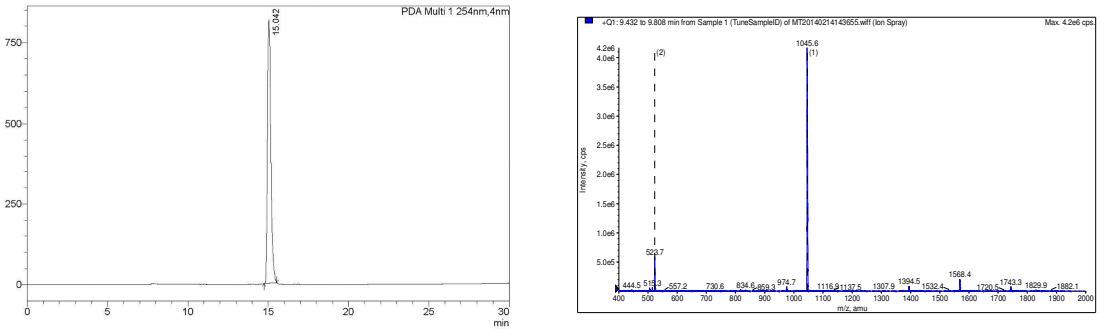


**Figure S-4** RP-HPLC trace and mass spectra for Peptide **6** (48 % yield). Rt=15.042 min (C8 column, 0-100% solvent B, 30 min). Exact mass of Peptide **6** $[M+1H]^{+1}$ calculated: 1044.39 and found 1045.6; calculated $[M+2H]^{+2}$523.195 and found 528.7.

## Peptide 7

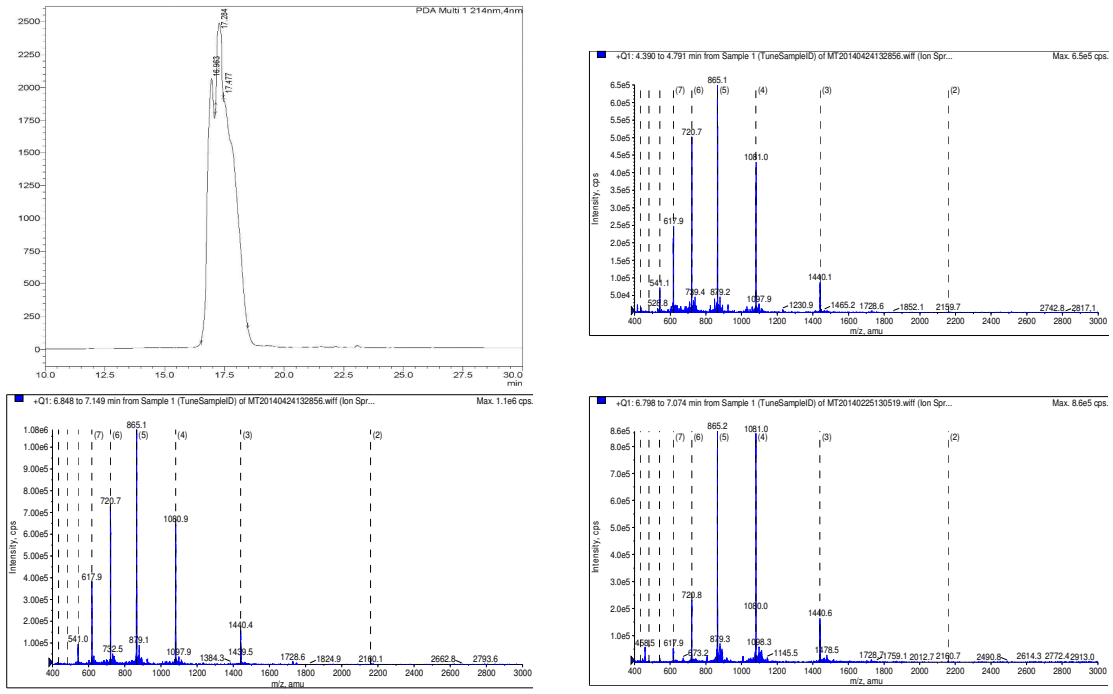


**Figure S-5** RP-HPLC trace and mass spectra for Peptide **7** (73 % yield). Rt=16.96, 17.28 and 17.47 min (C4 column, 0-100% solvent B, 30 min). Exact mass of Peptide **7** $[M+1H]^{+1}$ calculated: 4316.39; calculated $[M+2H]^{+2}$ 2159.195 and found 2159.7, 2160.1 and 2160.7; calculated $[M+3H]^{+3}$ 1439.8 and found 1440.1, 1440.1, 1440.6; calculated $[M+4H]^{+4}$ 1080.09 and found 1081.0, 1080.9, 1080.0; calculated $[M+5H]^{+5}$ 864.38 and found 865.6, 865.1, 865.2.

## Peptide 8

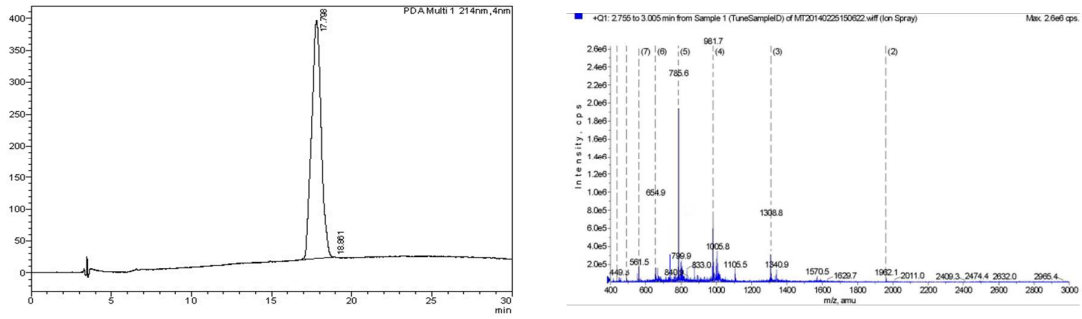


**Figure S-6** RP-HPLC trace and mass spectra for Peptide **8** (83 % yield). Rt=17.79 min (C18 column, 0-100% solvent B, 30 min). Exact mass of Peptide **8** $[M+1H]^{+1}$ calculated: 3922.03; calculated $[M+2H]^{+2}$ 1962.01 and found 1962.1; calculated $[M+3H]^{+3}$ 1308.34 and found 1308.8; calculated $[M+4H]^{+4}$ 981.50 and found 981.7; calculated $[M+5H]^{+5}$ 785.40 and found 785.6.

## Peptide 9

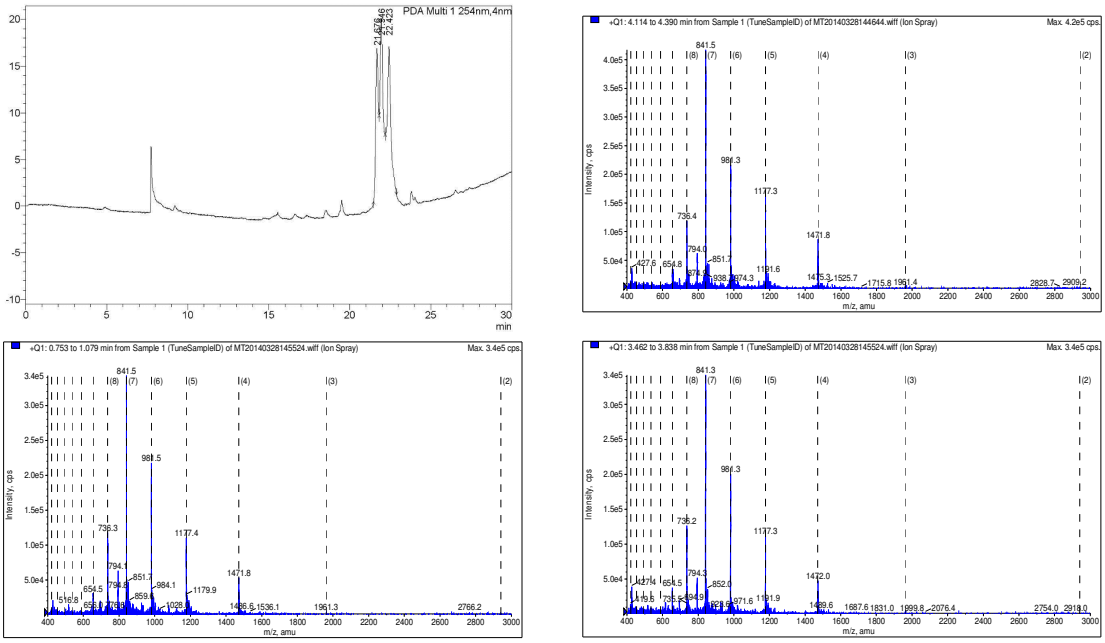


**Figure S-7** RP-HPLC trace and mass spectra for Peptide **9** (33 % yield). Rt=21.67, 21.94 and 22.42 min (C8 column, 0-100% solvent B, 30 min). Exact mass of Peptide **9** $[M+1H]^{+1}$ calculated: 5876.89; calculated $[M+2H]^{+2}$ 2939.45; calculated $[M+3H]^{+3}$ 1959.96 and found 1961.3 and 1961.4; calculated $[M+4H]^{+4}$ 1470.22 and found 1471.8 and 1472; calculated $[M+5H]^{+5}$ 1176.37 and found 1177.3 and 1177.4.

## Peptide 10

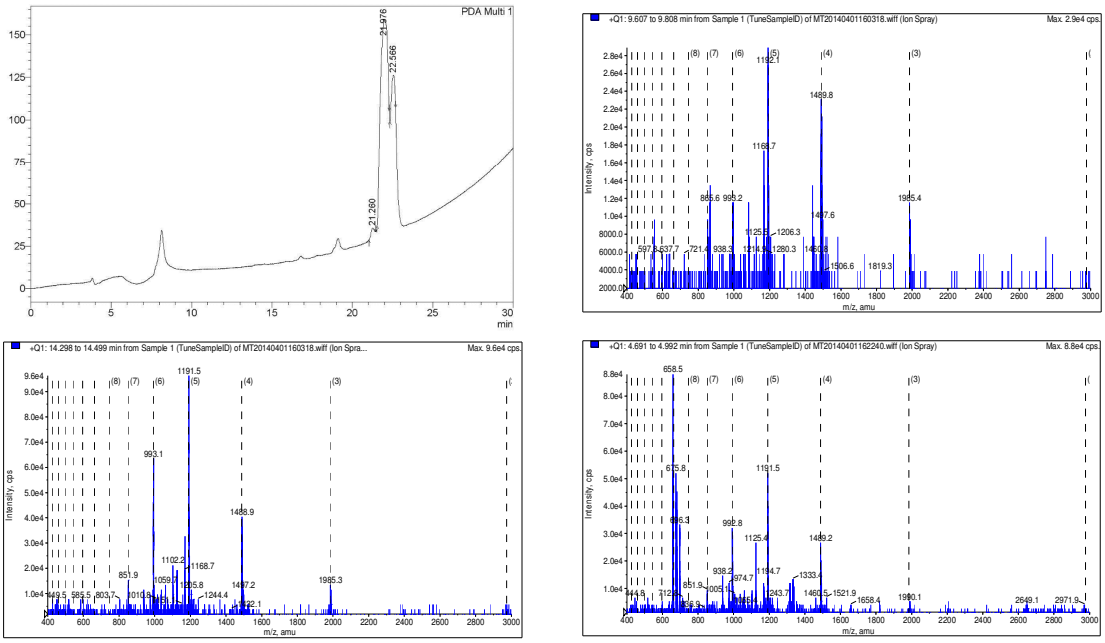


**Figure S-8** RP-HPLC trace and mass spectra for Peptide **10** (35 % yield). Rt=21.26, 21.97 and 21.56 min (C8 column, 0-100% solvent B, 30 min). Exact mass of Peptide **10** $[M+1H]^{+1}$ calculated: 5947.93; calculated $[M+2H]^{+2}$ 2974.965 and found 2971.9; calculated $[M+3H]^{+3}$ 1983.64 and found 1985.4, 1985.3 and 1990.1; calculated $[M+4H]^{+4}$ 1487.98 and found 1489.8, 1488.9 and 1489.2; calculated $[M+5H]^{+5}$ 1190.58 and found 1192.1 and 1191.5.

## Peptide 11

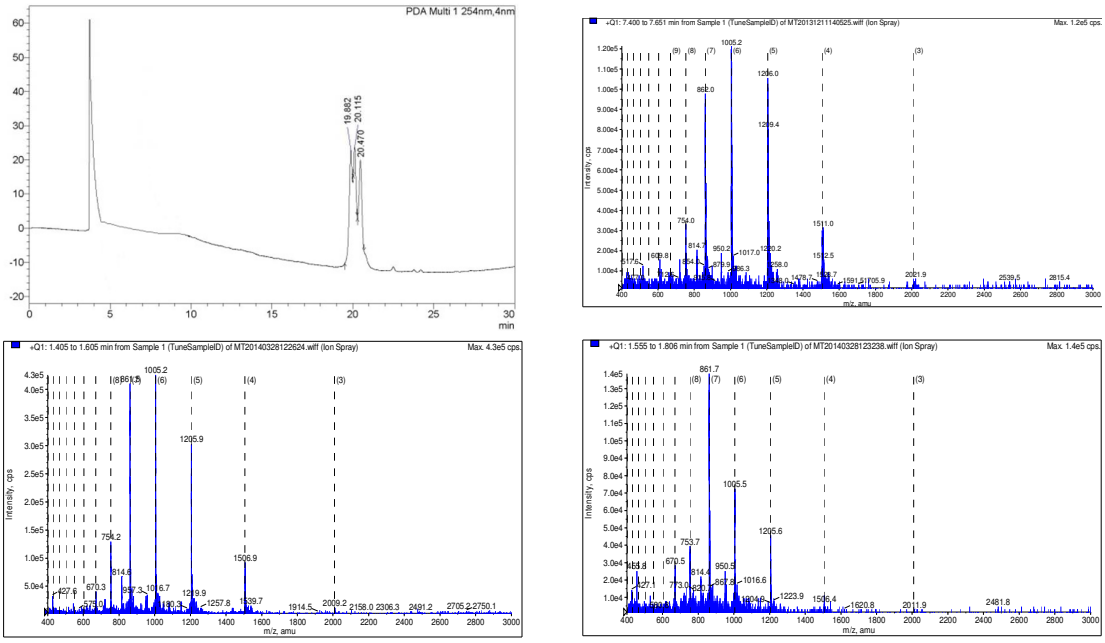


**Figure S-9** RP-HPLC trace and mass spectra for Peptide **11** (34 % yield). Rt=19.88, 20.11 and 20.47 min (C8 column, 0-100% solvent B, 30 min). Exact mass of Peptide **11** $[M+1H]^{+1}$ calculated: 6018.97; calculated $[M+2H]^{+2}$ 3009.98; calculated $[M+3H]^{+3}$ 2007.32 and found 2009.2 and 2011.9; calculated $[M+4H]^{+4}$ 1505.74 and found 1511, 1506.9 and 1506.4; calculated $[M+5H]^{+5}$ 1204.79 and found 1206, 1205.9 and 1205.6.

## Peptide 12

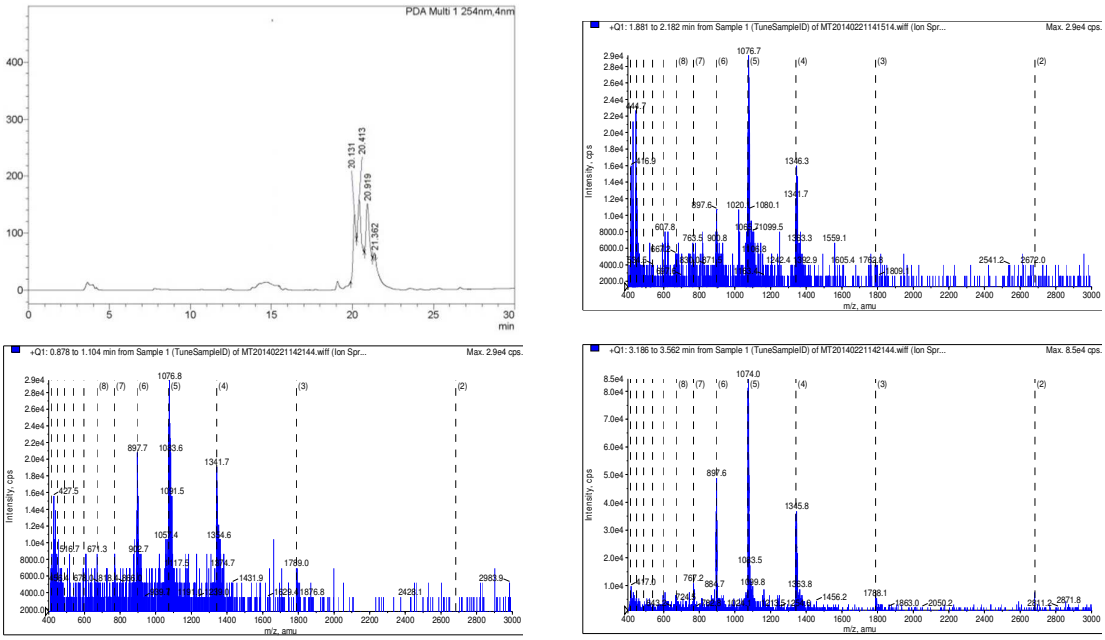


**Figure S-10** RP-HPLC trace and mass spectra for Peptide **12** (45 % yield). Rt=20.13, 20.41 and 21.36 min (C8 column, 0-100% solvent B, 30 min). Exact mass of Peptide **12** $[M+1H]^{+1}$ calculated: 5358.78; calculated $[M+3H]^{+3}$ 1787.26 and found 1789 and 1788.1; calculated $[M+4H]^{+4}$ 1340.69 and found 1341.7 and 1345.8; calculated $[M+5H]^{+5}$ 1072.75 and found 1076.7, 1076.8 and 1074.

## Peptide 13

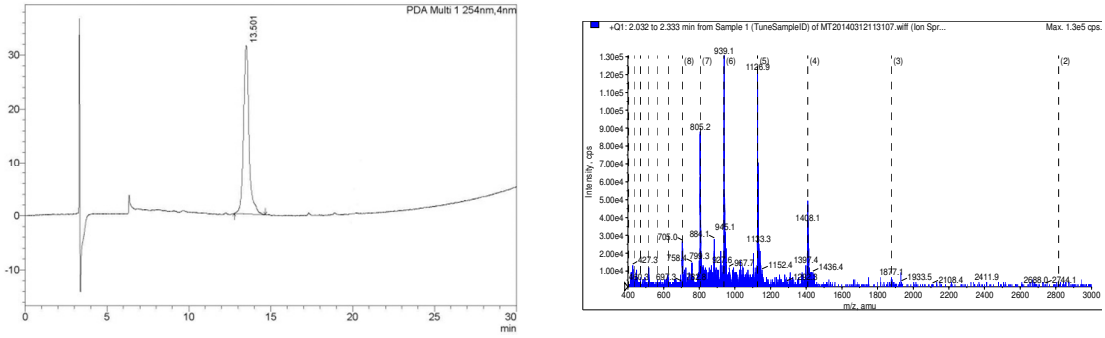


**Figure S-11** RP-HPLC trace and mass spectra for Peptide **13** (51 % yield). Rt=13.501 min (C8 column, 0-100% solvent B, 30 min). Exact mass of Peptide **13** $[M+1H]^{+1}$ calculated: 5624.61; calculated $[M+3H]^{+3}$ 1875.78 and found 1877.1; calculated $[M+4H]^{+4}$ 1407.15 and found 1408.1; calculated $[M+5H]^{+5}$ 1125.92 and found 1126.9.

**Peptide 14**

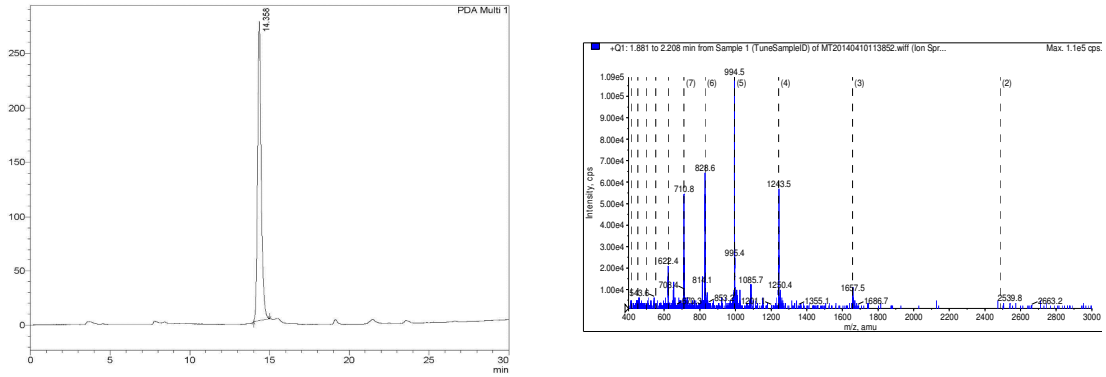


**Figure S-12** RP-HPLC trace and mass spectra for Peptide **14** (35 % yield). Rt=13.501 min (C8 column, 0-100% solvent B, 30 min). Exact mass of Peptide **14** $[M+1H]^{+1}$ calculated: 4964.42; calculated $[M+3H]^{+3}$ 1655.8 and found 1657.5; calculated $[M+4H]^{+4}$ 1242.1 and found 1243.5; calculated $[M+5H]^{+5}$ 993.88 and found 994.5.

## Flow Cytometry Concentration Selection

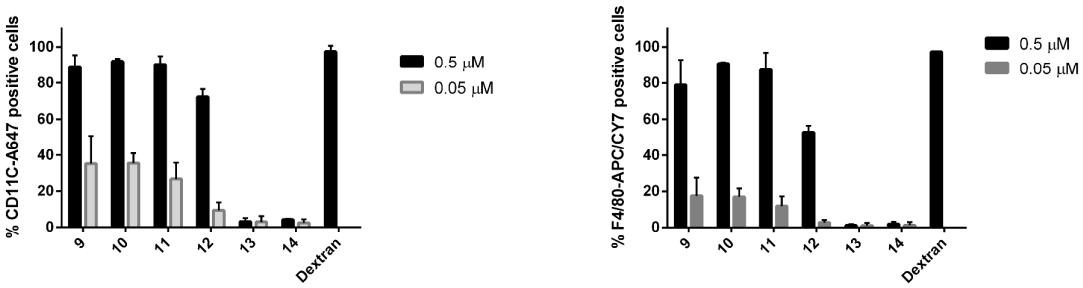


**Figure S-13 Concentration (μM) selection using flow cytometry** at 0.5 μM and 0.05 μM for the Vaccine Constructs (A) $CD11c^{+}$ and (B) $F4/80^{+}$ cells in triplicate. Dextran was at 1 mg/ml in PBS.

# Mass transfer limitation study on Peptide 11

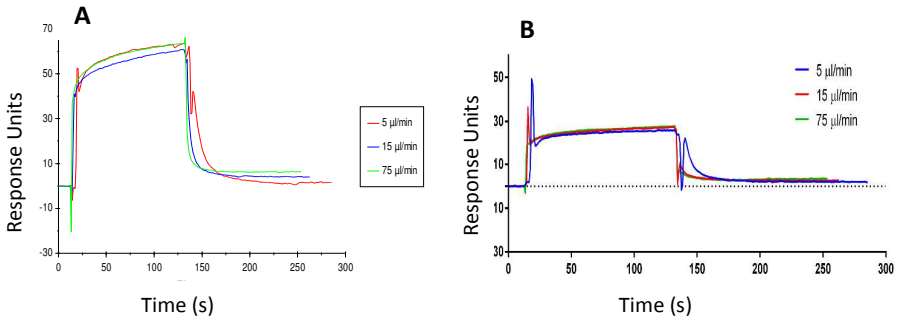


**Figure S-14 Mass transfer limitation for (A) Peptide 11 and (B) Peptide 12 measured at 50 μM** using different flow rates (5 μl/min, 15 μl/min, 75 μl/min) to determine changes in the level of response units.