Supporting information

Novel monodisperse PEGtide dendrons: design, fabrication and evaluation of mannose receptor-mediated macrophage targeting

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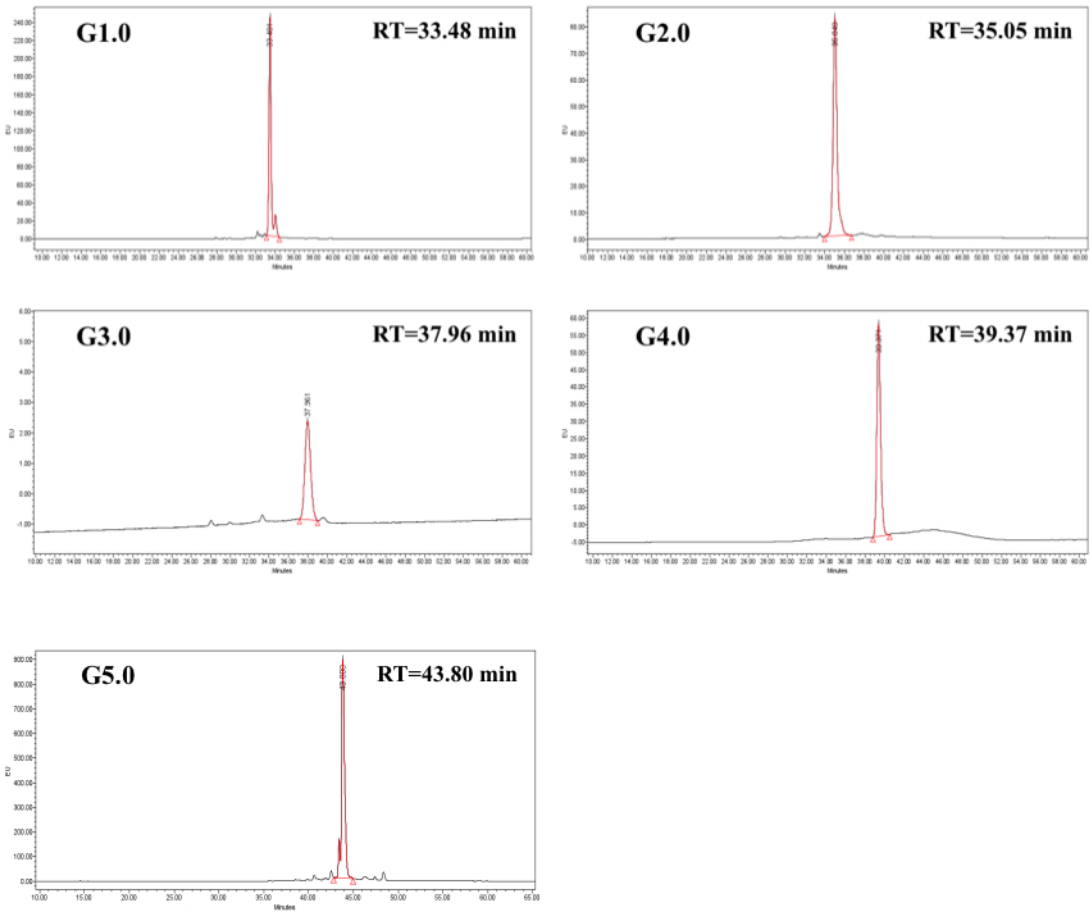
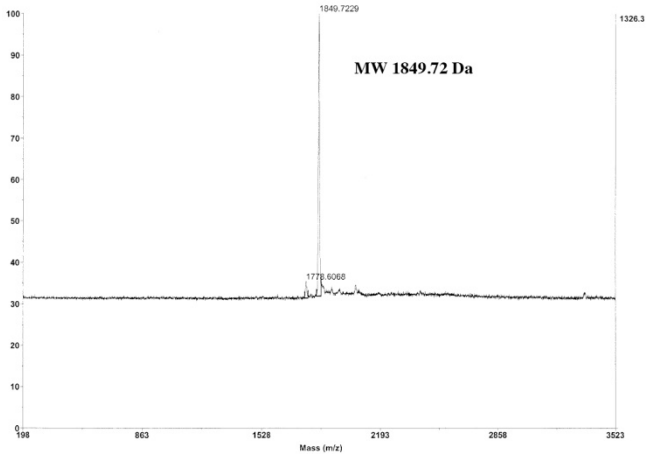
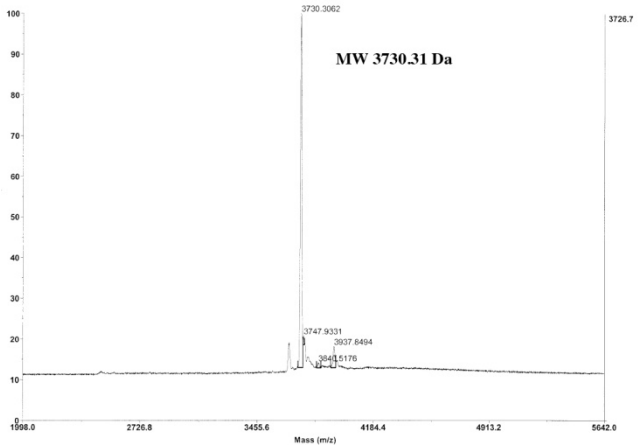


Figure S1. RP-HPLC profiles of purified PEGtide dendrons, G1.0 to G5.0. Column: Symmetry® C18, 5 μm, 100 Å, 4.6×150 mm; Mobile phase: A: 0.05% TFA in water, B: 0.05% TFA in acetonitrile. Retention times for G1.0, G2.0, G3.0, G4.0, and G5.0 are 33.48, 35.05, 37.96, 39.37, and 43.80 min, respectively. The percentage purities of G1.0-5.0 dendrons were found as 98.3, 99.0, 96.8, 98.9, and 97.1, respectively.

G1.0


1849.7229
1326.3
MW 1849.72 Da
1778.6068
100
90
80
70
60
50
40
30
20
10
0
198
863
1528
2193
2858
3523
Mass (m/z)

G2.0


3730.3062
3726.7
MW 3730.31 Da
3747.9331
3937.6494
3840.5176
100
90
80
70
60
50
40
30
20
10
0
1998.0
2726.8
3455.6
4184.4
4913.2
5642.0
Mass (m/z)

G3.0

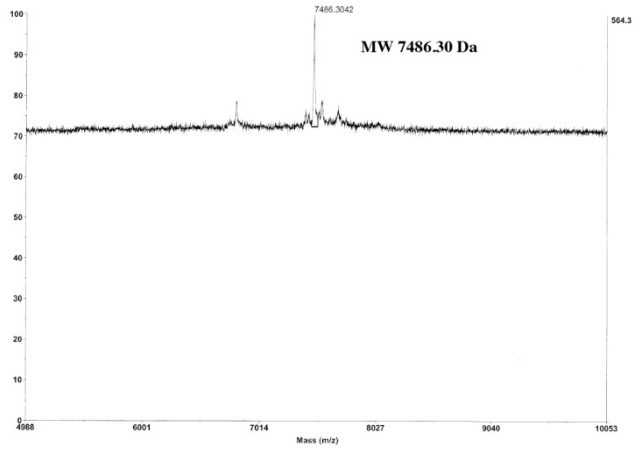

7486.3042
564.3
MW 7486.30 Da
100
90
80
70
60
50
40
30
20
10
0
4988
6001
7014
8027
9040
10053
Mass (m/z)

Figure S2. MALDI-TOF spectra of PEGtide dendrons, G1.0 to G3.0. The molecular weights of G1.0, G2.0, and G3.0 were estimated as 1849.72, 3730.31, and 7486.30 Da, respectively, which were in agreement with calculated values [M+H$^+$] of 1850.94, 3733.06, and 7495.29 Da.

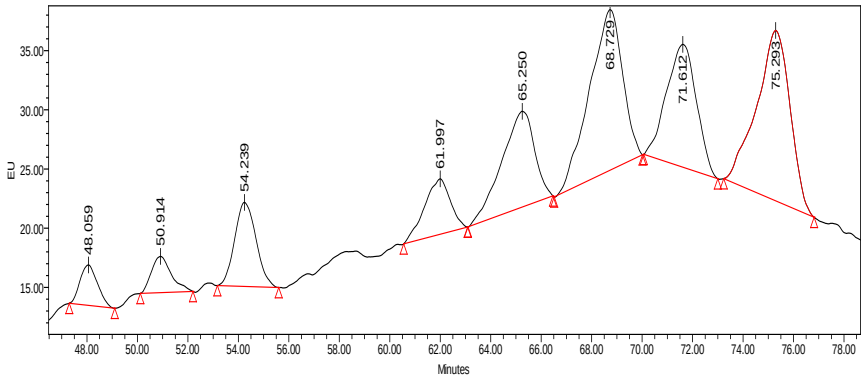


Figure S3. HPLC profile of crude G3.0-mannose$_8$. Fraction corresponding to retention time of 75.3 minute was collected and analyzed by MALDI-TOF (see below). Method: Symmetry®C18 column (4.6 × 150 mm, particle size 5 μm); flow rate: 1 mL per minute; and gradient: 0.05% per minute.

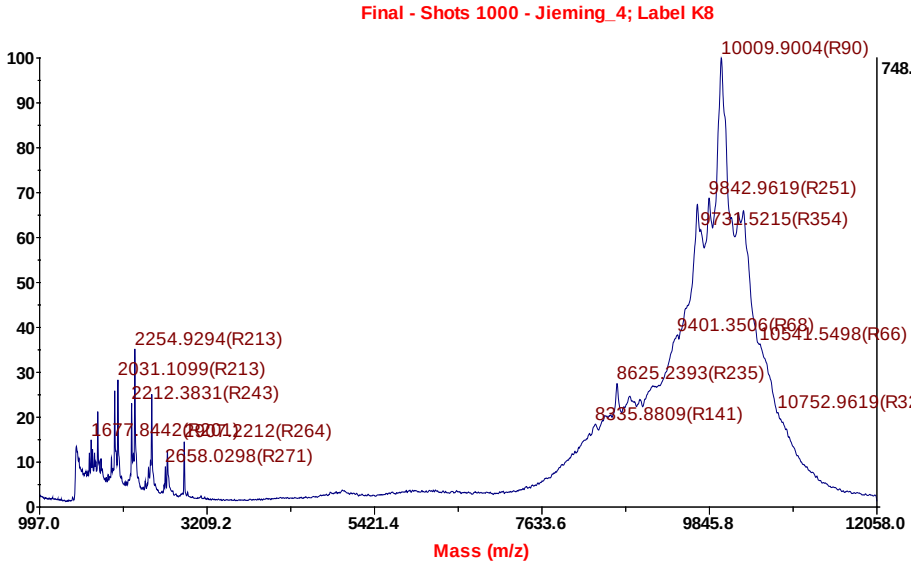


Figure S4. MALDI-TOF spectrum of purified G3.0-mannose$_8$. The observed molecular weight is 10009.9 Da, whereas the calculated molecular weight [M+H$^+$] is 10004.9 Da. The observed molecular weight corresponds to attachment of eight mannose moieties on dendron surface.

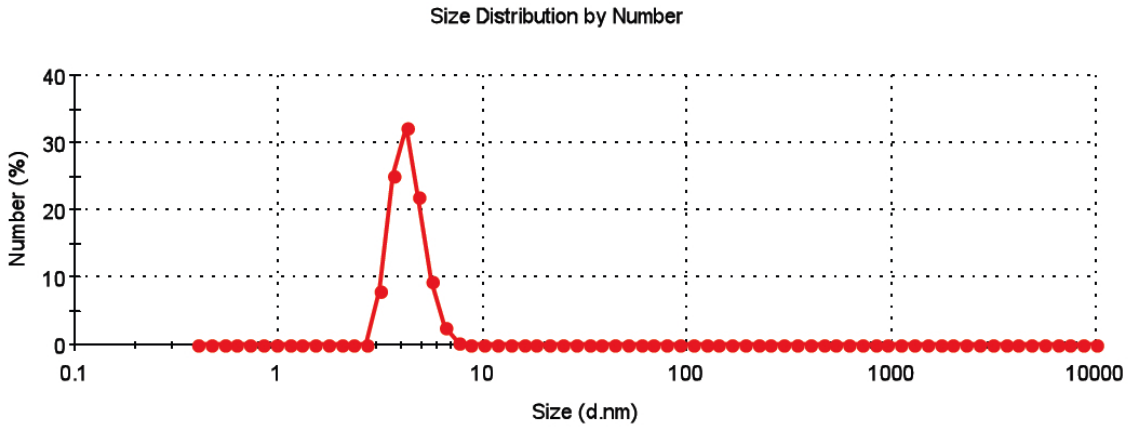


Figure S5. DLS profile of G3.0-mannose$_8$ (hydrodynamic diameter ~ 4.3 nm).

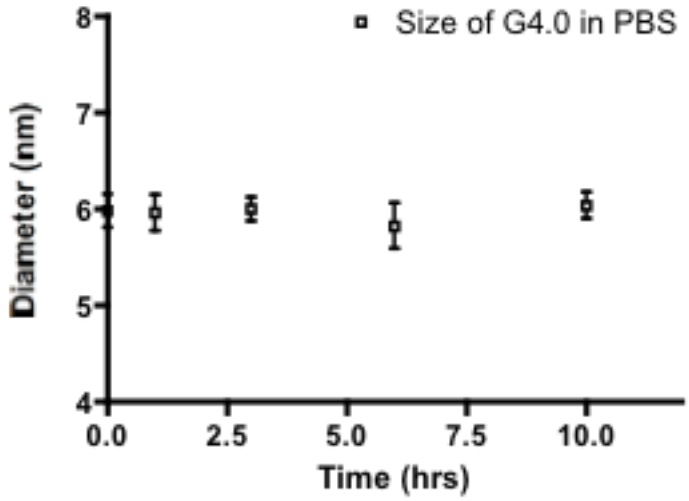
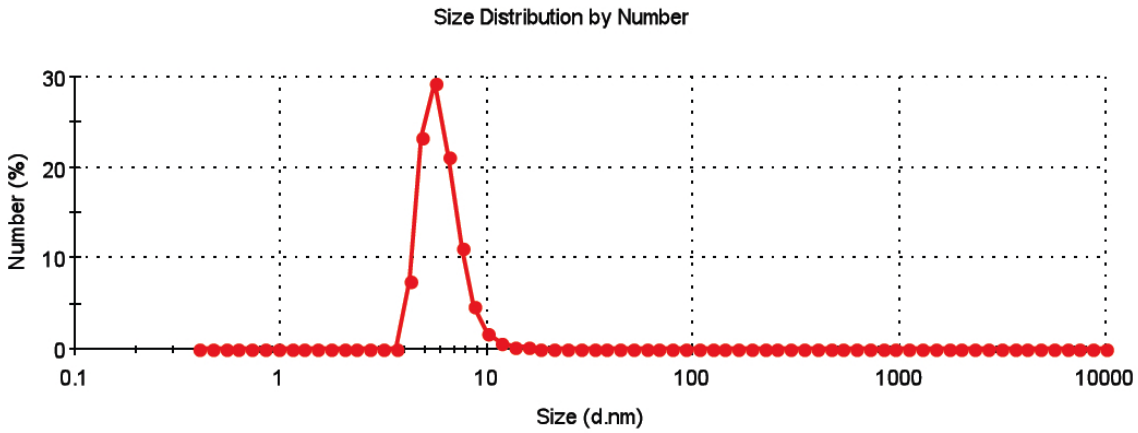


Figure S6. Size stability evaluation of G4.0 dendrons in PBS (0.1 M, pH 7.0).

(a)



(b)

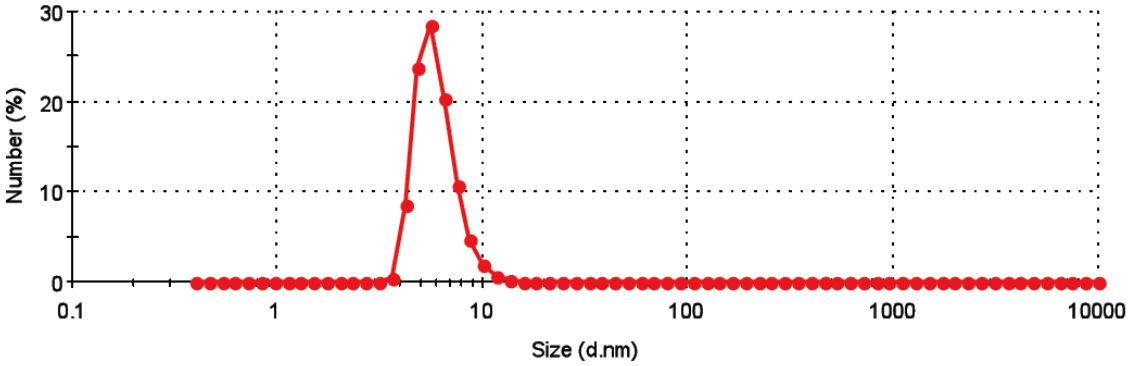


Figure S7. DLS profiles of cellular culture medium with G4.0 dendrons (a) and without G4.0 dendrons (b).