Supplementary Information

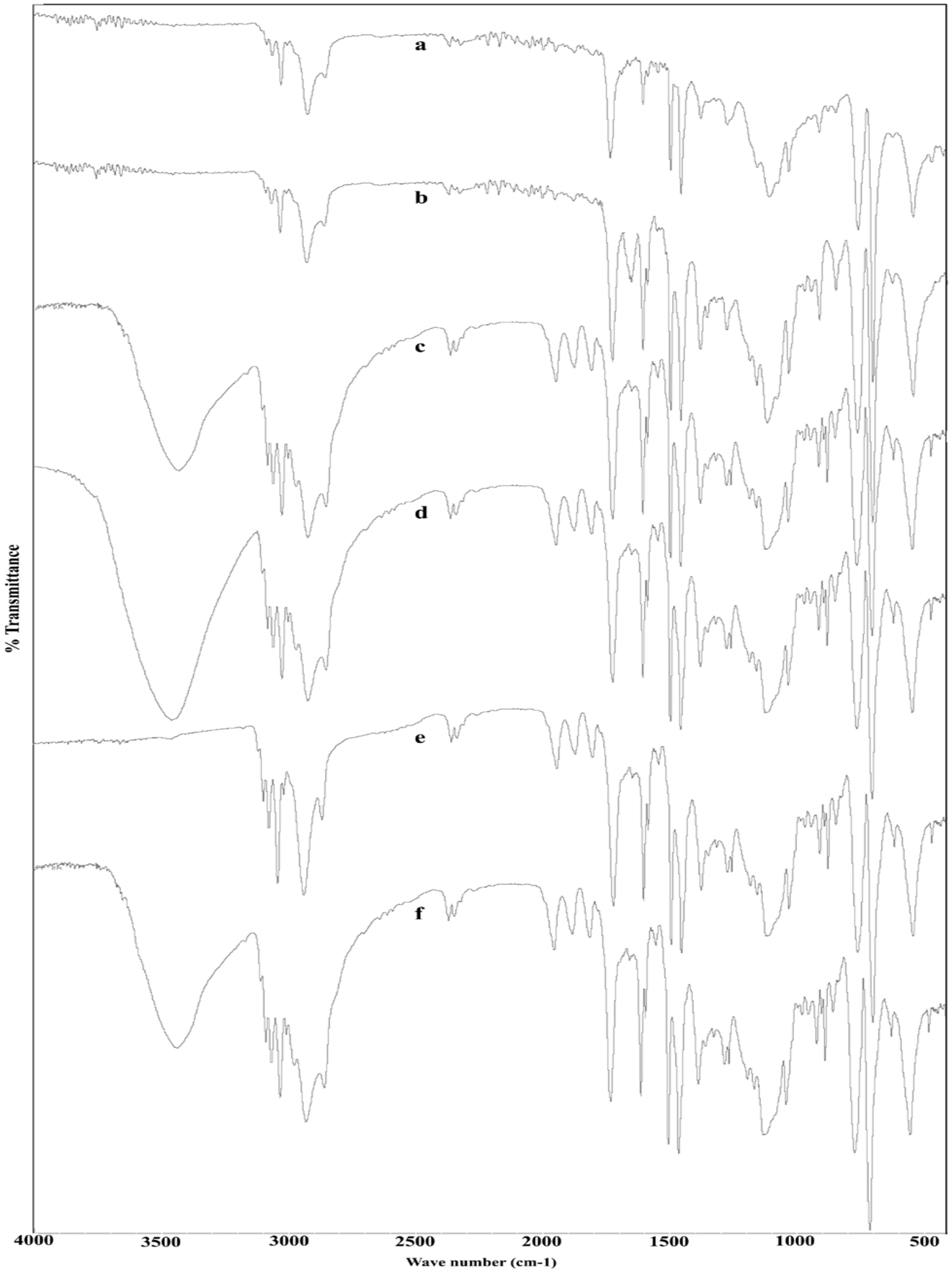

Fig S1. FTIR spectra of (a) PS-PEGDM-VBC resin (b) Schiff base **G_1** resin (c) Amine **G_1** resin (d) Hydroxyl **G_1** resin (e) Chloro **G_1** resin (f) PEGylated **G_2** resin.

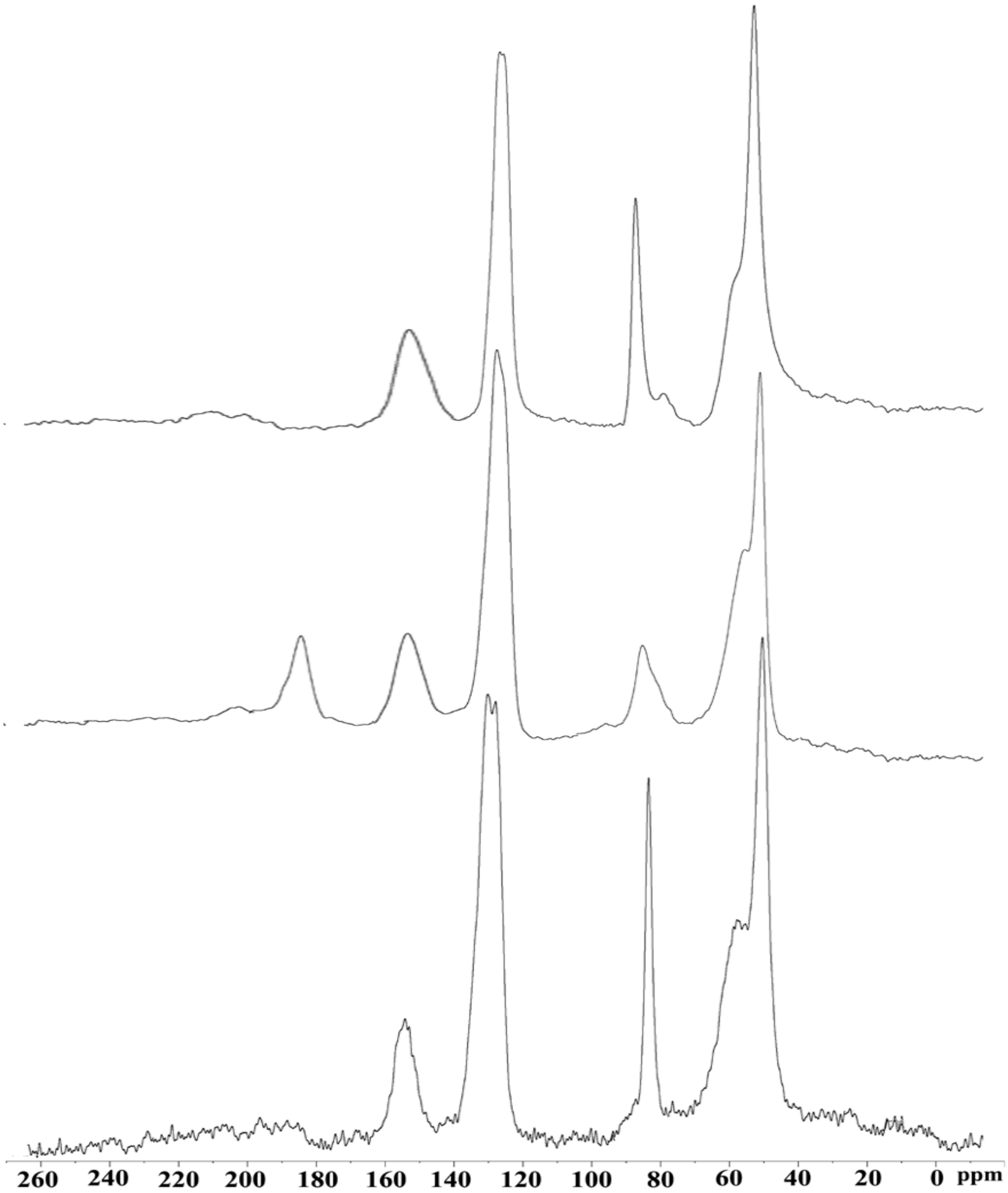

Fig S2. ^{13}C NMR spectra of (a) PS-PEGDM-VBC resin (b) Schiff base $\mathbf{G_1}$ resin (c) PEGylated $\mathbf{G_2}$ resin.

Experimental (*Supplementary*)

Amine resin

The Schiff base resin $\mathbf{G_1}$ (3.5 g) was continuously stirred with 6M HCl (150 mL) at 60 ^{0}C for 12 h reaction. Benzaldehyde molecules were liberated as an oily emulsion during the course of hydrolysis. Hydrochloride form of golden yellow polymer beads obtained were filtered off, washed with ethanol (10×30 mL) and ether (10×10 mL) and dried under vacuum. The resin in the free amino form were obtained by washing with 1M NaOH solution (25×5 mL) followed by thorough washing with distilled water until the solution was turned neutral. Lyophilized the sample and the free amino groups regenerated were quantified by UV method by acylating amino groups with F-moc-Gly-OH.[18] The yield of amine resin $\mathbf{G_1}$ collected was 3.22 g.

Hydroxyl resin

Amine resin (3g, 0.285, mmol/g) $\mathbf{G_1}$ was taken in a R.B flask and 2 M HCl (30 mL) was added in drop wise manner and kept at 0^{0}C for 15 minutes. The mixture was stirred gently and 5 M $NaNO_2$ (50 mL) solution has been added in drop wise manner. After the complete addition of $NaNO_2$ solution, the reaction was allowed to stand for 1 h in ice cold condition and brought back to room temperature. The diazotized resin beads were washed with excess hot water (5×10 mL), 2M NaOH (3×10 mL), ethanol (5×10 mL), methanol (5×10 mL) and ether (5×10 mL) and finally checked with ninhydrin. The beads were further extracted with ethanol and methanol and washed with ether (3×10 mL) and kept in vacuum. The amount of hydroxyl $\mathbf{G_1}$ resin obtained was 2.9 g. The hydroxyl loading of resin was determined by esterification using MSNT/MeI/Fmoc-Gly-OH mixture.[20]

Chlorine resin

Hydroxyl $\mathbf{G_1}$ resin (2.5 g, 0.284 mmol/g) was allowed to swell in dry dichloromethane (20 mL) for 30 minutes. To this swelled support, calculated volume of thionyl chloride (0.516 mL, 10 mmol excess) has been added in drop wise manner with occasional stirring and kept at 60 ^{0}C for an overnight reaction. The reaction was brought back to room temperature and excess thionyl chloride present was removed by the slow addition of distilled ethanol. The resin was further washed with dichloromethane (5×10 mL), acetone (5×10 mL), ethanol (5×10 mL), methanol (5×10 mL) and ether (5×10 mL) and finally extracted with ethanol and methanol. The resin was kept in vacuum at 40 ^{0}C for 48 h. The amount of chlorine terminated **G_1** dendrimer resin collected was 2.46 g. The chlorine functional loading value was estimated by Volhard's estimation method.[20]