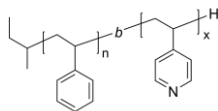


Bearing different degree of 4VP units

Structure:



Mn $\times 10^3$ S-b-4VP	PDI
22-b-0.53	1.01

Dp of each unit 211-b-5
Tg for PS block: 104 °C

Polymers were prepared by living anionic polymerization in THF at $-78\text{ }^{\circ}\text{C}$ in the presence of LiCl as an additive.

The product was characterized by size exclusion chromatography (SEC) and ^1H NMR and FTIR data analysis.

Purification of the obtained polymer was carried out rigorously as follows to ensure the removal of the catalyst side product:

1. Dissolved the polymer in CHCl_3 and wash with de-ionized distilled water to remove the any soluble organic catalyst side product.
2. Polymer extracted from water with chloroform.
3. Polymer solution in CHCl_3 was dried over anhydrous sodium sulfate.
4. Solution filtered and than passed through a column packed with basic Al_2O_3 .
5. Solution concentrated on rota-evaporator.
6. Solution precipitated in cold hexane and redissolved in benzene and freeze dried.
7. Final dried under vacuum for 48h at 50°C .

Chromatogram Plot

Polystyrene Block P43807

RI (mV)

Conductivity (mS/cm)

Time (minutes)

Legend:

- RI (checked)
- UV 190 nm (checked)
- UV 214 nm (checked)
- UV 254 nm (checked)
- UV 310 nm (unchecked)

Peak	Mp (g/mol)	Mn (g/mol)	Mw (g/mol)	Mz (g/mol)	Mz-1 (g/mol)	Mw (g/mol)	PDI
1	29381	29113	29242	29385			1.005

DSC thermogram of poly(2-vinylpyridine) showing heat flow versus temperature. The curve exhibits several endothermic peaks labeled with their respective temperatures: 100.55°C, 104.15°C(T), 107.64°C, 150.50°C, 152.89°C(T), and 155.36°C. The x-axis is Temperature (°C) from 80 to 200, and the y-axis is Heat Flow (W/g) from -0.40 to -0.20.

Figure 1 displays the IR spectra of five polyimide samples (PAB011 to PAB015) from 4000 to 600 cm⁻¹. The spectra are stacked vertically. Key peaks are labeled with blue boxes and arrows: 3300 cm⁻¹ (NH), 1650 cm⁻¹ (C=O), 1550 cm⁻¹ (C=O), 1380 cm⁻¹ (C-N), and 720 cm⁻¹ (C-Cl). A legend at the bottom identifies the samples and their synthesis dates.

Sample	Description
PAB011	Sample 2017 (by Achromat and Clavis Therapeutics, May 01/2022)
PAB012 (1:1/2:1)	Polysiloxane cross-linker
PAB013	Sample 2017 (by Achromat and Clavis Therapeutics, May 04/2022)
PAB014	Sample 2018 (by Achromat and Clavis Therapeutics, May 01/2022)
PAB015	Sample 2018 (by Achromat and Clavis Therapeutics, May 03/2022)

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