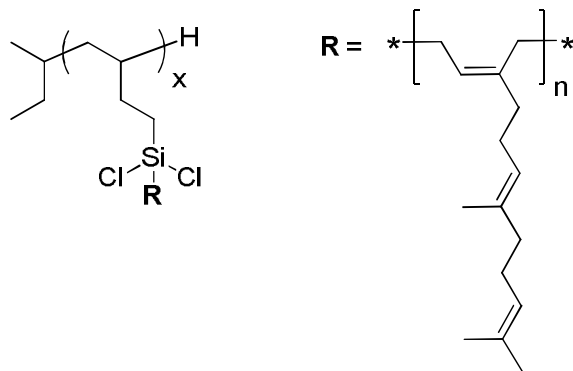


Sample Name:

Poly(1,4-farnesene) grafted on silyl-modified oligo(1,2-butadiene)

Alternate Name: Four-arm 1,4-Polyfarnesene

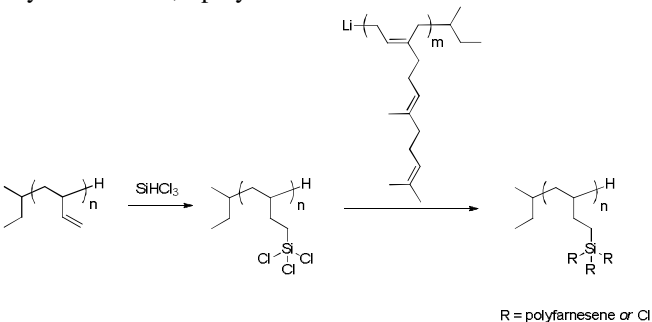
Sample # **P18418-4-Farne**



M _n (arm), g/mol	M _n (total), g/mol	M _w /M _n
5.0 × 10 ³	20.0 × 10 ³	1.15

Synthesis and Purification:

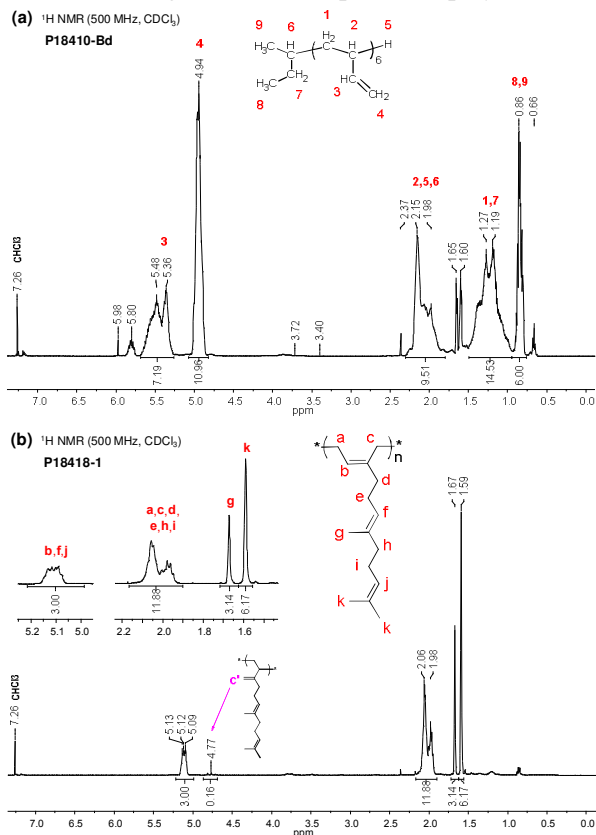
1,2-polybutadiene (main chain) and polyfarnesene (arms) were synthesized (separately) by anionic living polymerization of 1,3-butadiene in THF and β-farnesene in cyclohexane, respectively, using secBuLi as an initiator. 1,2-polybutadiene was coupled with trichlorosilane and added to 1,4-polyfarnesene, resulted in 1,4-polyfarnesene grafted on silyl-modified 1,2-polybutadiene.



Characterization:

The absolute molecular weight and polydispersity index (PDI) were determined by size exclusion chromatography (SEC) using light scattering (LS) detector. SEC analysis was performed on a Varian ProStar liquid chromatograph equipped with UV-vis, RI and LS triple detector from Viscotec, three SEC columns from Supelco (G6000-4000-2000 HXL), and using THF as an eluent.

¹H NMR: (a) oligobutadiene (Dp=6), (b) polyfarnesene.



1,4-Polyfarnesene contains ≤7% of 1,2-polyfarnesene.

SEC elugrams: (a) PF arm, (b) PBd-g-PF.

