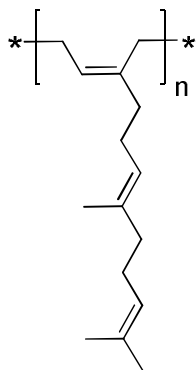


Sample Name:

**POLYFARNESENE, rich in 1,4-addition**

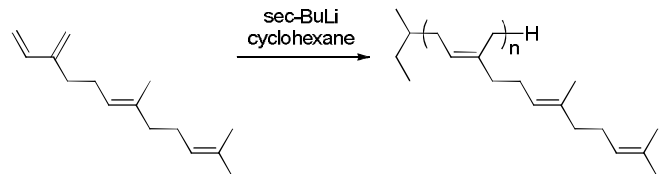
Sample # **P18392A-Farne**



$M_n \times 10^3$ (g/mol)	$M_w/M_n$
7.5	1.06

### Synthesis:

1,4-Polyfarnesene was synthesized by anionic living polymerization of  $\beta$ -farnesene in cyclohexane in presence of tetramethylethylenediamine (TMEDA) using *sec*-BuLi as an initiator.

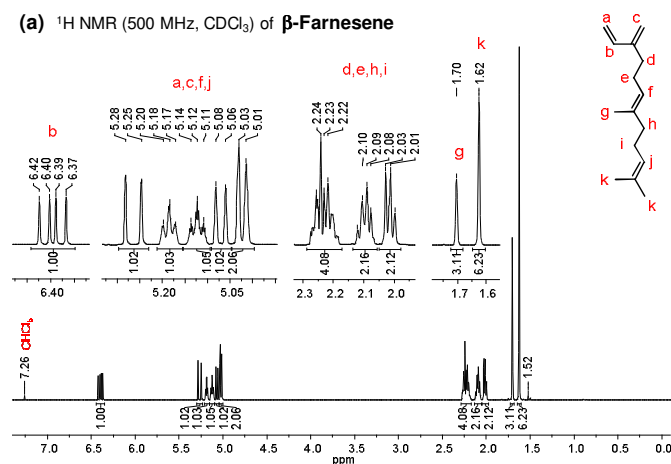


### Characterization:

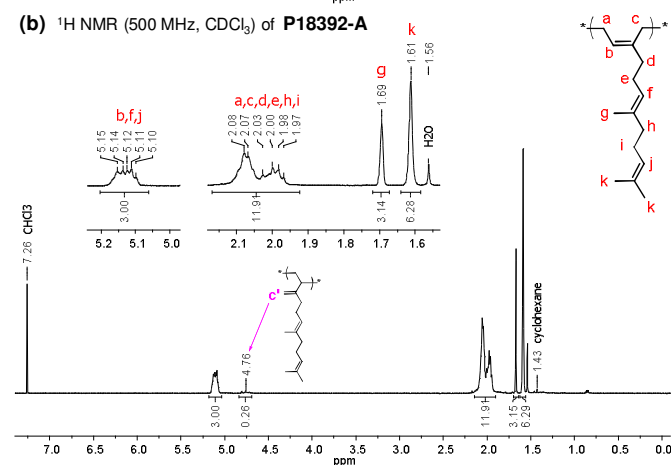
The absolute molecular weight and polydispersity index (PDI) were determined by size exclusion chromatography (SEC) using light scattering (LS) detector. SEC analysis was performed on a Varian ProStar liquid chromatograph equipped with UV-vis, RI and LS triple detector from Viscotec, three SEC columns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

$^1\text{H}$  NMR spectra: (a)  $\beta$ -farnesene, (b) polyfarnesene.

(a)  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of  $\beta$ -Farnesene



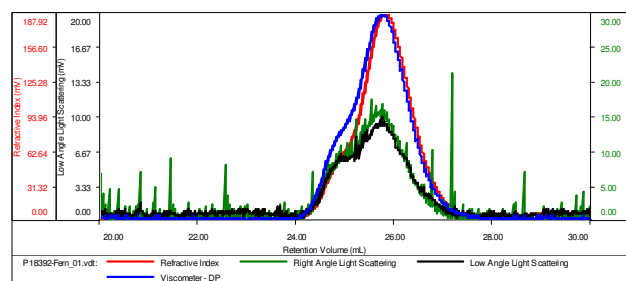
(b)  $^1\text{H}$  NMR (500 MHz,  $\text{CDCl}_3$ ) of P18392-A



1,4-Polyfarnesene contains  $\leq 12\%$  of 1,2-polyfarnesene.

### SEC elugram of polyfarnesene.

Concentration (mg/mL)	4.2211
Sample dn/dc (mL/g)	0.1270
Method File	PS80K-Feb25-2014-0000.vcm
Column Set	3x PL 1113-6300
System	System 1



Sample	Mn	Mw	Mp	Mw/Mn	IV
P18392-Fern_01.vdt	7,655	8,085	7,700	1.056	0.1633