

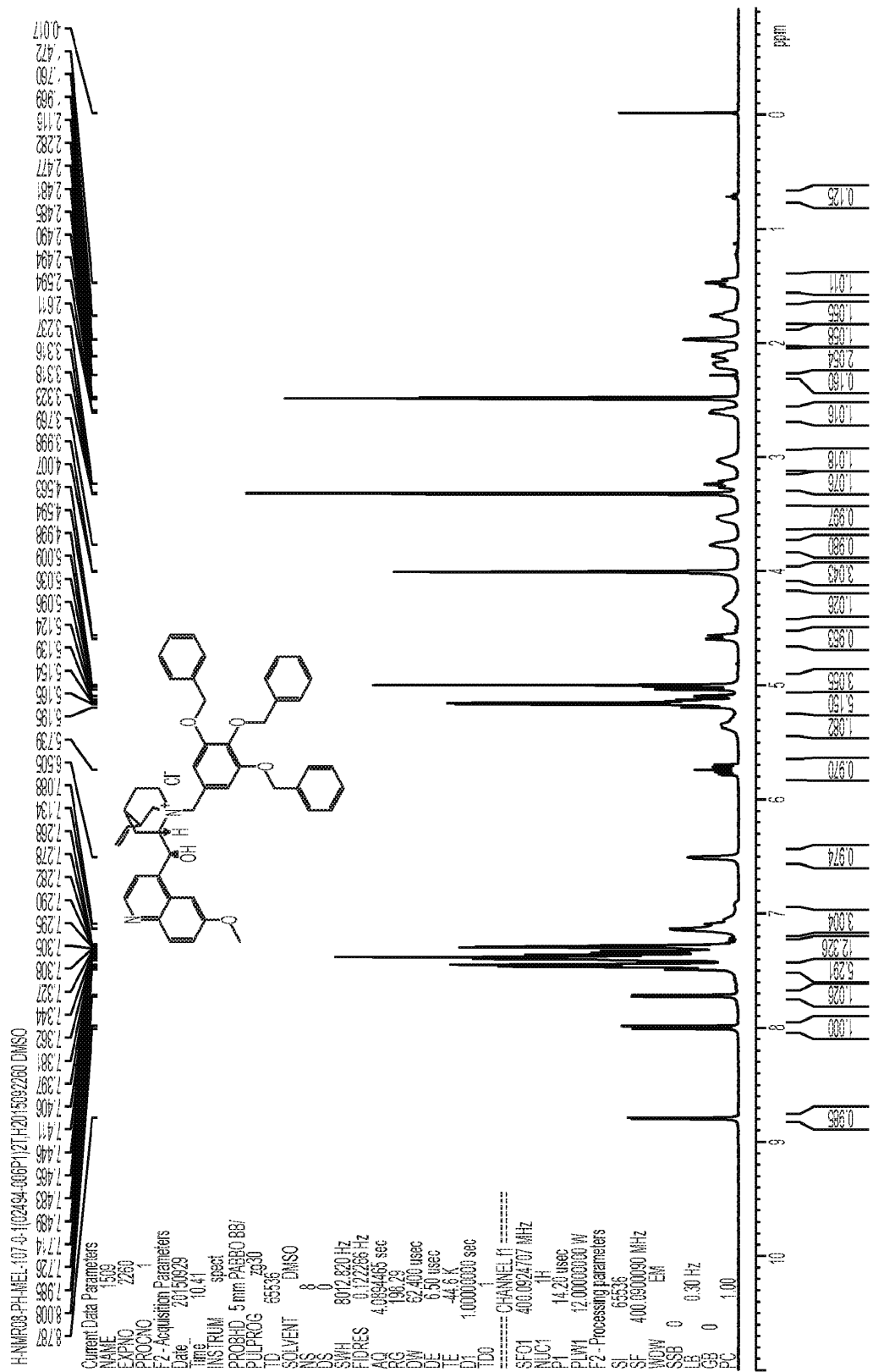


FIG. 1: ¹H NMR spectra of chiral phase transfer catalyst (IIIa-13-1) prepared in Example 1 in DMSO-d₆.

LCMS Analysis Report

Sample Name :	IIIa-13-1	Seq. Line :	7
Injection Date :	Tue, 29 Sep 2015	Instrument Name :	LCMS-14
Int. Volume :	1.0 ul		
Acq Operator :	FAL		
Acq Method :	D:\DATA\20150929\20150928-3 2015-09-29 13-20-52\XDB50-		
	(ACN-TFA)+10		

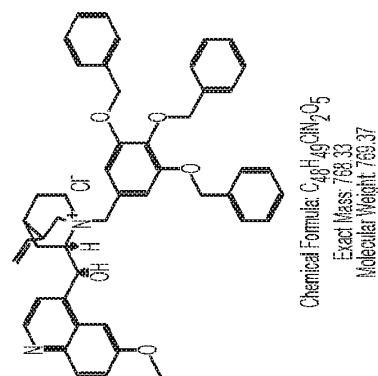
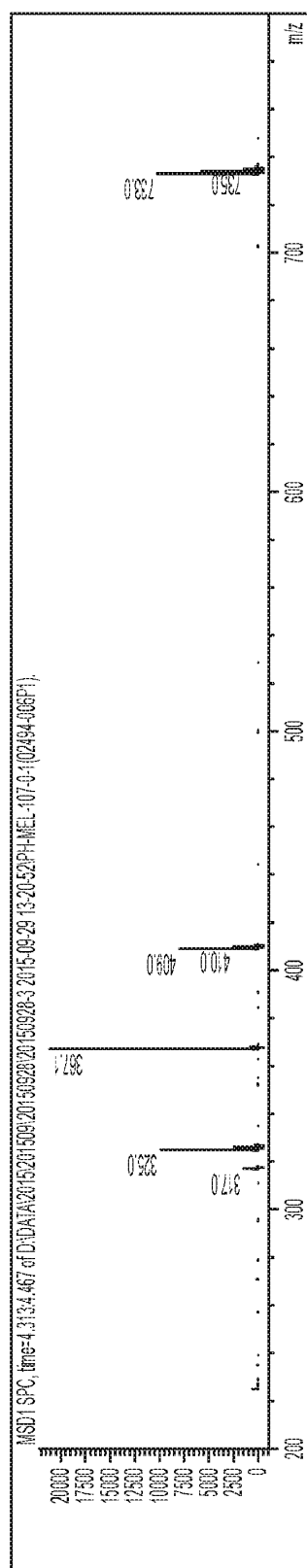


FIG. 2: LCMS spectra of chiral phase transfer catalyst (IIIa-13-1) prepared in Example 1.

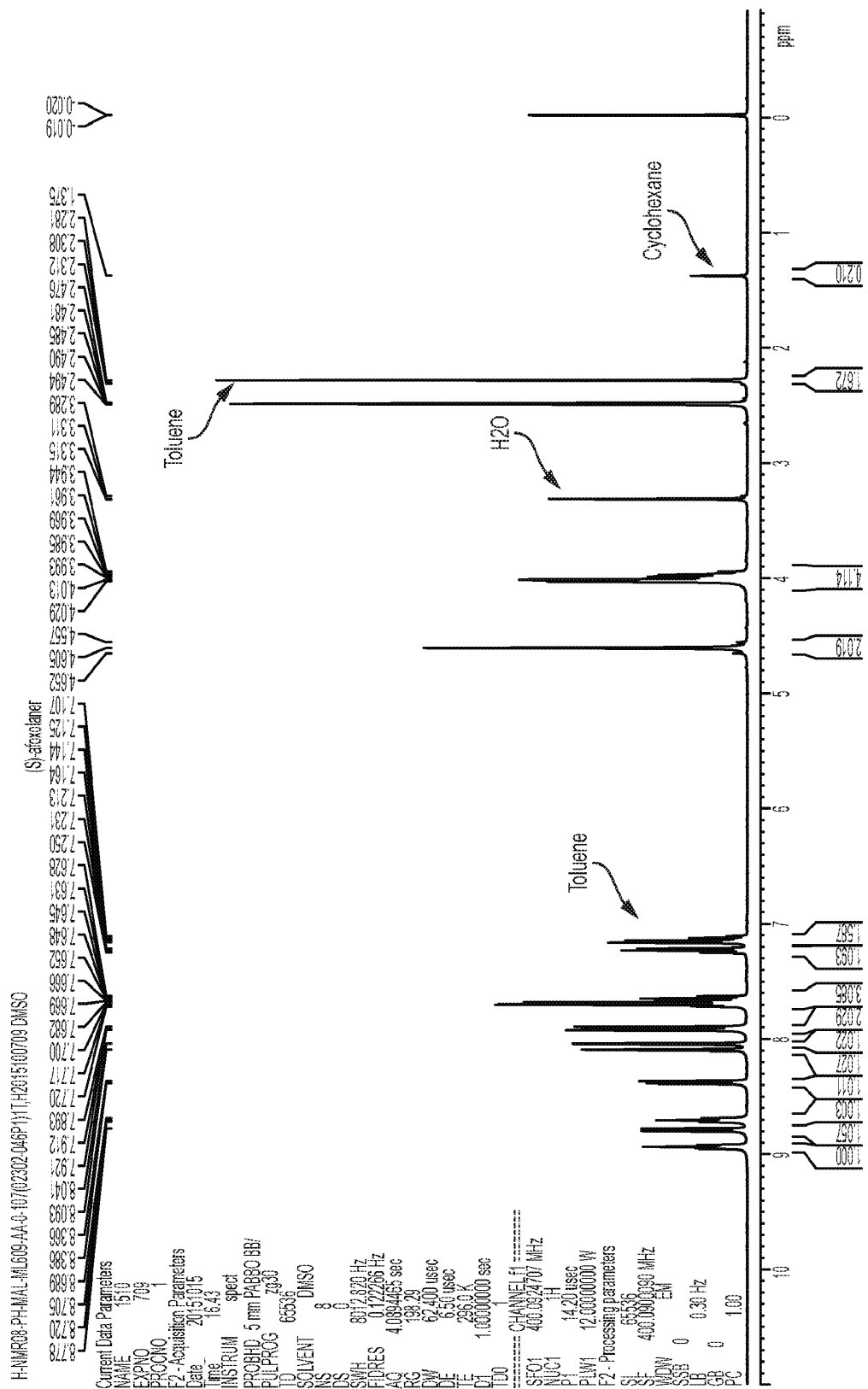


FIG. 3: ¹H NMR of (S)-afoxolaner in DMSO-d₆ prepared in Example 7

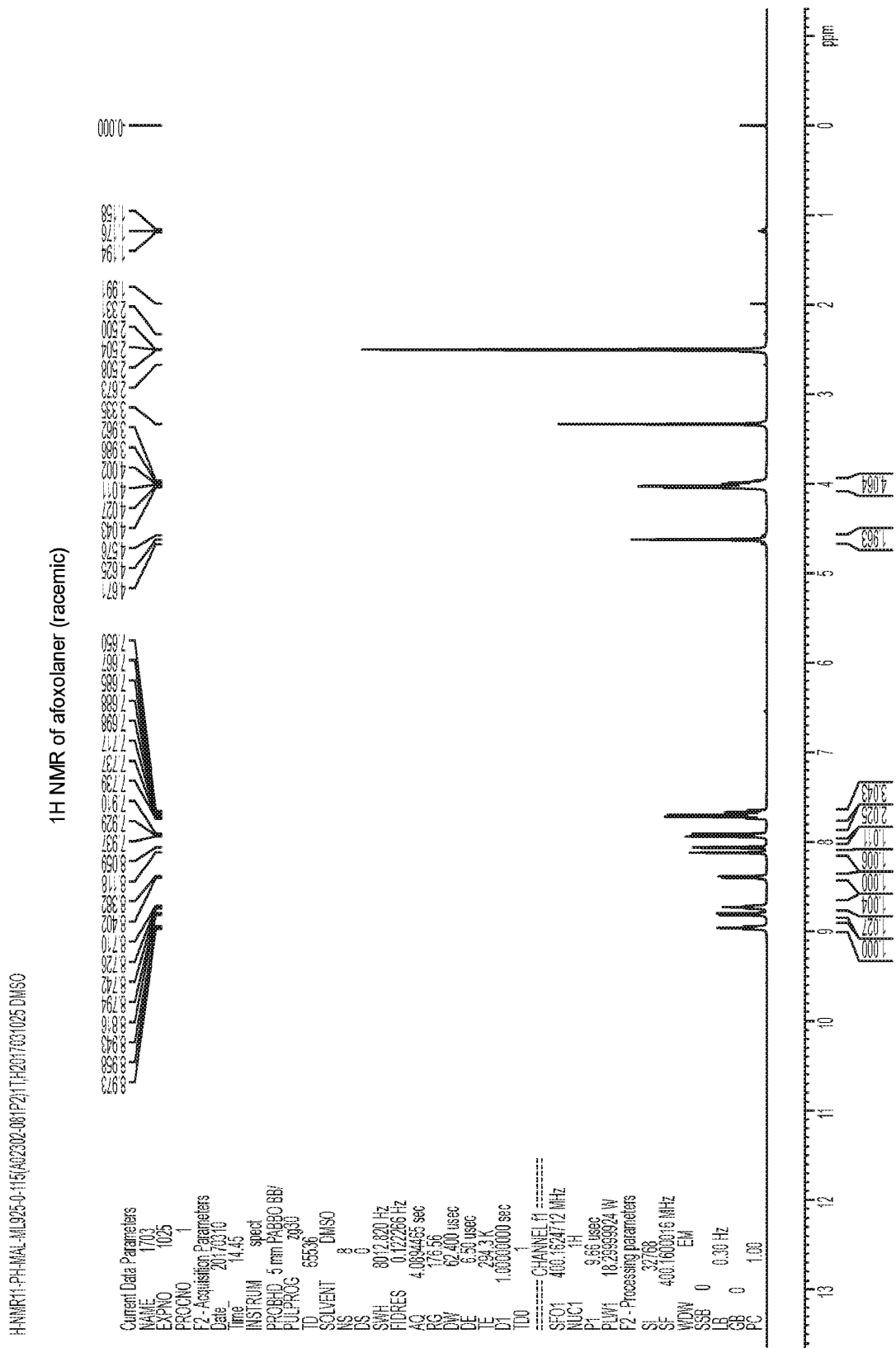


FIG. 4: ¹H NMR of afoxolaner (racemic) in DMSO-d₆.

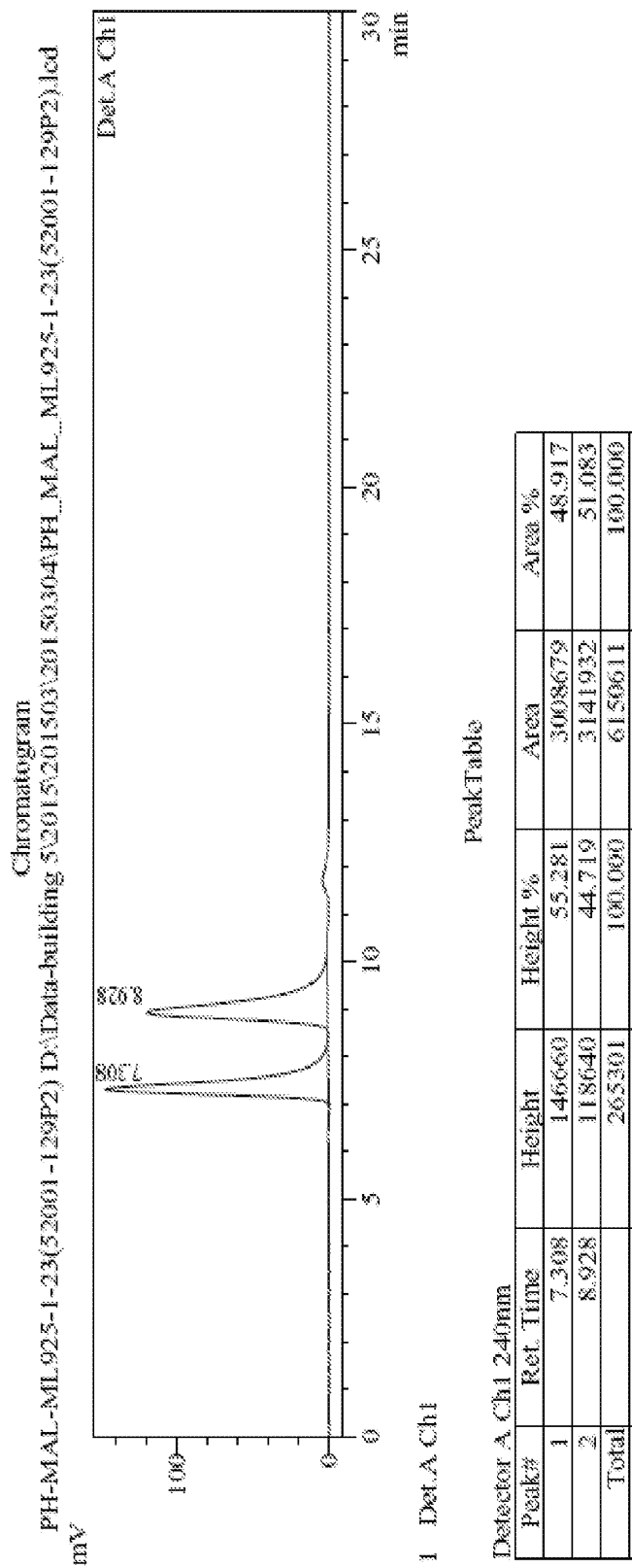


FIG. 5: chiral HPLC of afoxolaner (racemic) using HPLC method of Example 3.

6/10

Analytical Method:
Column: iA 4.6*150mm, 5.0
Isocratic Flow: HEX:IPA= 90:10
Flow Rate: 1.0mL/min
Detector: UV/240 nm
Column Temperature: 30°C

Sample preparation: 2.0mg/mL
Diluent(s): Ethanol

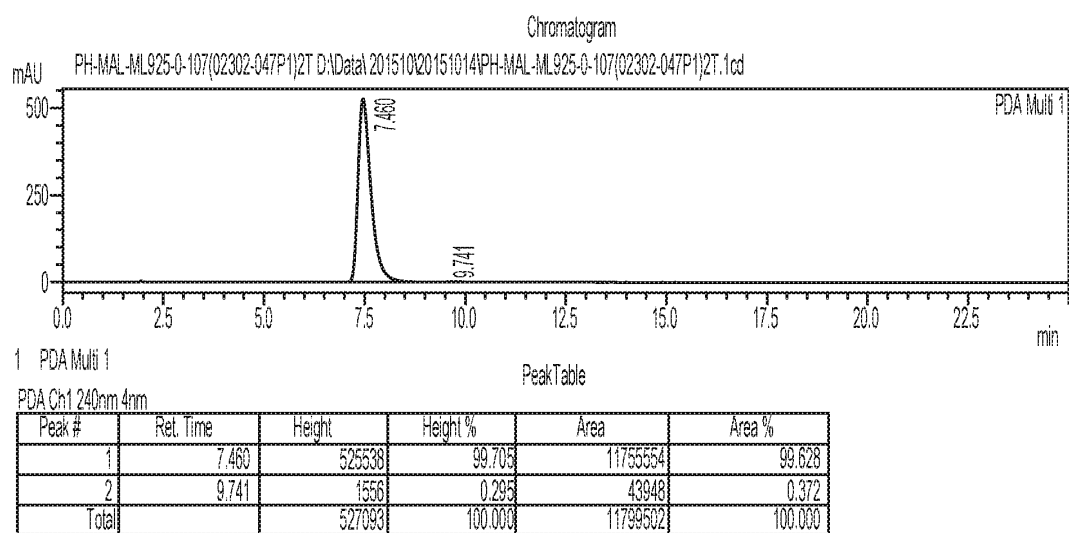


FIG. 6: chiral HPLC of (S)-afoxolaner using HPLC method of Example 3.

7/10

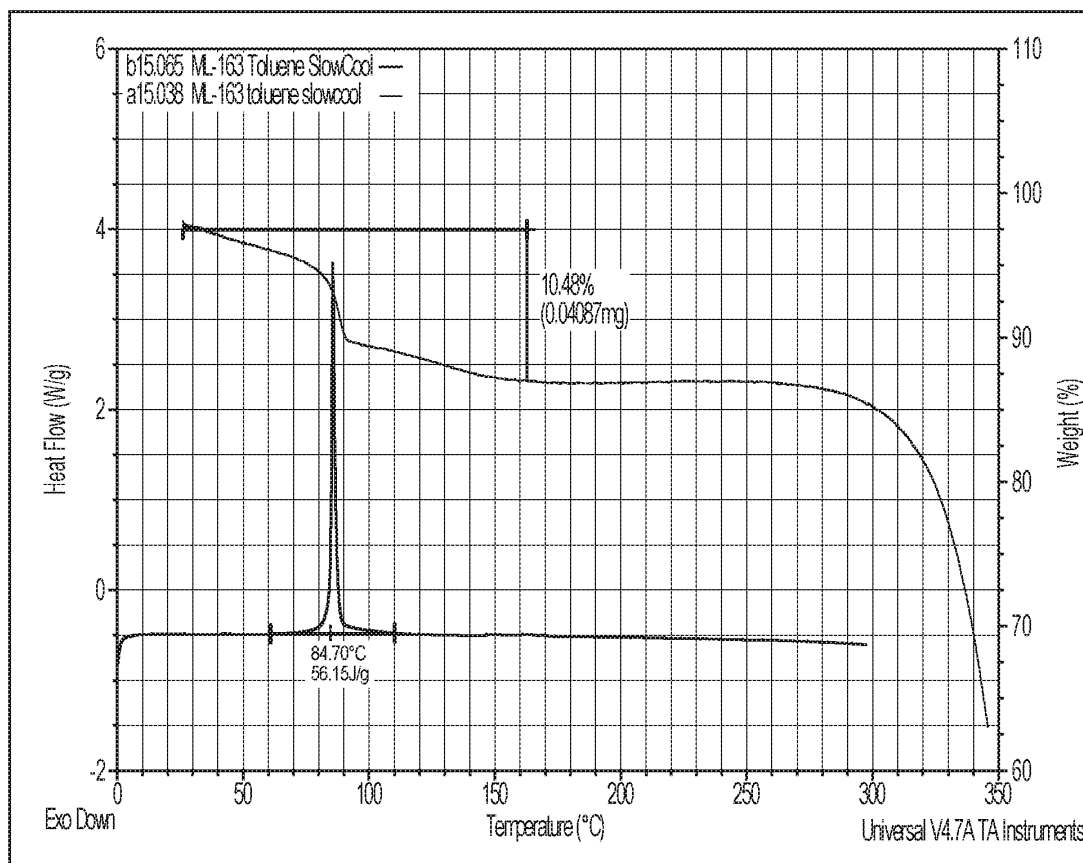


FIG. 7: TGA and DSC of toluene solvate of (S)-afoxolaner from Example 12

8/10

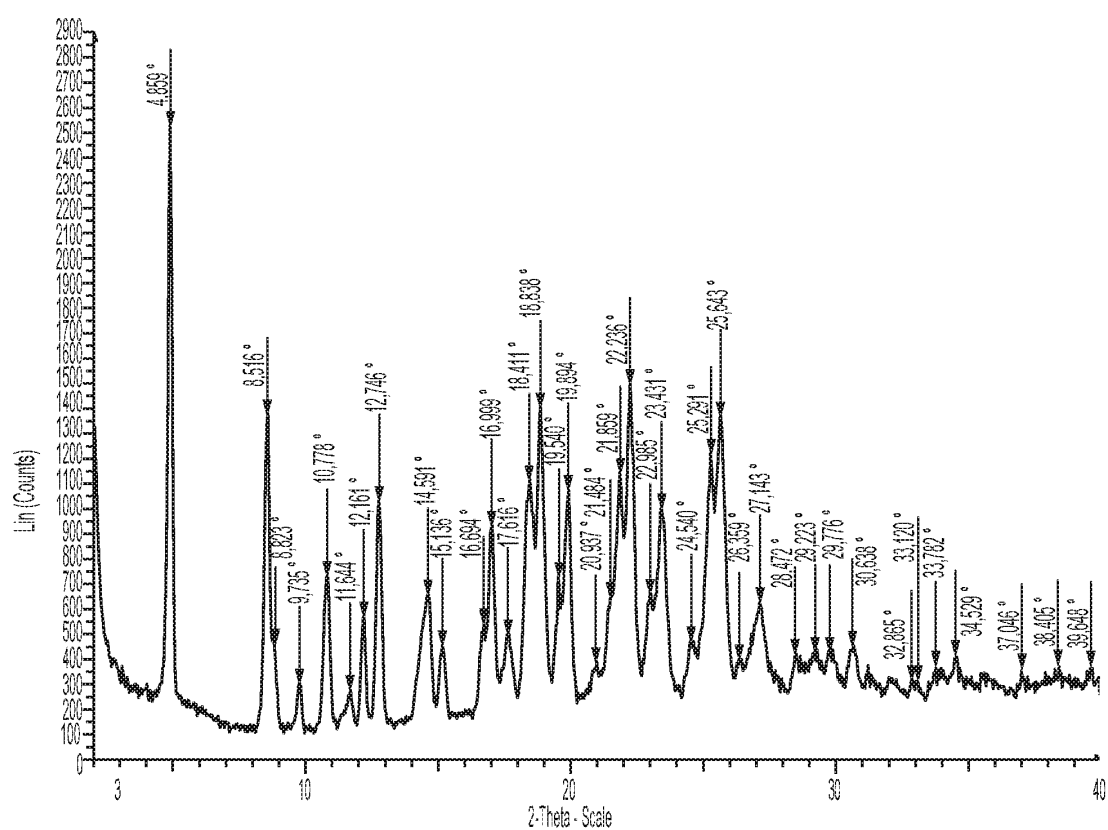


FIG. 8: X-Ray Powder Diffraction of toluene solvate of (S)-afoxolaner from Example 12

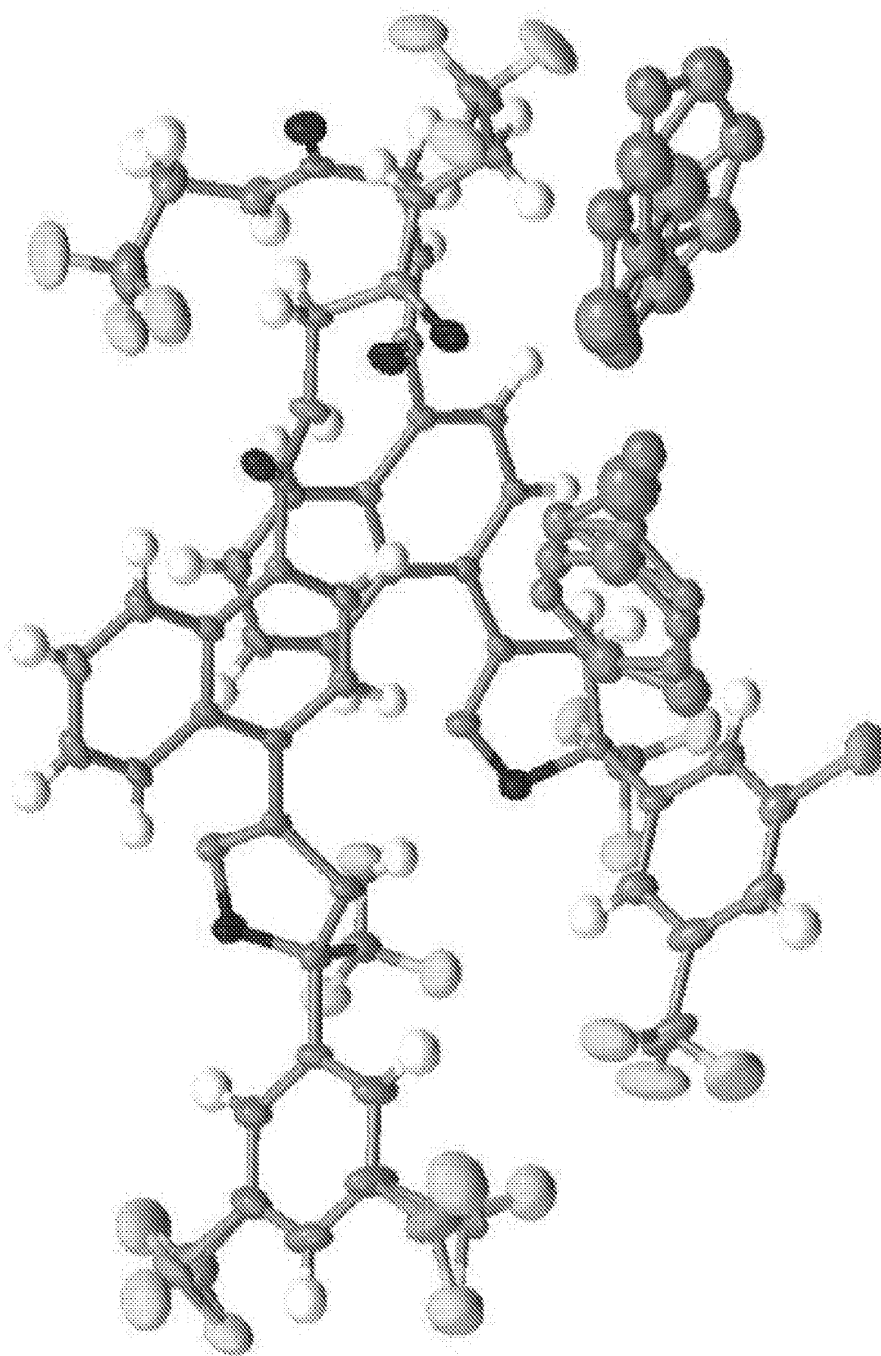


FIG. 9: (S)-afoxolaner single crystal structure

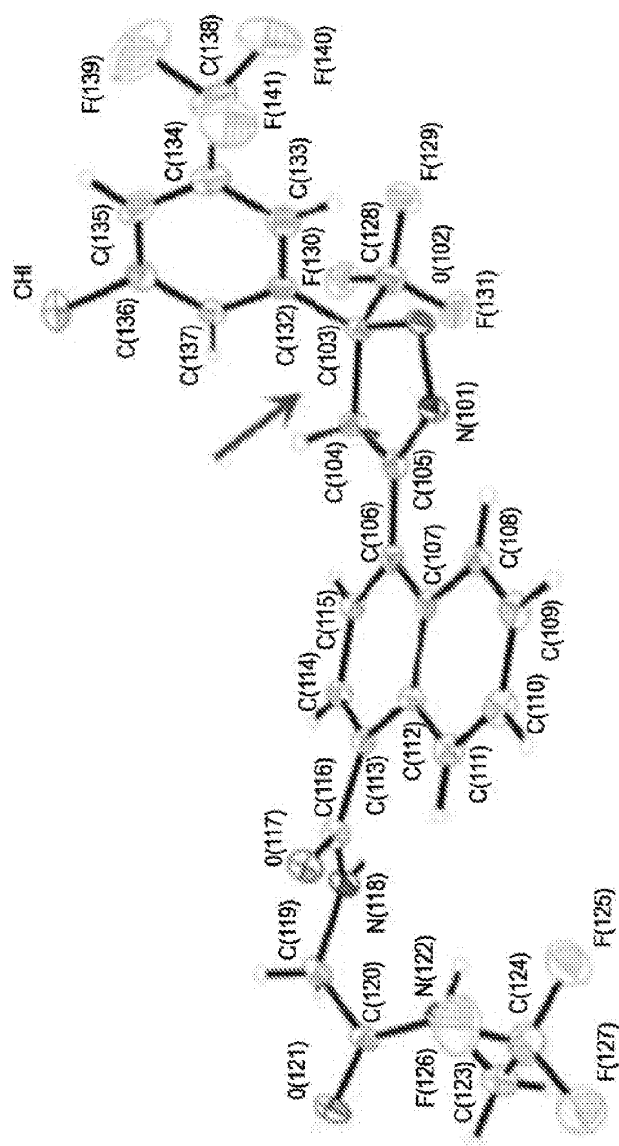


FIG. 10: Molecular Structure of (S)-afoxolaner from Cerius 2 software