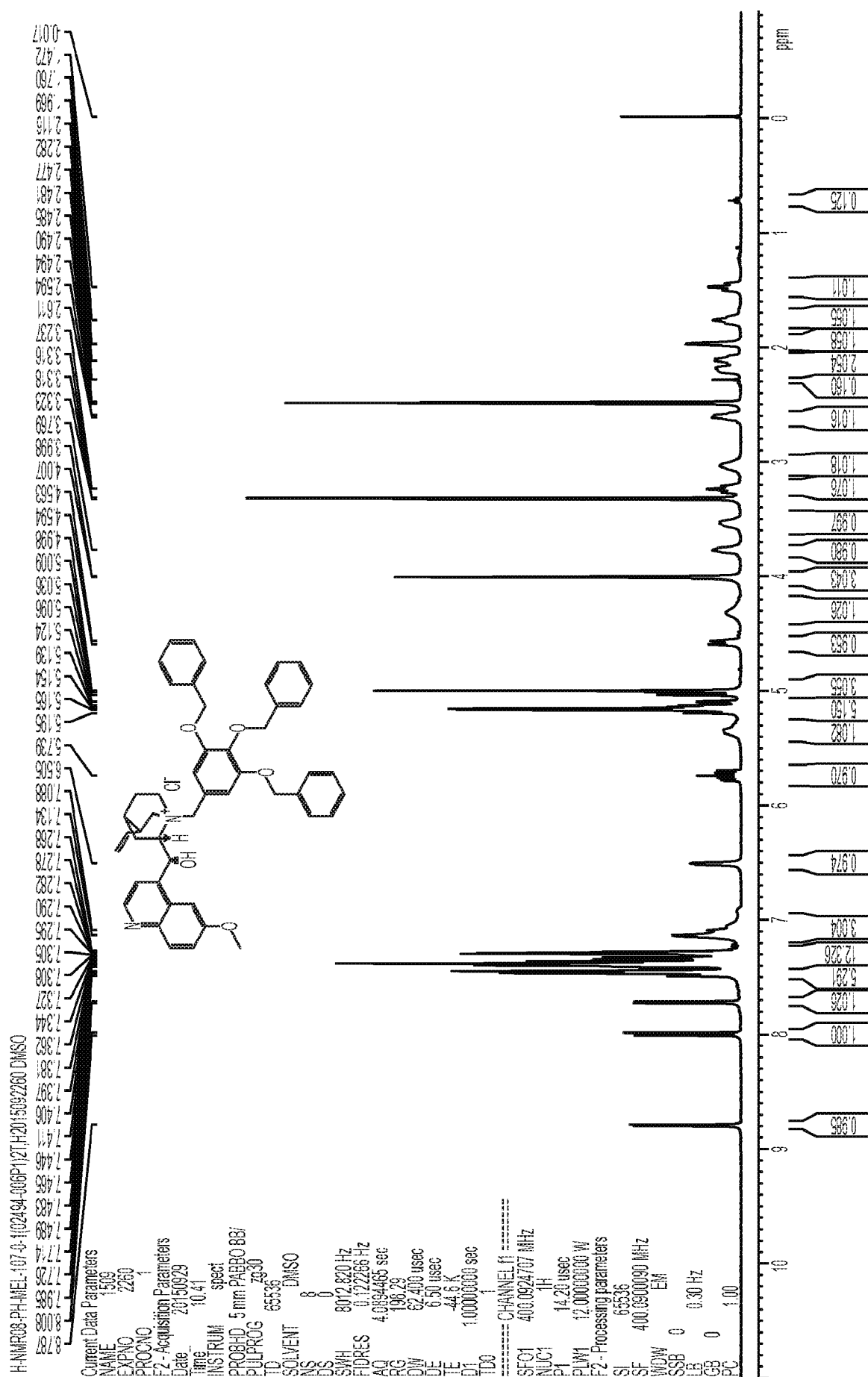
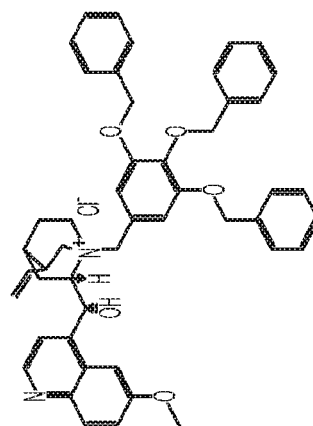
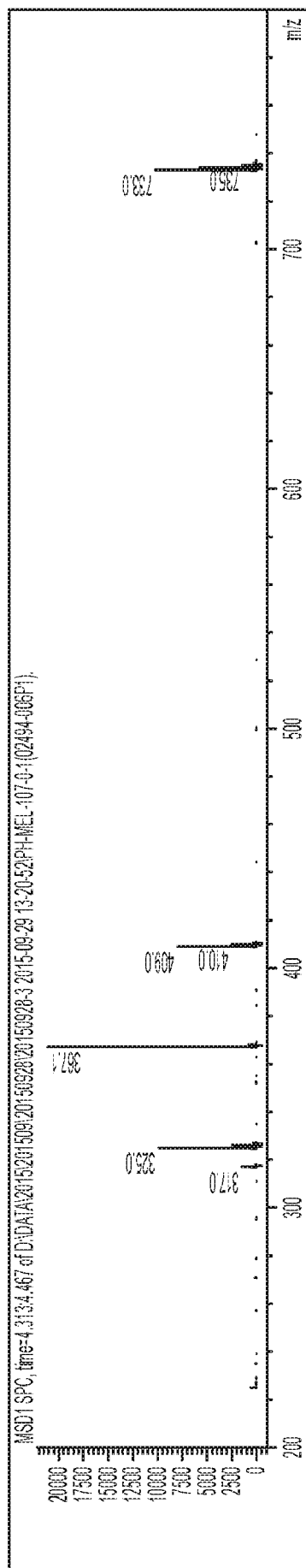


FIG. 1: ¹H NMR spectra of chiral phase transfer catalyst (IIla-13-1) prepared in Example 1 in DMSO-d₆.

LC/MS Analysis Report

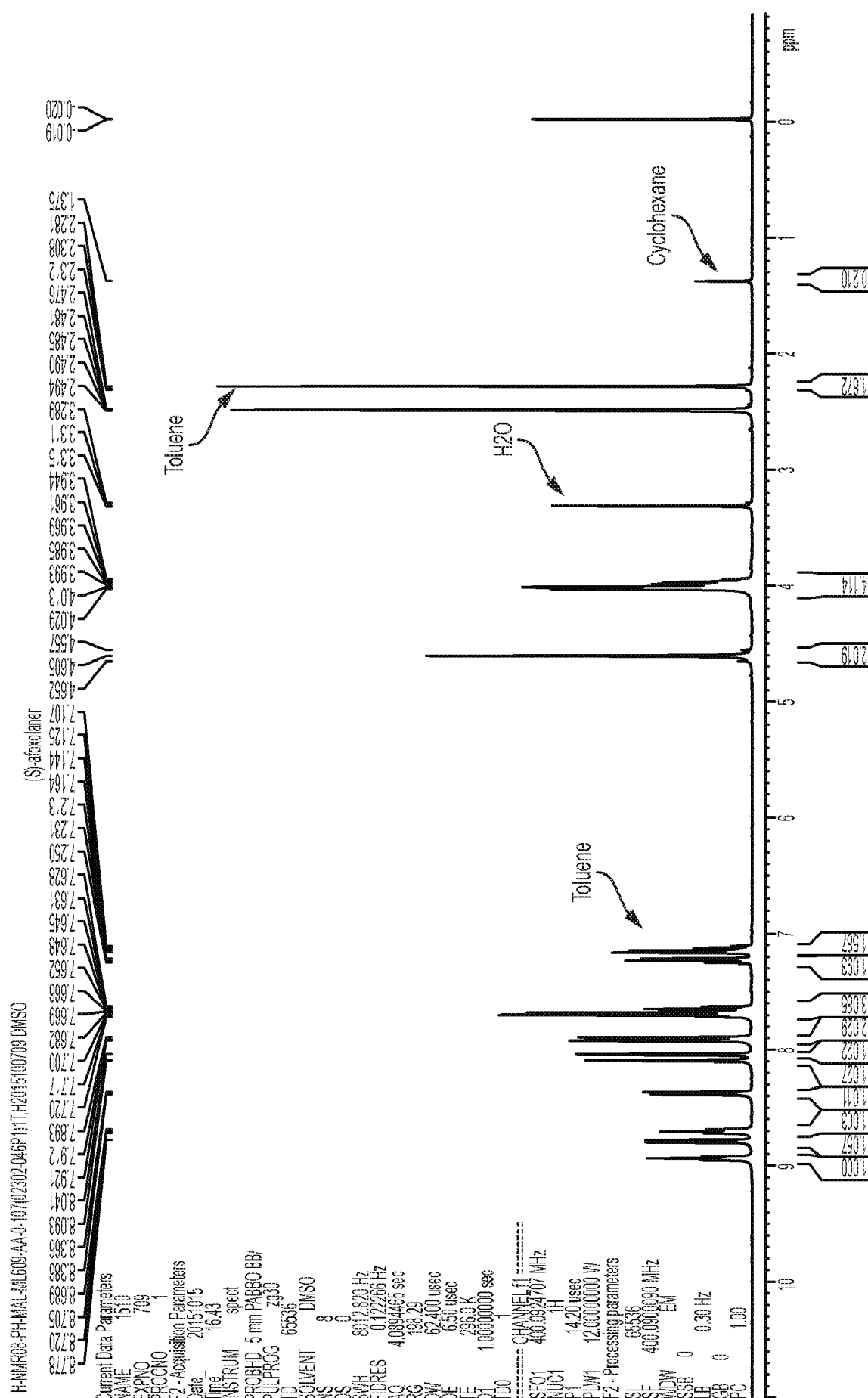
Sample Name :
Injection Date :
Inj. Volume :
Acq Operator :
Acq Method :

IIla-13-1
Tue 29 Sep 2015
1.0 ul
FAL
D:\DATA\2015\20150928\20150928-3 2015-09-29 13:20:52\XD350-
(ACN-TFA)-10
Seq. Line : 7
Instrument Name : LCMS-14



Chemical Formula: $C_{49}H_{49}ClN_2O_5$
Exact Mass: 768.33
Molecular Weight: 769.37

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



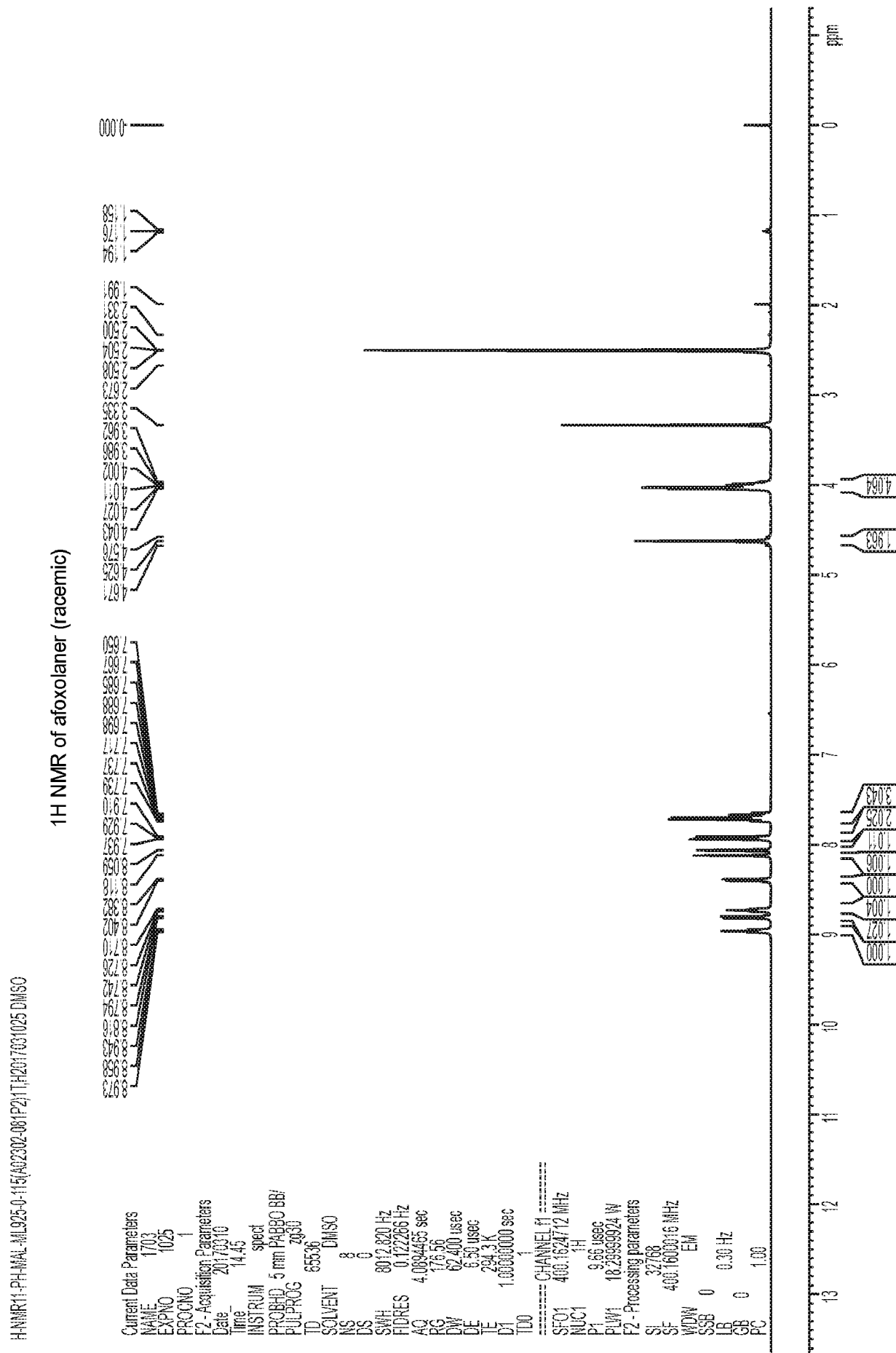


FIG. 4: ¹H NMR of afoxolaner (racemic) in DMSO-d₆.

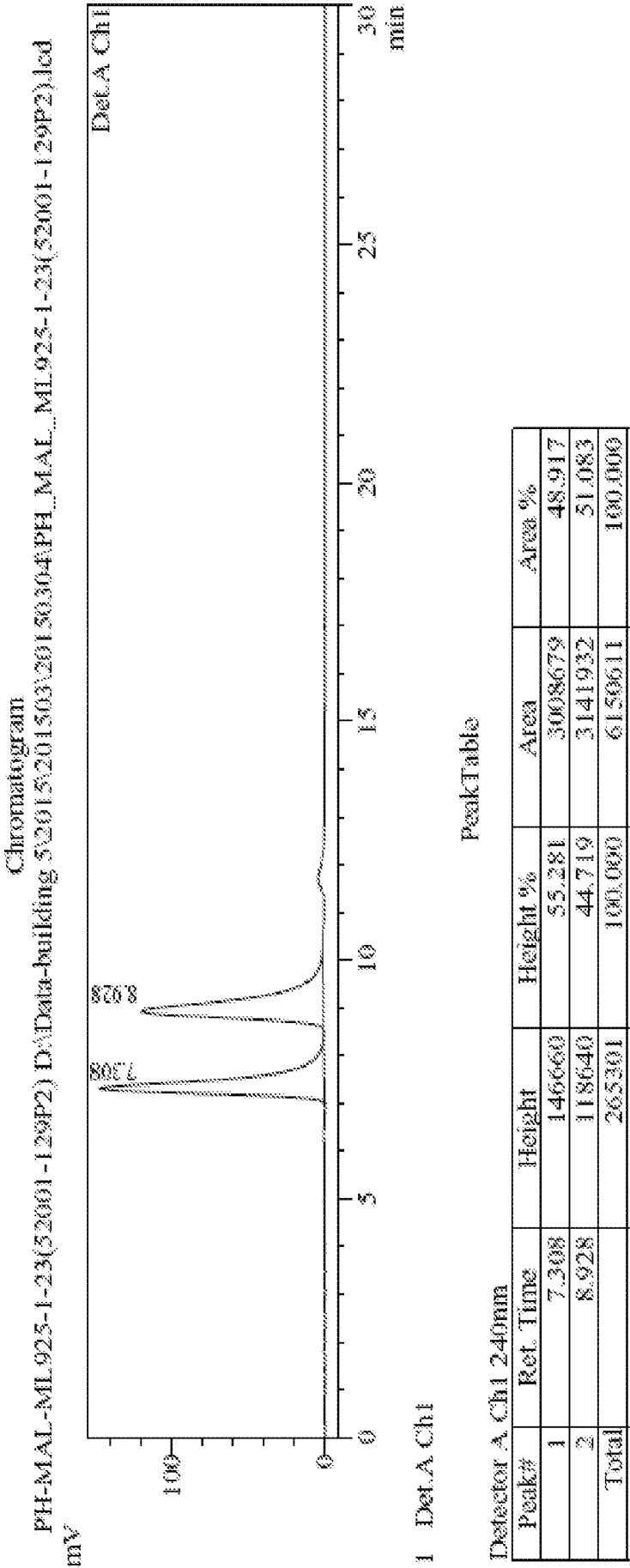


FIG. 5: chiral HPLC of afoxolaner (racemic) using HPLC method of Example 3.

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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

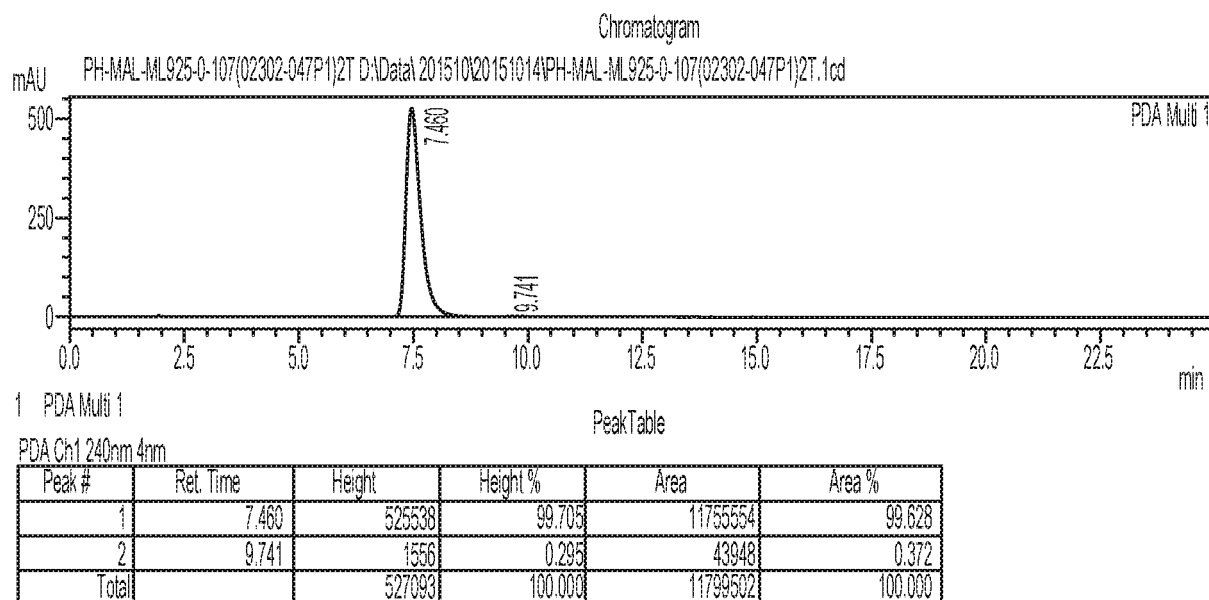


FIG. 6: chiral HPLC of (S)-afoxolaner using HPLC method of Example 3.

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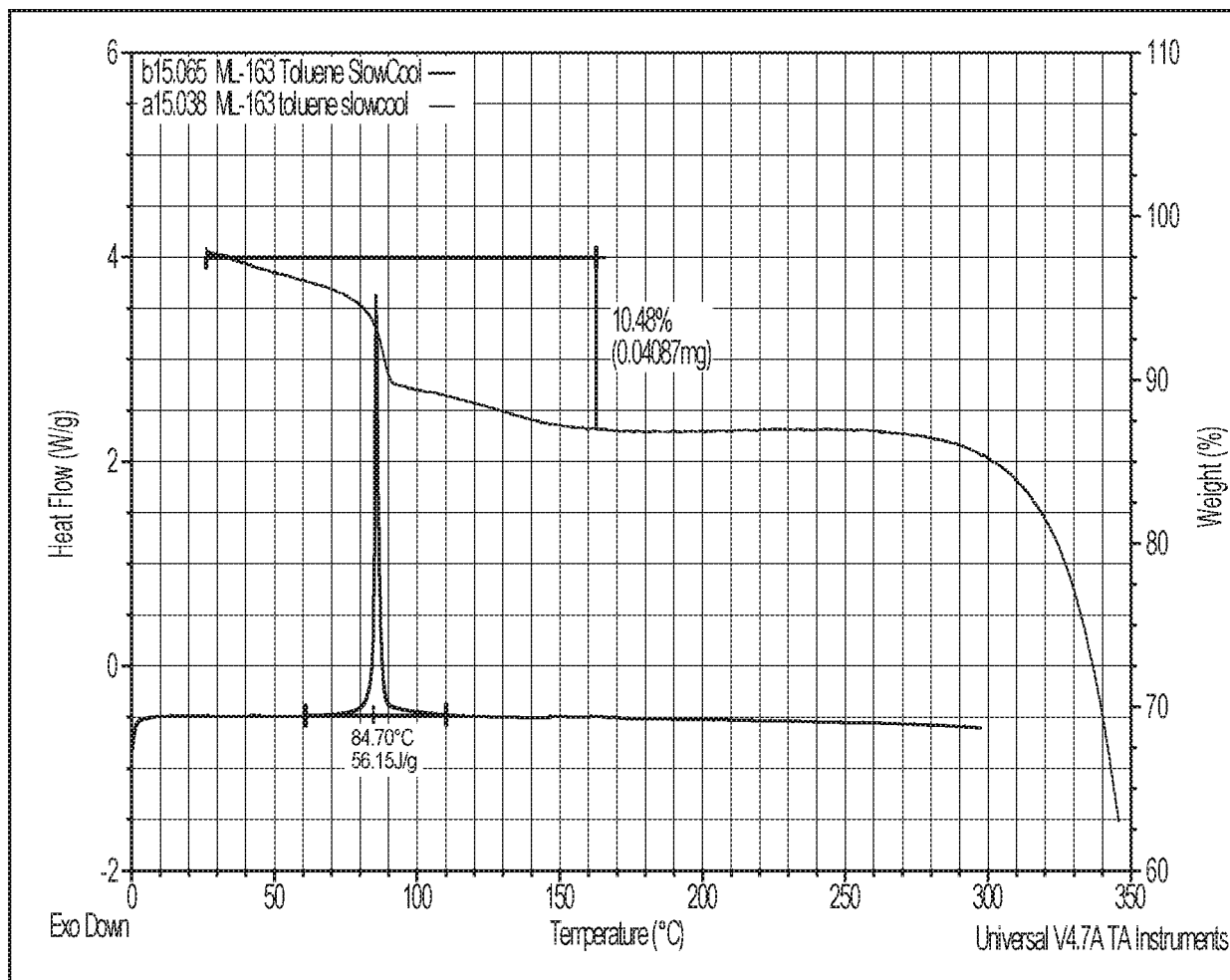


FIG. 7: TGA and DSC of toluene solvate of (S)-afloxolaner from Example 12

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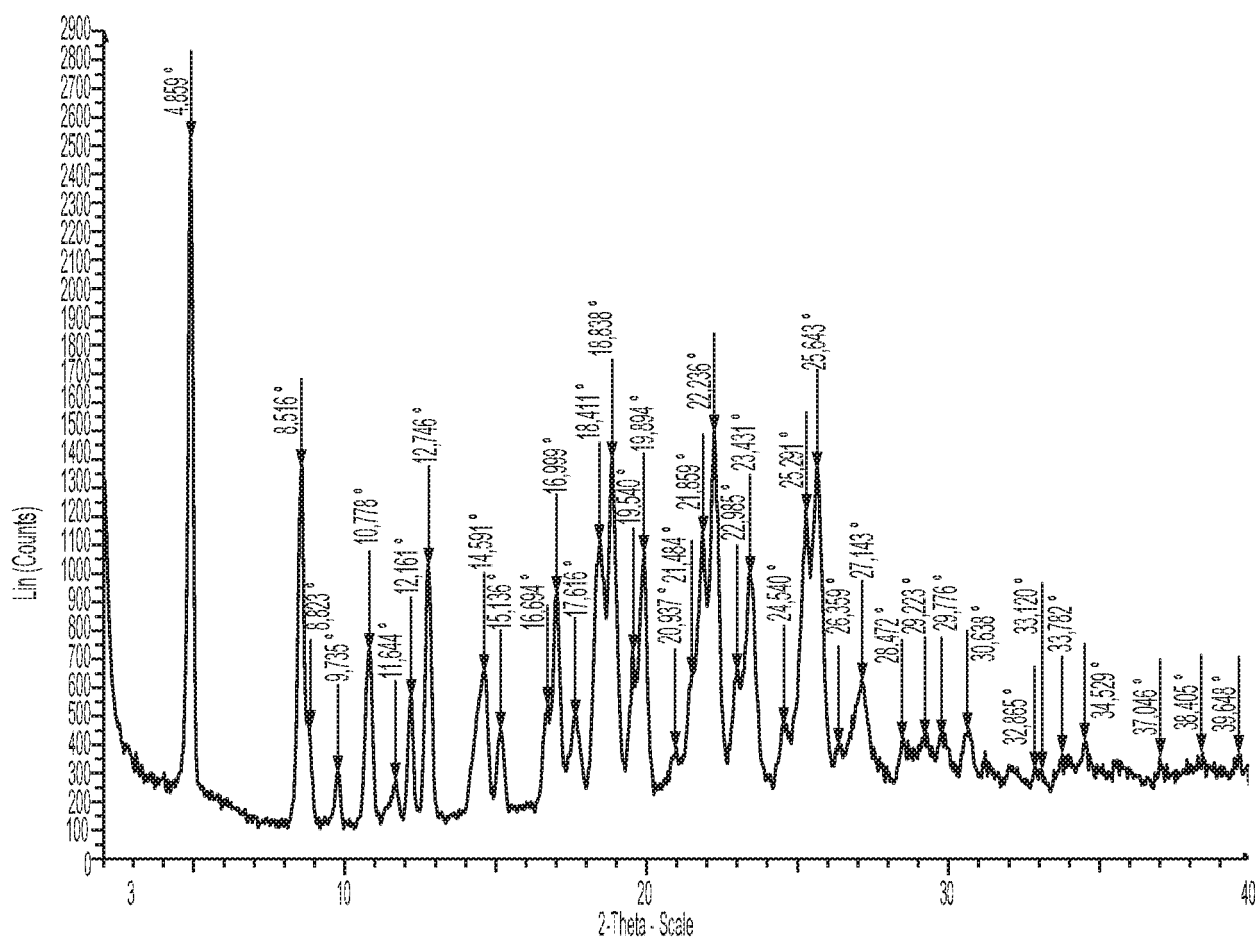


FIG. 8: X-Ray Powder Diffraction of toluene solvate of (S)-afoxolaner from Example 12

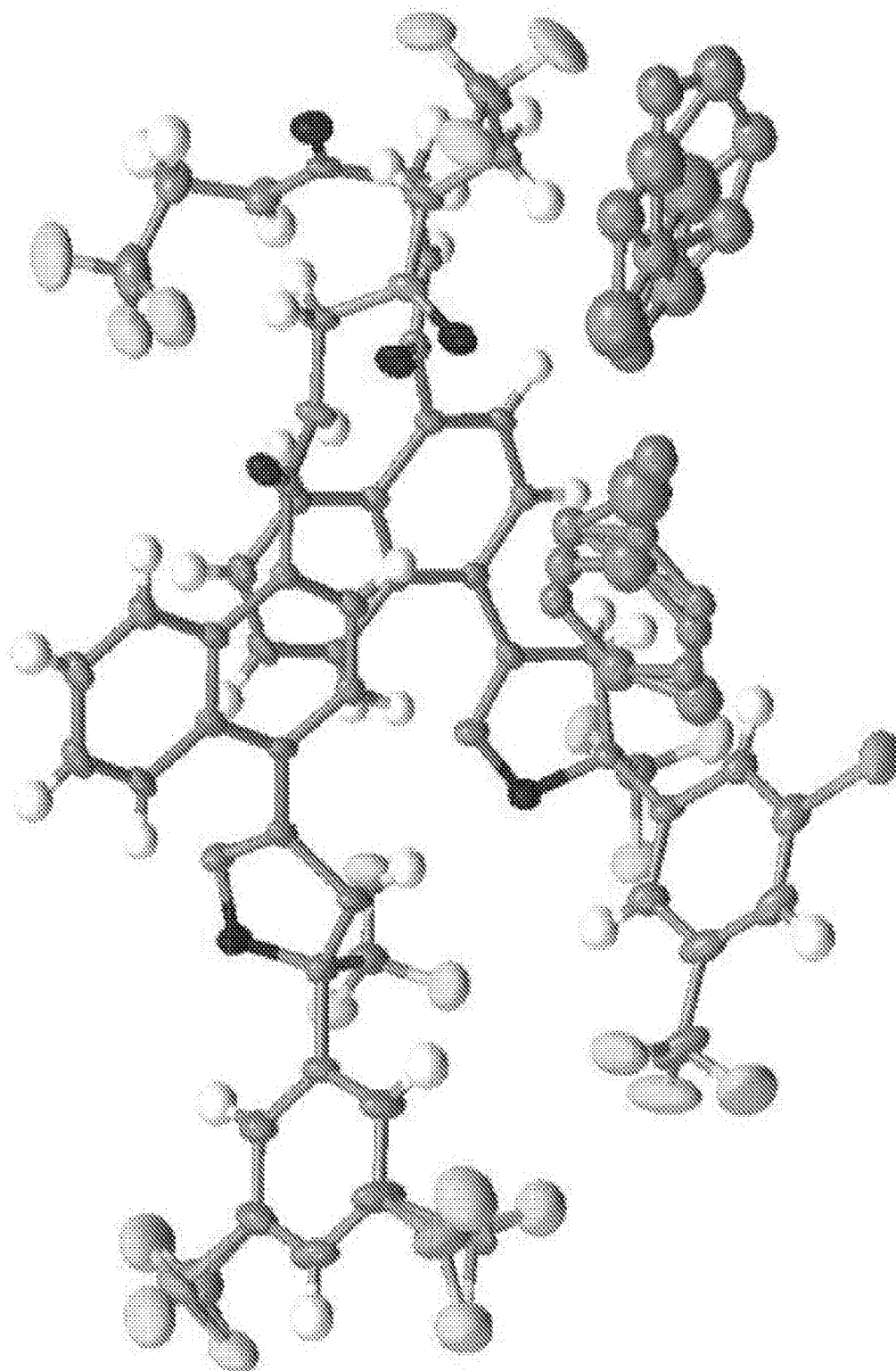


FIG. 9: (S)-afoxolaner single crystal structure

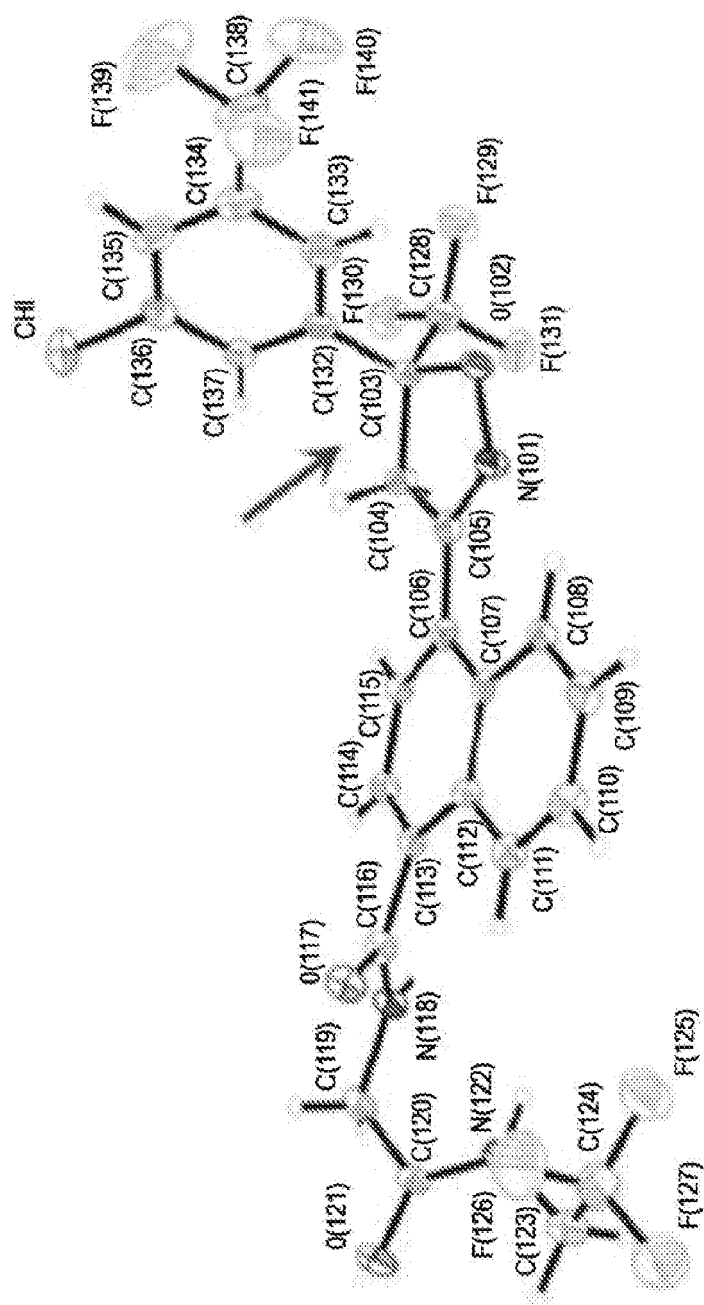


FIG. 10: Molecular Structure of (S)-afloxolaner from Cerius 2 software