

EXAMPLE CHROMATOGRAMS

OF

P1 MRTPA RLS-ZRH-2016-75_GC×GCTOFMS

Program Name	P1
Project Name	THS 2.2 Commercial Product Characterization
Covered Time Period	March – June 2016
Category of Experimental Work	Non-Targeted Differential Screening (NTDS) using GC×GC-TOFMS
Document Author	Martin Almstetter
Document Owner	Mark Bentley

AND

P1 MRTPA RLS-ZRH-2016-401_GC×GCTOFMS

Program Name	P1
Project Name	THS 2.2 Commercial Product Characterization
Covered Time Period	October 2016 – January 2017
Category of Experimental Work	Non-Targeted Differential Screening (NTDS) using GC×GC-TOFMS
Document Author	Martin Almstetter
Document Owner	Mark Bentley

TABLE OF CONTENTS

INTRODUCTION	3
ABBREVIATIONS	19

TABLE OF FIGURES

Figure 1	THSR_NPOL_1501879_02_1A	4
Figure 2	THSM_NPOL_1501884_02_1A	5
Figure 3	THSH_NPOL_1574384_02_1A	6
Figure 4	3R4F_NPOL_1574409_02_1A	7
Figure 5	BLP1_NPOL_1574414_02_1A	8
Figure 6	THSR_VOL_1501812_02_1A	9
Figure 7	THSM_VOL_1501881_02_1A	10
Figure 8	THSH_VOL_1574381_02_1A	11
Figure 9	3R4F_VOL_1501911_02_1A	12
Figure 10	BLP1_VOL_1501916_02_1A	13
Figure 11	THSR_POL_1501878_02_1A	14
Figure 12	THSM_POL_1501883_02_1A	15
Figure 13	THSH_POL_1574383_02_1A	16
Figure 14	3R4F_POL_1574408_02_1A	17
Figure 15	BLP1_POL_1574413_02_1A	18

INTRODUCTION

This document illustrates example GC×GC-TOFMS chromatograms taken from the P1 MRTPA studies RLS-ZRH-2016-75 and RLS-ZRH-2016-401. RLS-ZRH-2016-75 compares the chemical aerosol composition of THS 2.2 regular (Dorado II 'Ron') and THS 2.2 menthol (Dorado I 'Mint Vinny Low') HeatSticks using commercial THD 2.4 devices versus the conventional reference cigarette 3R4F. RLS-ZRH-2016-401 compares the chemical aerosol composition of THS 2.2 high menthol (Dorado I 'Vinny High Menthol') HeatSticks using commercial THD 2.4 devices versus the conventional reference cigarette 3R4F.

All test items were smoked using the Health Canada intense smoking regimen and aerosols were analyzed by NTDS using GC×GC-TOFMS as described in PMI_RD_WKI_001229¹, PMI_RD_WKI_001353² and PMI_RD_WKI_001354³.

A representative chromatogram of each injected sample type (3R4F, THSR, THSM, THSH, BLP1) is shown for every method. In accordance with the WKIs artificial regions of the chromatograms (e.g. solvent, column bleed) were excluded using the classification tool of the LECO ChromaTOF software. The apex ion chromatograms are normalized to a fixed scale of abundance per applied method for an enhanced visual comparability. The aerosol generation blank samples (BLP1) contain a set of retention index markers and isotope labeled internal standards.

¹ PMI_RD_WKI_001229 'NTDS GC×GC-TOFMS Nonpolar', version 3.0

² PMI_RD_WKI_001353 'NTDS GC×GC-TOFMS Volatile', version 3.0

³ PMI_RD_WKI_001354 'NTDS GC×GC-TOFMS Polar', version 3.0

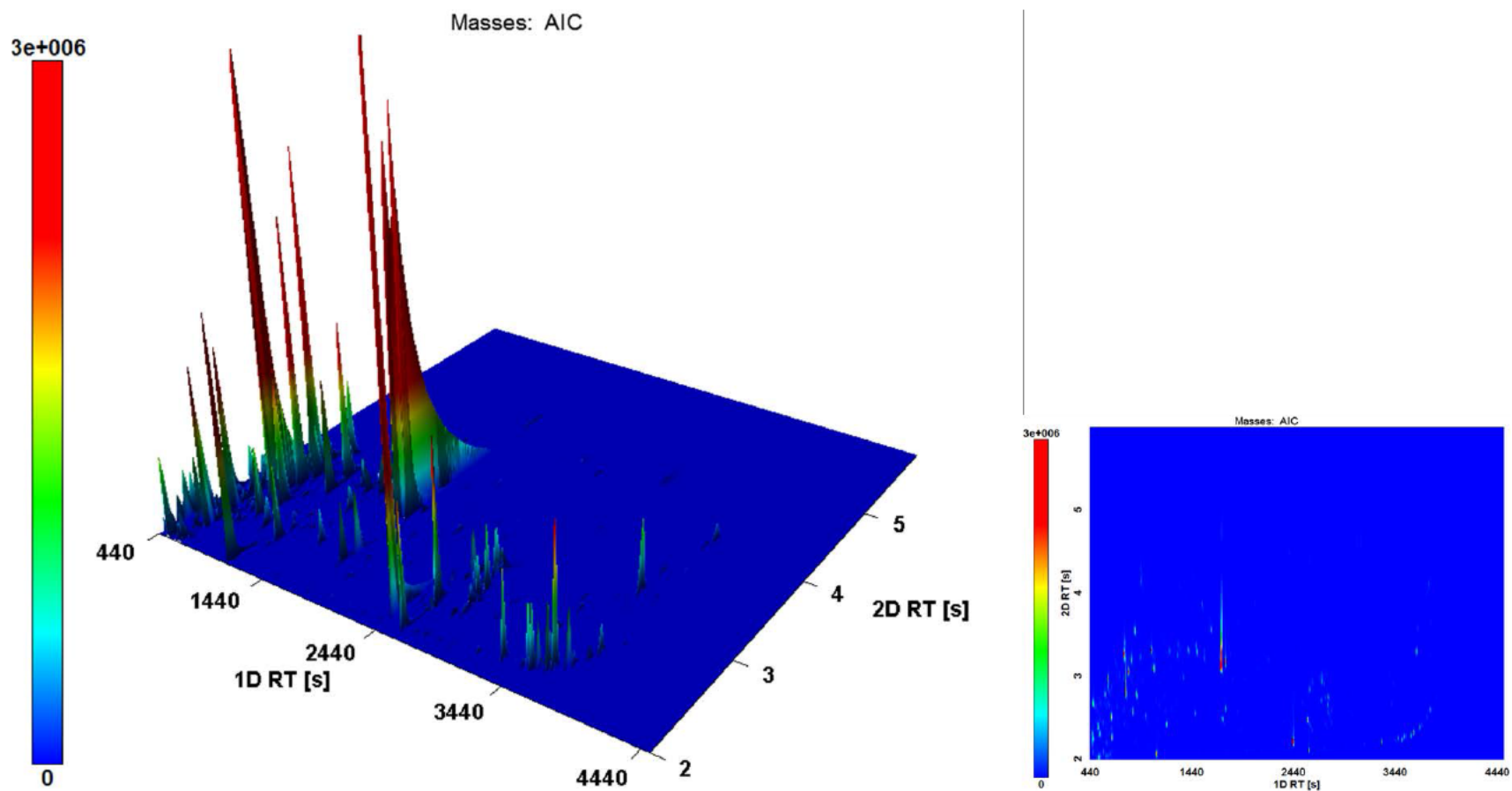


Figure 1 THSR_NPOL_1501879_02_1A

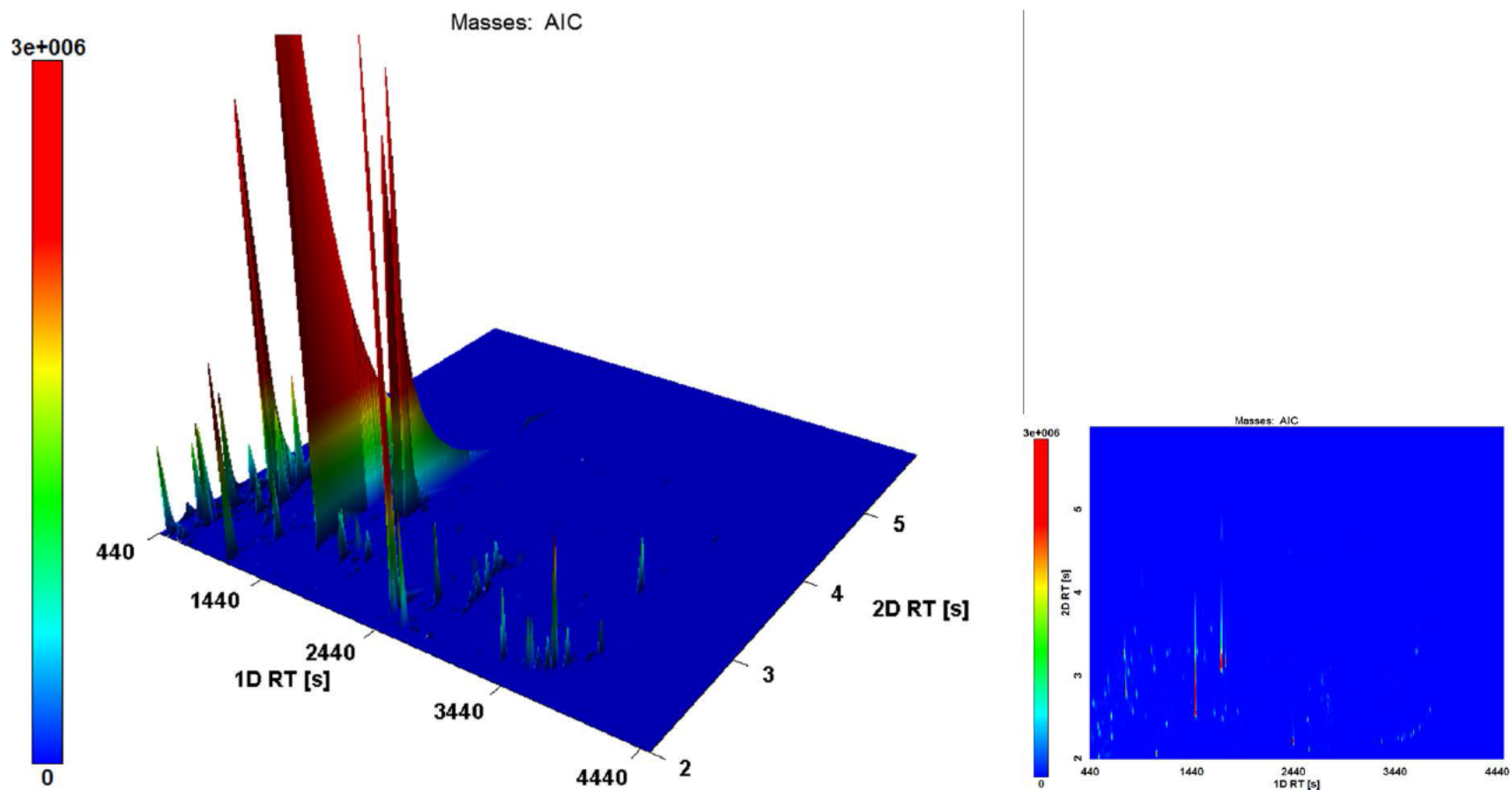


Figure 2 THSM_NPOL_1501884_02_1A

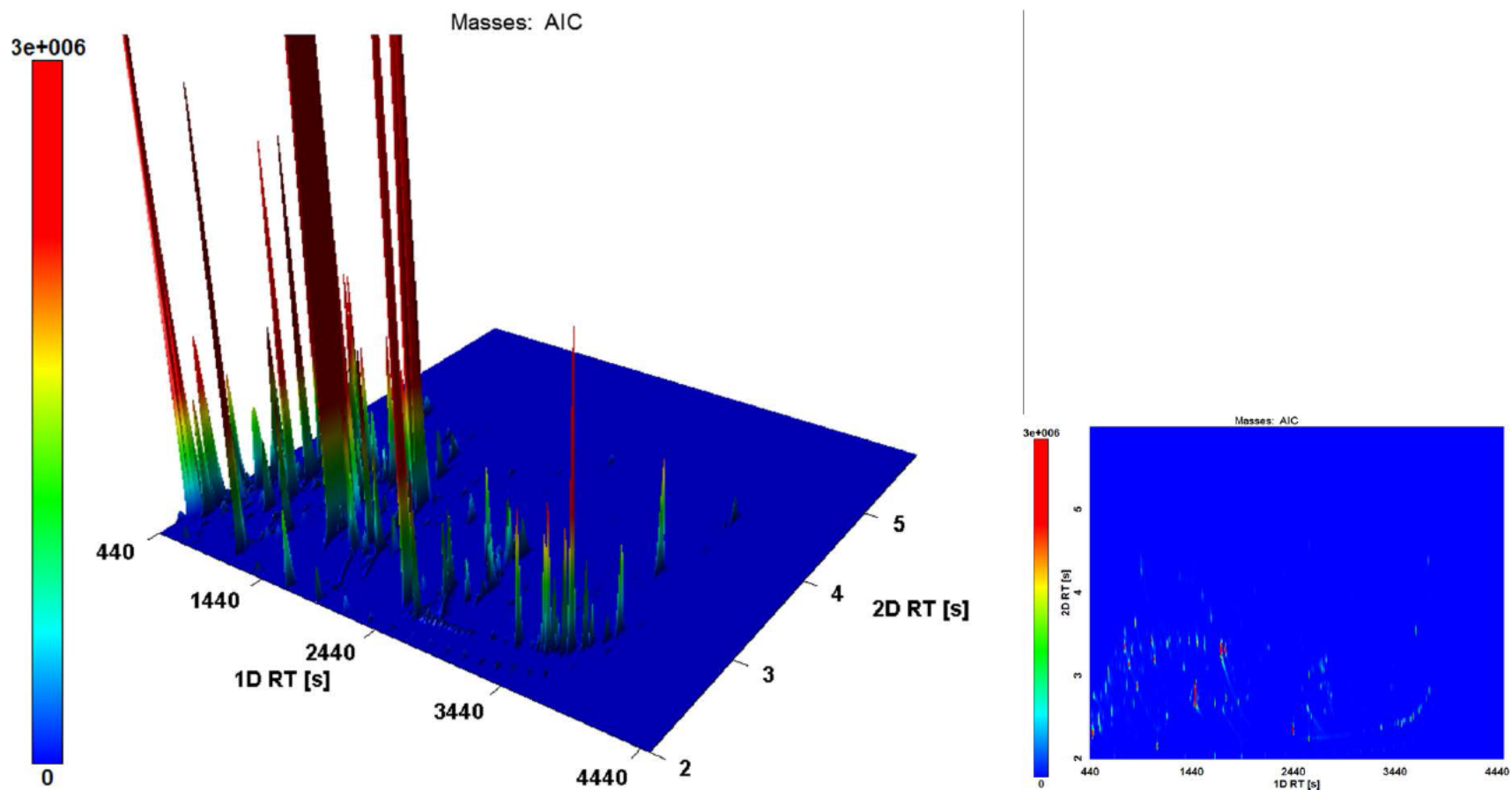


Figure 3 THSH_NPOL_1574384_02_1A

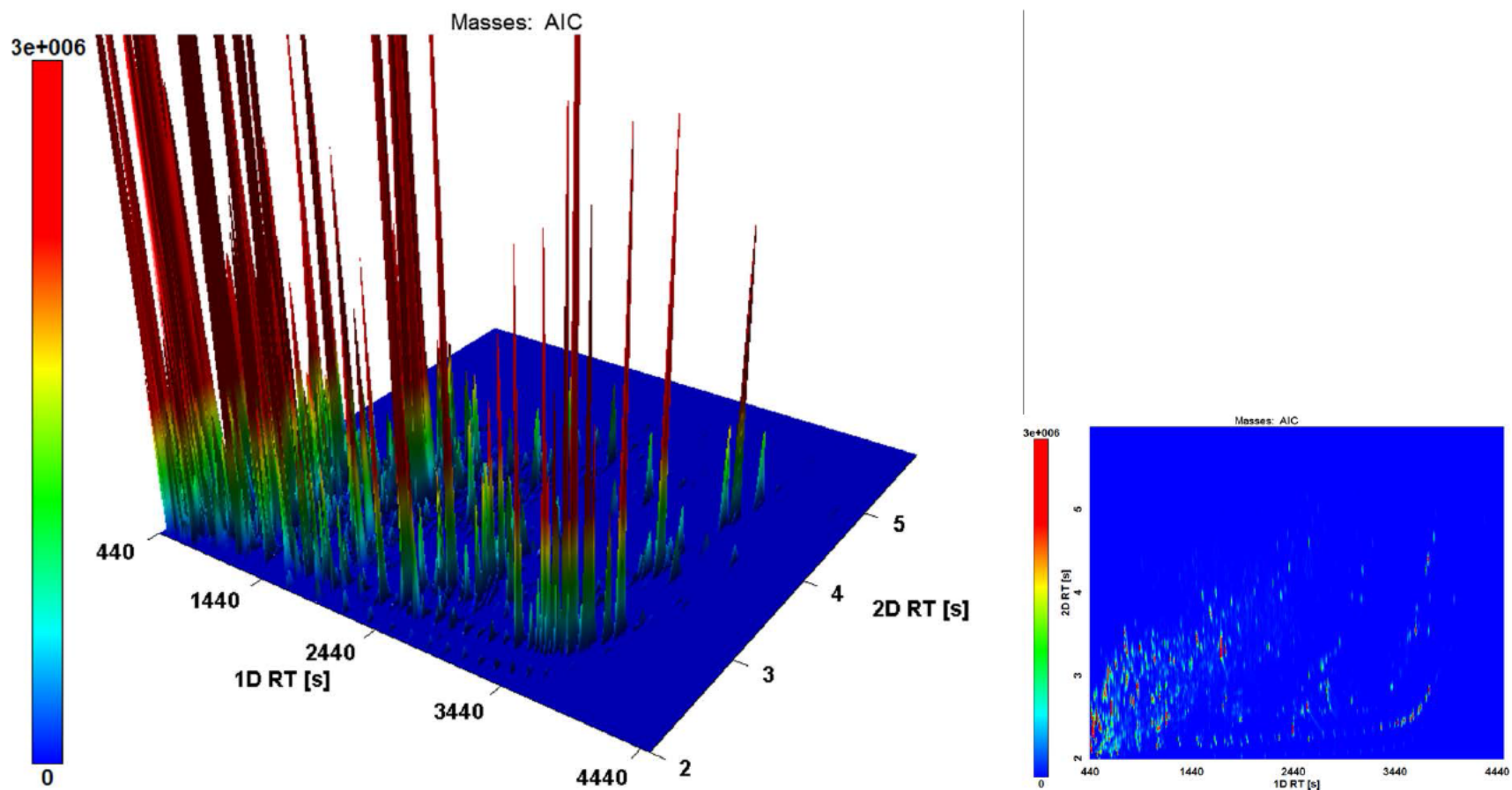


Figure 4 3R4F_NPOL_1574409_02_1A

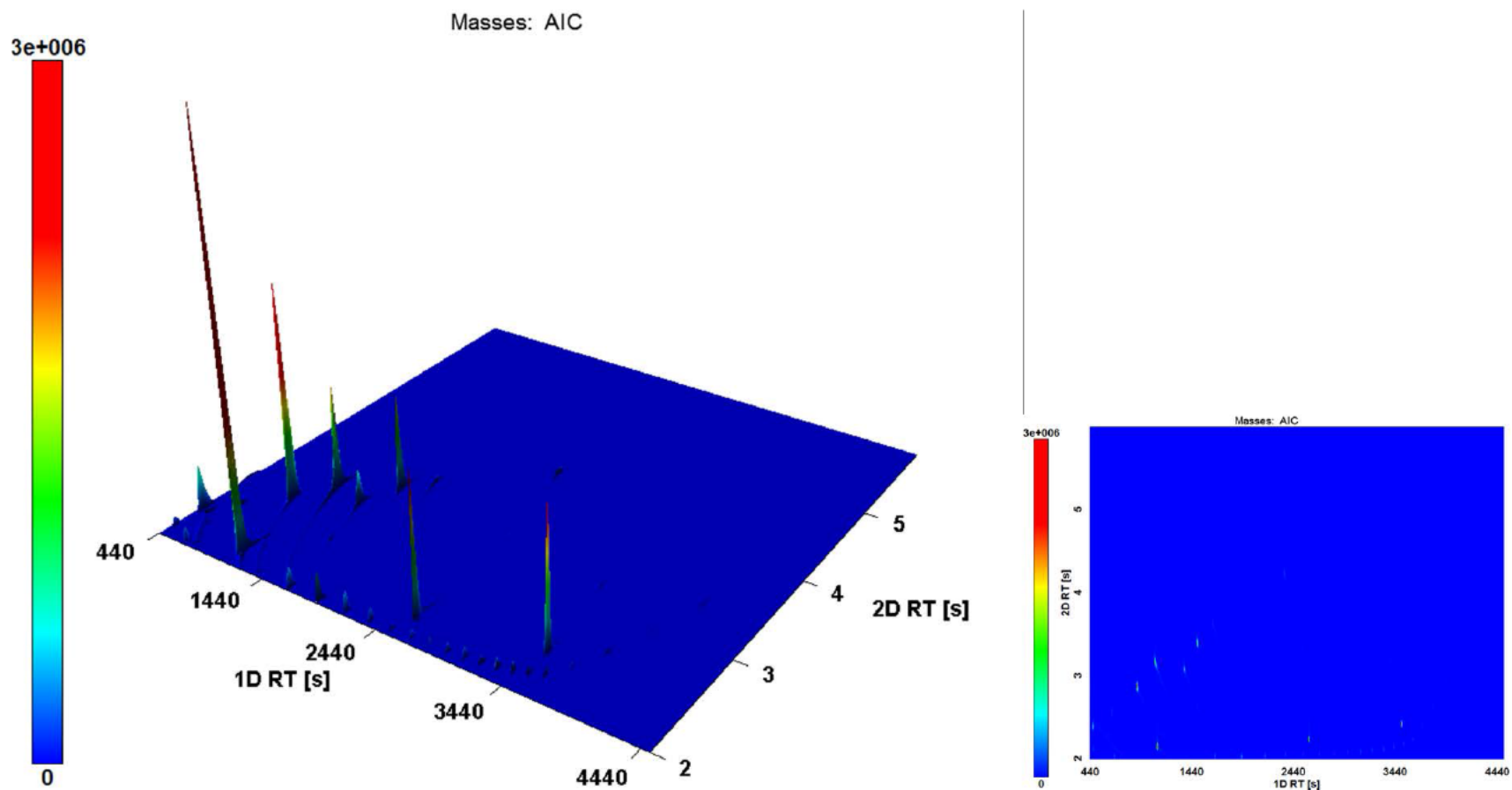


Figure 5 BLP1_NPOL_1574414_02_1A

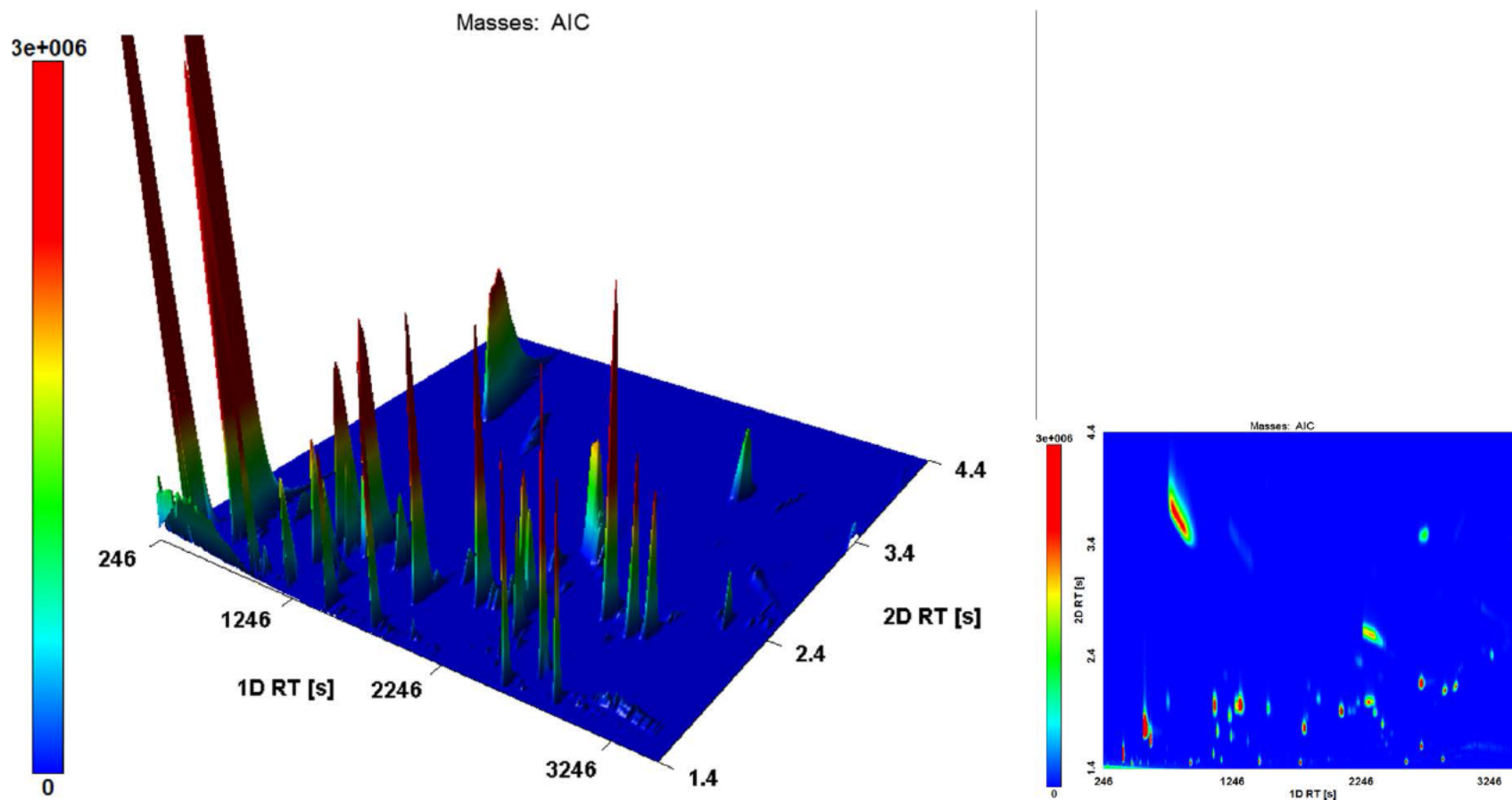


Figure 6 THSR_VOL_1501812_02_1A

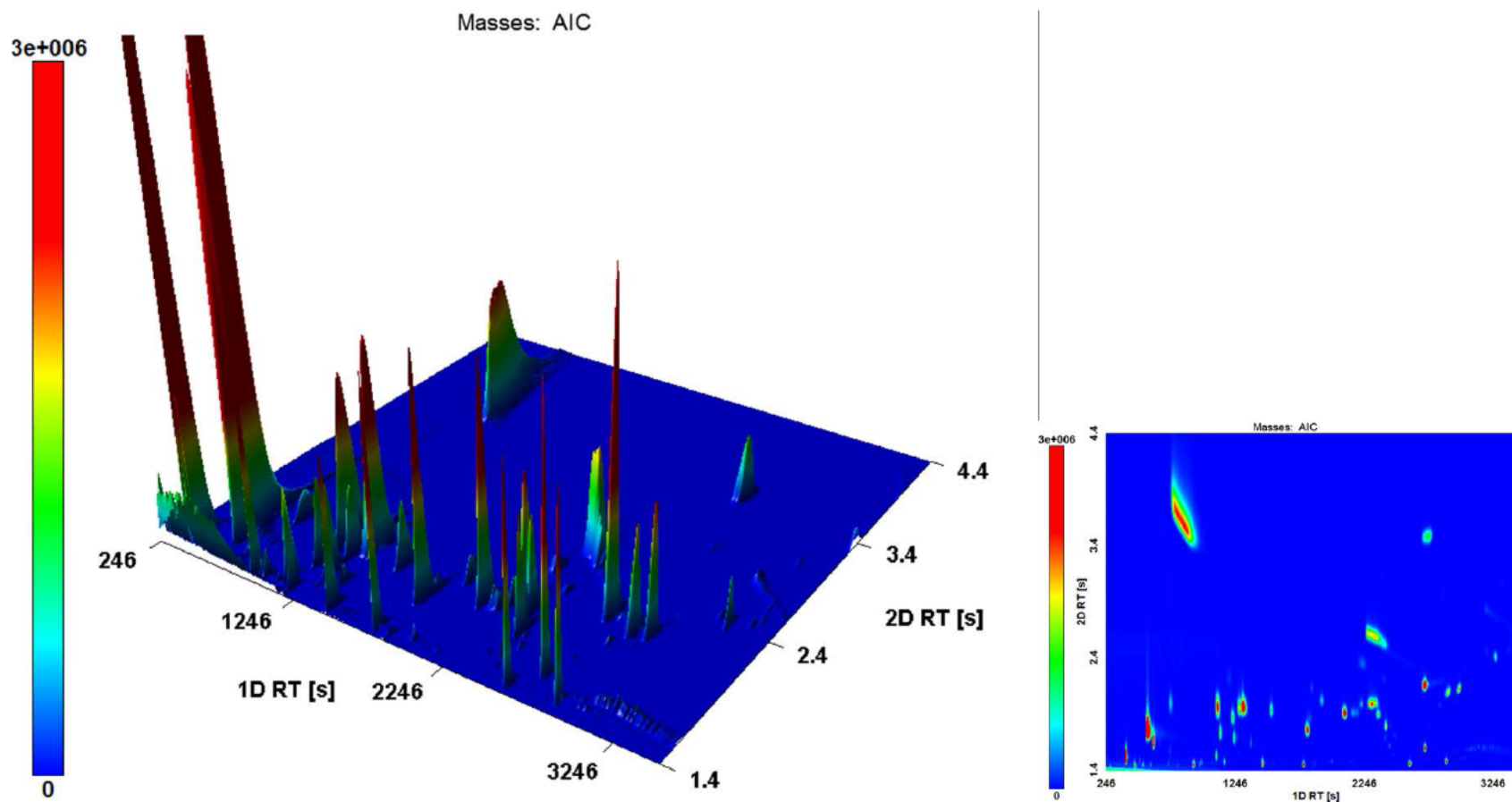


Figure 7 THSM_VOL_1501881_02_1A

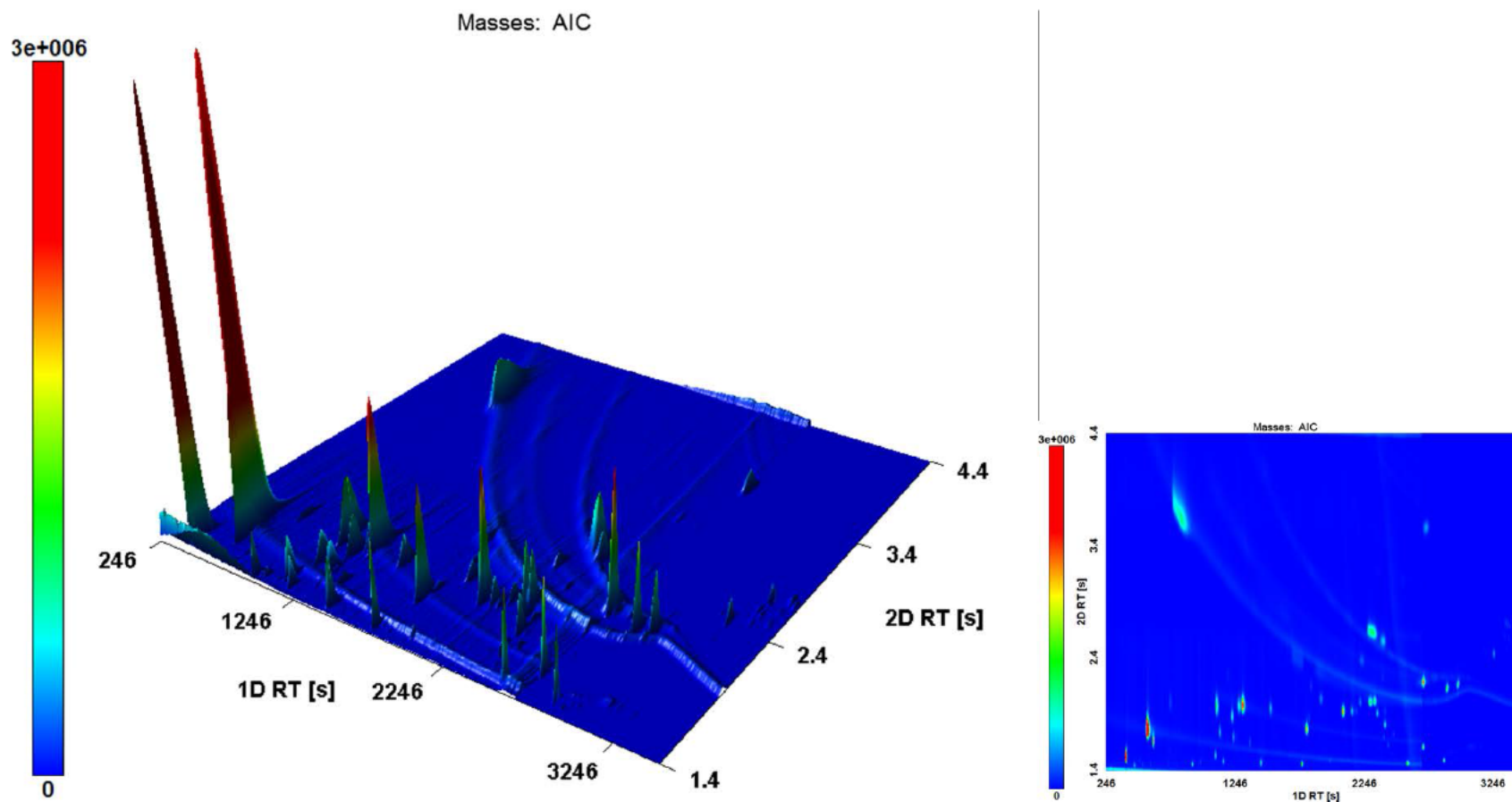


Figure 8 THSH_VOL_1574381_02_1A

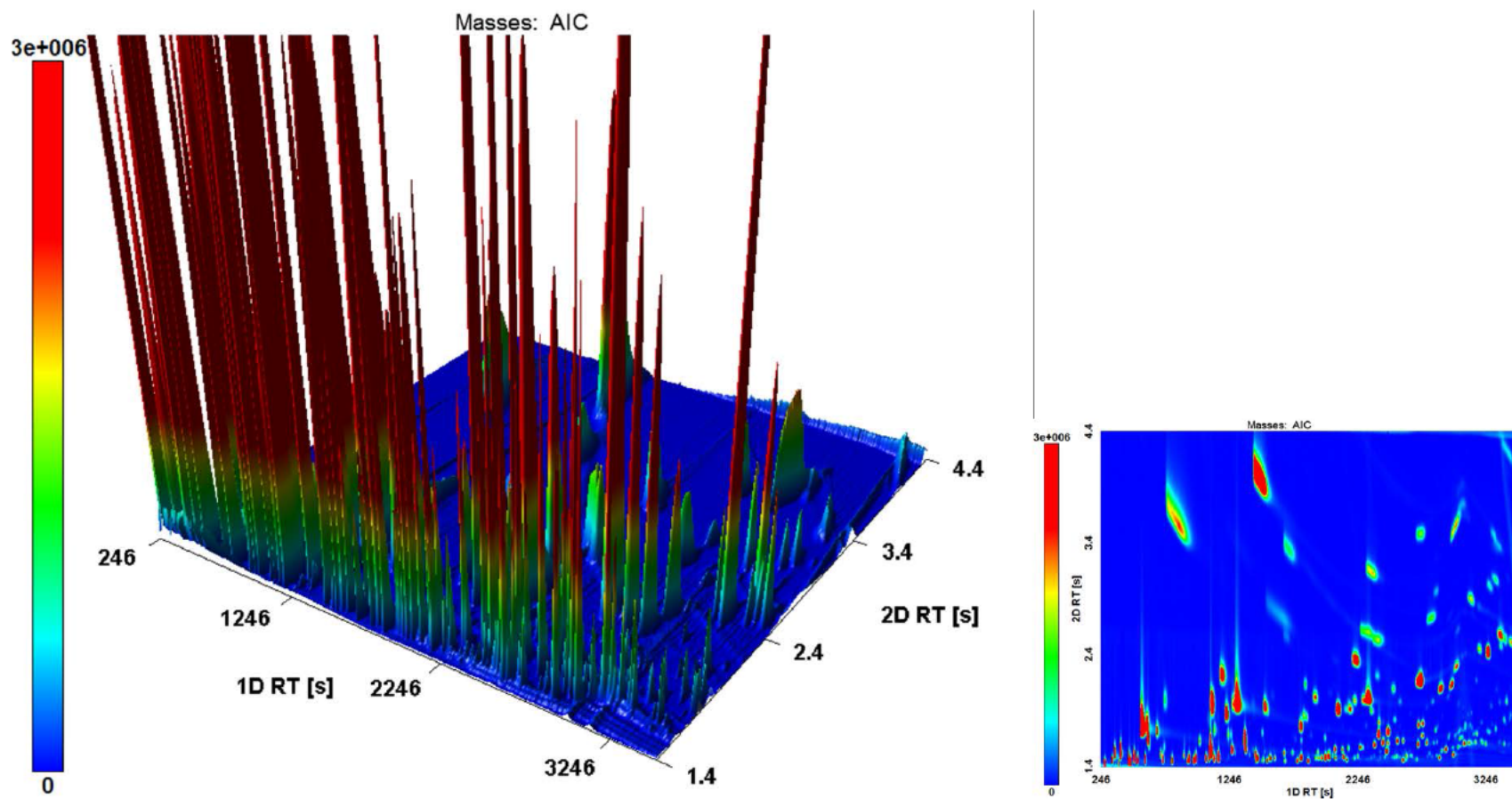


Figure 9 3R4F_VOL_1501911_02_1A

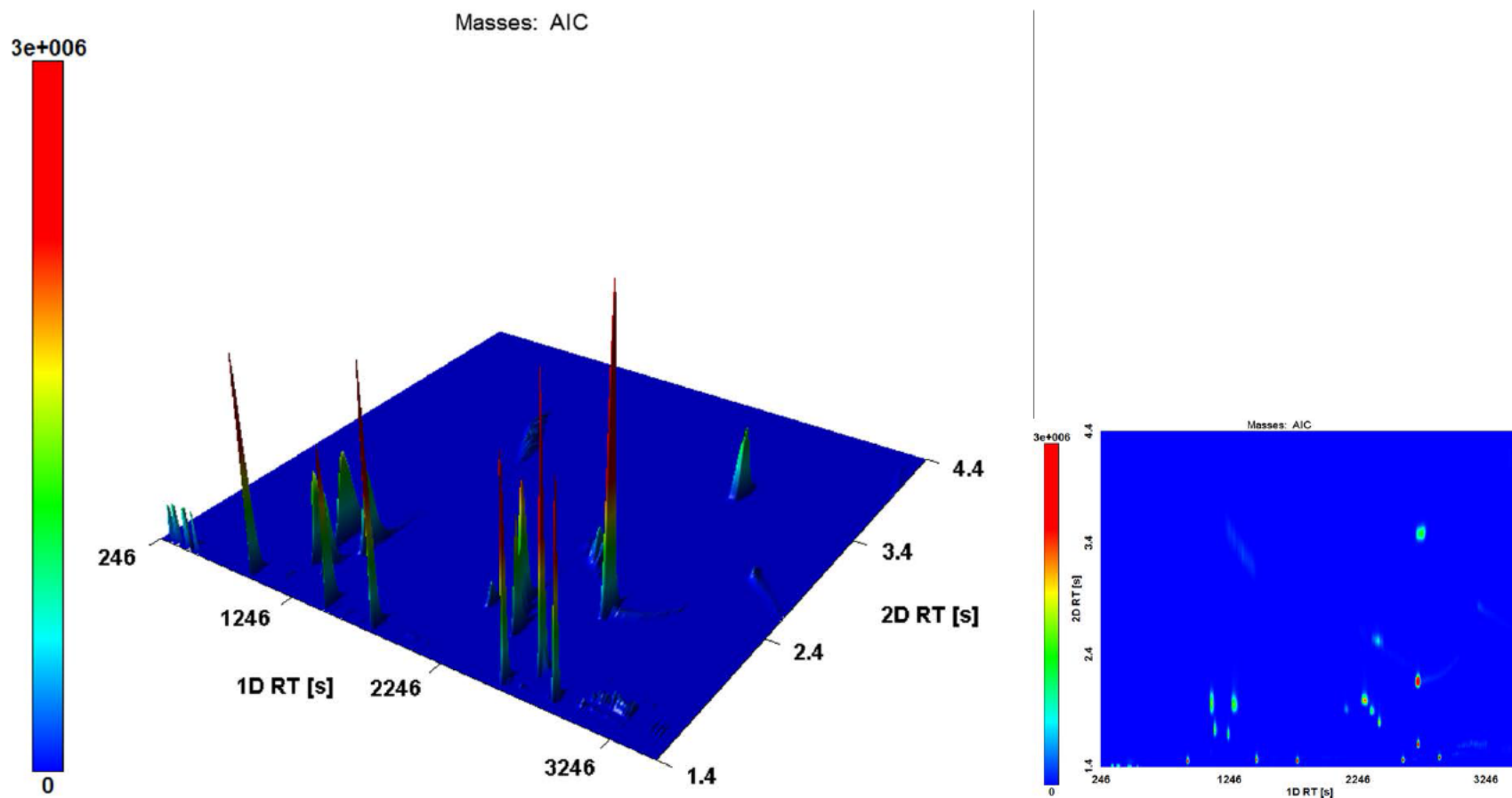


Figure 10 BLP1_VOL_1501916_02_1A

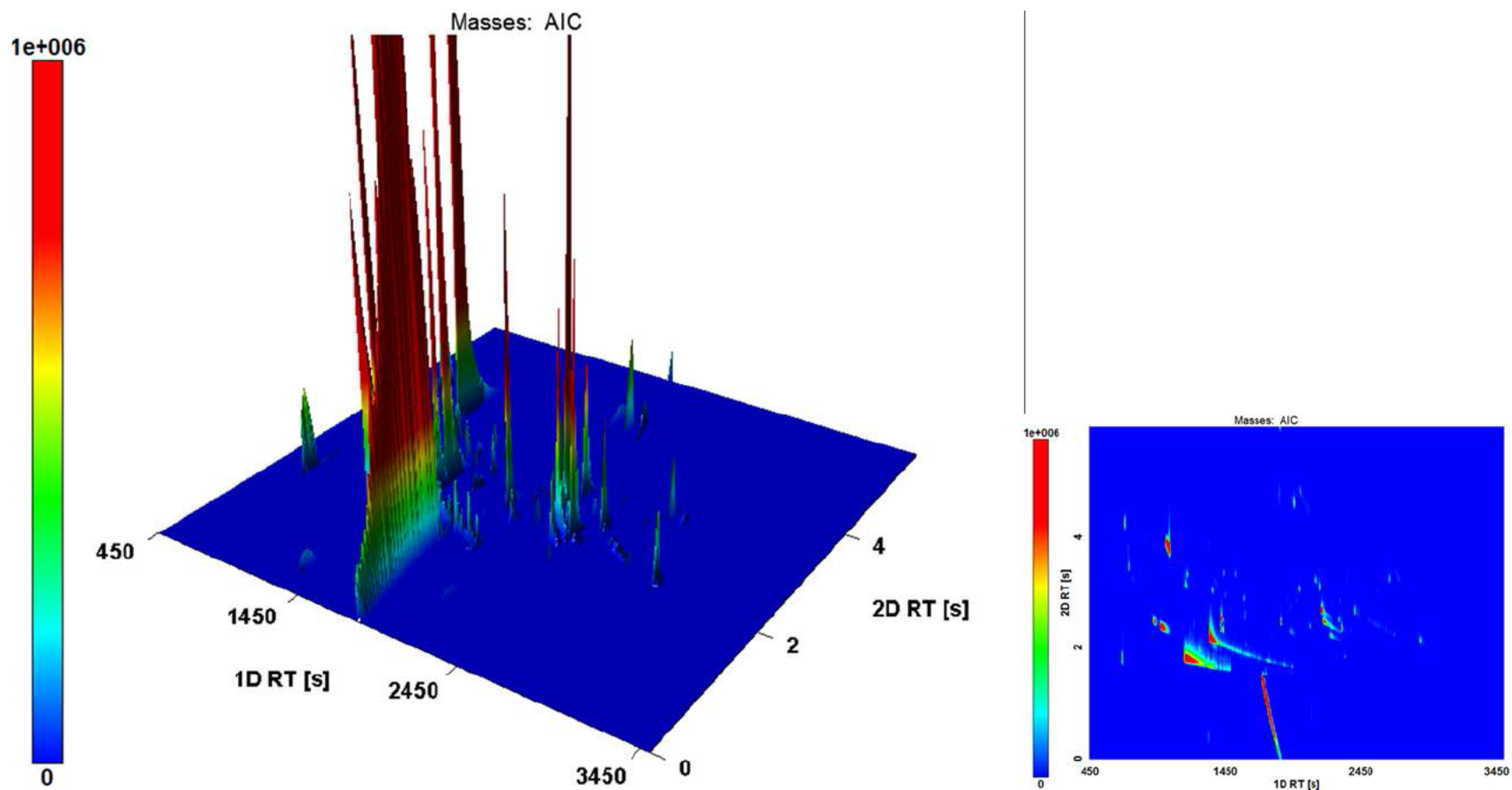


Figure 11 THSR_POL_1501878_02_1A

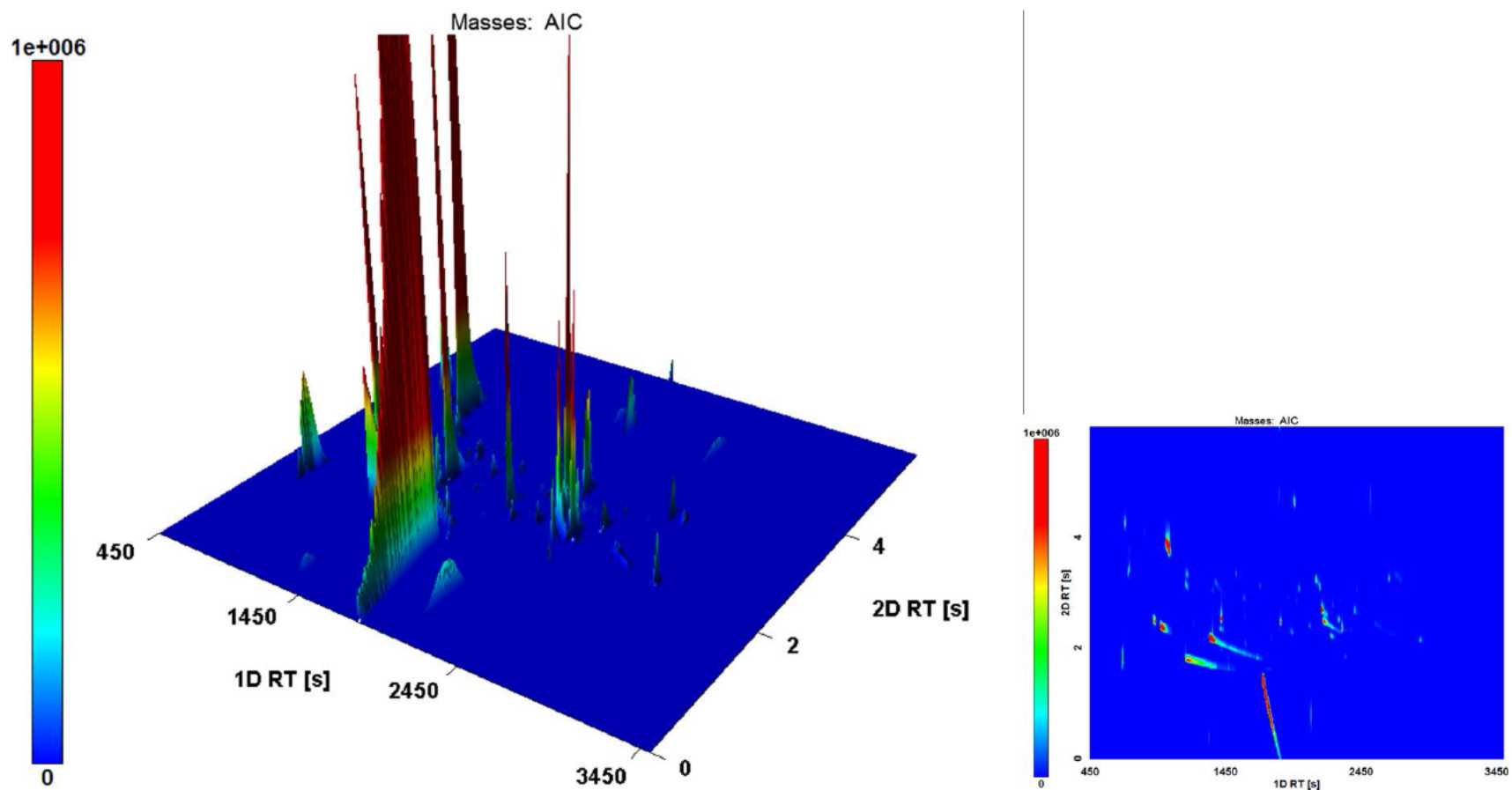


Figure 12 THSM_POL_1501883_02_1A

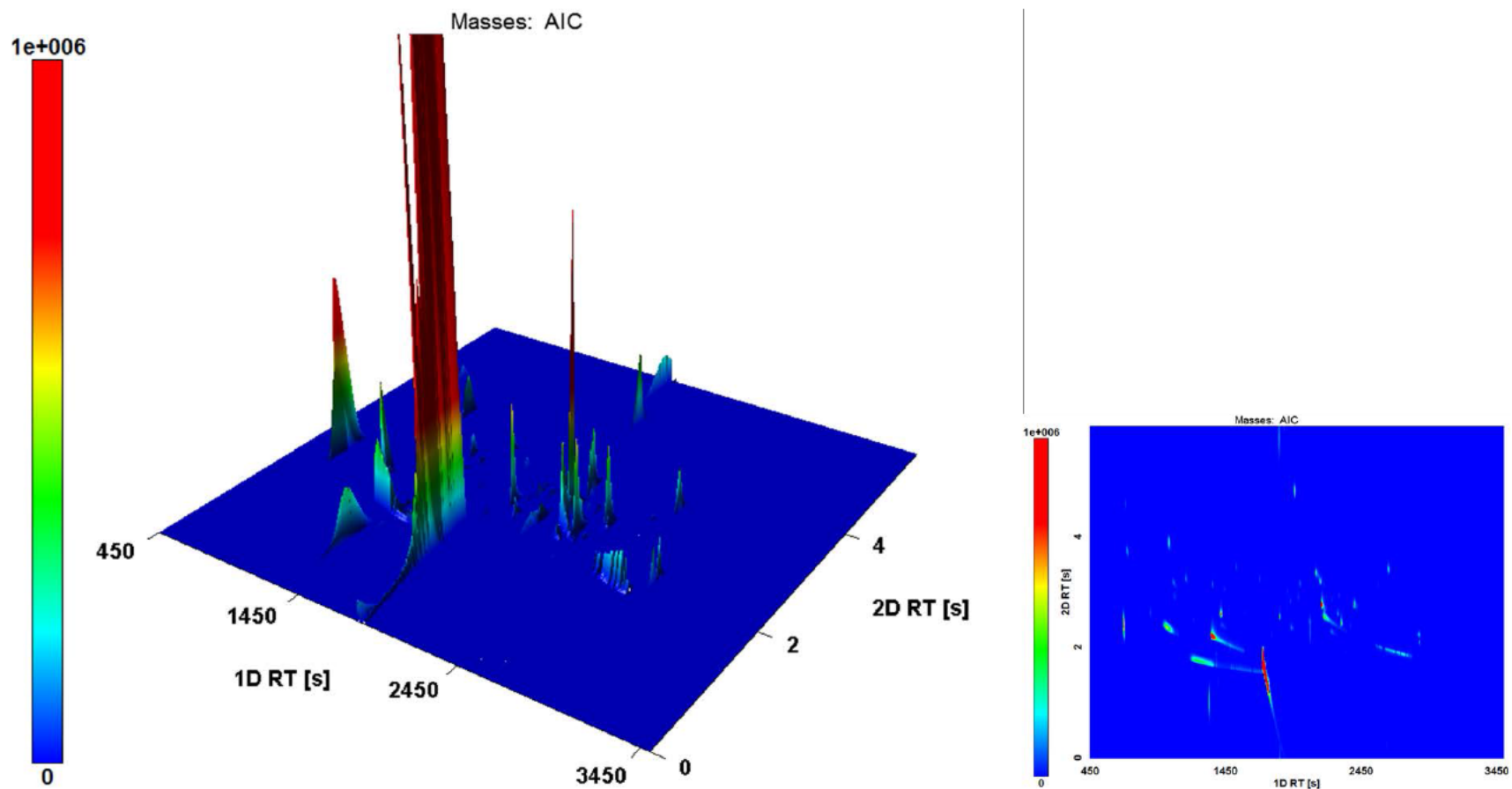


Figure 13 THSH_POL_1574383_02_1A

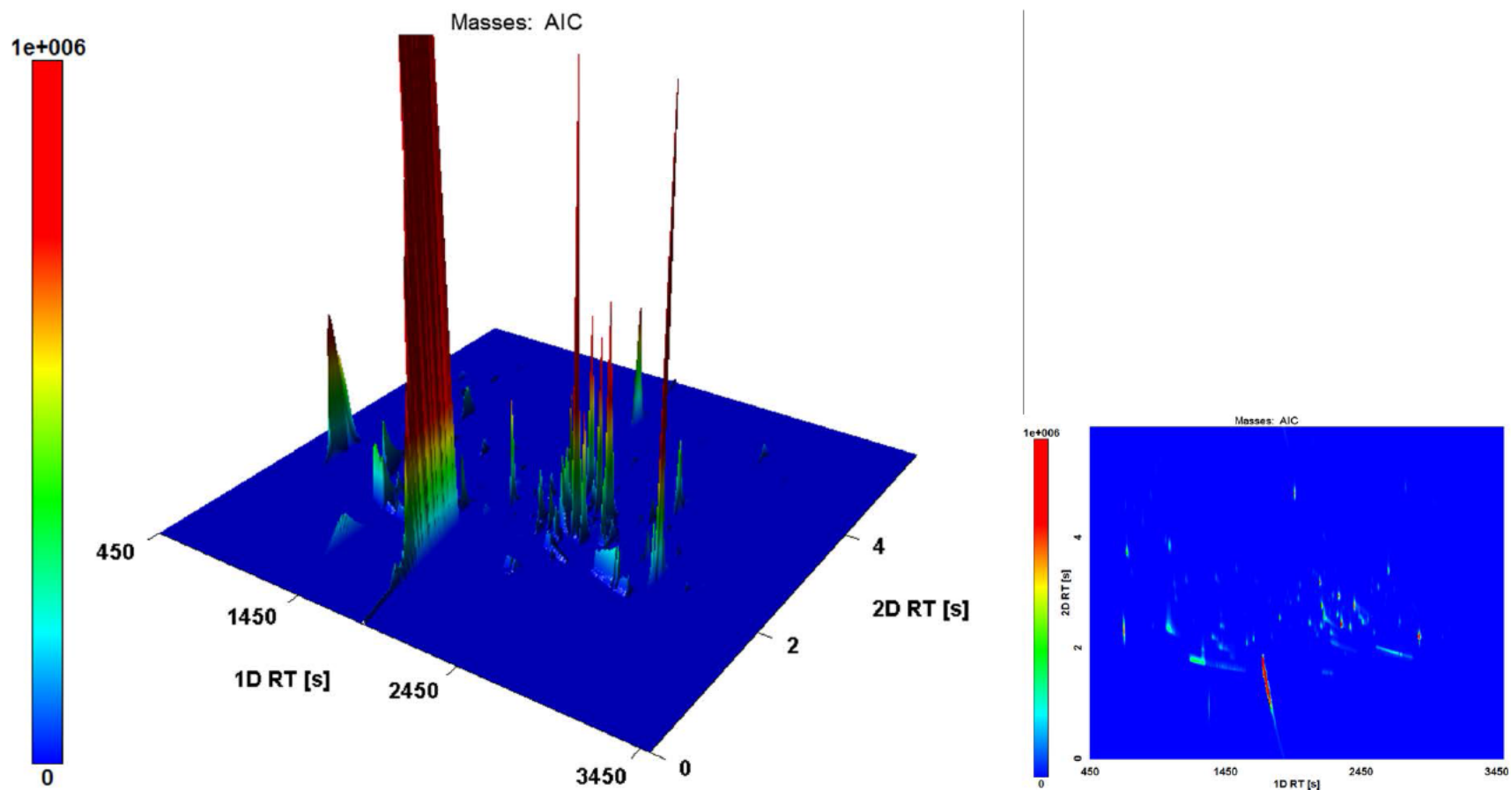


Figure 14 3R4F_POL_1574408_02_1A

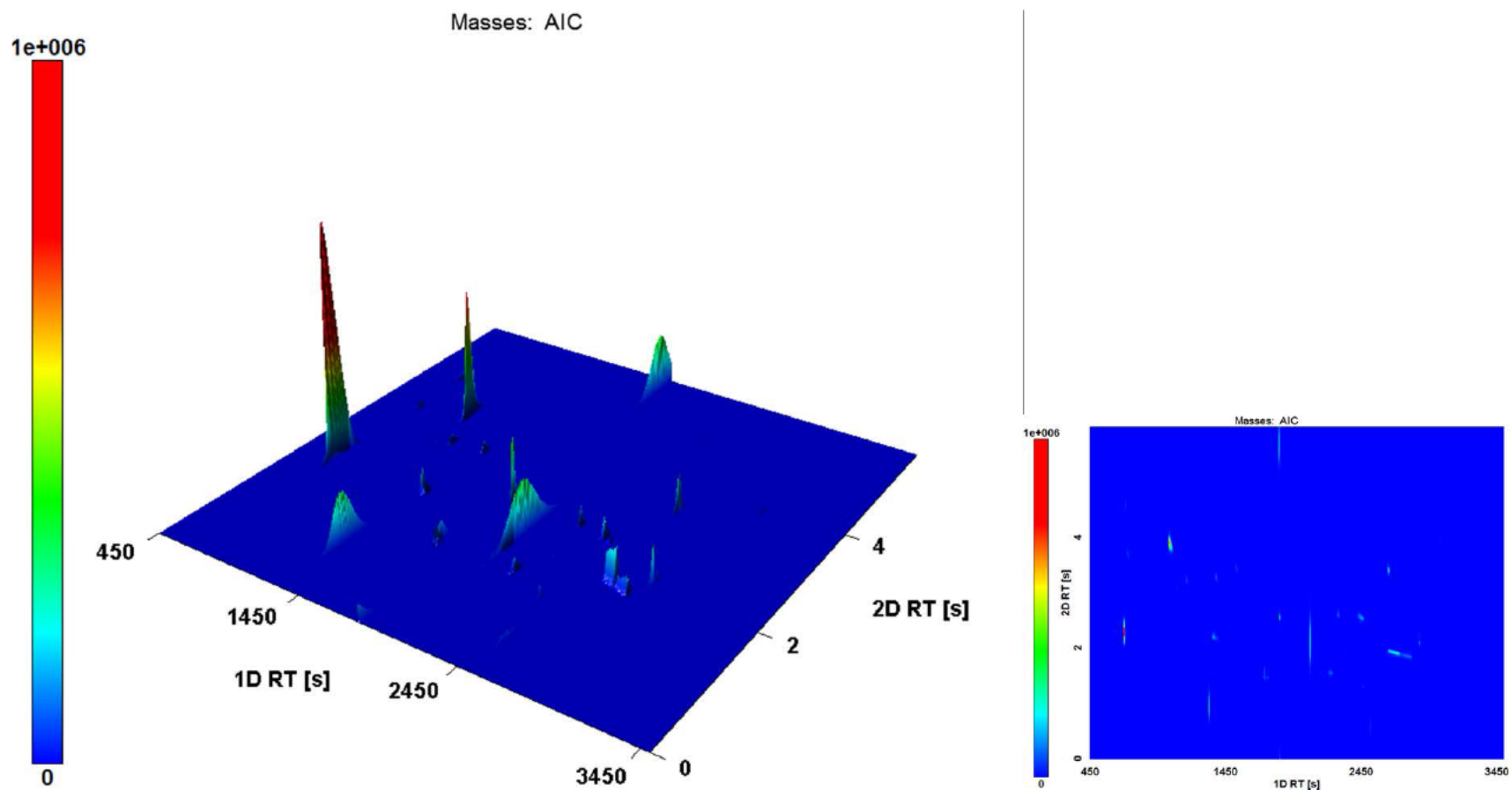


Figure 15 BLP1_POL_1574413_02_1A

ABBREVIATIONS

Abbreviations		
1D	:	1st Dimension
2D	:	2nd Dimension
BLP1	:	Aerosol Generation Blank Sample
GC×GC-TOFMS	:	Comprehensive 2-dimensional Gas Chromatography coupled to time-of-flight Mass Spectrometry
NPOL	:	Nonpolar
NTDS	:	Non Targeted Differential Screening
POL	:	Polar
RT	:	Retention Time
THD	:	Tobacco Heating Device
THS	:	Tobacco Heating System
THSR	:	THS 2.2 Dorado II Ron
THSM	:	THS 2.2 Dorado I Mint Vinny Low
THSH	:	THS 2.2 Dorado I Vinny High Menthol
VOL	:	Volatile