

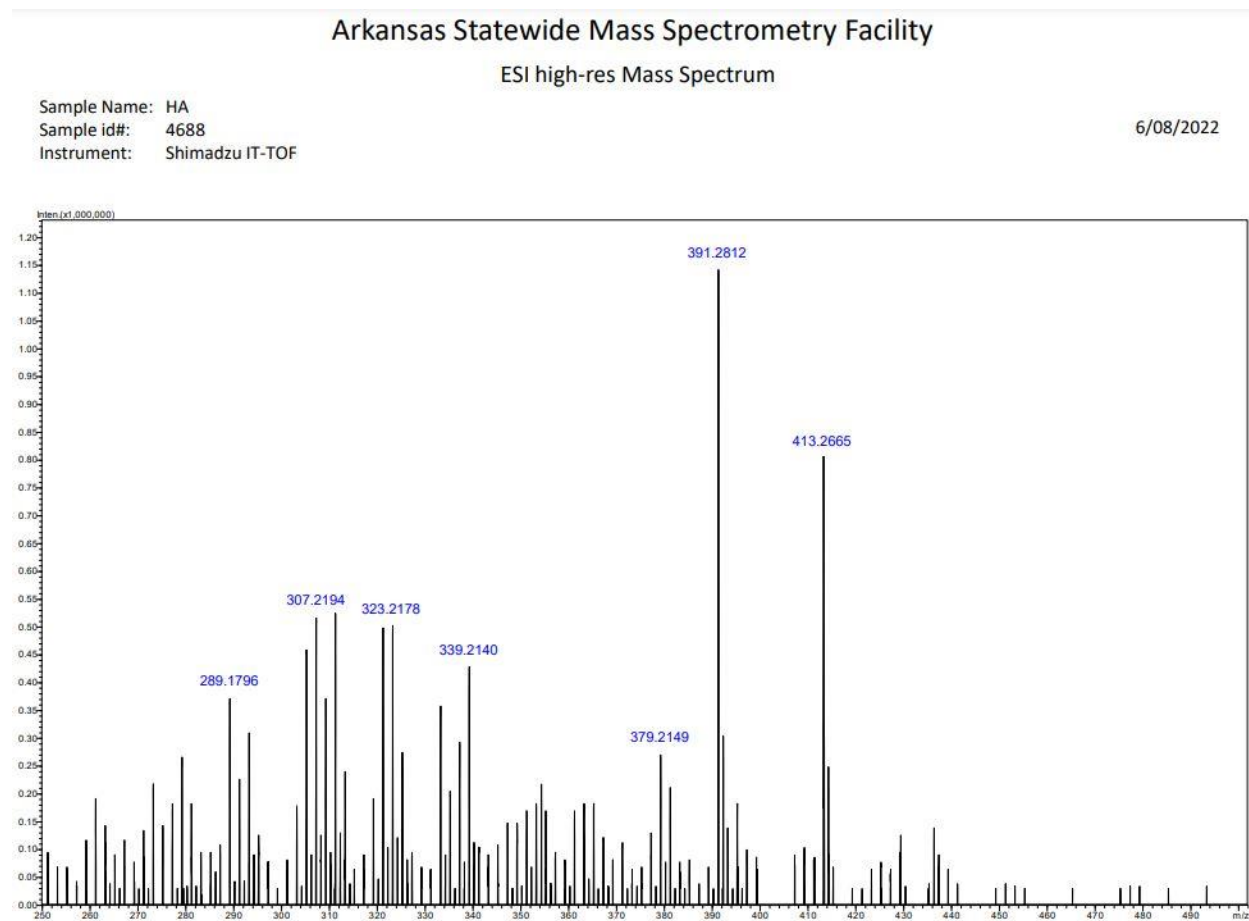
## Antimelanoma properties of *Verbena officinalis* fractions

Rabia Nisar<sup>1</sup>, Sanjay Adhikary<sup>2</sup>, Saeed Ahmad<sup>1</sup>, Mohammad Abrar Alam<sup>2</sup>

<sup>1</sup>Department of Pharmaceutical Chemistry, Faculty of Pharmacy, The Islamia University of Bahawalpur, Bahawalpur 63100, Pakistan

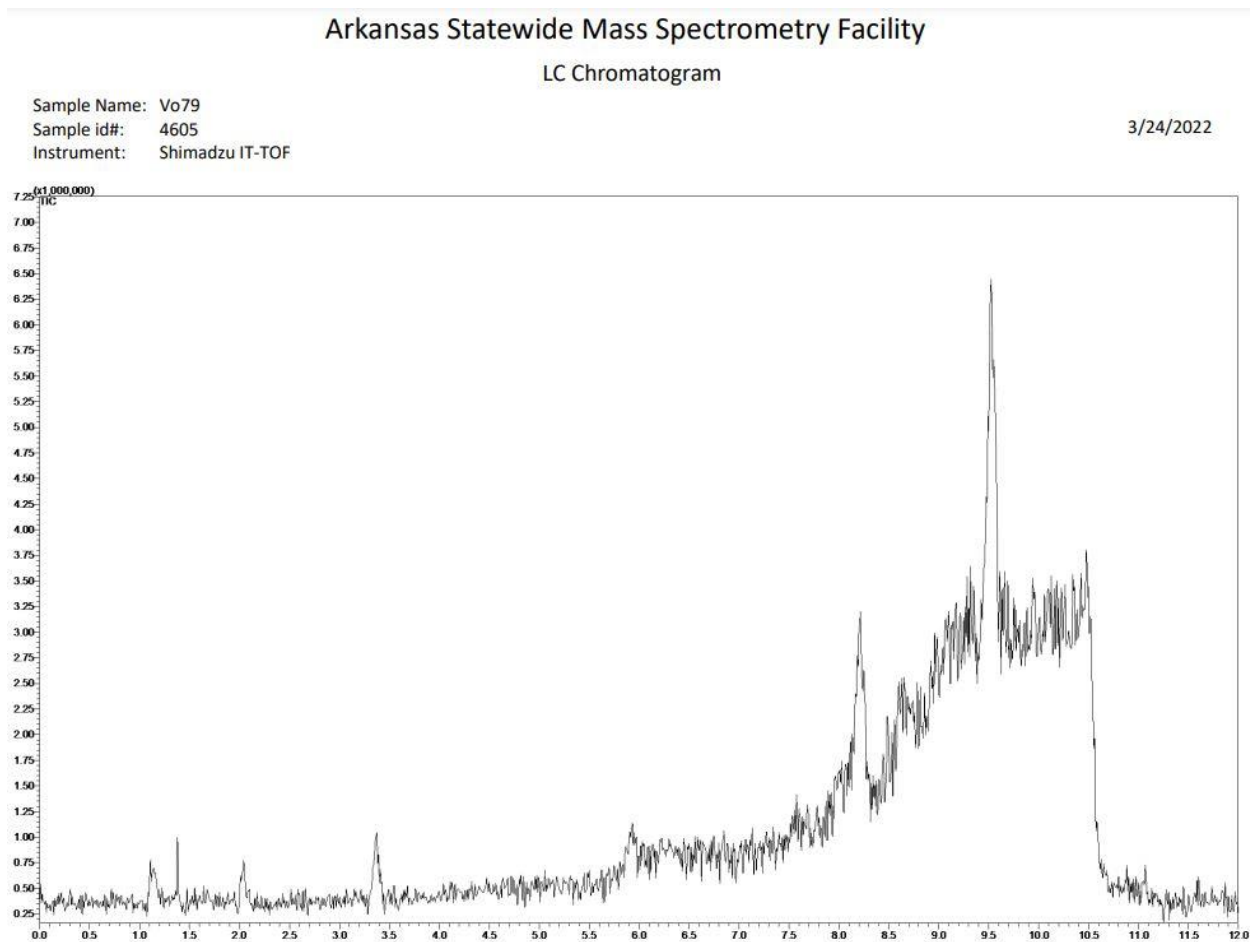
<sup>2</sup>Department of Chemistry and Physics, College of Sciences and Mathematics, Arkansas State University, Jonesboro, Arkansas, 72404, United States

### ESI mass spectra of HA fraction of *V. officinalis*



**Figure S1.** ESI high-resolution mass spectrum of HA extract of *V. officinalis*

1. LC chromatogram and ESI mass spectra of VO79 isolated from chloroform extract of *V. officinalis* at different retention time



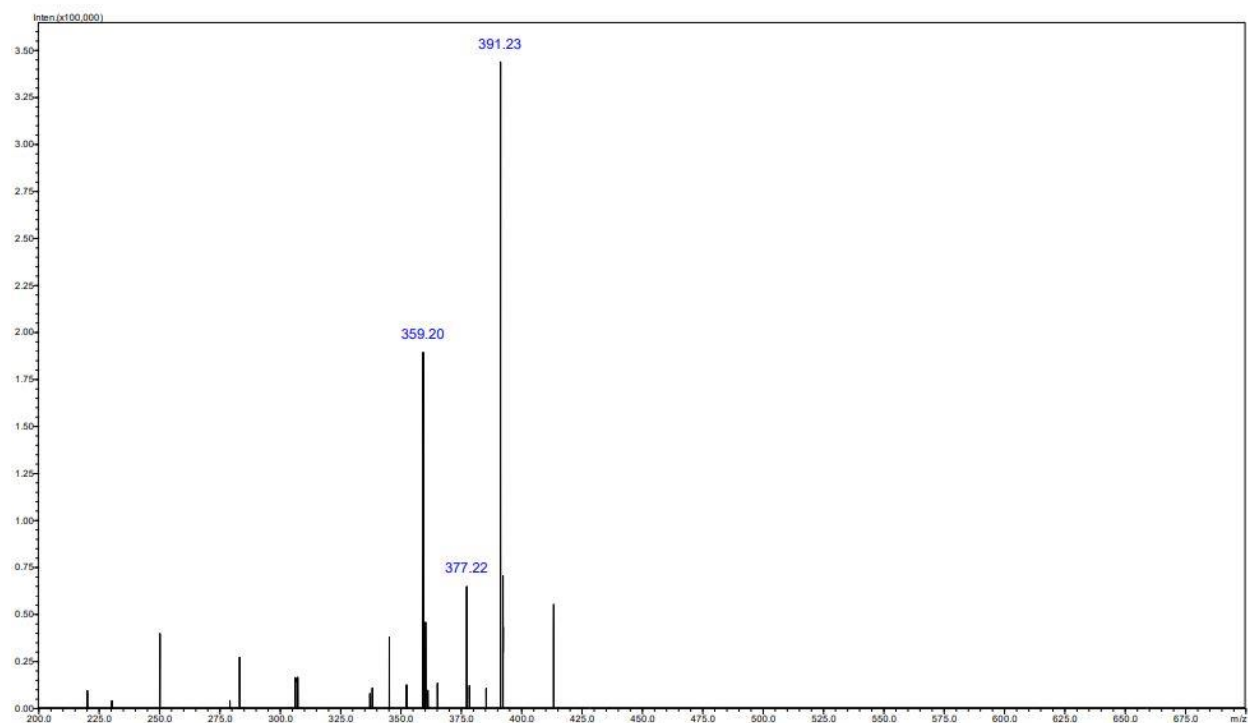
**Figure S2.** LC chromatogram of VO79 isolated from the chloroform extract of *V. officinalis*

# Arkansas Statewide Mass Spectrometry Facility

## ESI Mass Spectrum (3.37 min)

Sample Name: Vo79  
Sample id#: 4605  
Instrument: Shimadzu IT-TOF

3/24/2022



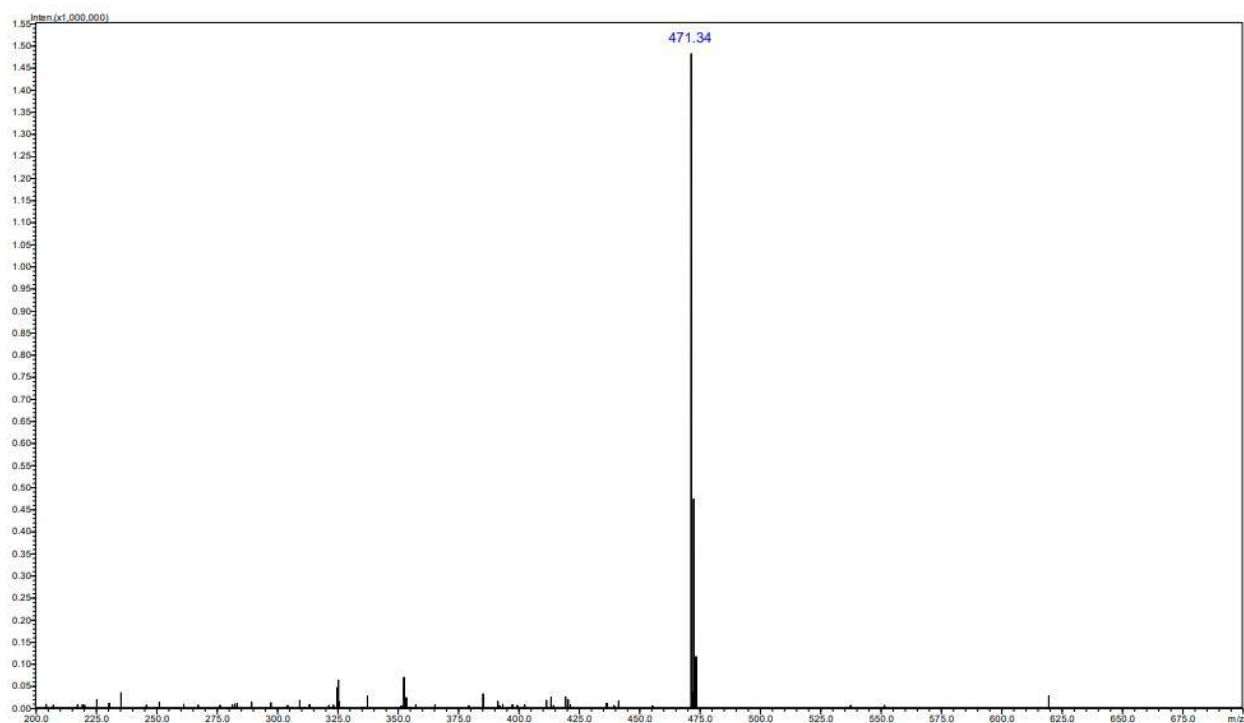
**Figure S3.** ESI mass spectrum of VO79 at retention time 3.37 min

# Arkansas Statewide Mass Spectrometry Facility

## ESI Mass Spectrum (8.21 min)

Sample Name: Vo79  
Sample id#: 4605  
Instrument: Shimadzu IT-TOF

3/24/2022



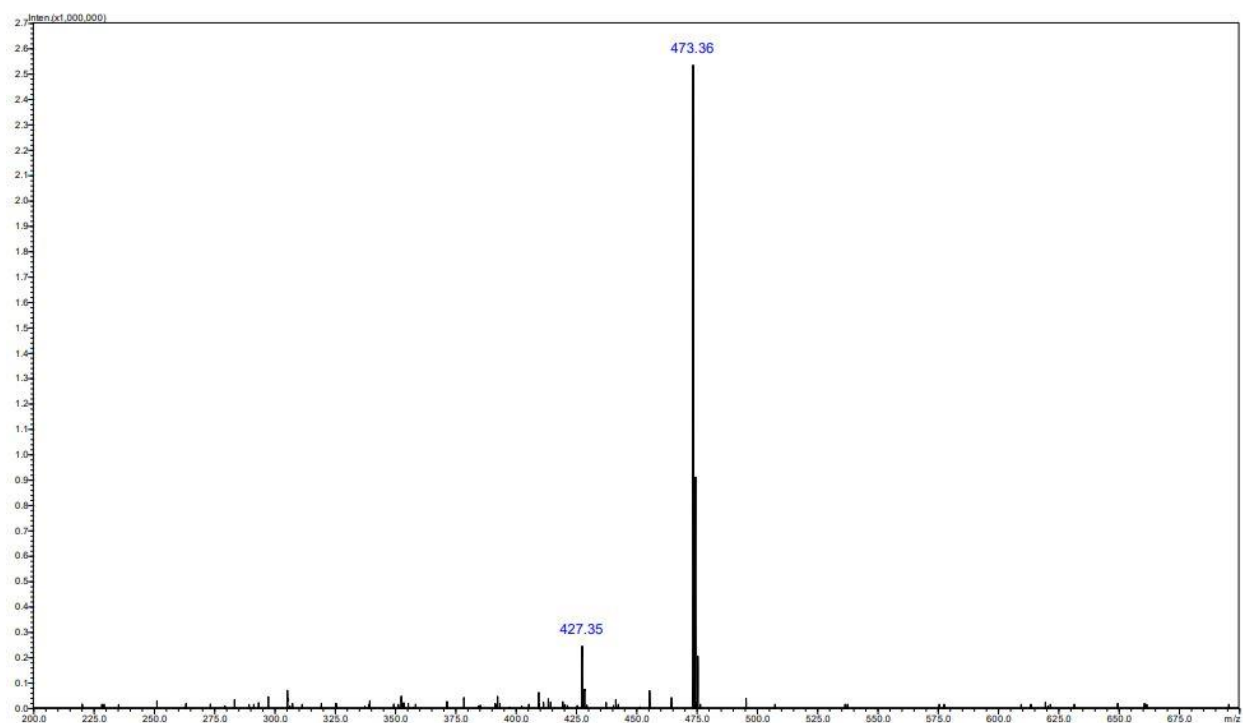
**Figure S4.** ESI mass spectrum of VO79 at retention time 8.21 min

# Arkansas Statewide Mass Spectrometry Facility

## ESI Mass Spectrum (9.53 min)

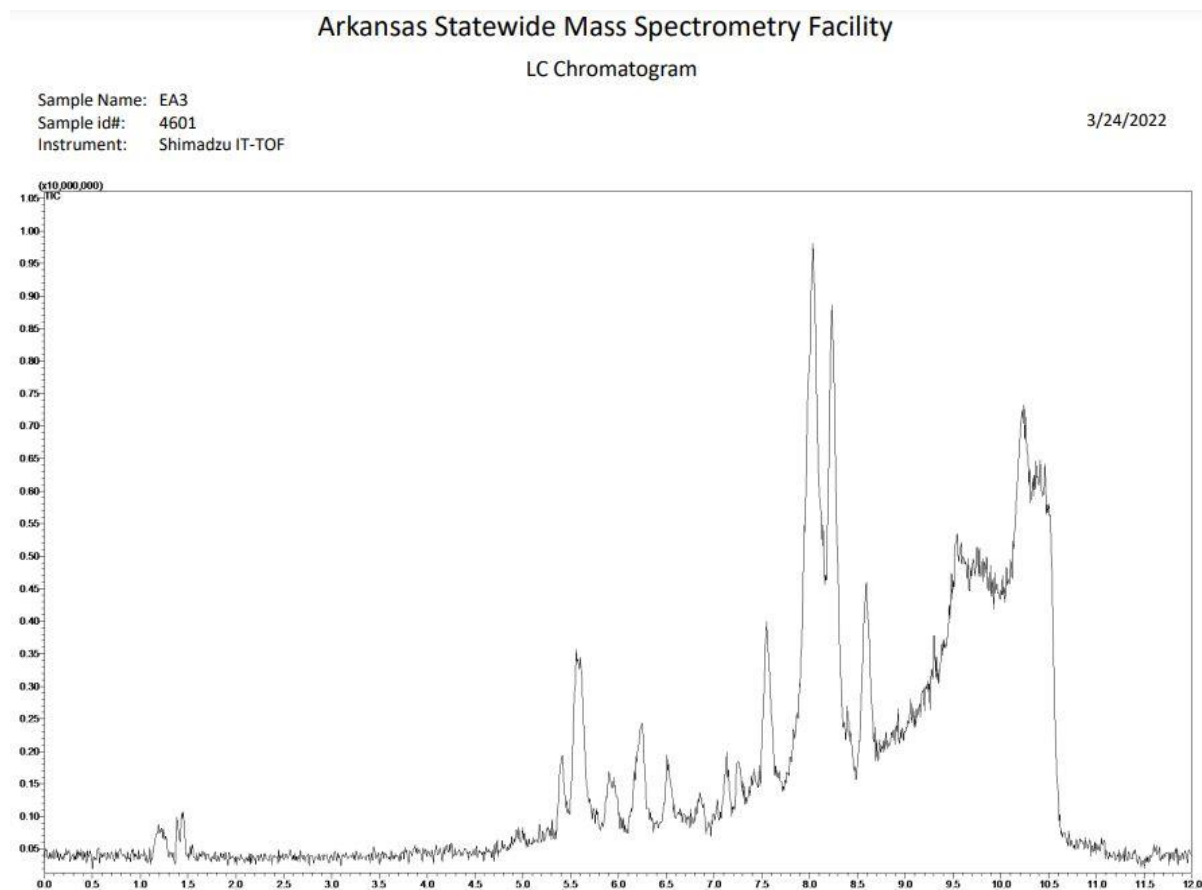
Sample Name: Vo79  
Sample id#: 4605  
Instrument: Shimadzu IT-TOF

3/24/2022



**Figure S5.** ESI mass spectrum of VO79 at retention time 9.53 min

2. LC chromatogram and ESI mass spectra of EA3 isolated from ethyl acetate extract of *V. officinalis* at different retention time



**Figure S6.** LC chromatogram of EA3 isolated from the ethyl acetate extract of *V. officinalis*

# Arkansas Statewide Mass Spectrometry Facility

ESI Mass Spectrum (5.41 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022

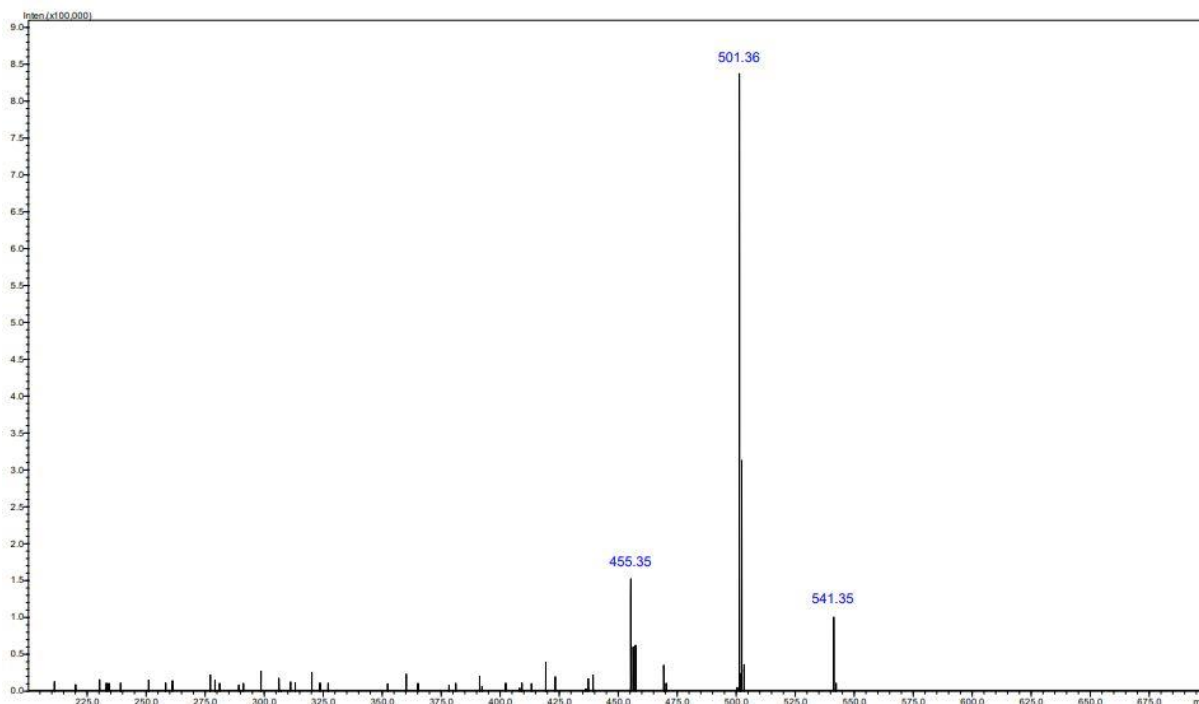


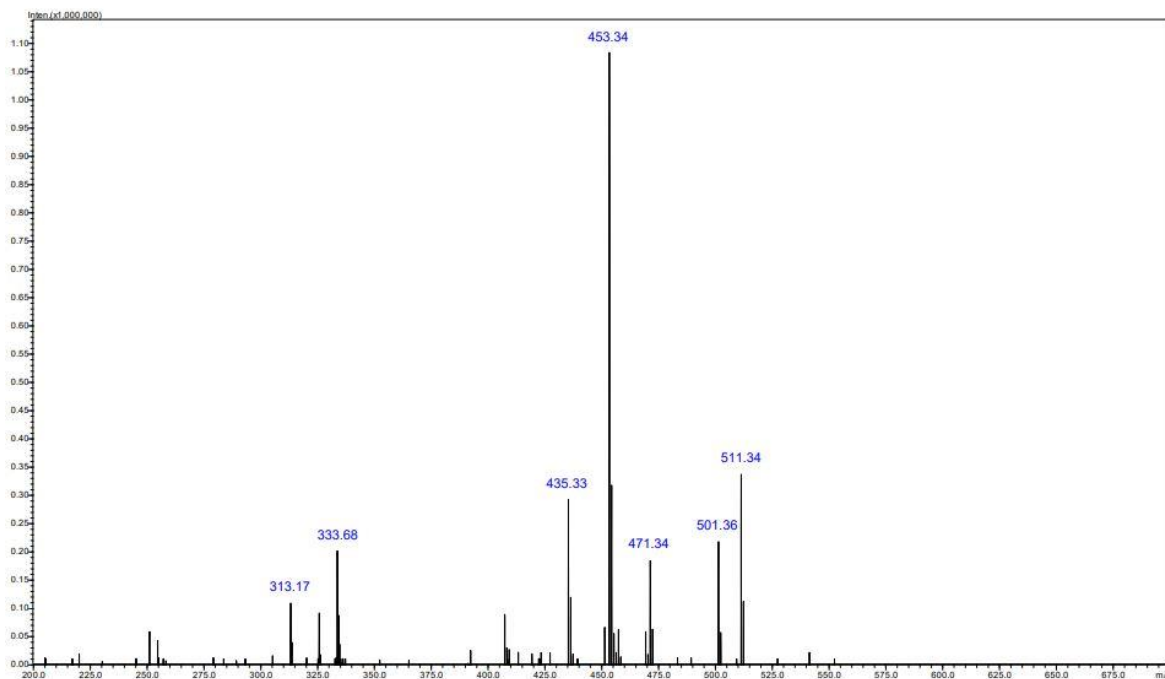
Figure S7. ESI mass spectrum of EA3 at retention time 5.41 min

# Arkansas Statewide Mass Spectrometry Facility

ESI Mass Spectrum (5.58 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022

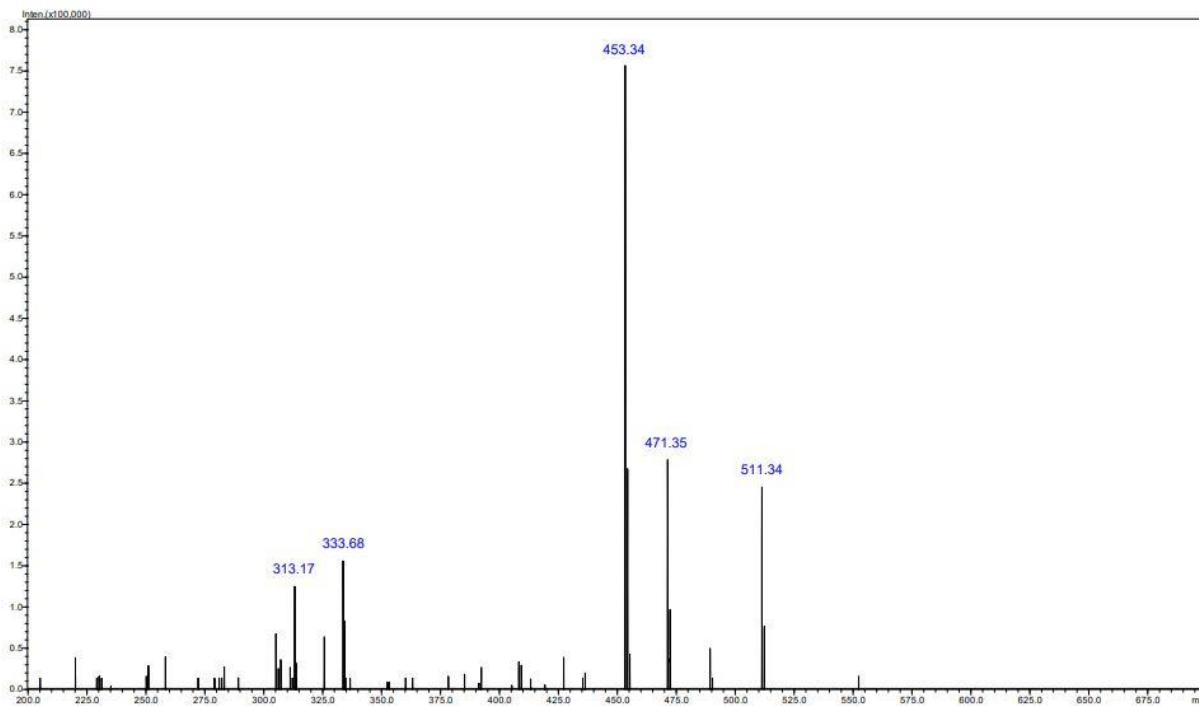


**Figure S8.** ESI mass spectrum of EA3 at retention time 5.58 min

Arkansas Statewide Mass Spectrometry Facility  
ESI Mass Spectrum (6.23 min)

Sample Name: EA3  
Sample Id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



**Figure S9.** ESI mass spectrum of EA3 at retention time 6.23 min

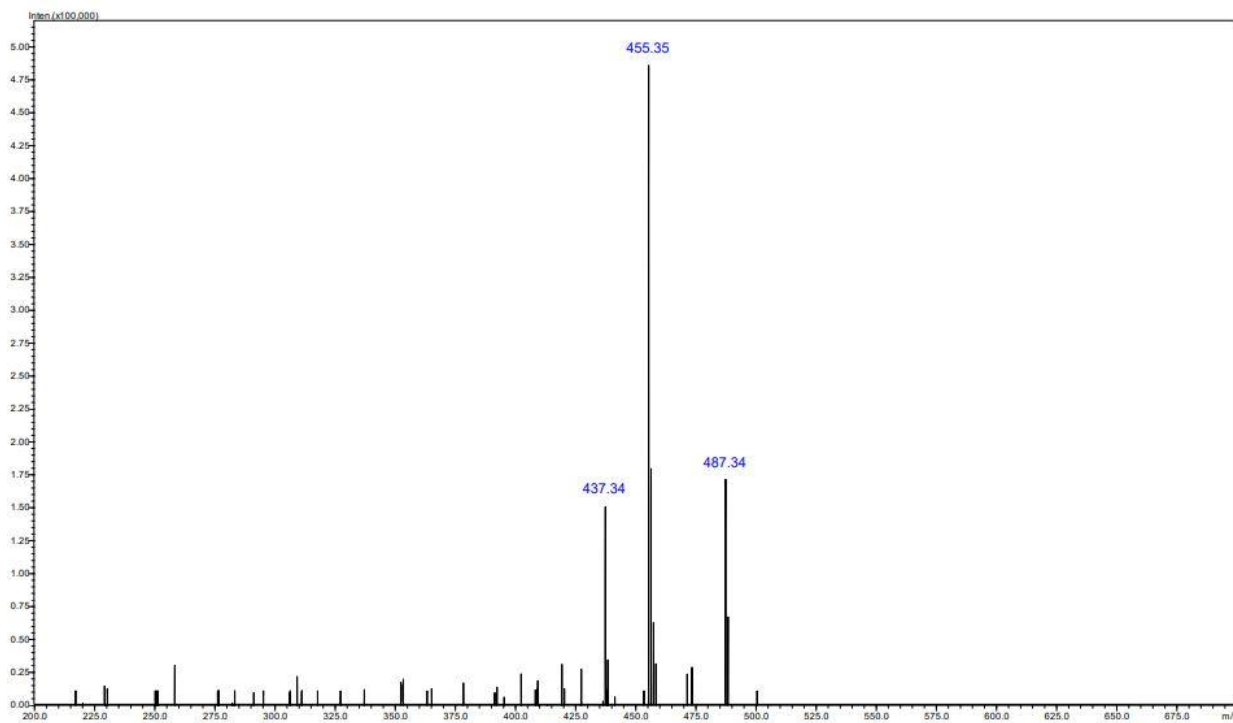


# Arkansas Statewide Mass Spectrometry Facility

## ESI Mass Spectrum (6.52 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



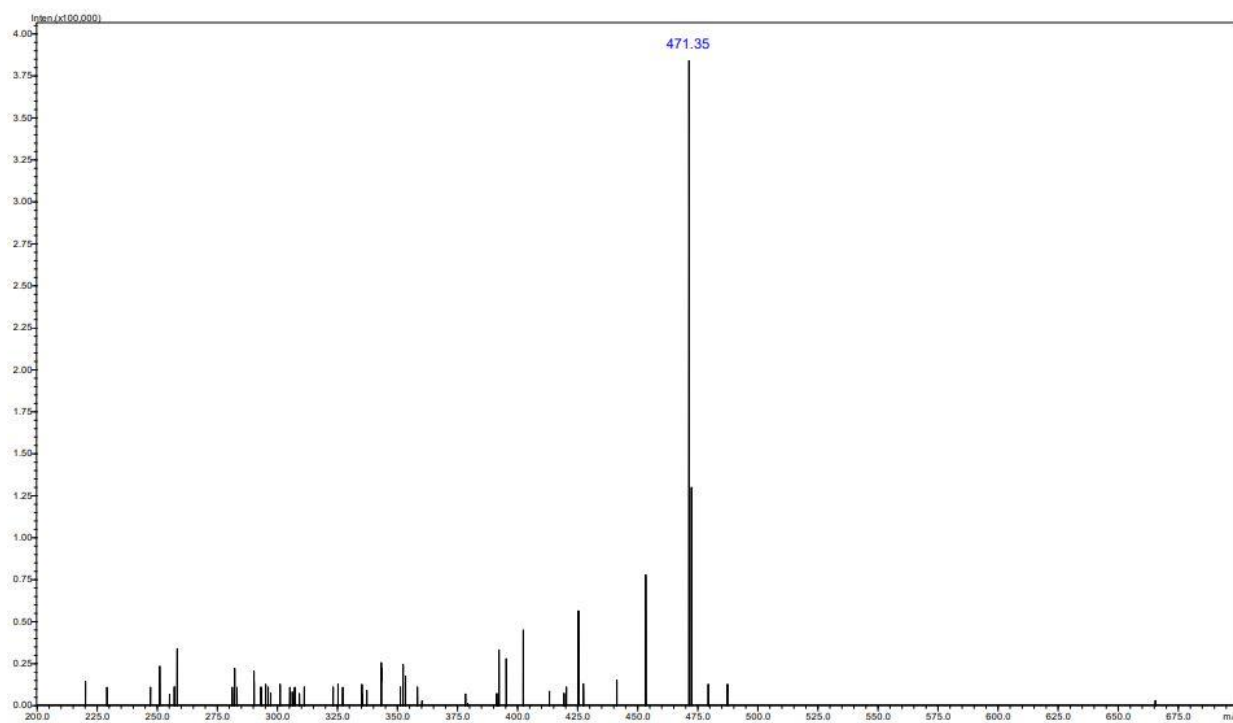
**Figure S10.** ESI mass spectrum of EA3 at retention time 6.52 min

# Arkansas Statewide Mass Spectrometry Facility

ESI Mass Spectrum (6.86 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



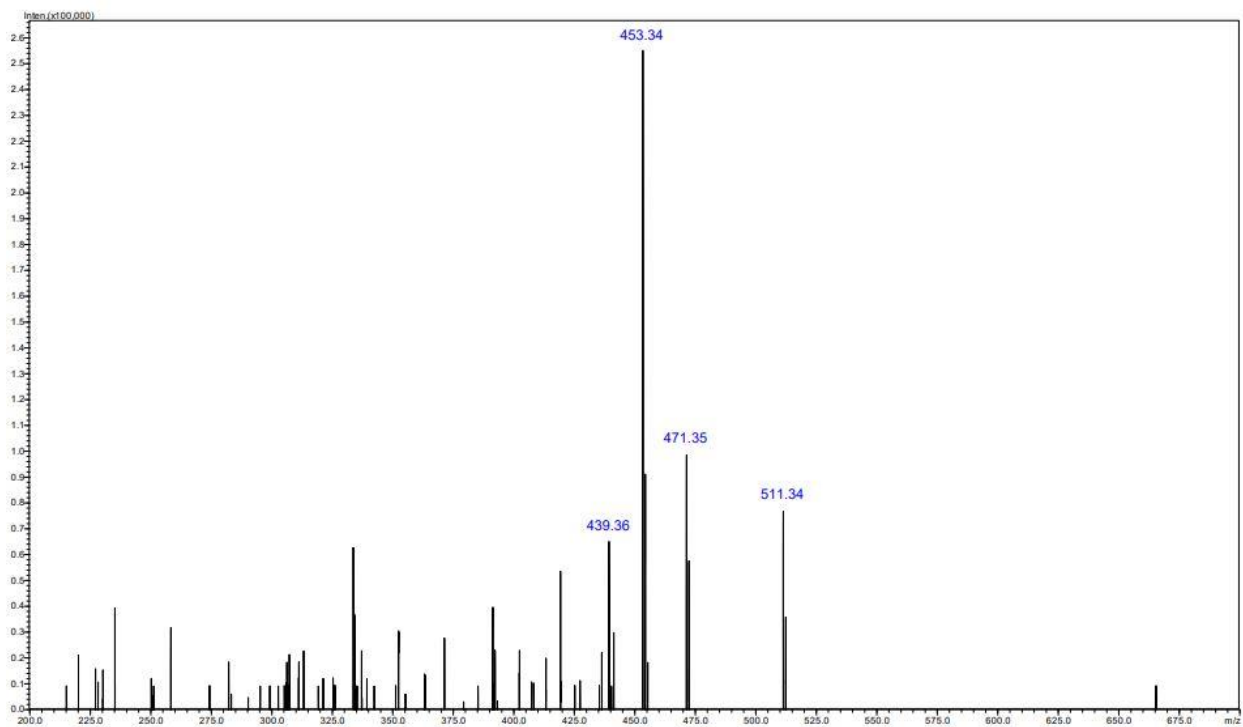
**Figure S11.** ESI mass spectrum of EA3 at retention time 6.86 min

# Arkansas Statewide Mass Spectrometry Facility

ESI Mass Spectrum (7.13 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



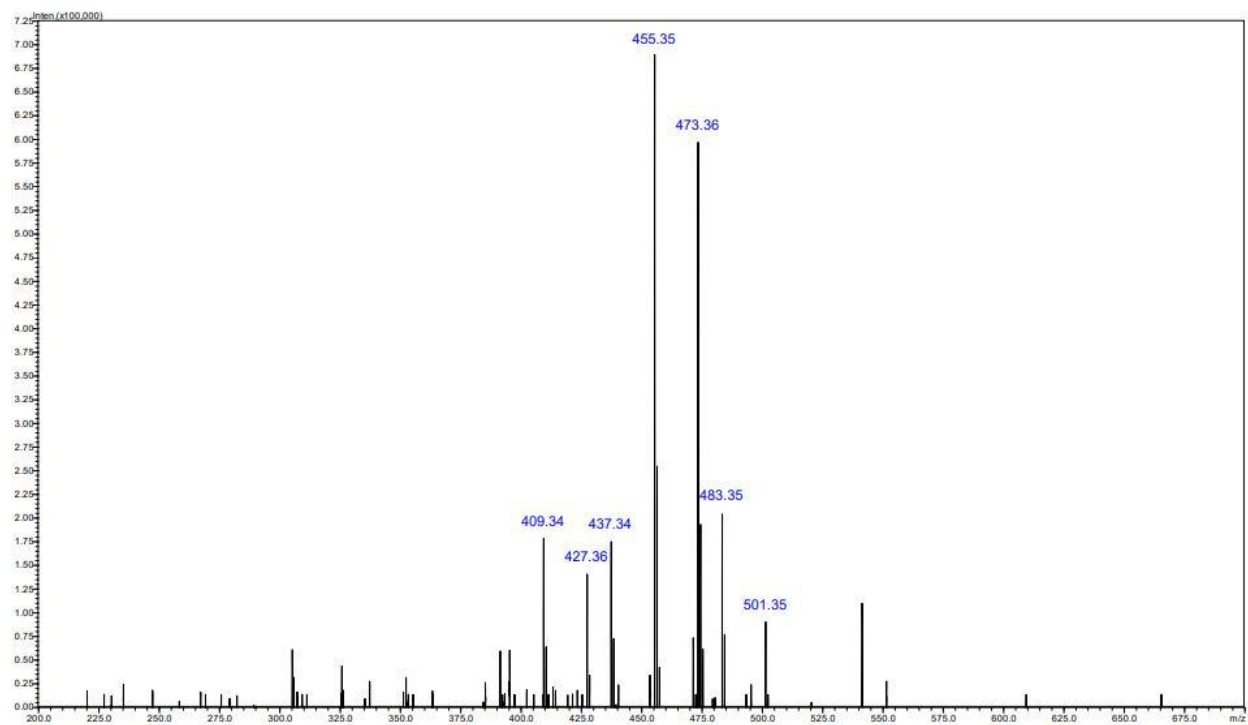
**Figure S12.** ESI mass spectrum of EA3 at retention time 7.13 min

# Arkansas Statewide Mass Spectrometry Facility

ESI Mass Spectrum (7.55 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



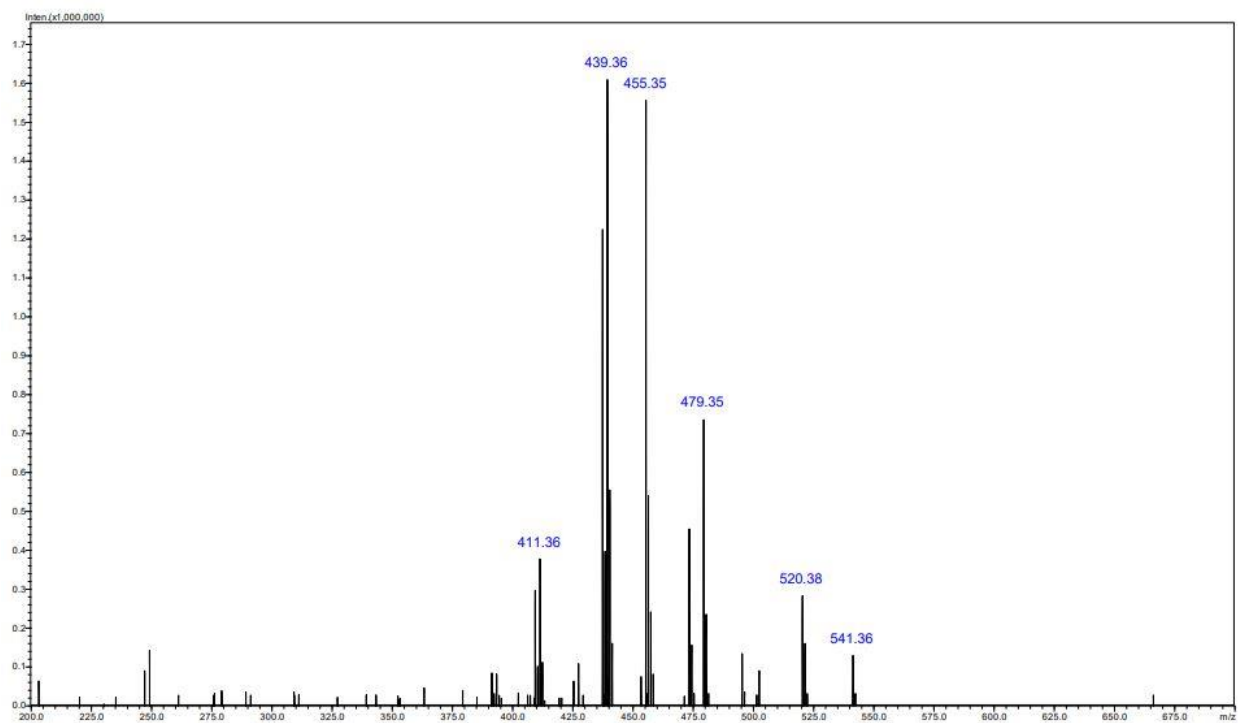
**Figure S13.** ESI mass spectrum of EA3 at retention time 7.55 min

# Arkansas Statewide Mass Spectrometry Facility

## ESI Mass Spectrum (7.55 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



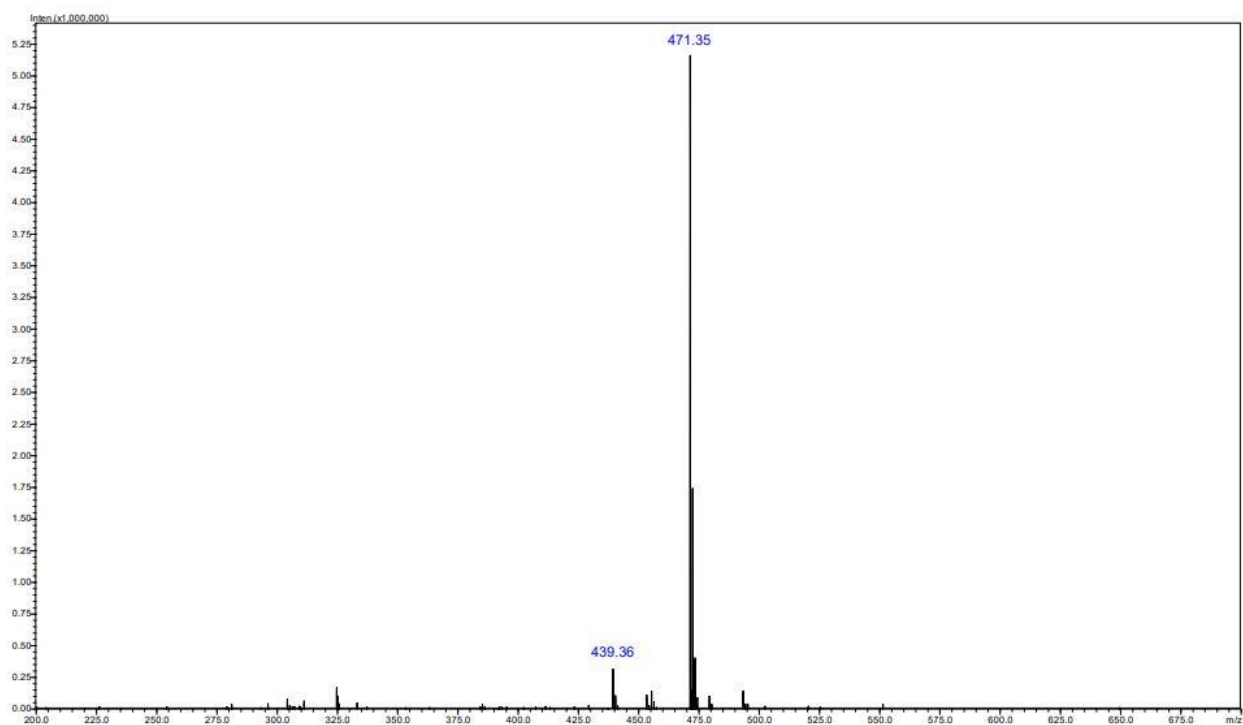
**Figure S14.** ESI mass spectrum of EA3 at retention time 7.55 min

# Arkansas Statewide Mass Spectrometry Facility

ESI Mass Spectrum (8.23 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



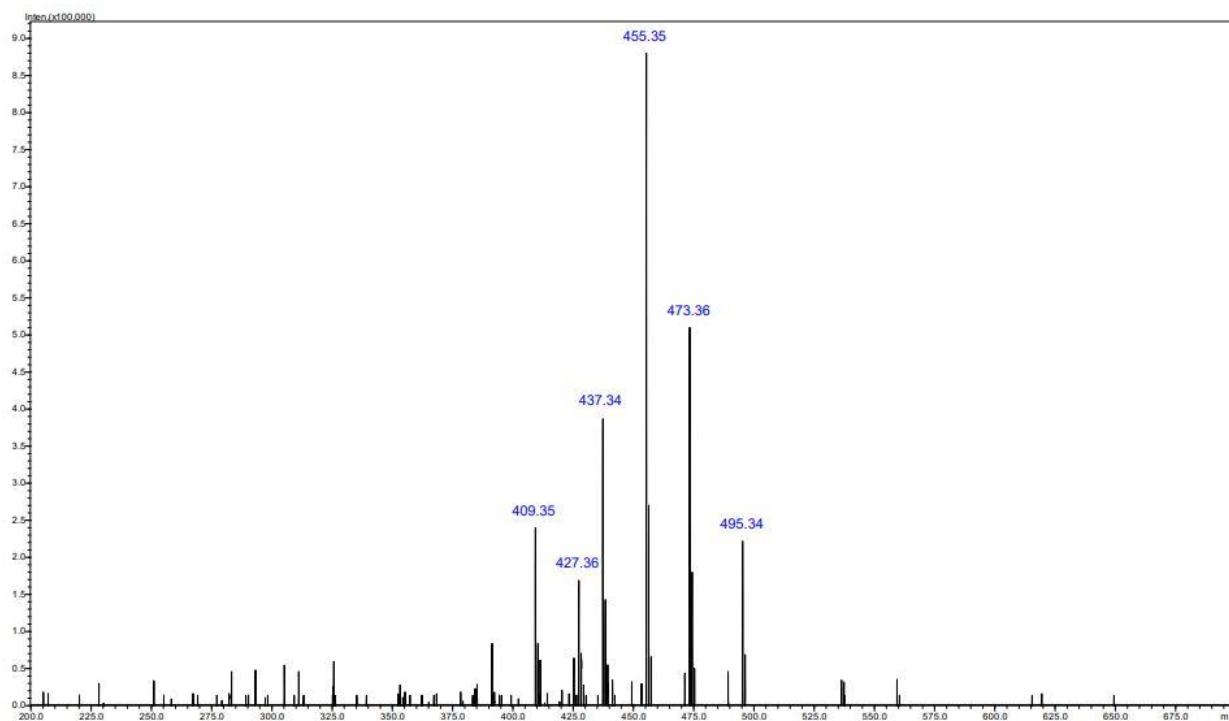
**Figure S15.** ESI mass spectrum of EA3 at retention time 8.23 min

# Arkansas Statewide Mass Spectrometry Facility

ESI Mass Spectrum (8.59 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



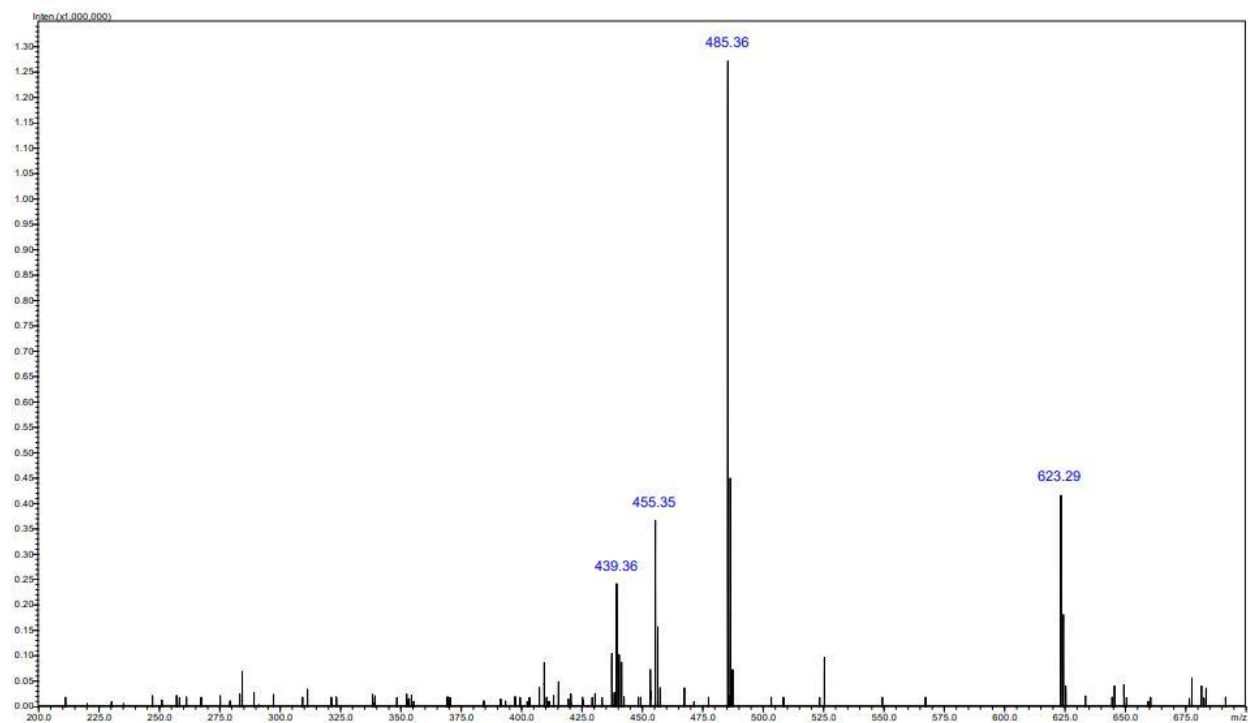
**Figure S16.** ESI mass spectrum of EA3 at retention time 8.59 min

# Arkansas Statewide Mass Spectrometry Facility

ESI Mass Spectrum (10.23 min)

Sample Name: EA3  
Sample id#: 4601  
Instrument: Shimadzu IT-TOF

3/24/2022



**Figure S17.** ESI mass spectrum of EA3 at retention time 10.23 min