

A. Appendix – GCMS spectra of propellants

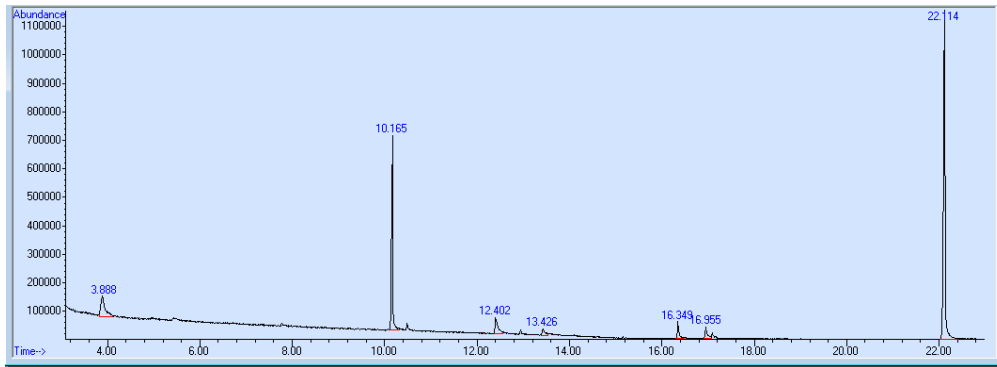


Figure A.1: Gas Chromatogram of FSSA propellant sample 2

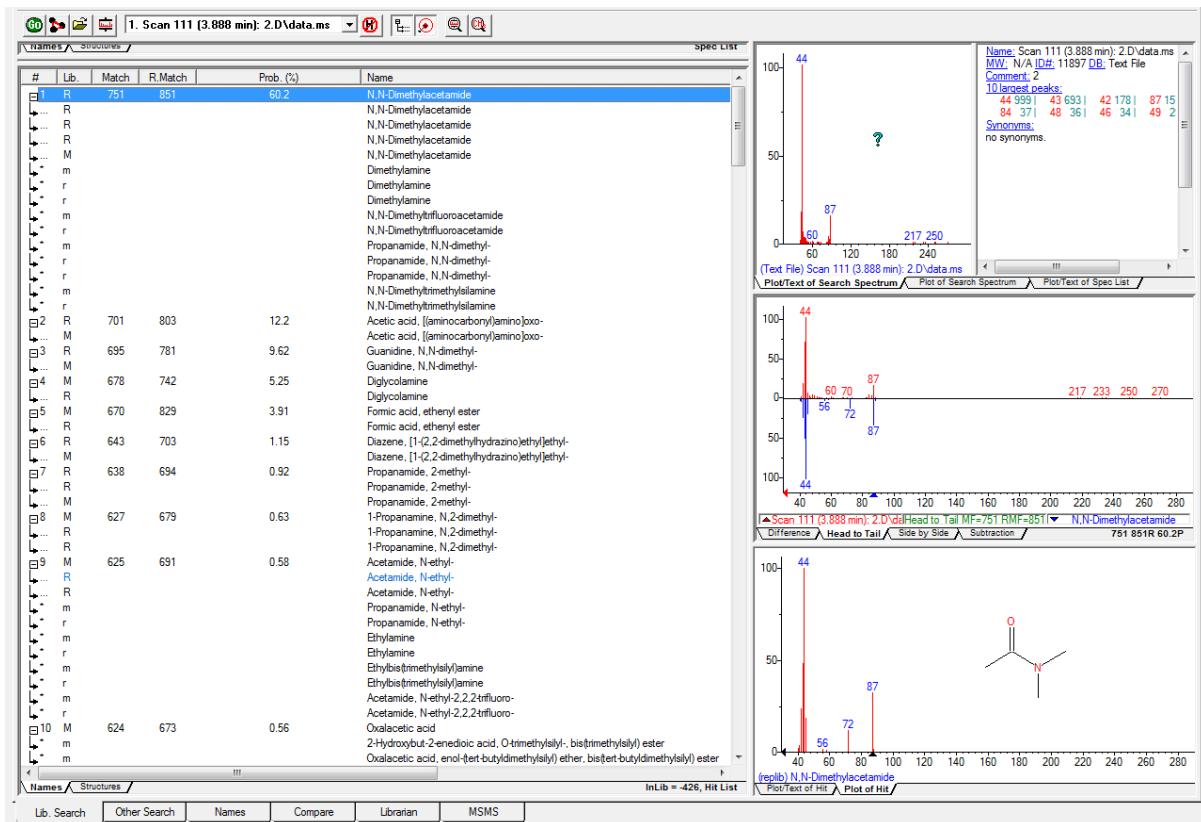


Figure A.2: Mass Spectrum and assignment of FSSA propellant 2 GS peak 3.888 minutes

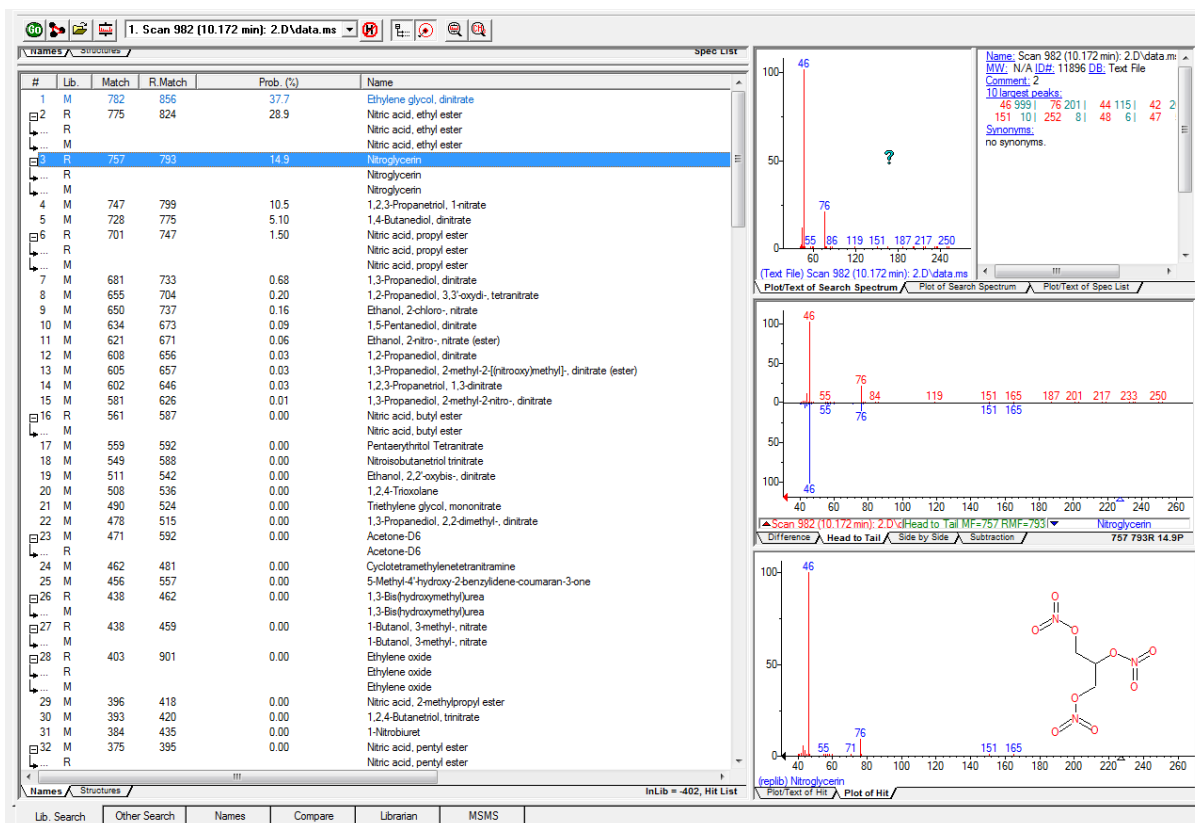


Figure A.3: Mass Spectrum and assignment of FSSA propellant 2 GS peak 10.172 minutes

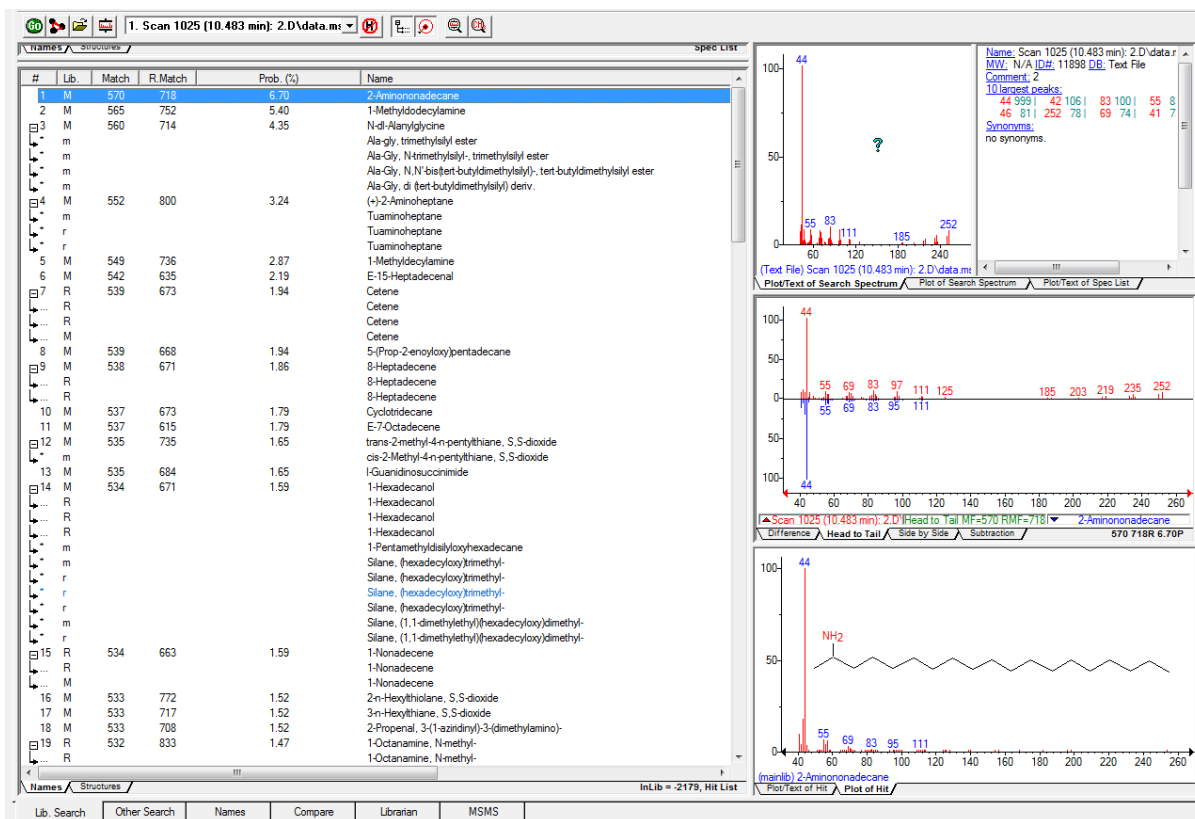


Figure A.4: Mass Spectrum and assignment of FSSA propellant 2 GS peak 10.483 minutes

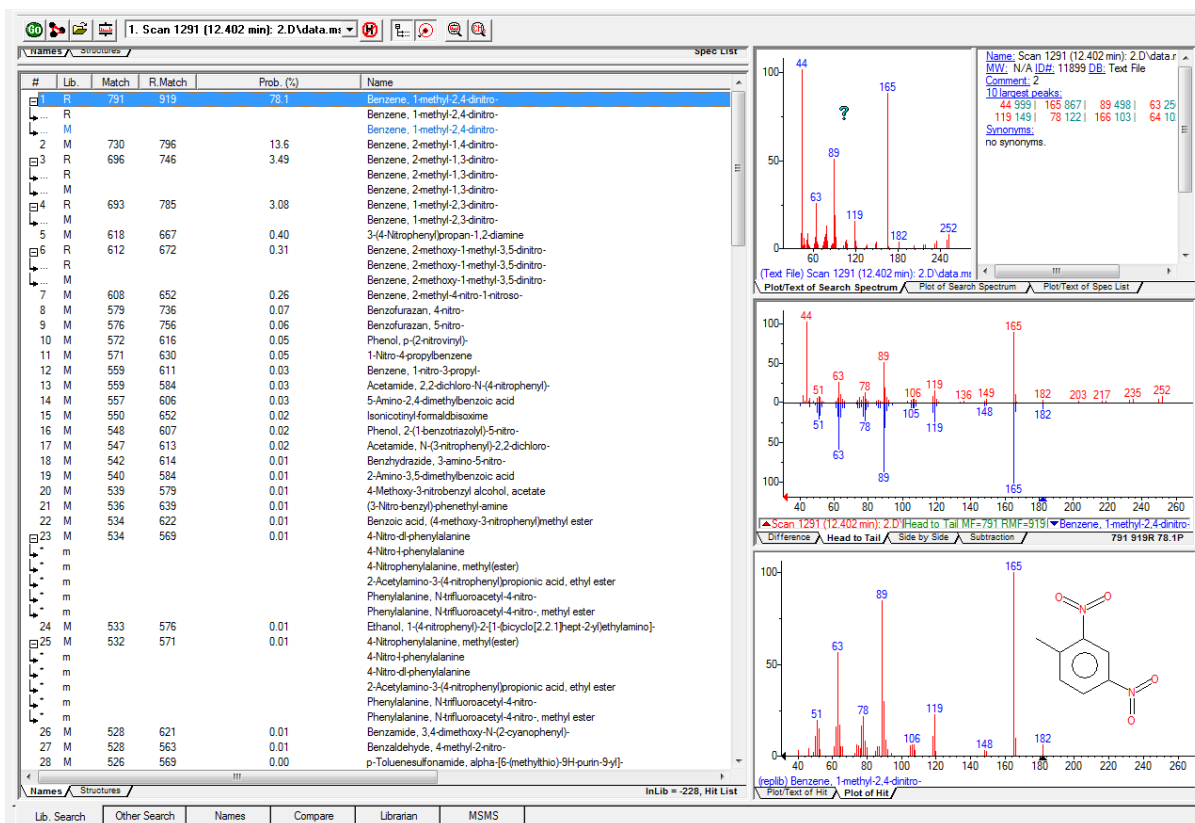


Figure A.5: Mass Spectrum and assignment of FSSA propellant 2 GS peak 12.402 minutes

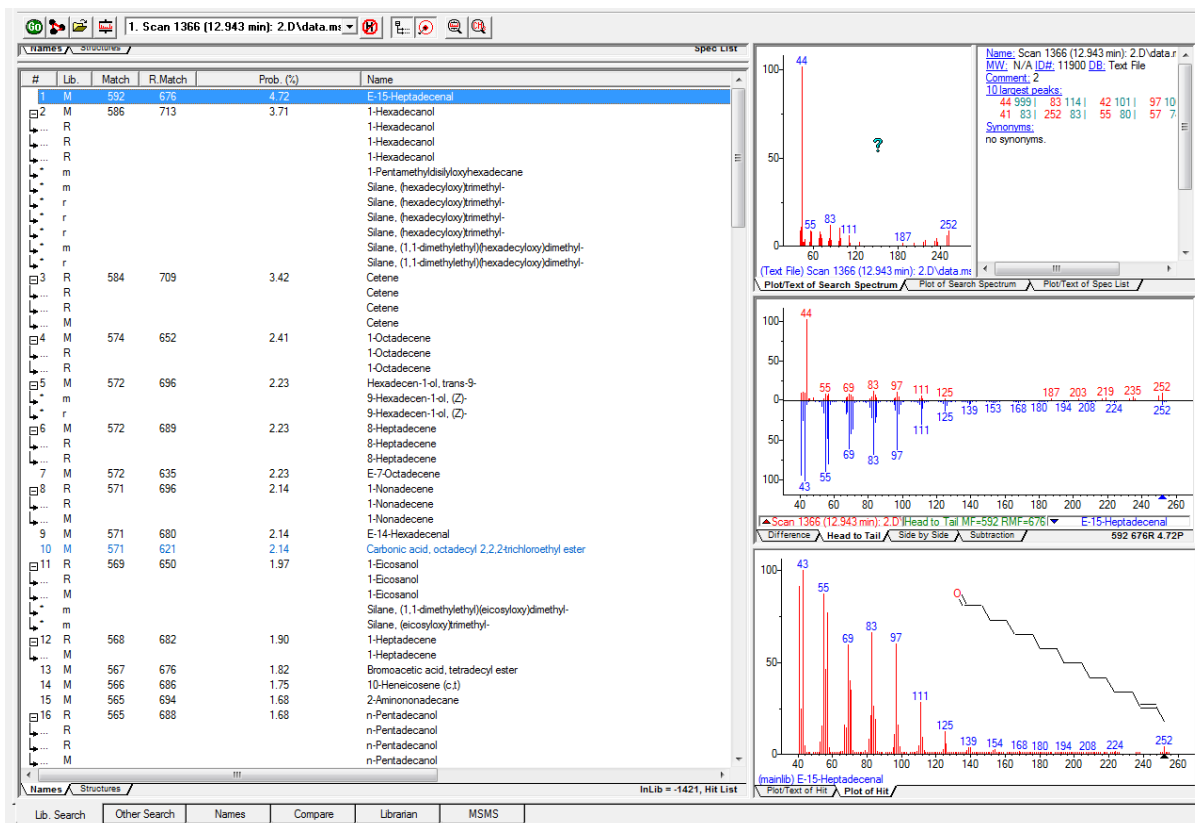


Figure A.6: Mass Spectrum and assignment of FSSA propellant 2 GS peak 12.943 minutes

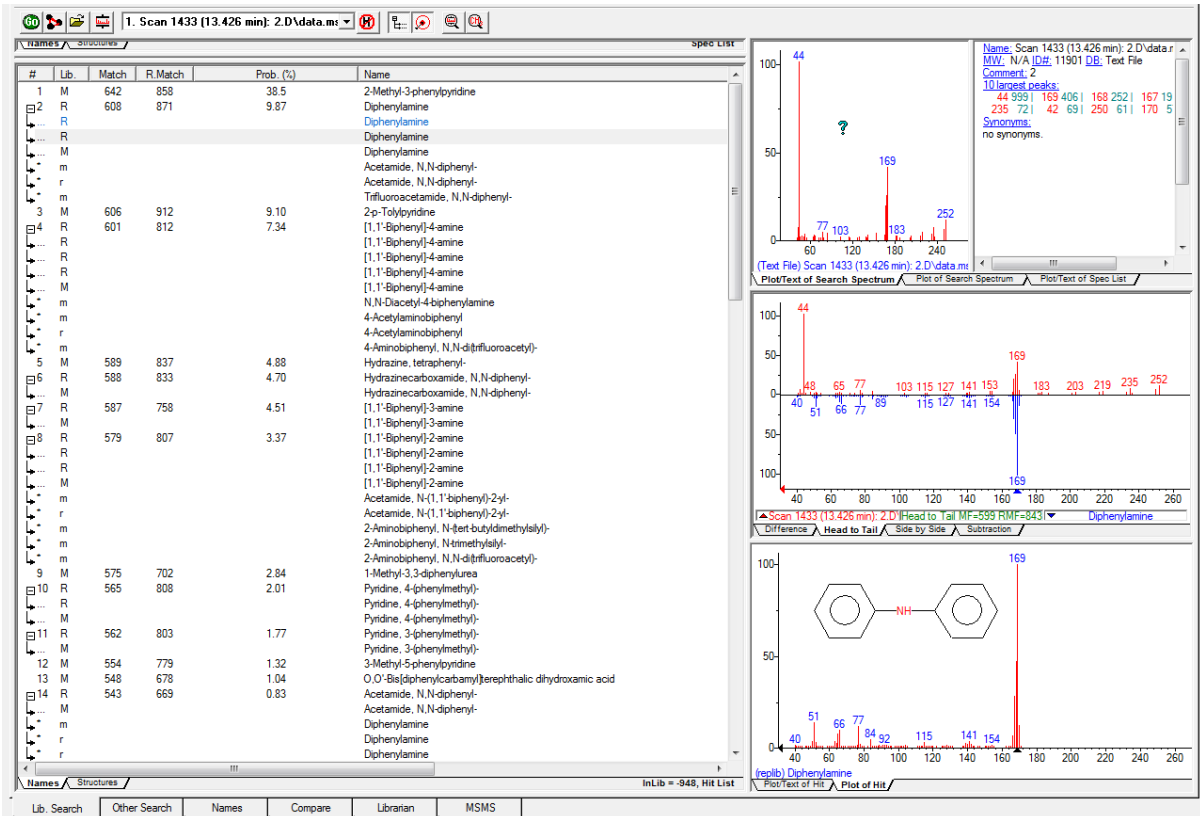


Figure A.7: Mass Spectrum and assignment of FSSA propellant 2 GS peak 13.426 minutes

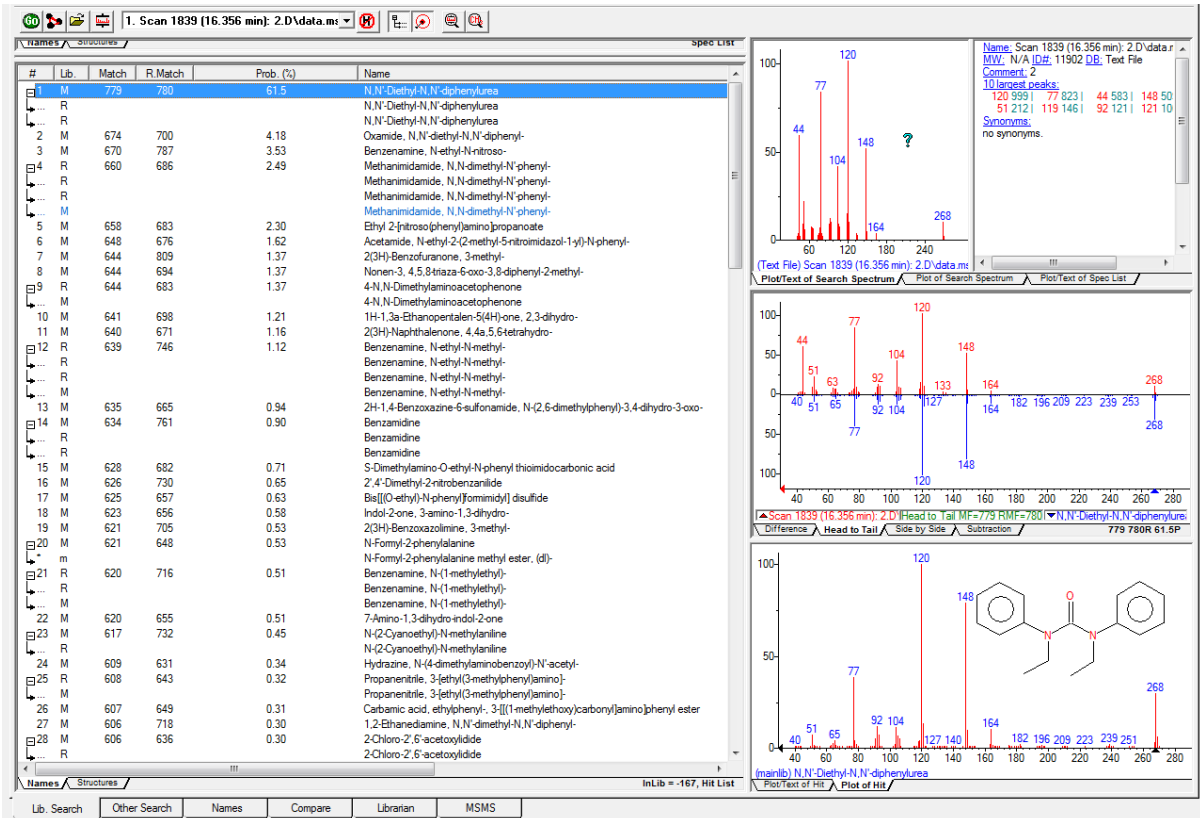


Figure A.8: Mass Spectrum and assignment of FSSA propellant 2 GS peak 16.356 minutes

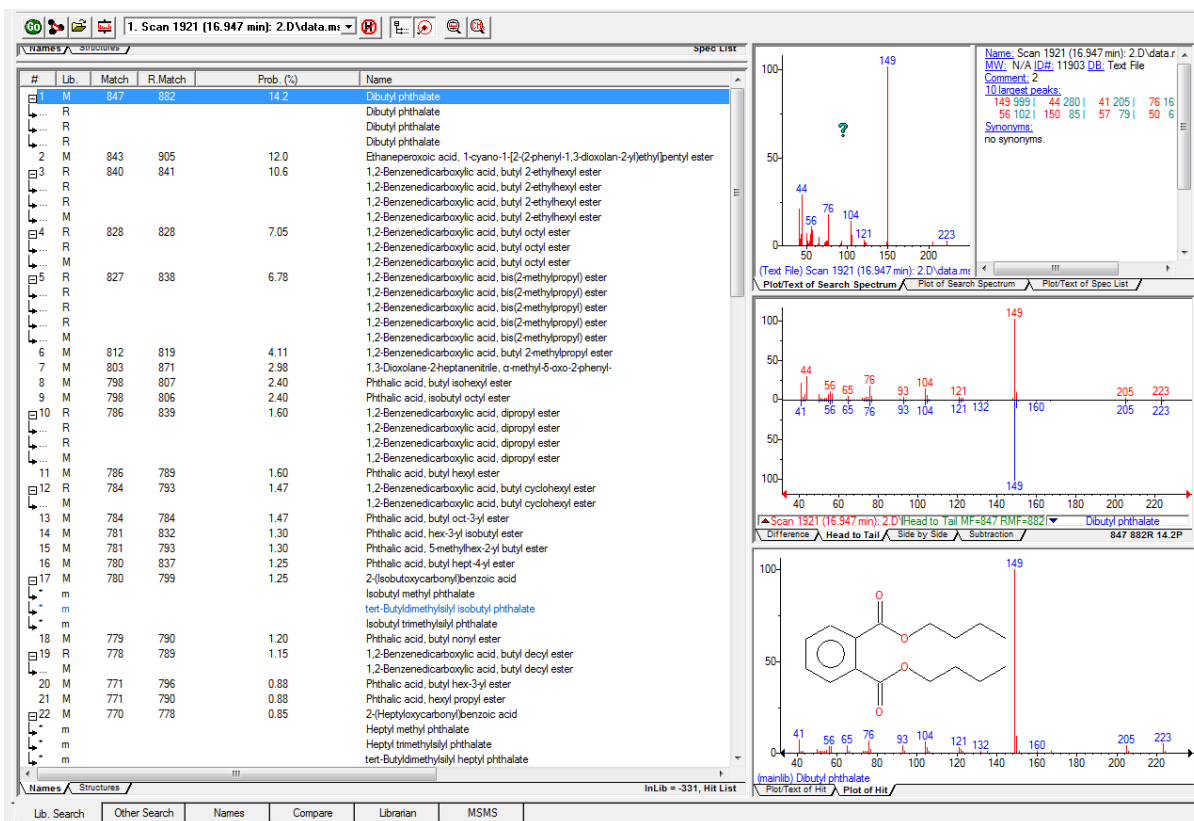


Figure A.9: Mass Spectrum and assignment of FSSA propellant 2 GS peak 16.947 minutes

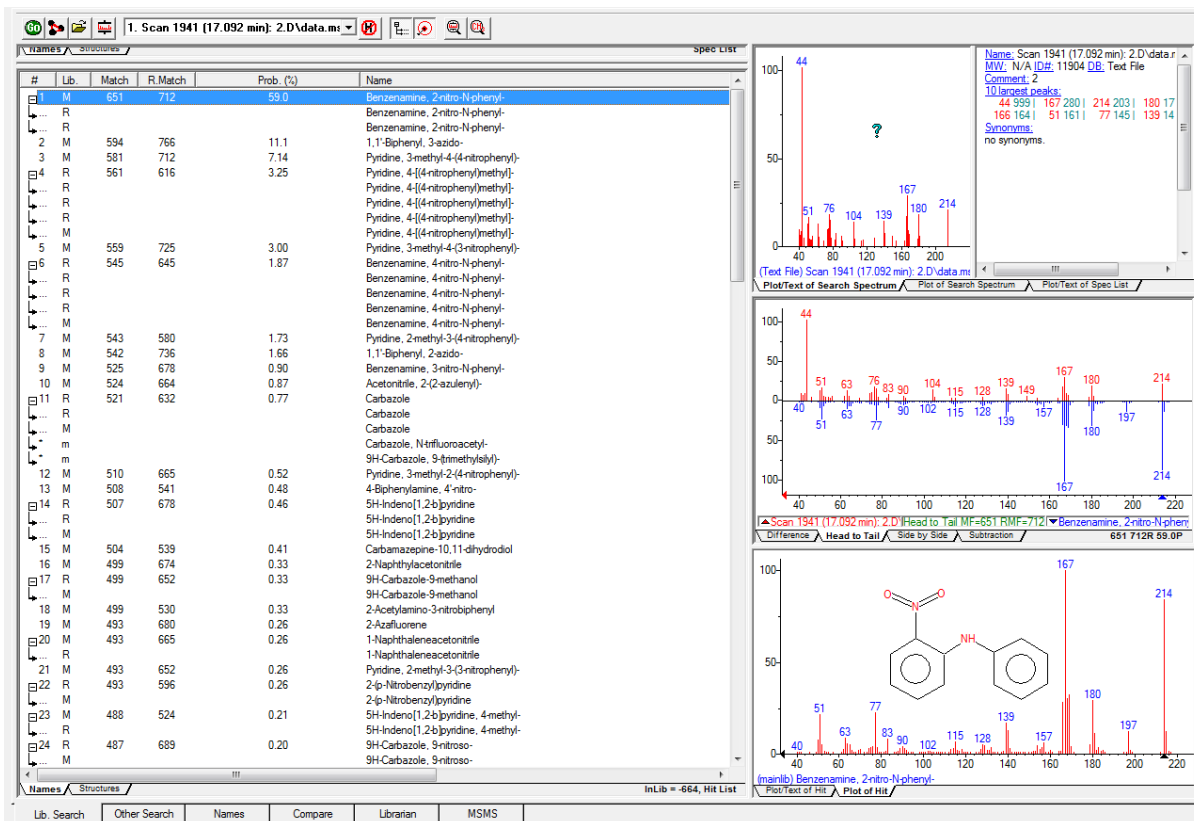


Figure A.10: Mass Spectrum and assignment of FSSA propellant 2 GS peak 17.092 minutes

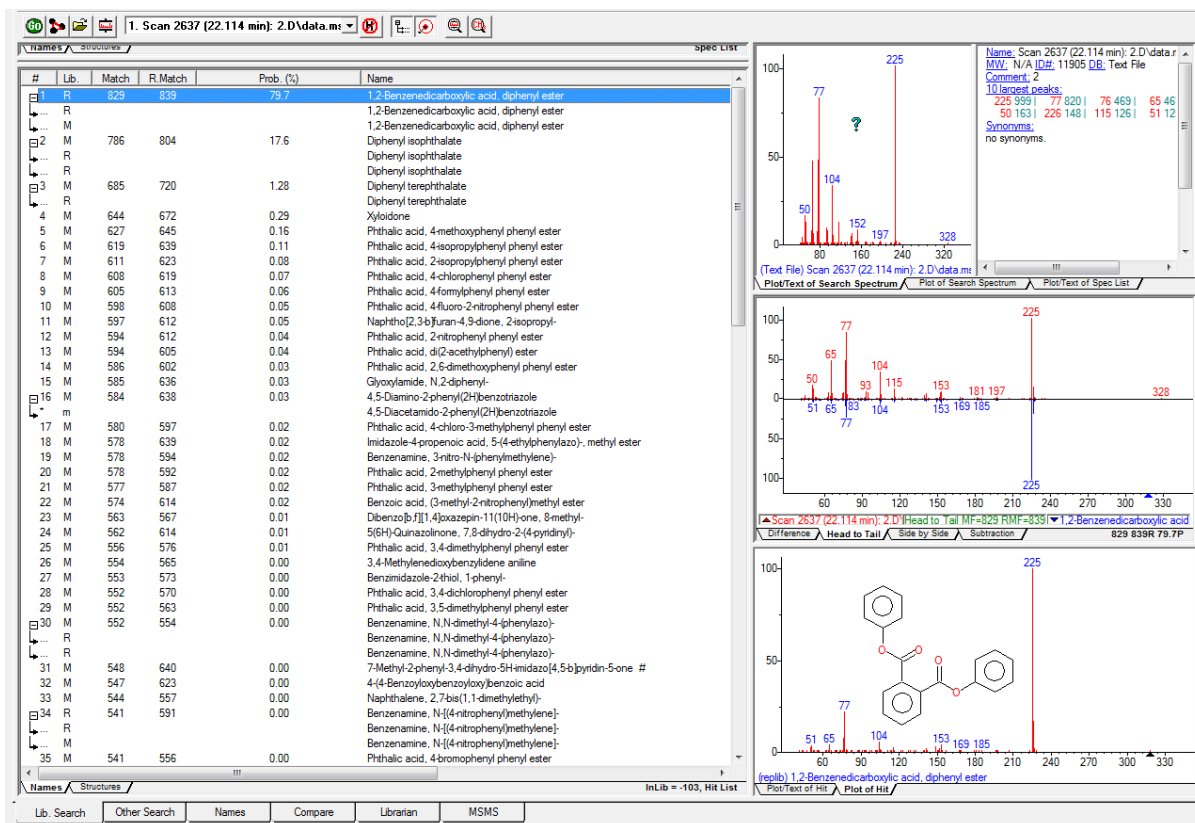


Figure A.11: Mass Spectrum and assignment of FSSA propellant 2 GS peak 22.114 minutes

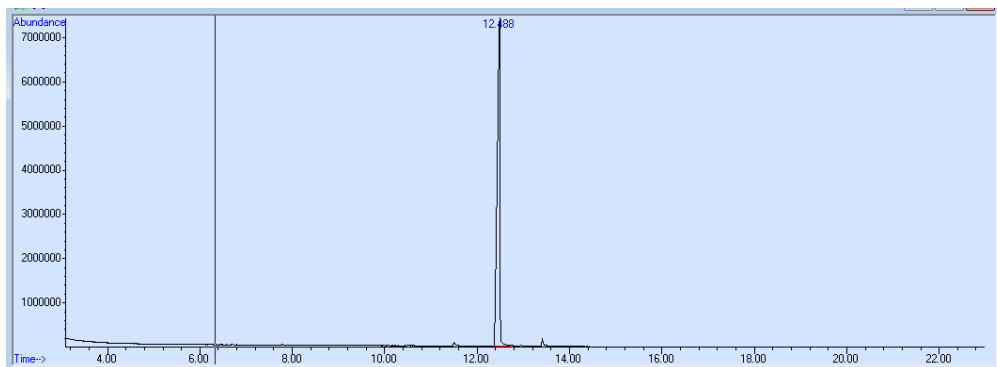


Figure A.12: Gas Chromatogram of FSSA propellant sample 4

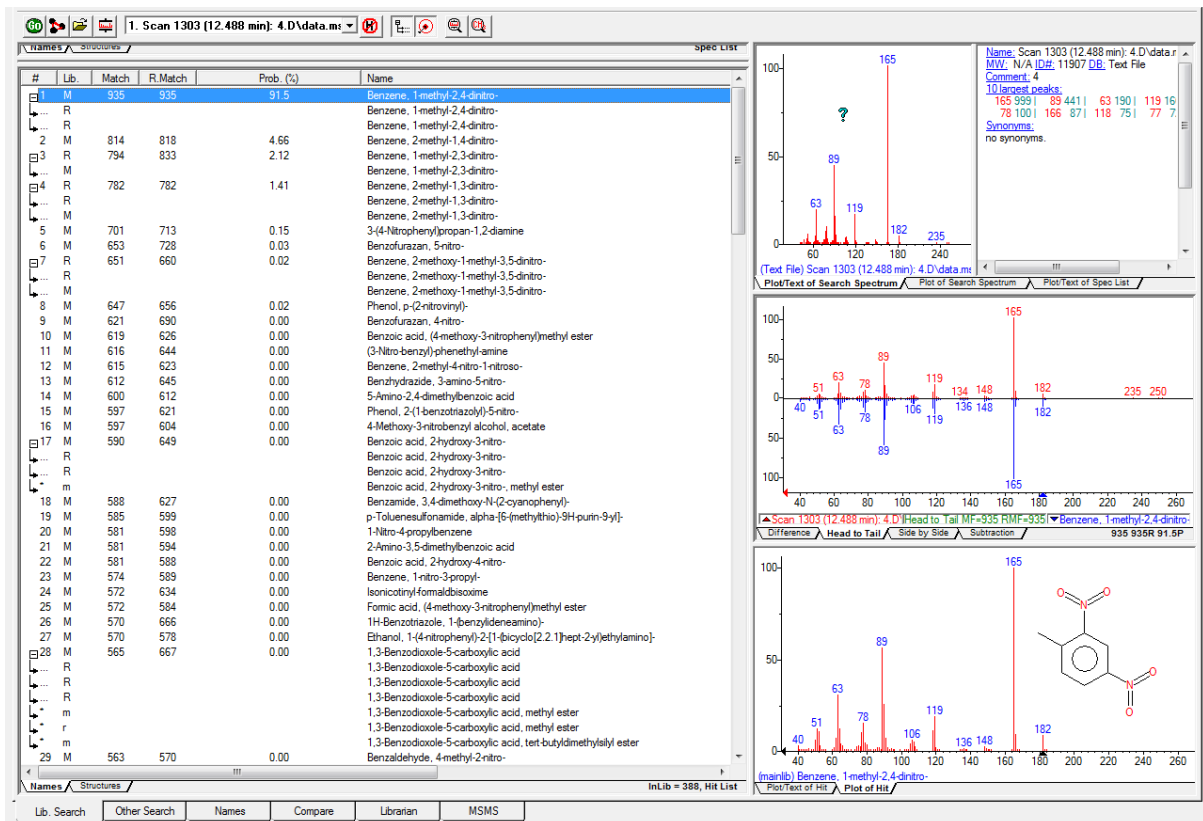


Figure A.13: Mass Spectrum and assignment of FSSA propellant 4 GS peak 12.488 minutes

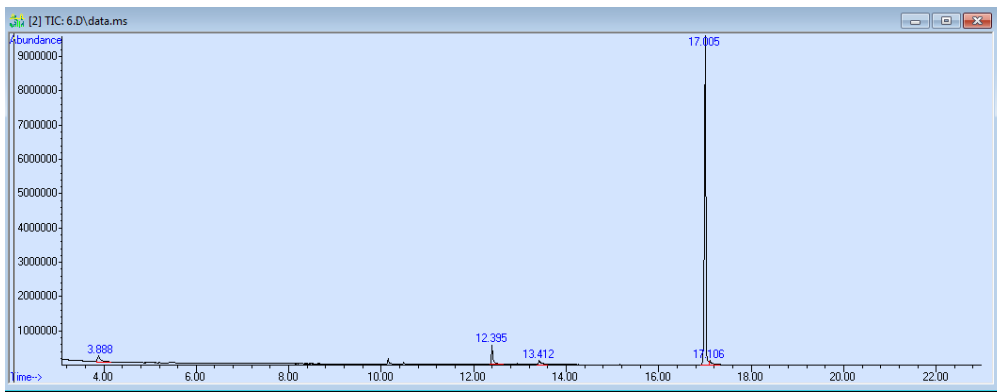


Figure A.14: Gas Chromatogram of FSSA propellant sample 6

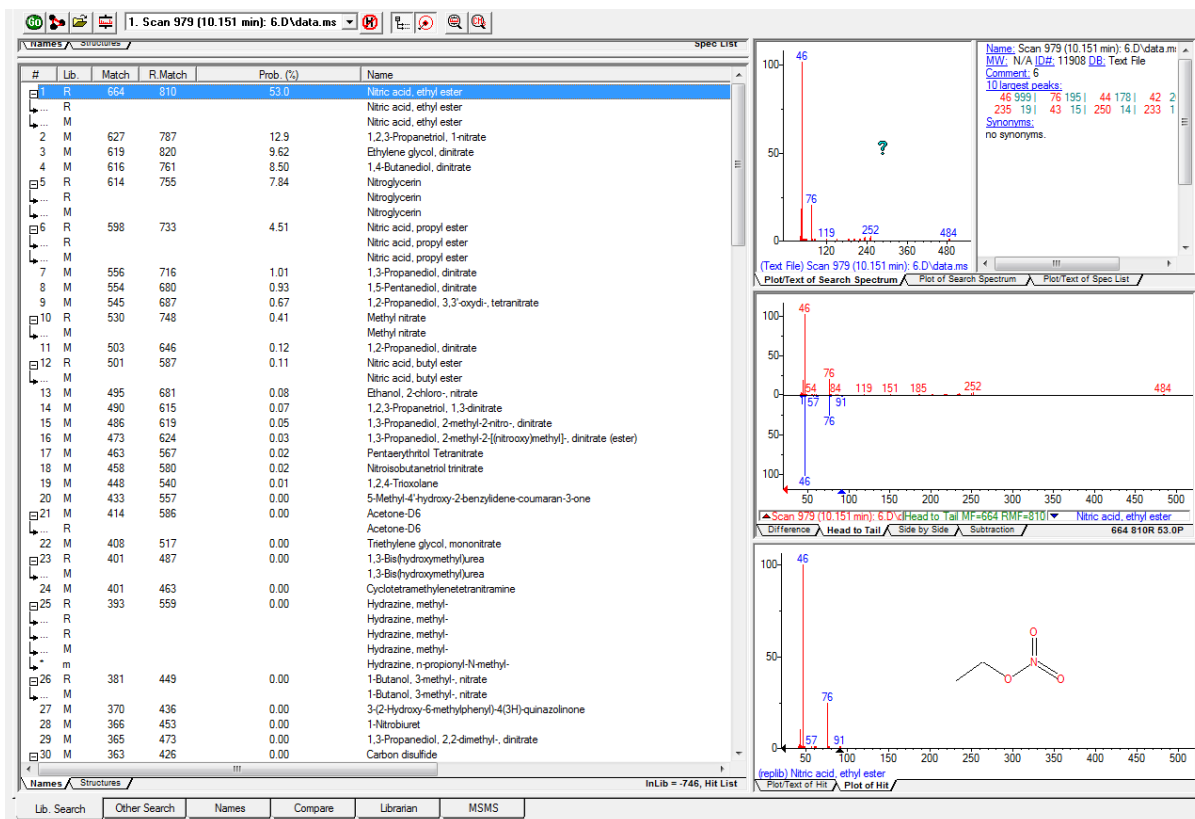


Figure A.15: Mass Spectrum and assignment of FSSA propellant 6 GS peak 10.151 minutes

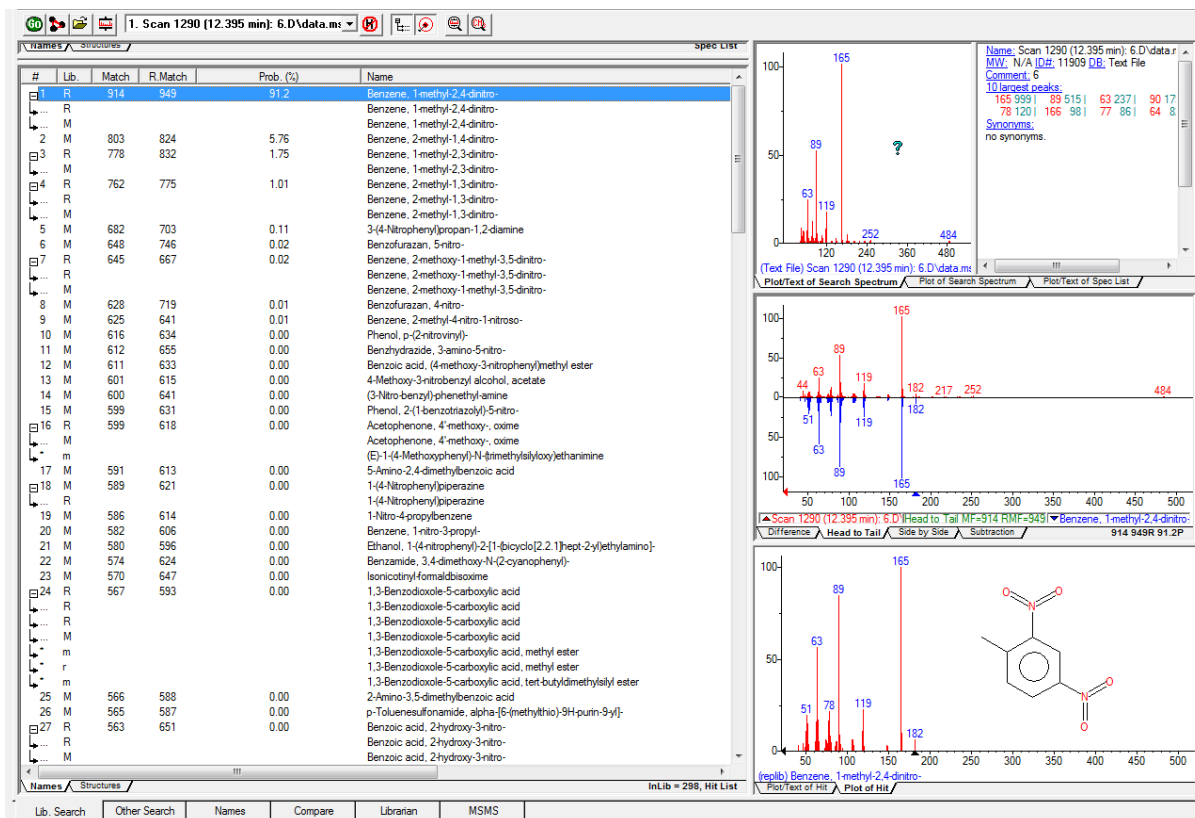


Figure A.16: Mass Spectrum and assignment of FSSA propellant 6 GS peak 12.395 minutes

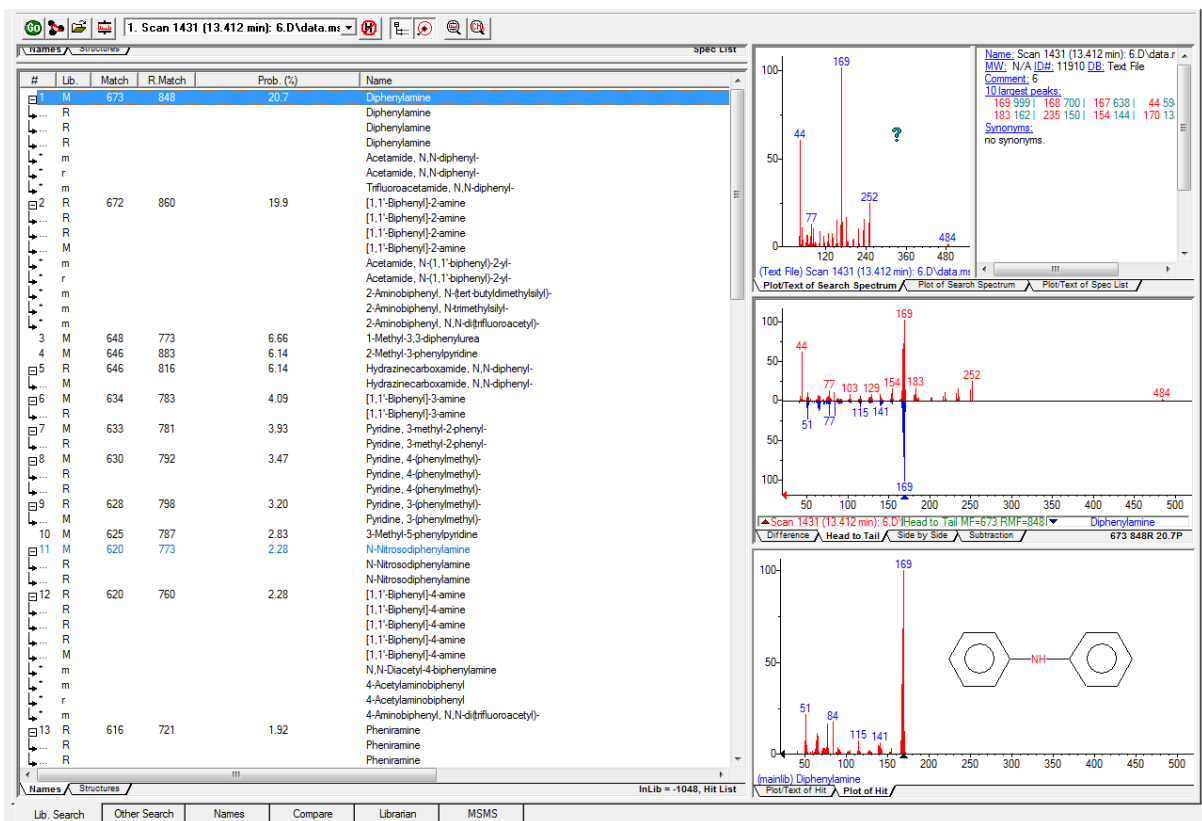


Figure A.17: Mass Spectrum and assignment of FSSA propellant 6 GS peak 13.412 minutes

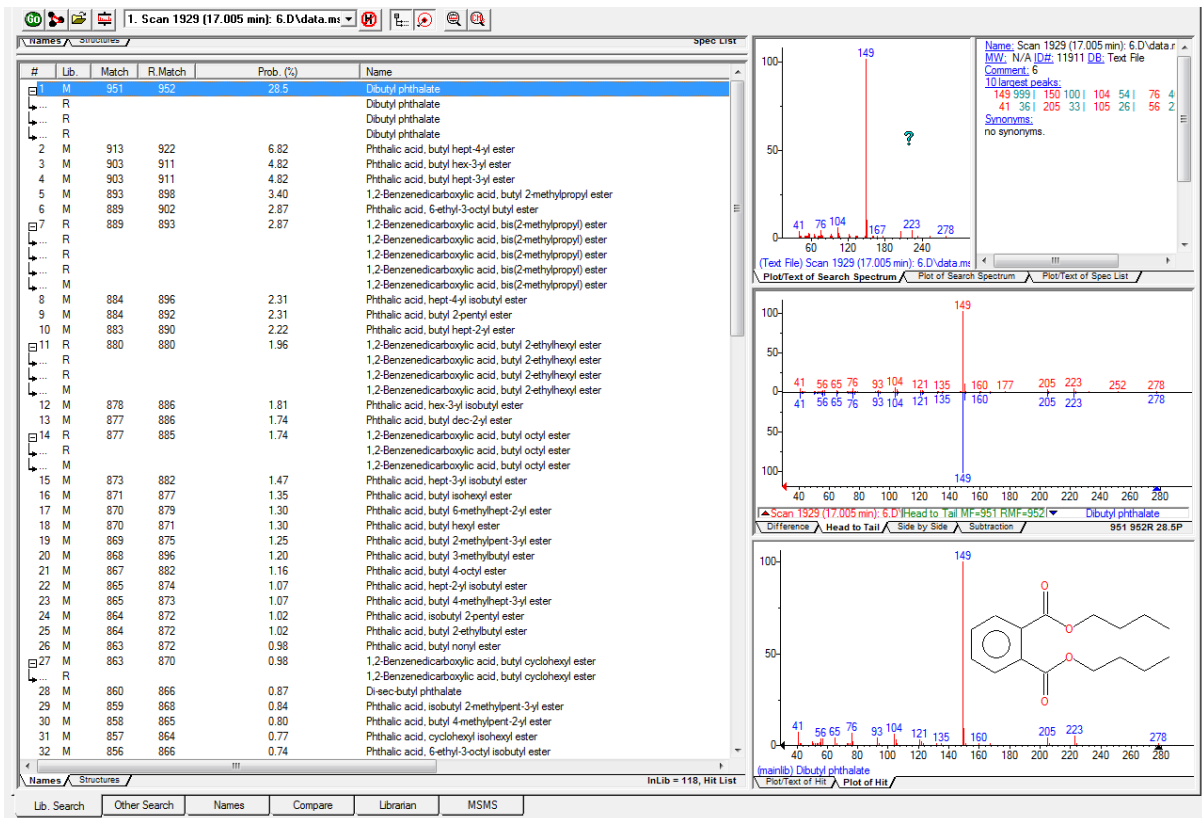


Figure A.18: Mass Spectrum and assignment of FSSA propellant 6 GS peak 17.005 minutes

B. Appendix – HPLC spectra of propellants

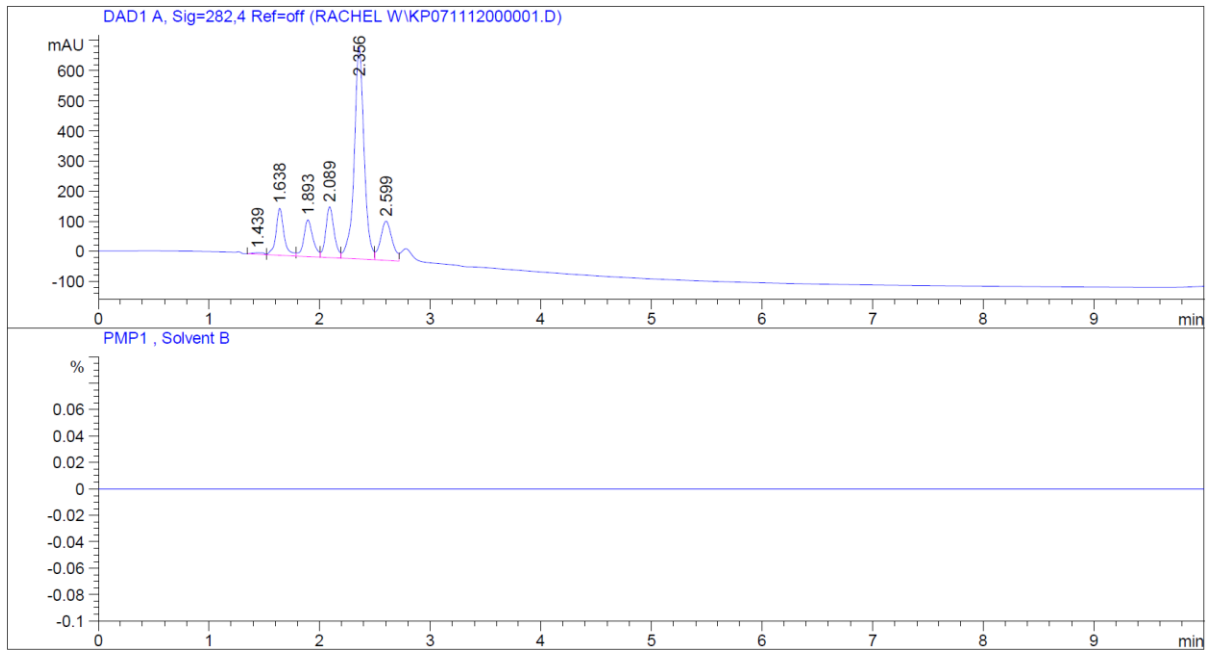


Figure B.1: HPLC Chromatogram of propellant standard mixture

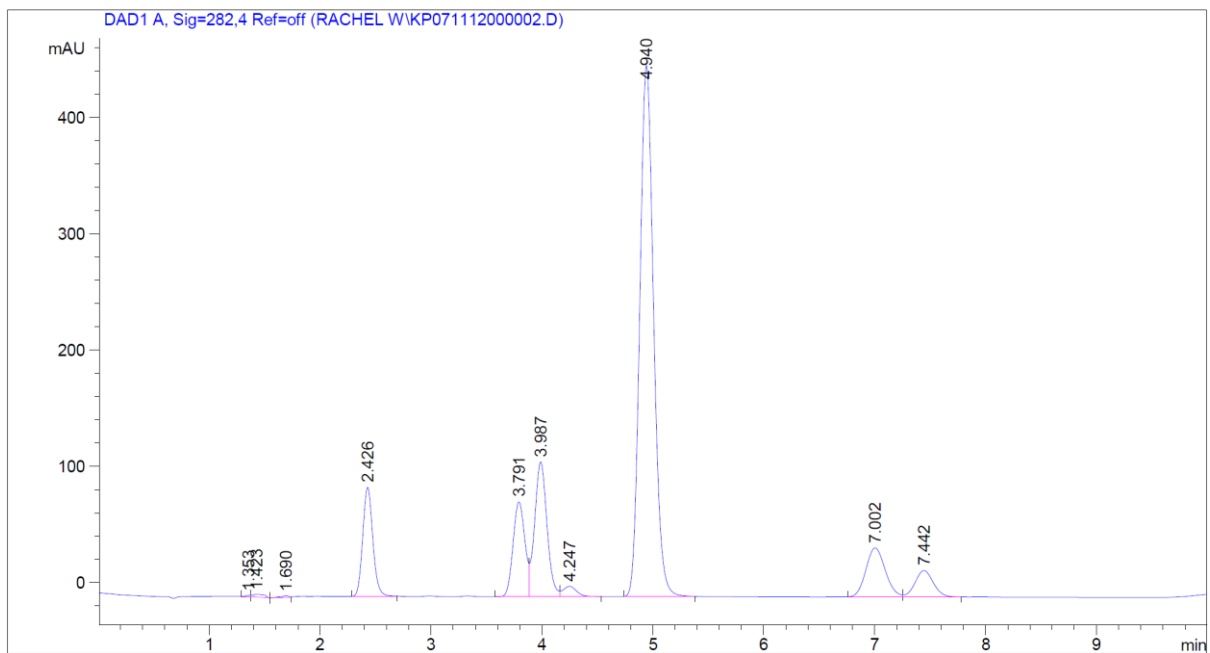


Figure B.2: HPLC Chromatogram of FSSA sample 1

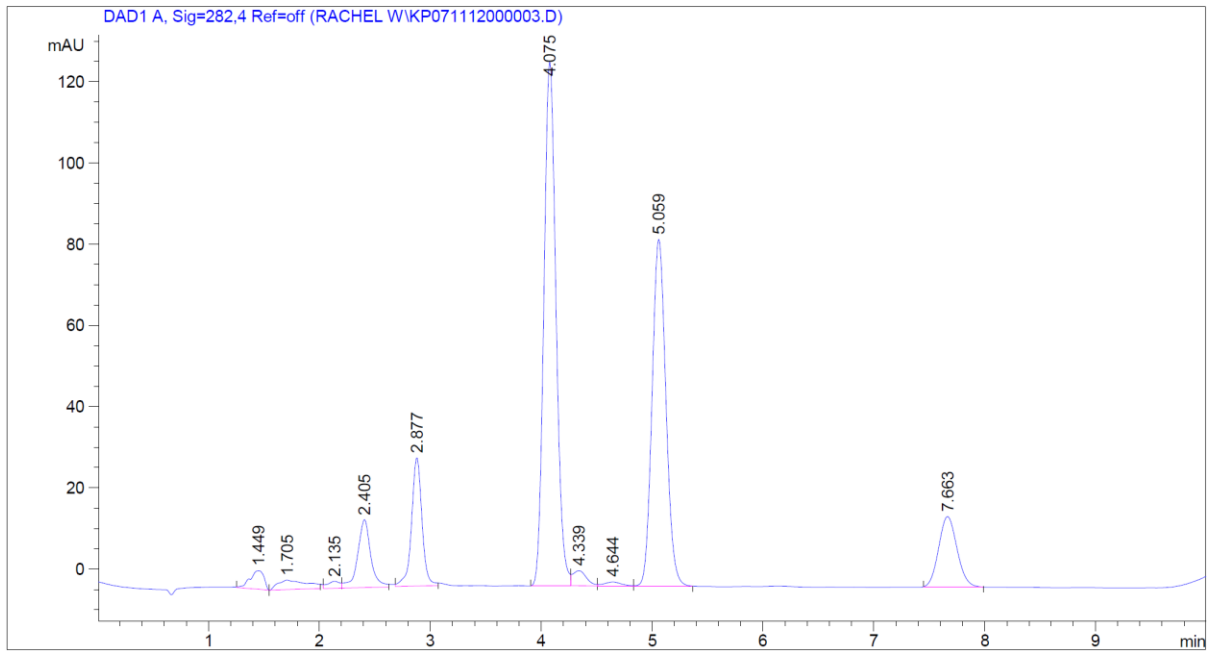


Figure B.3: HPLC Chromatogram of FSSA sample 2

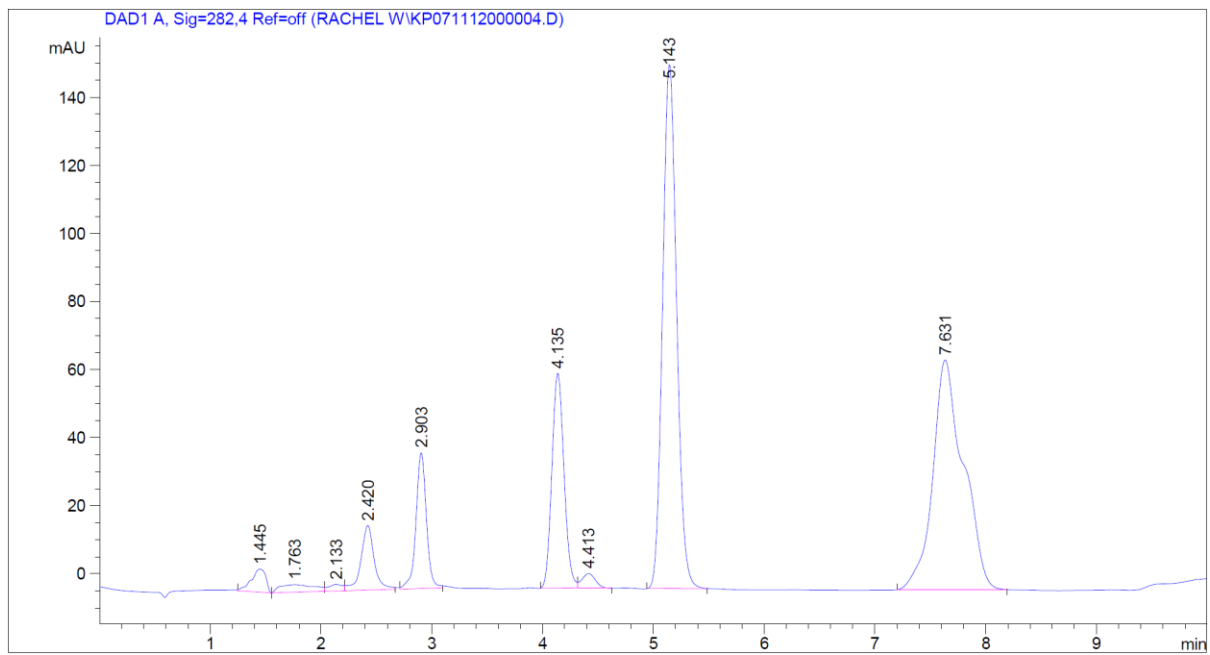


Figure B.4: HPLC Chromatogram of FSSA sample 3

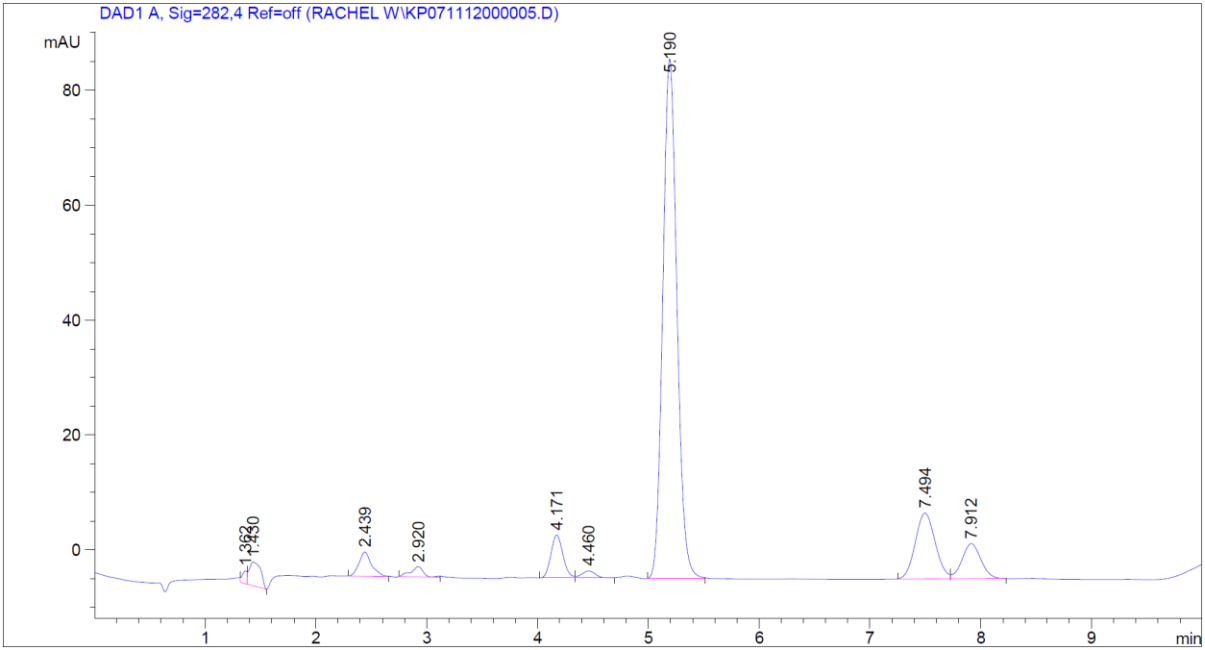


Figure B.5: HPLC Chromatogram of FSSA sample 4

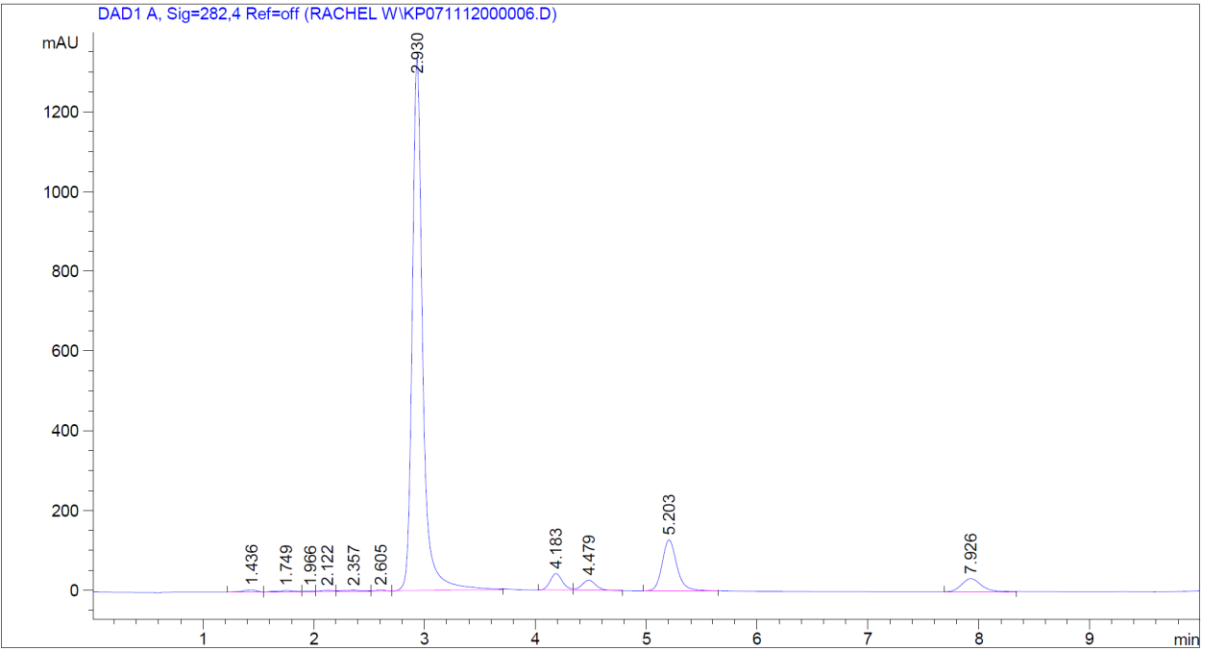


Figure B.6: HPLC Chromatogram of FSSA sample 5

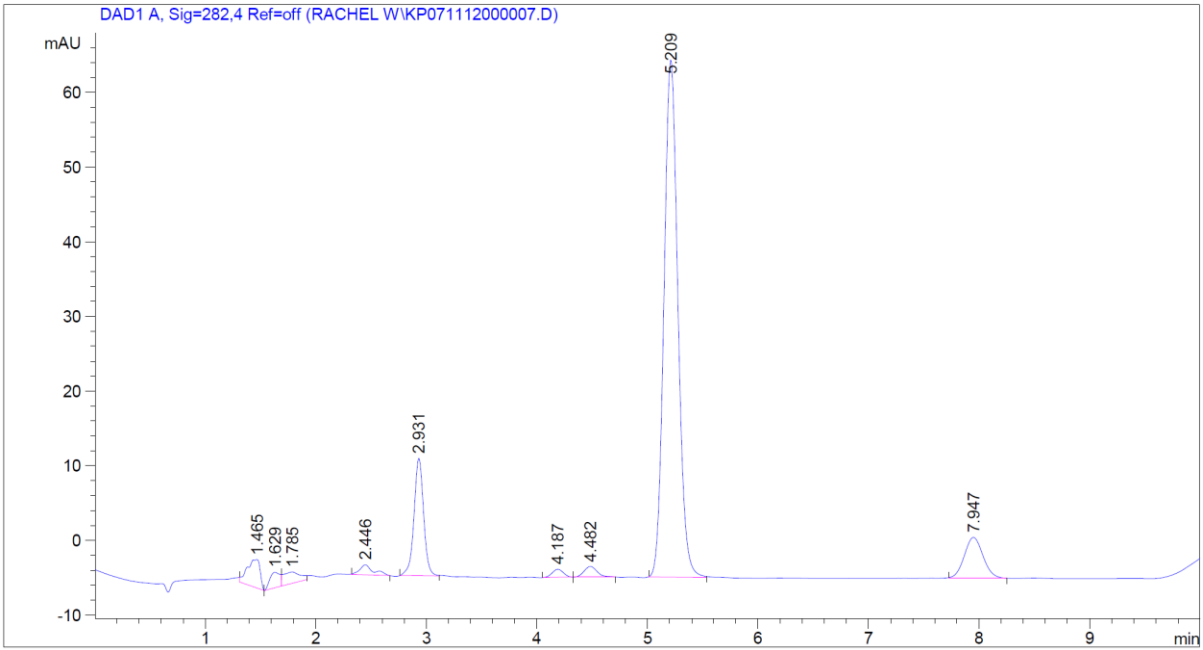


Figure B.7: HPLC Chromatogram of FSSA sample 6

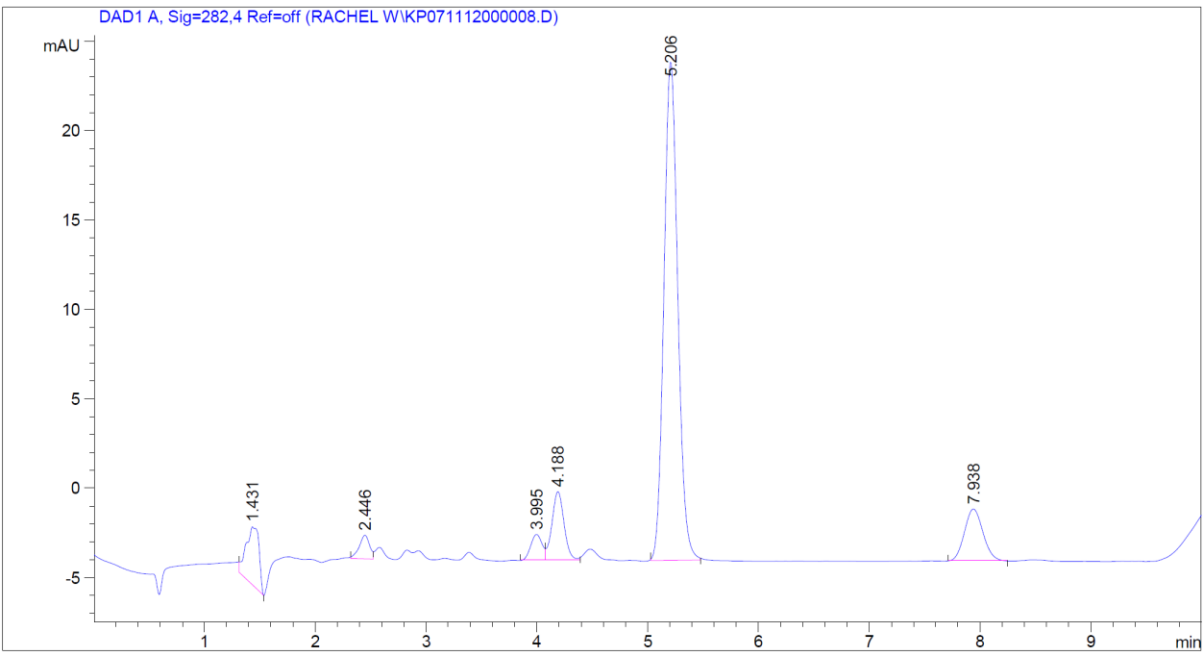


Figure B.8: HPLC Chromatogram of FSSA sample 7

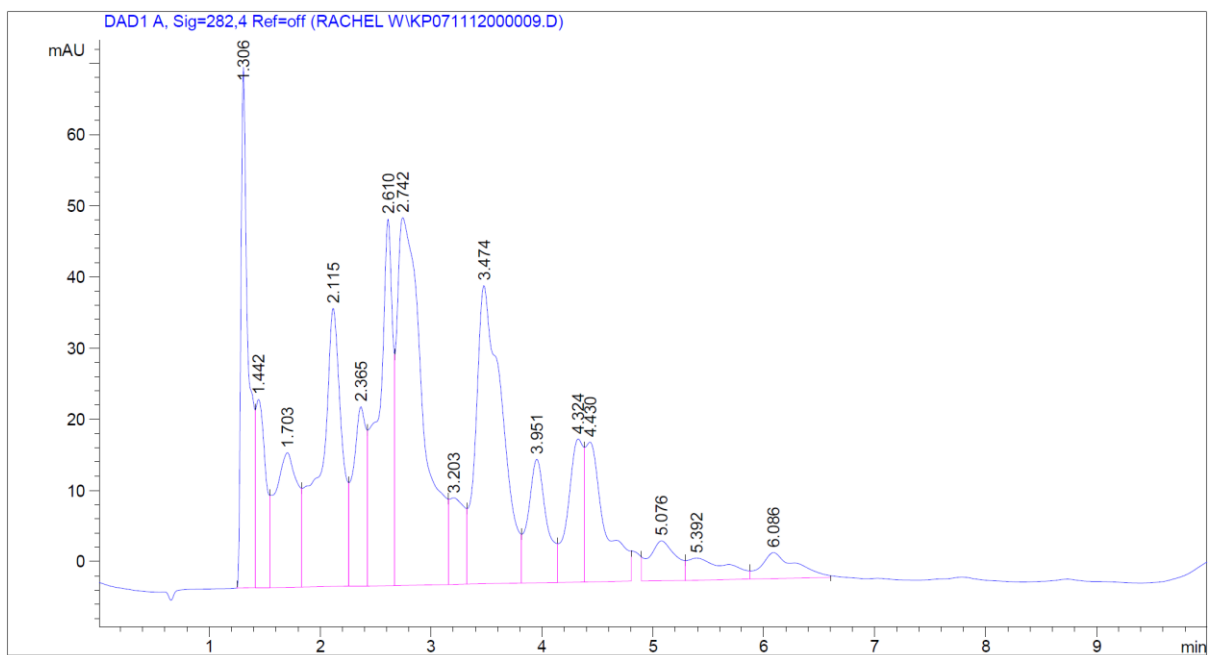


Figure B.9: HPLC Chromatogram of FSSA sample 8

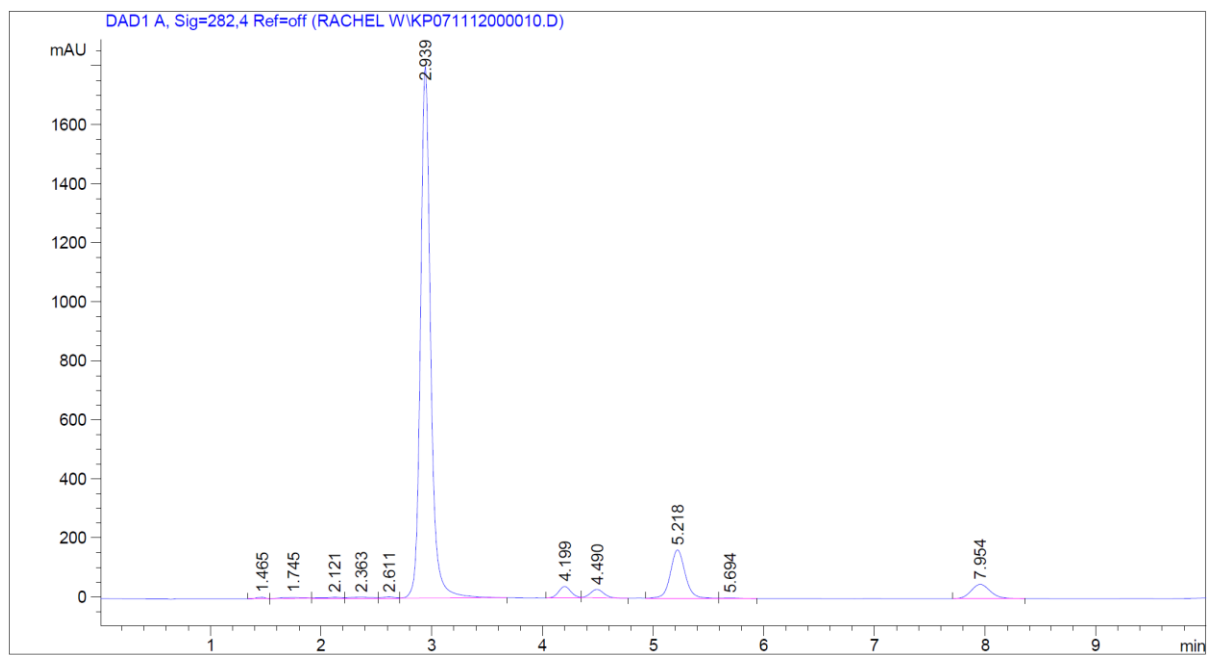


Figure B.10: HPLC Chromatogram of FSSA sample 9

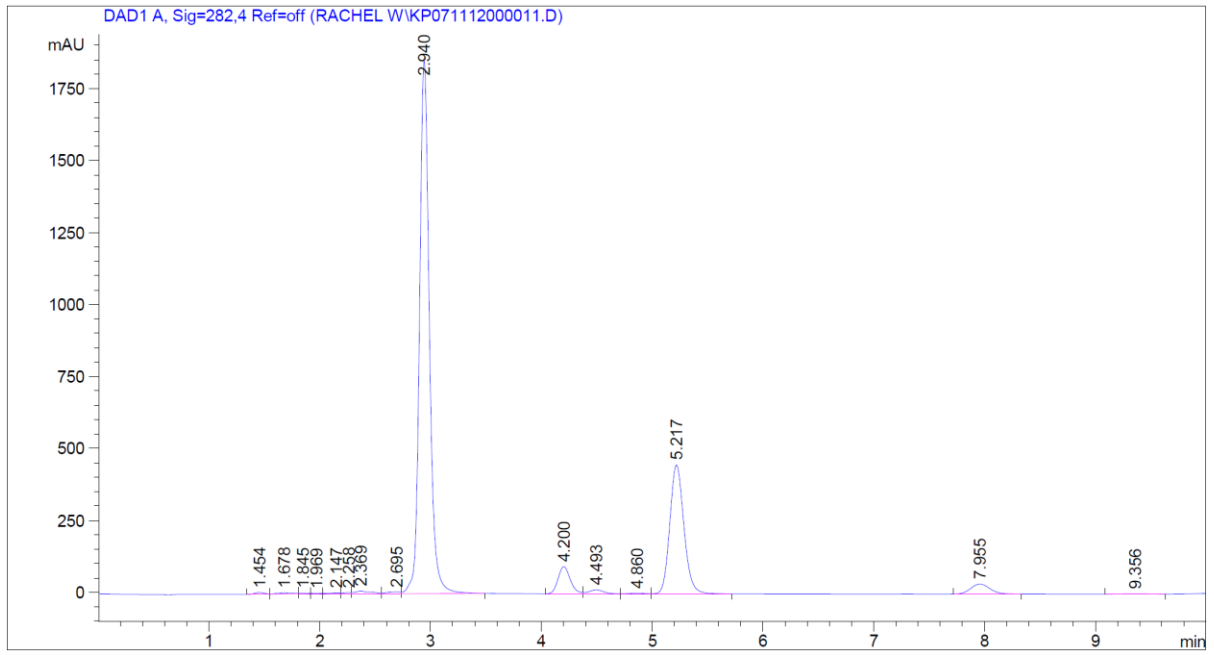


Figure B.11: HPLC Chromatogram of FSSA sample 10

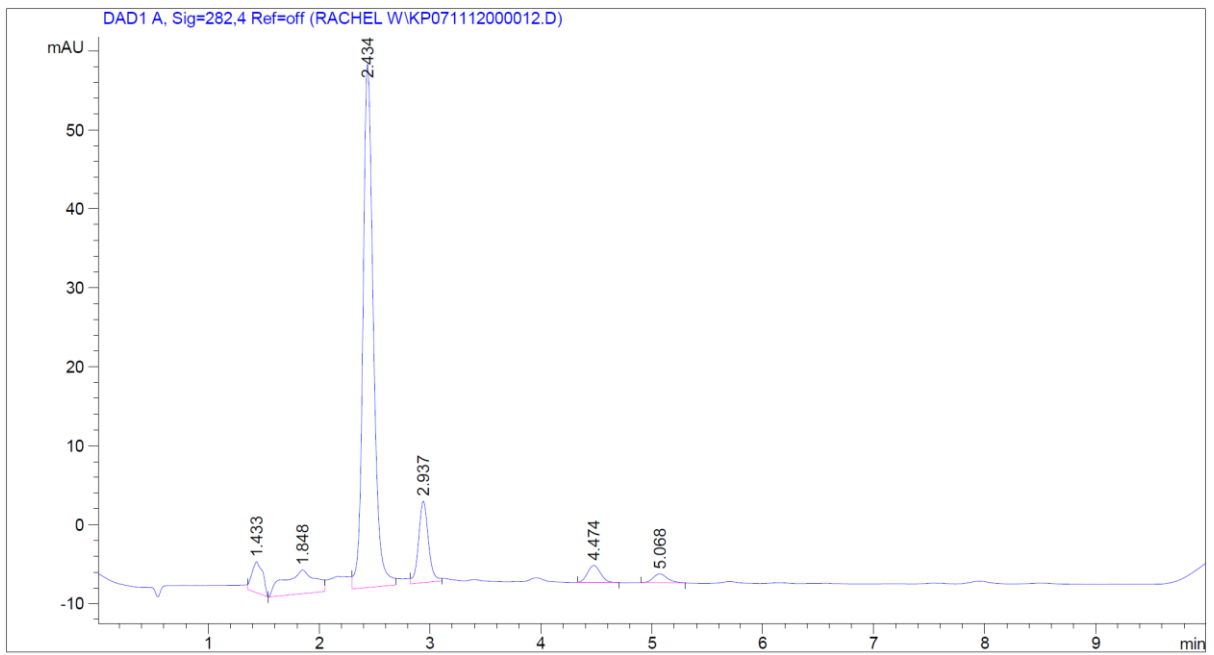


Figure B.12: HPLC Chromatogram of FSSA sample 11

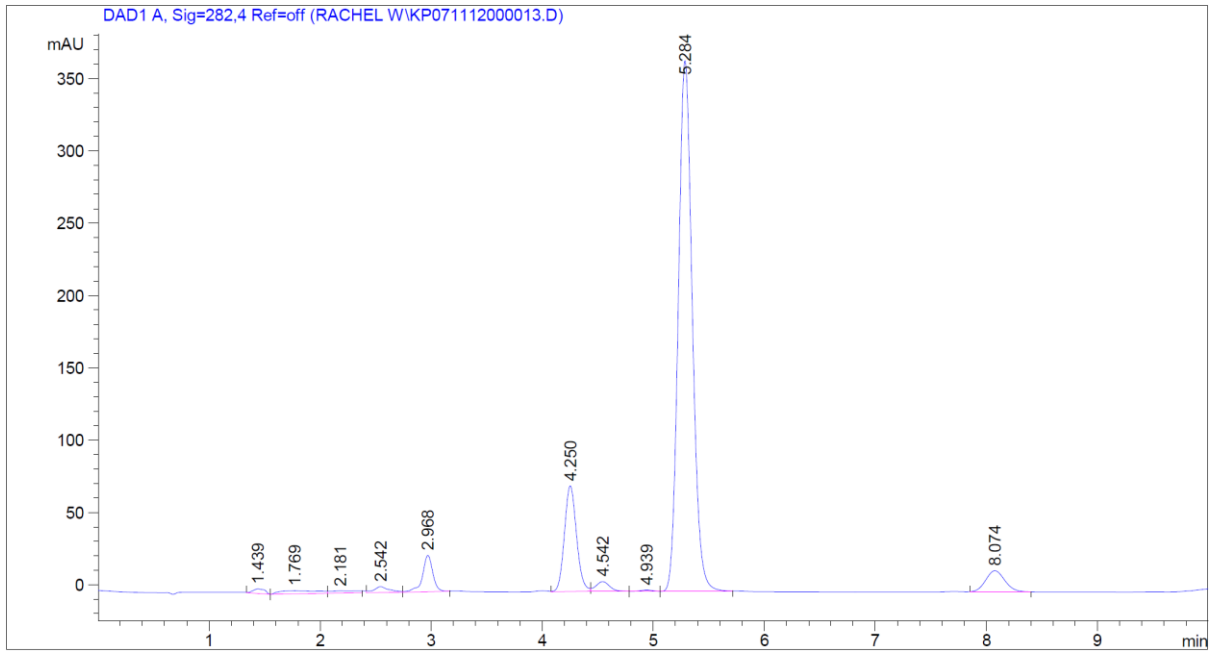


Figure B.13: HPLC Chromatogram of FSSA sample 12

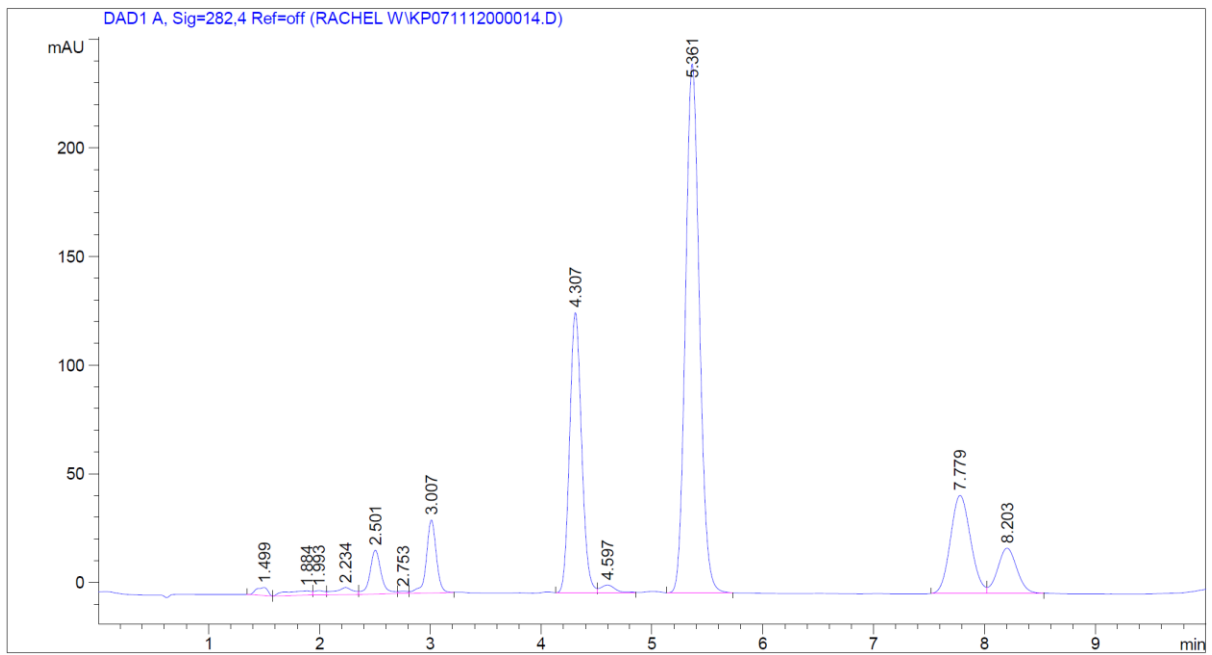


Figure B.14: HPLC Chromatogram of FSSA sample 13

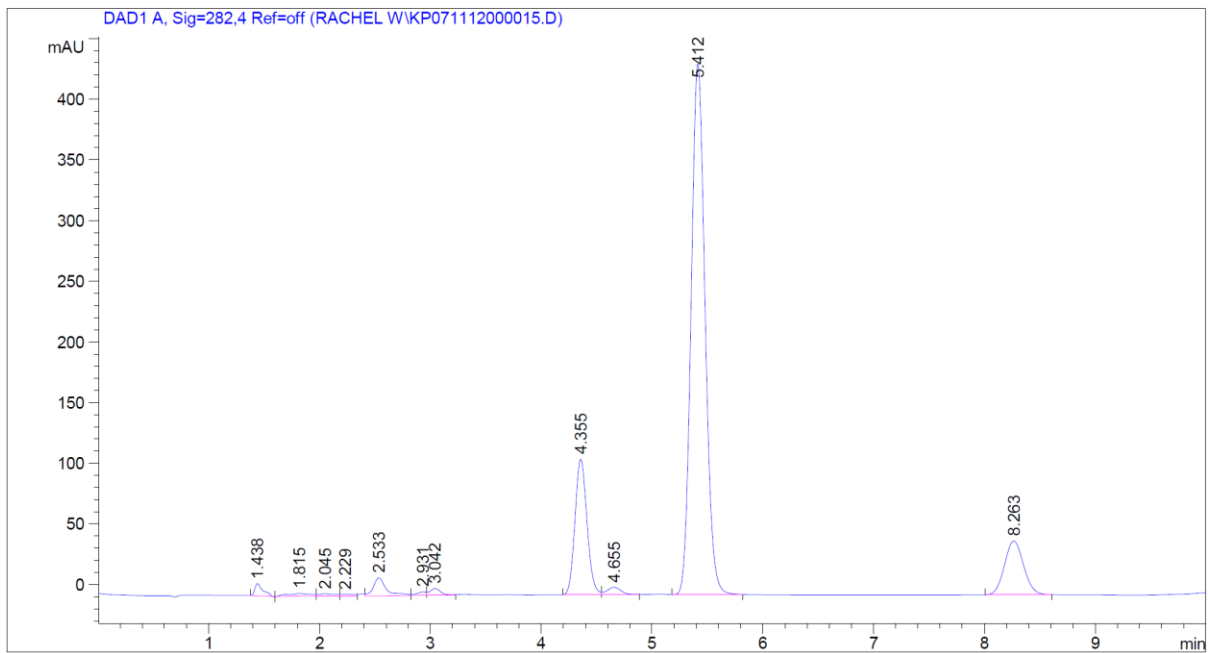


Figure B.15: HPLC Chromatogram of FSSA sample 14

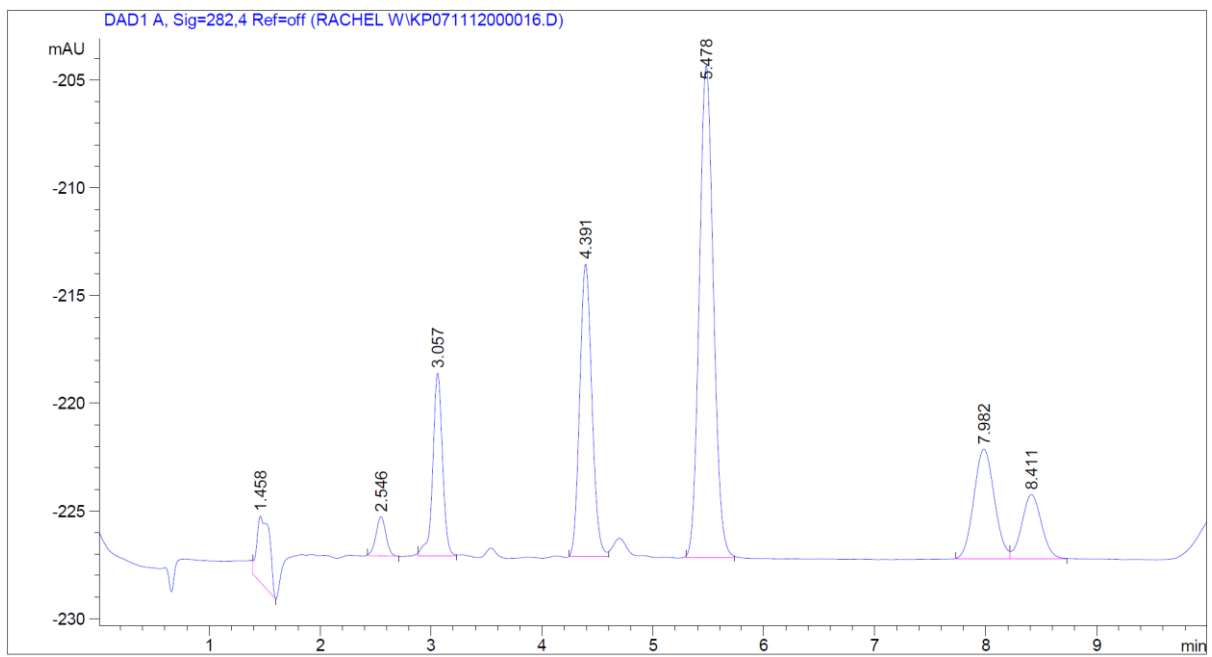


Figure B.16: HPLC Chromatogram of FSSA sample 15

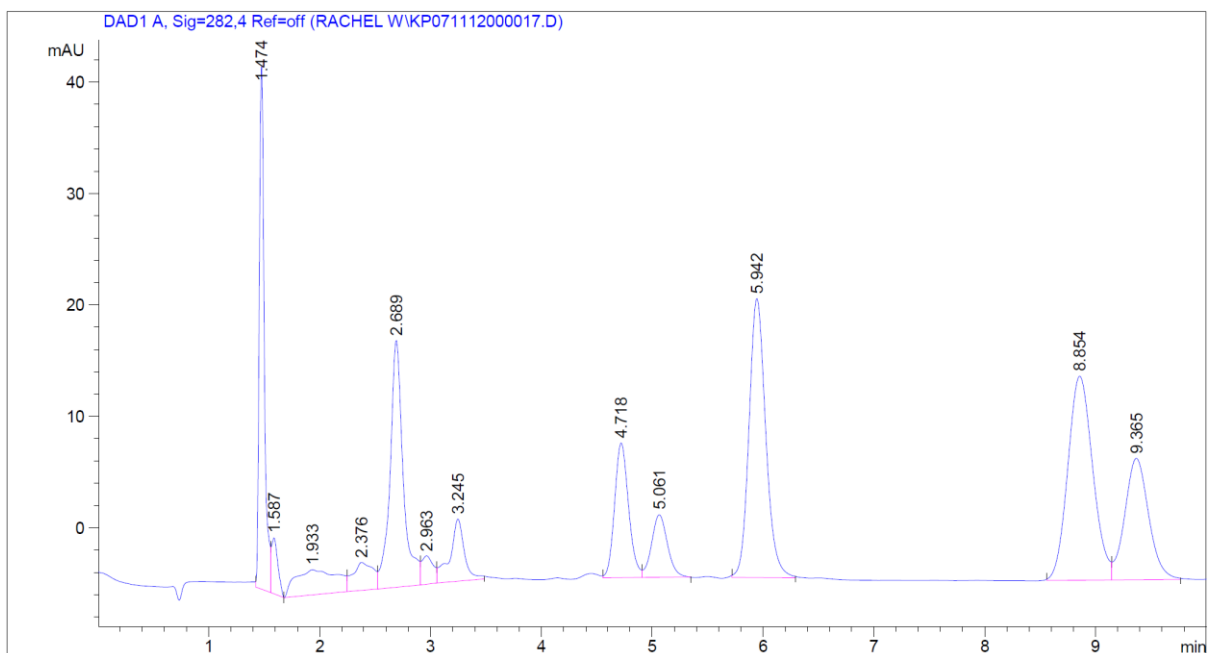


Figure B.17: HPLC Chromatogram of FSSA sample 16

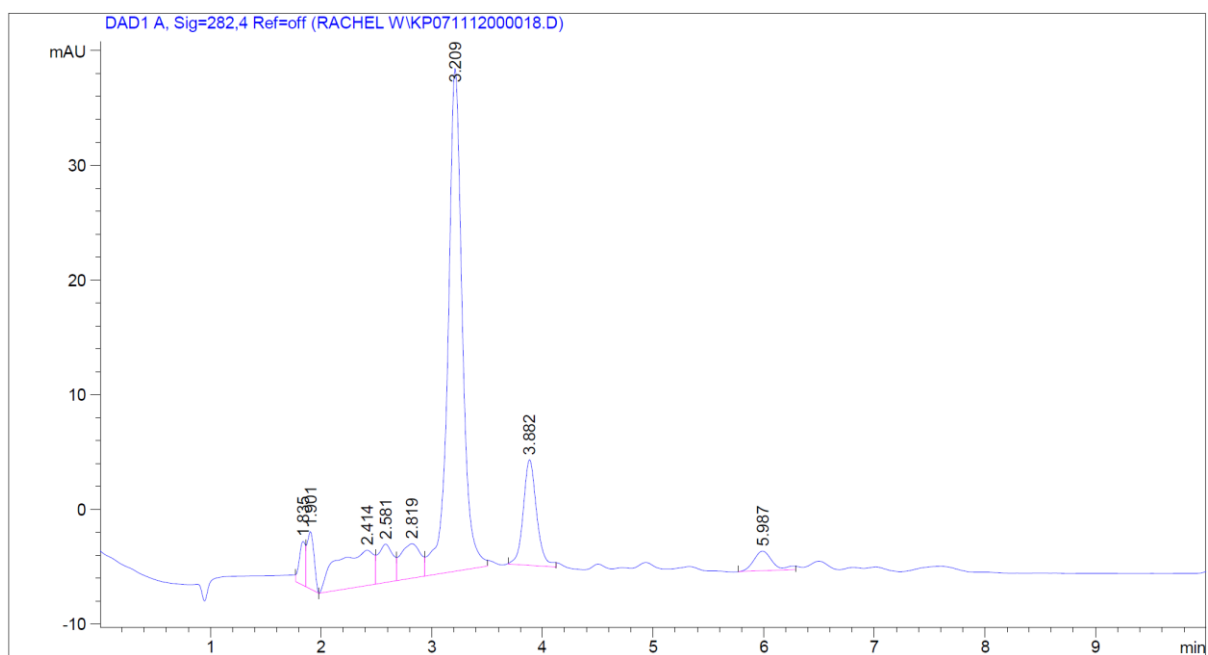


Figure B.18: HPLC Chromatogram of FSSA sample 17

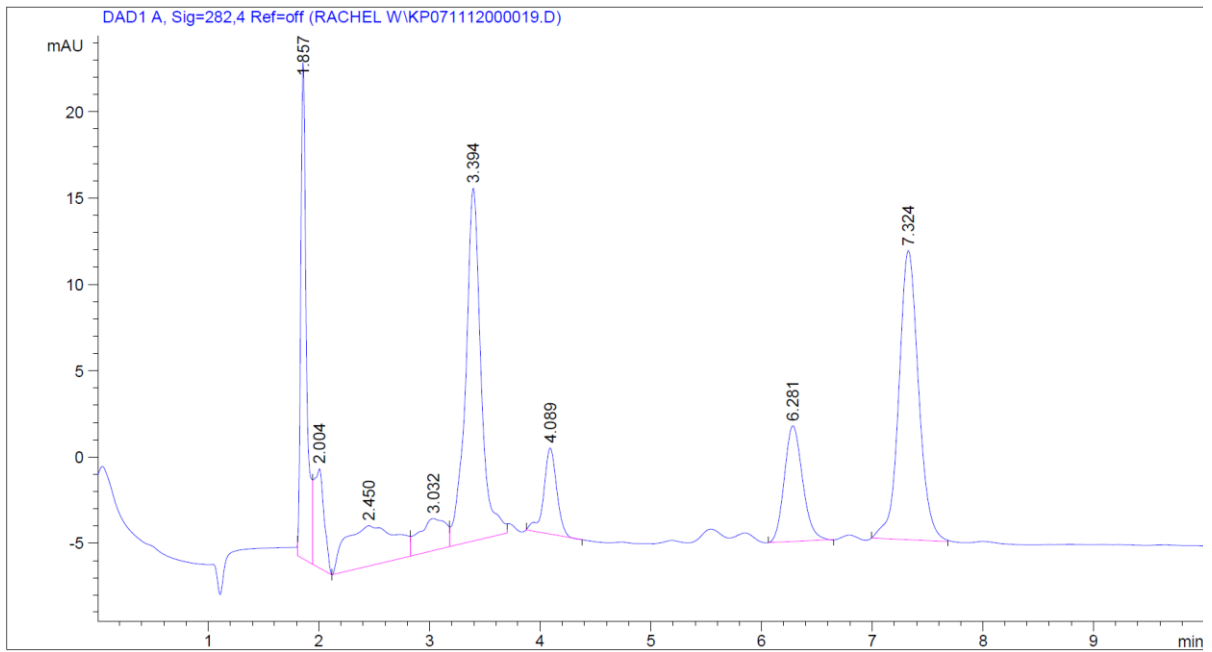


Figure B.19: HPLC Chromatogram of FSSA sample 18

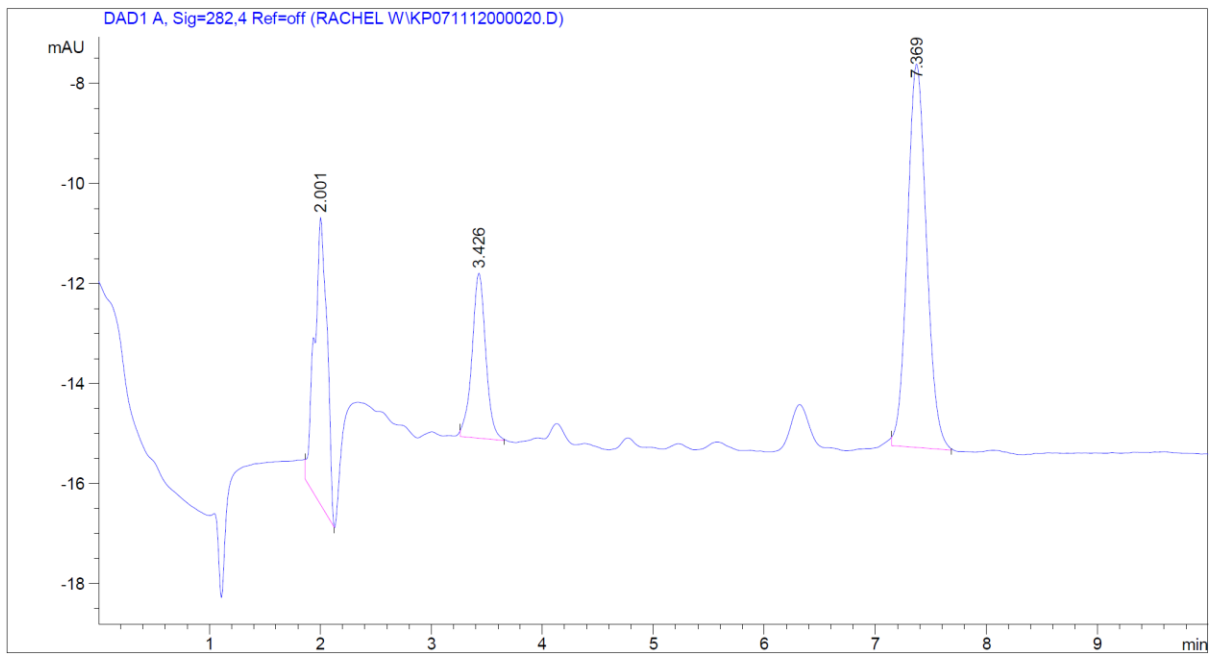


Figure B.20: HPLC Chromatogram of FSSA sample 19

C. Appendix Mid-Far IR spectra of propellants

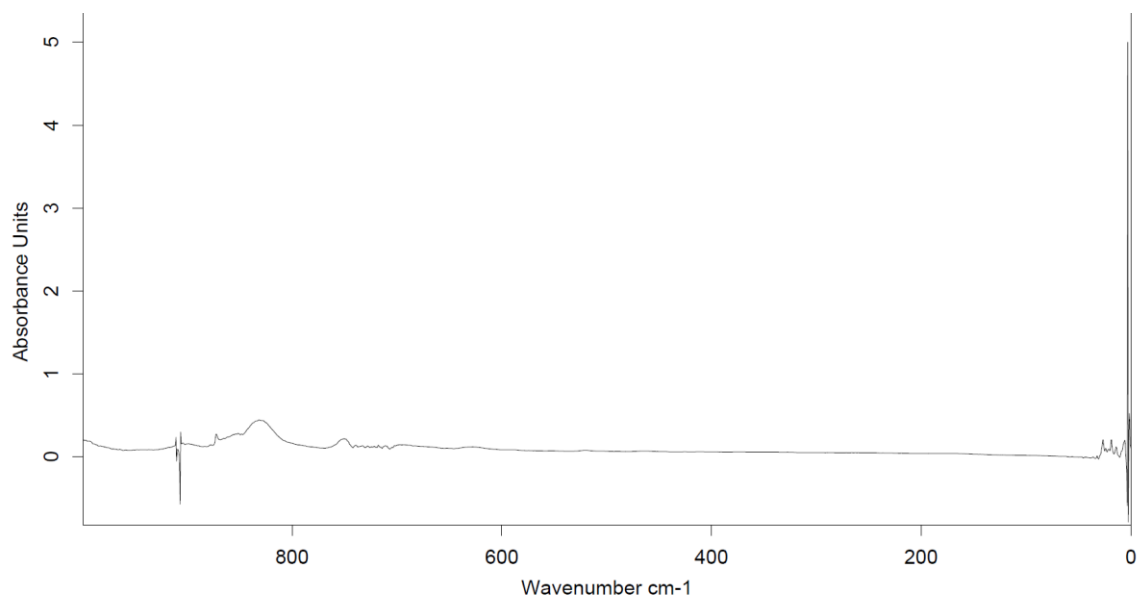


Figure C.1: IR spectrum of FSSA sample 1

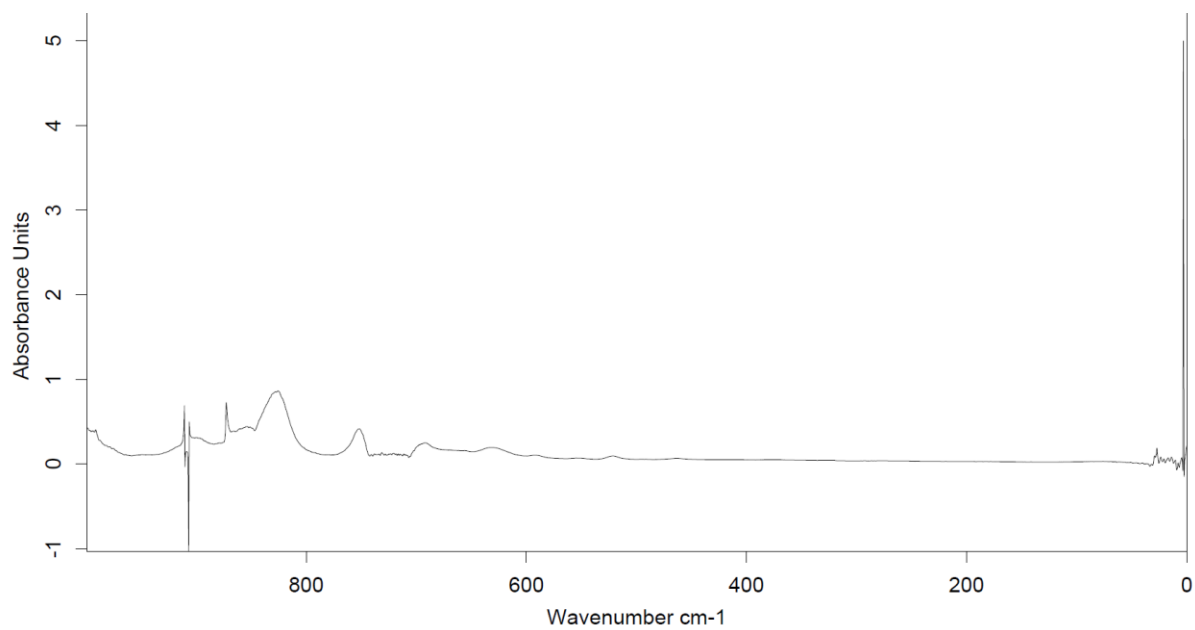


Figure C.2: IR spectrum of FSSA sample 2

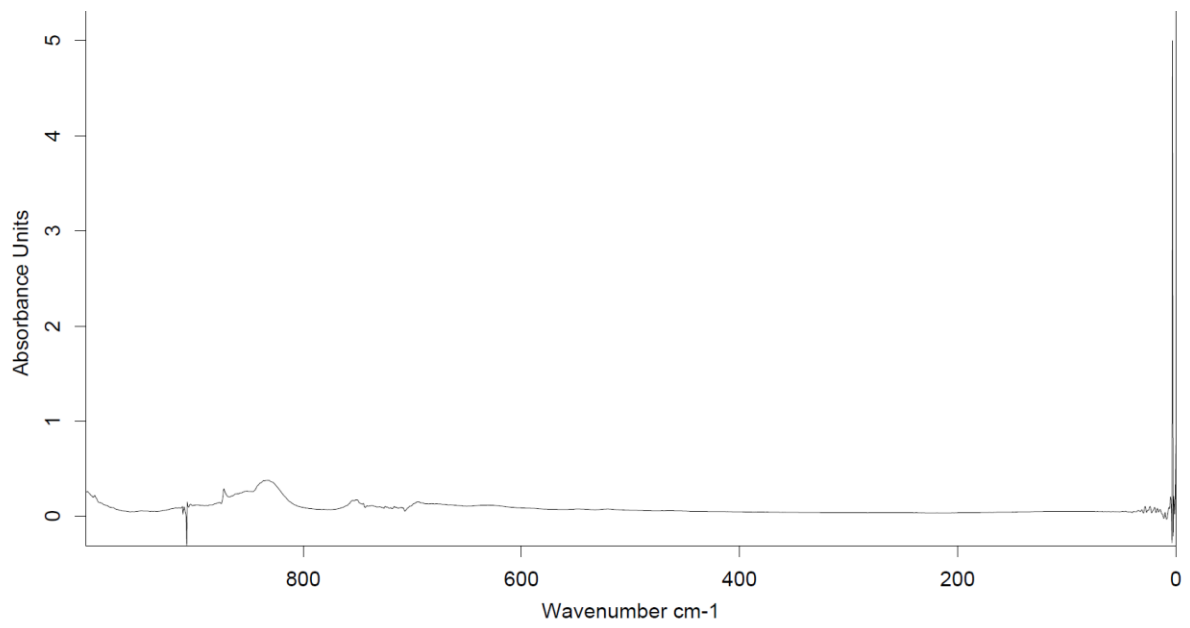


Figure C.3: IR spectrum of FSSA sample 3

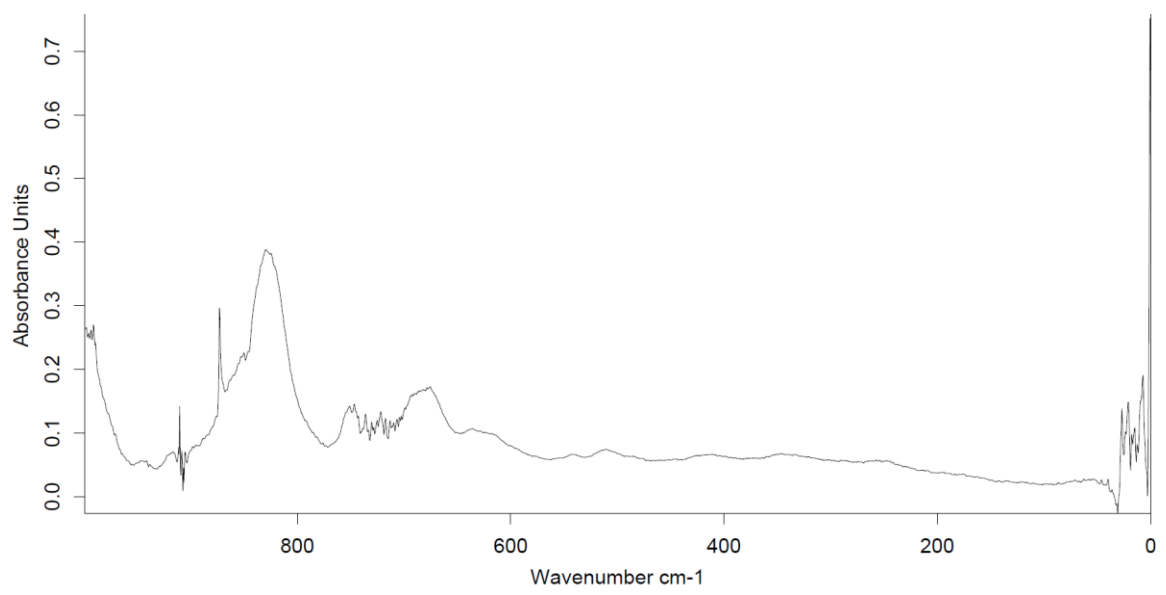


Figure C.4: IR spectrum of FSSA sample 4

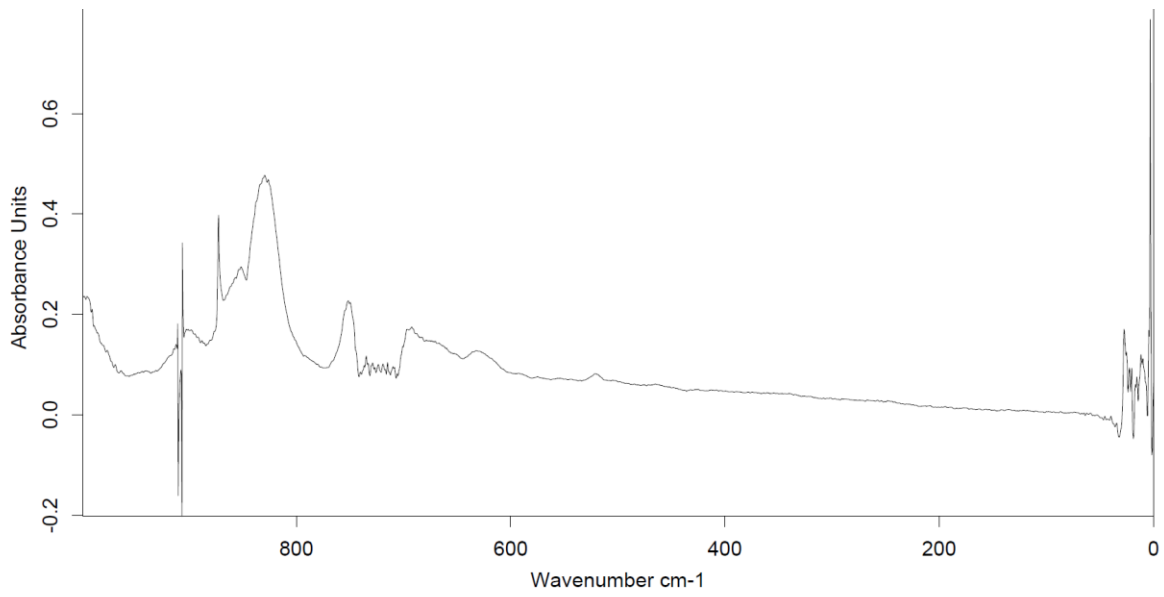


Figure C.5: IR spectrum of FSSA sample 6

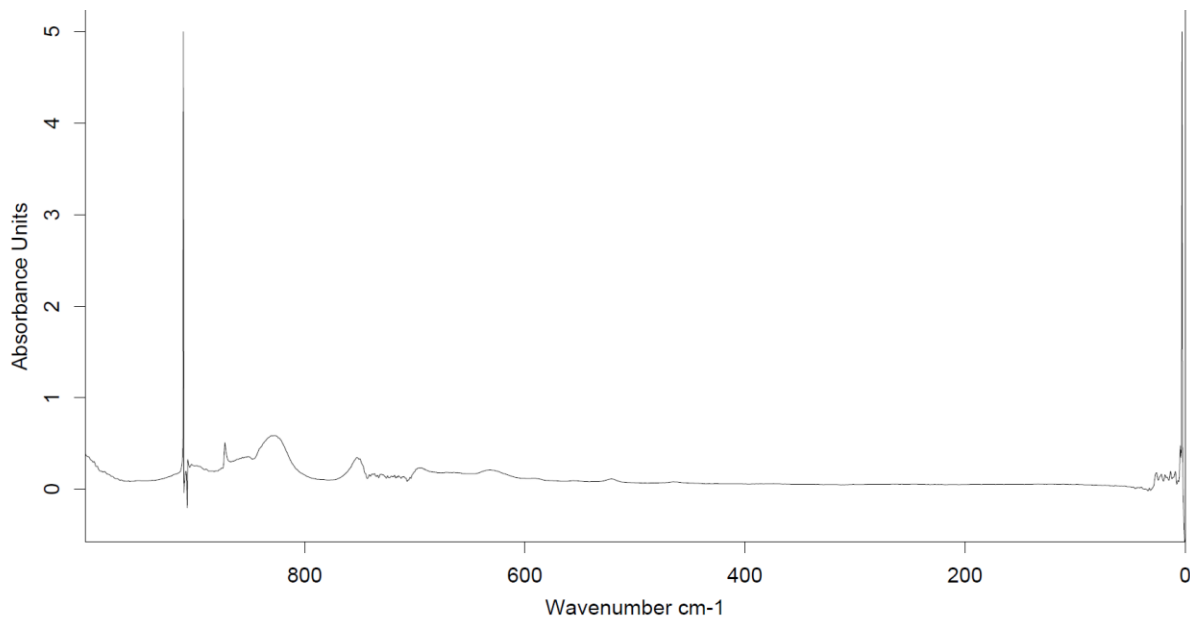


Figure C.6: IR spectrum of FSSA sample 7

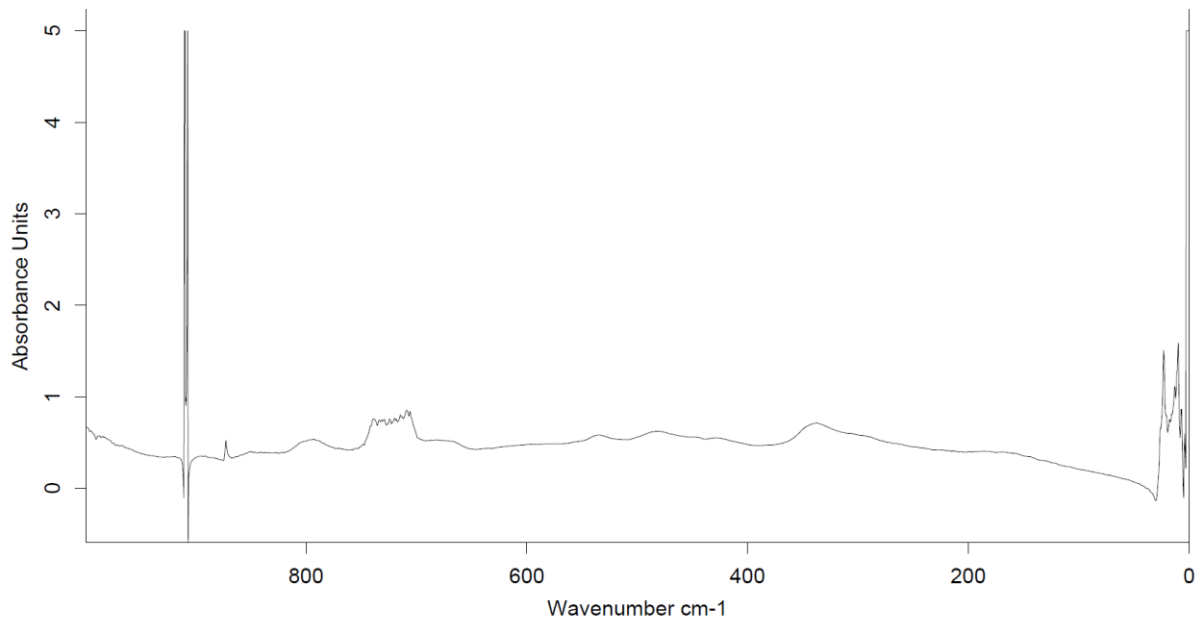


Figure C.7: IR spectrum of FSSA sample 8

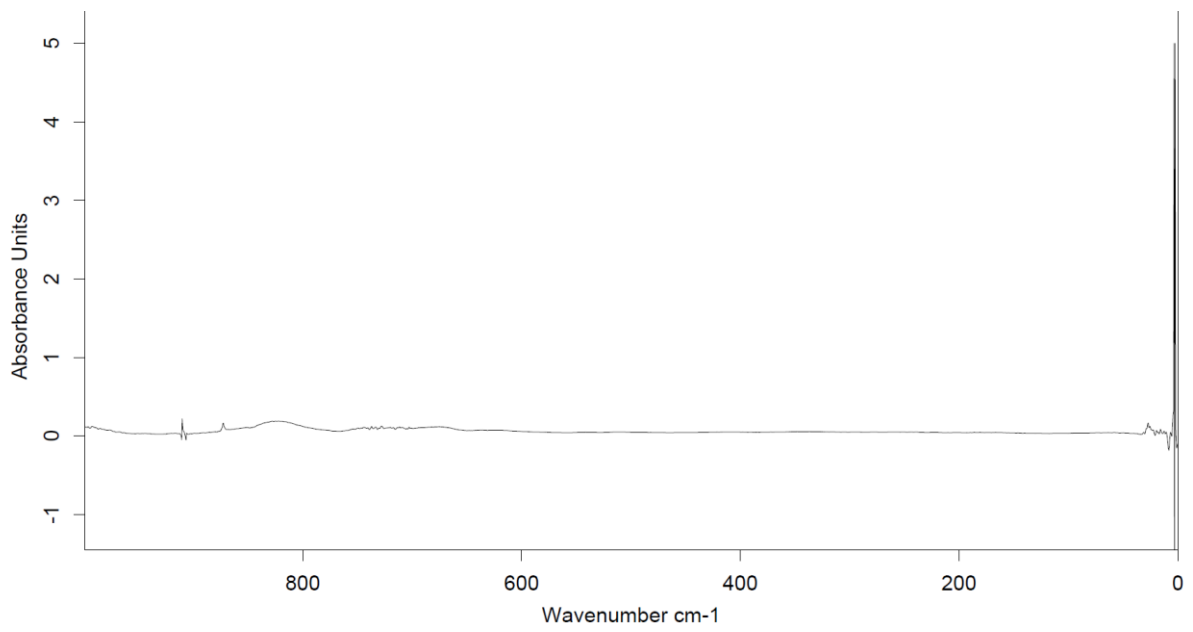


Figure C.8: IR spectrum of FSSA sample 9

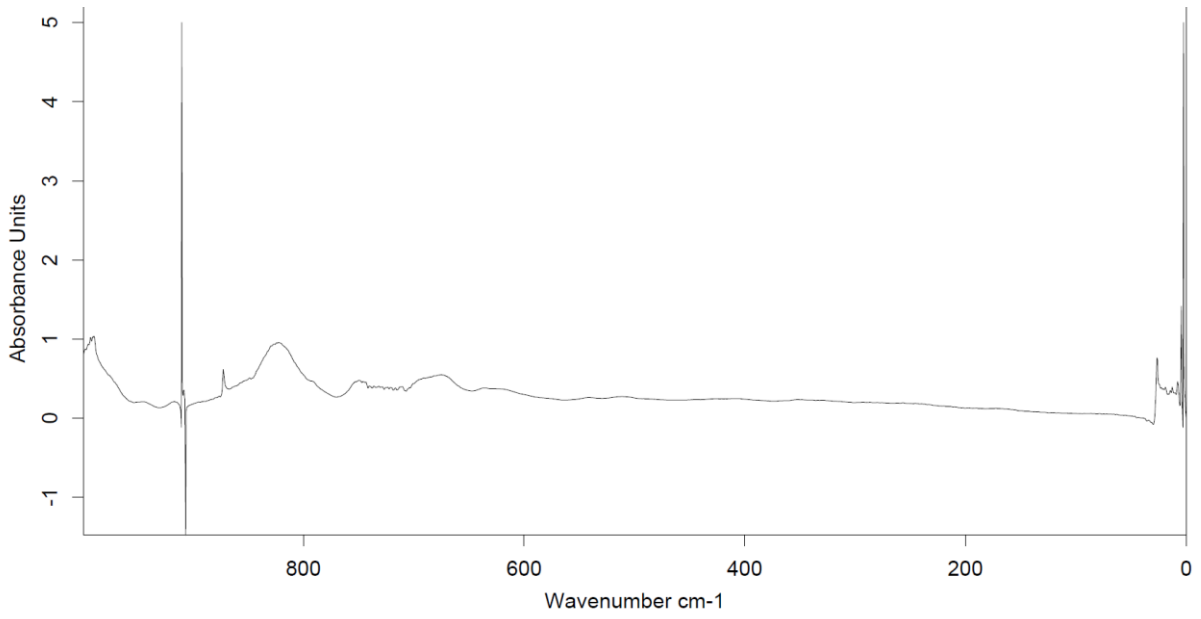


Figure C.9: IR spectrum of FSSA sample 10

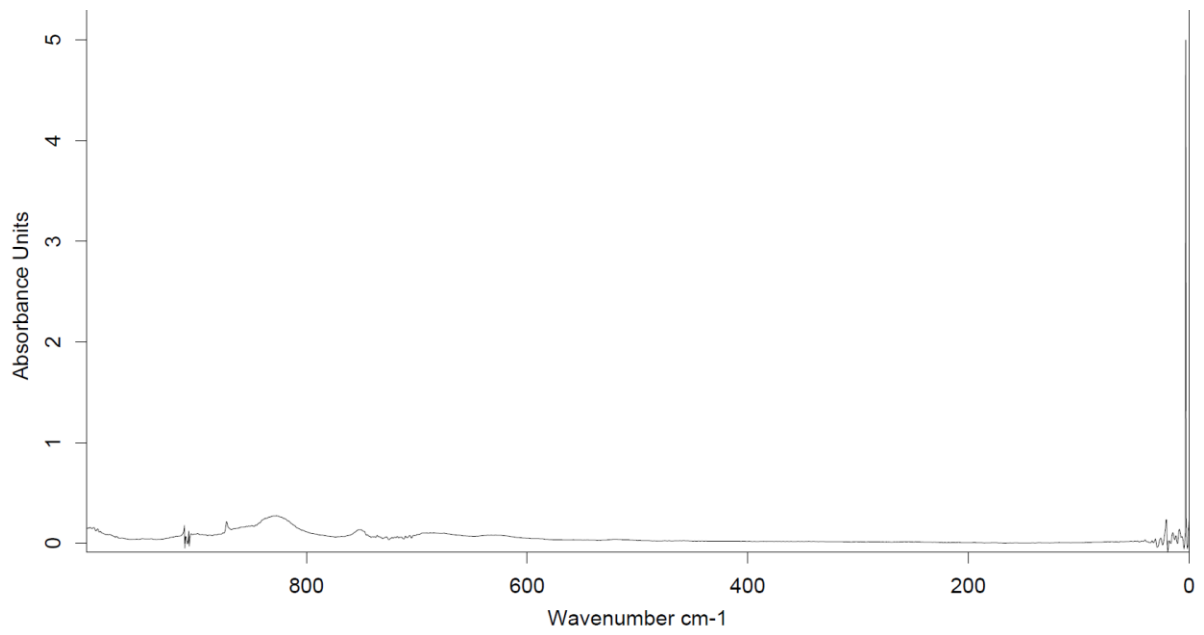


Figure C.10: IR spectrum of FSSA sample 11

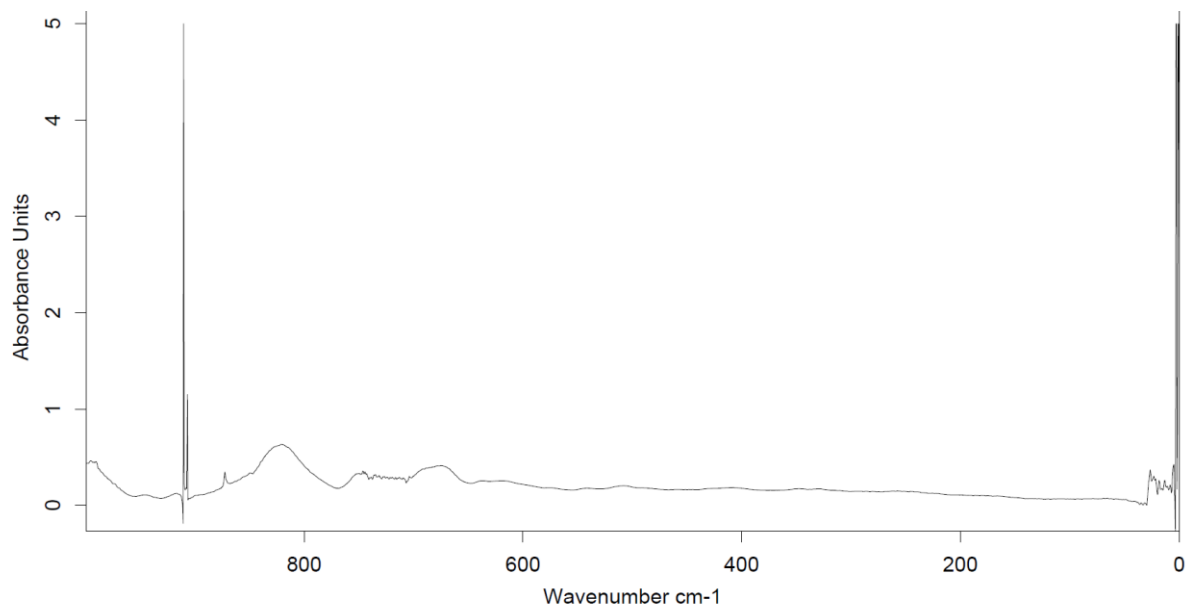


Figure C.11: IR spectrum of FSSA sample 12

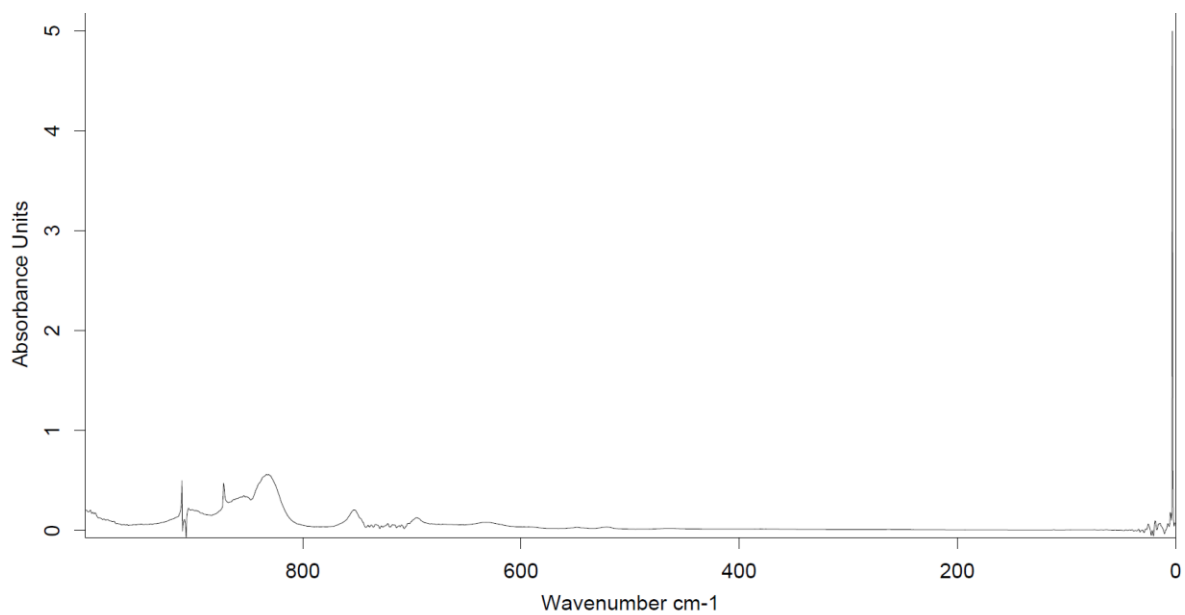


Figure C.12: IR spectrum of FSSA sample 13

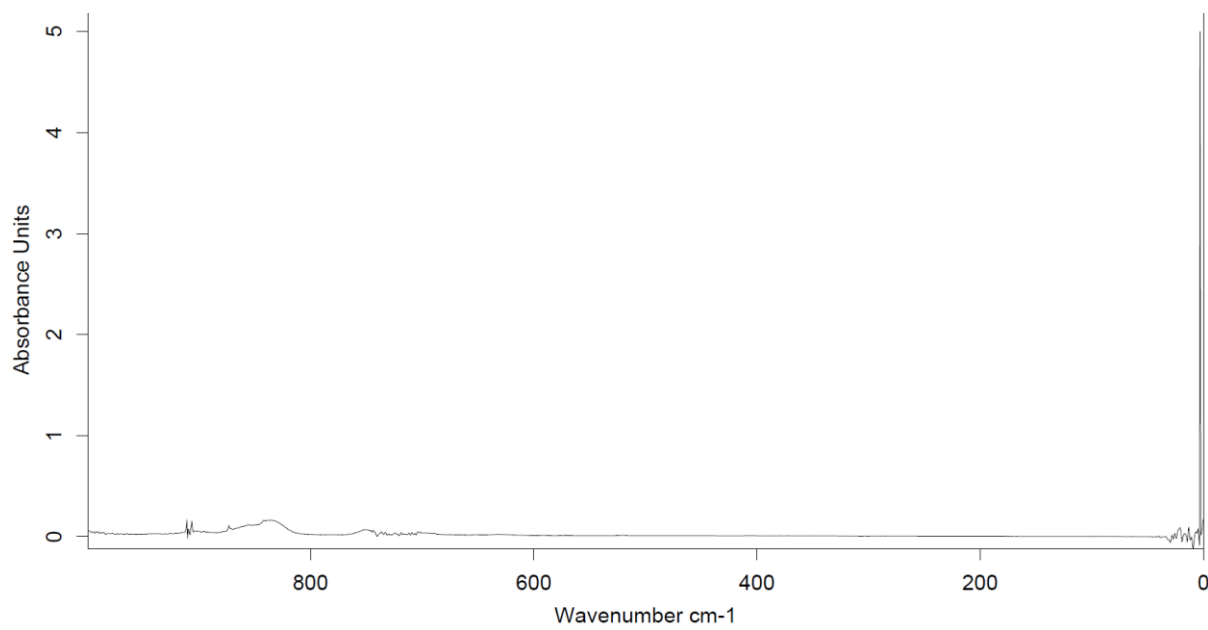


Figure C.13: IR spectrum of FSSA sample 14

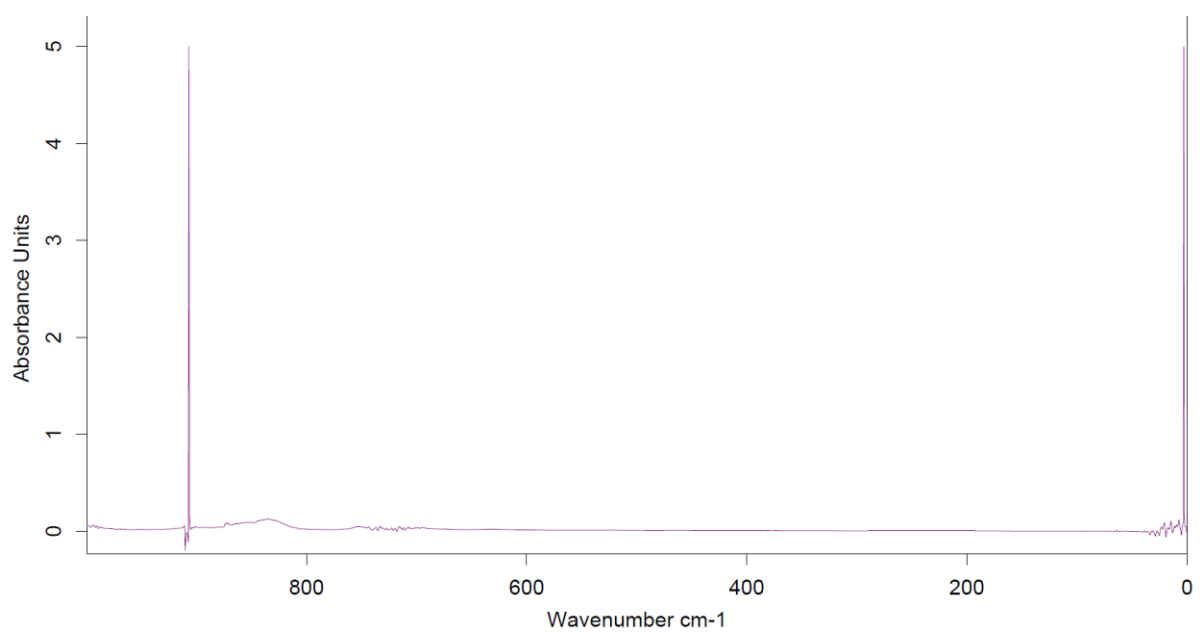


Figure C.14: IR spectrum of FSSA sample 15

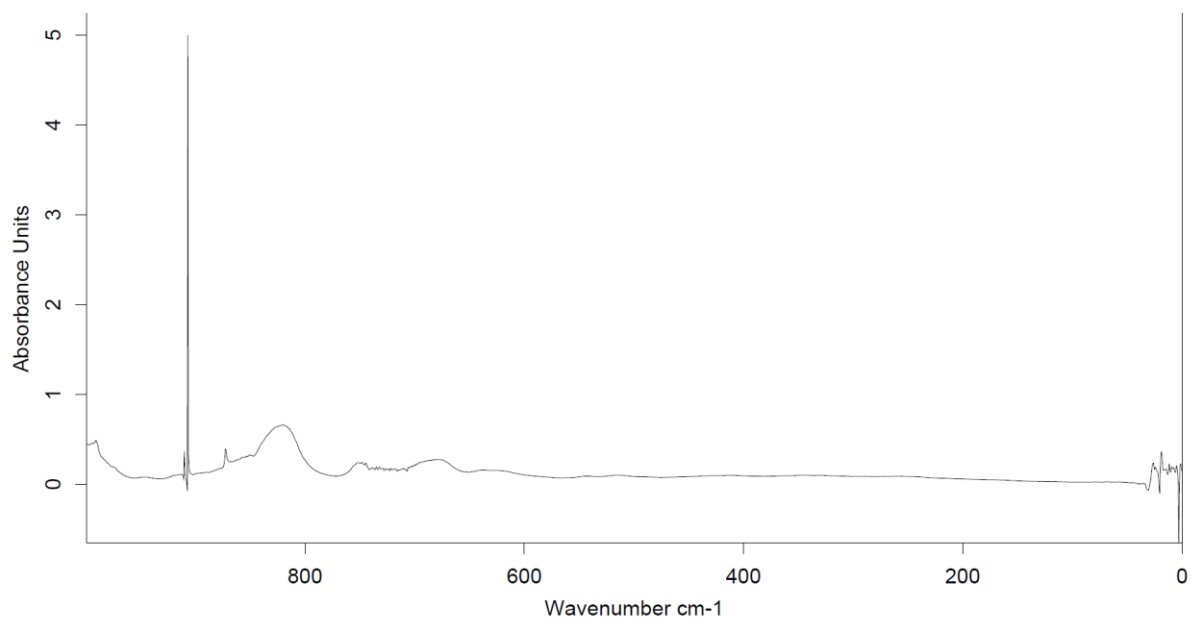


Figure C.15: IR spectrum of FSSA sample 16

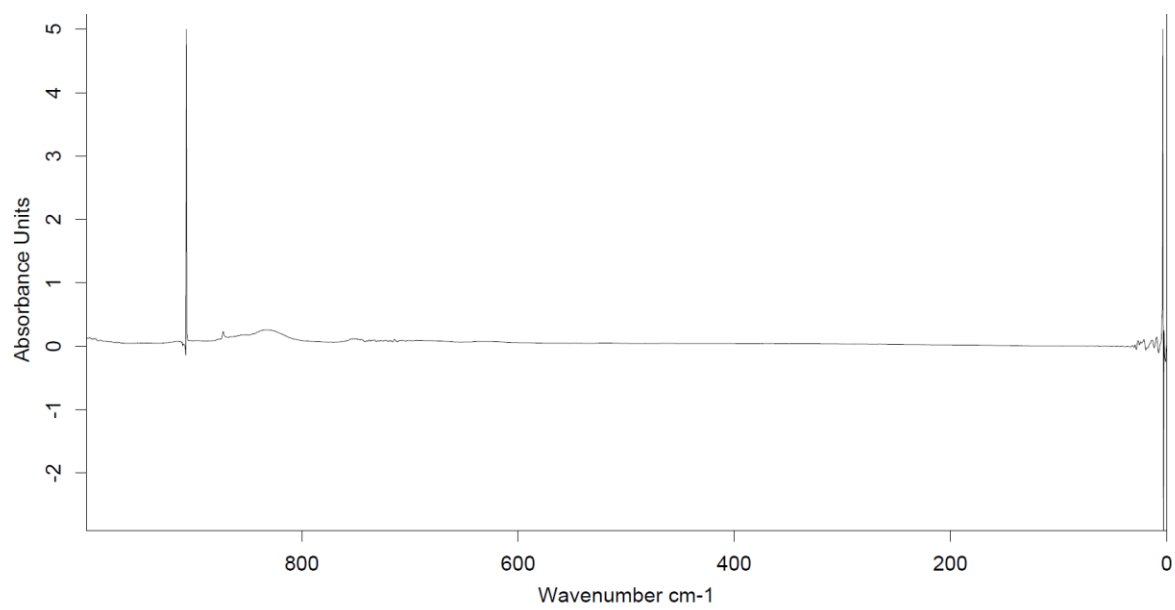


Figure C.16: IR spectrum of FSSA sample 17

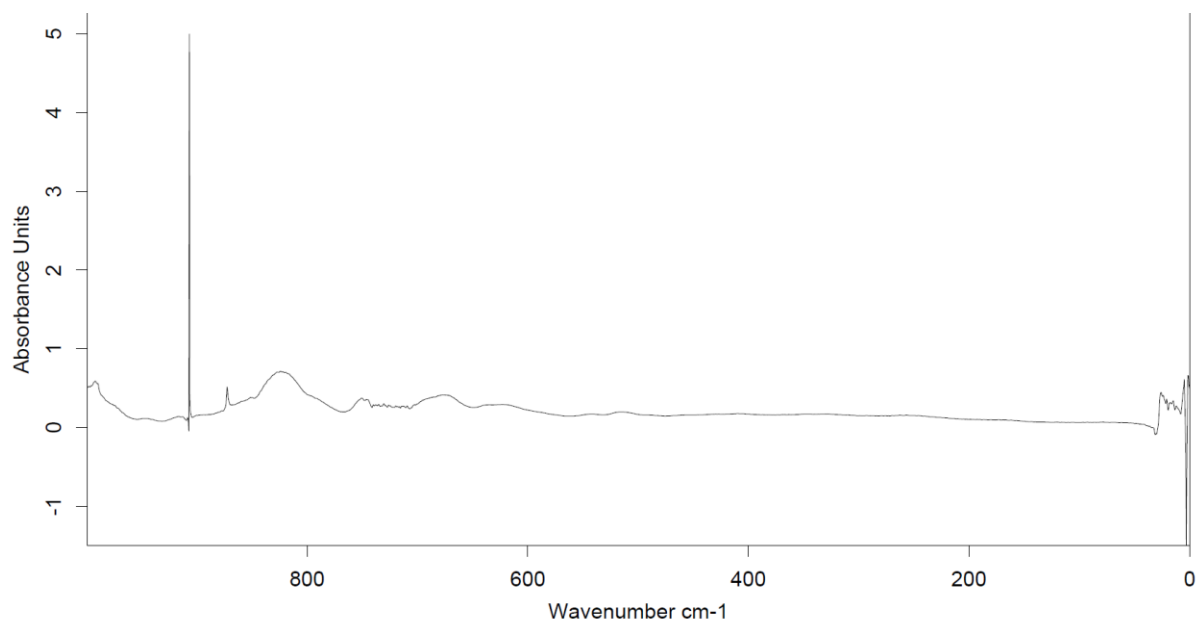


Figure C.17: IR spectrum of FSSA sample 18

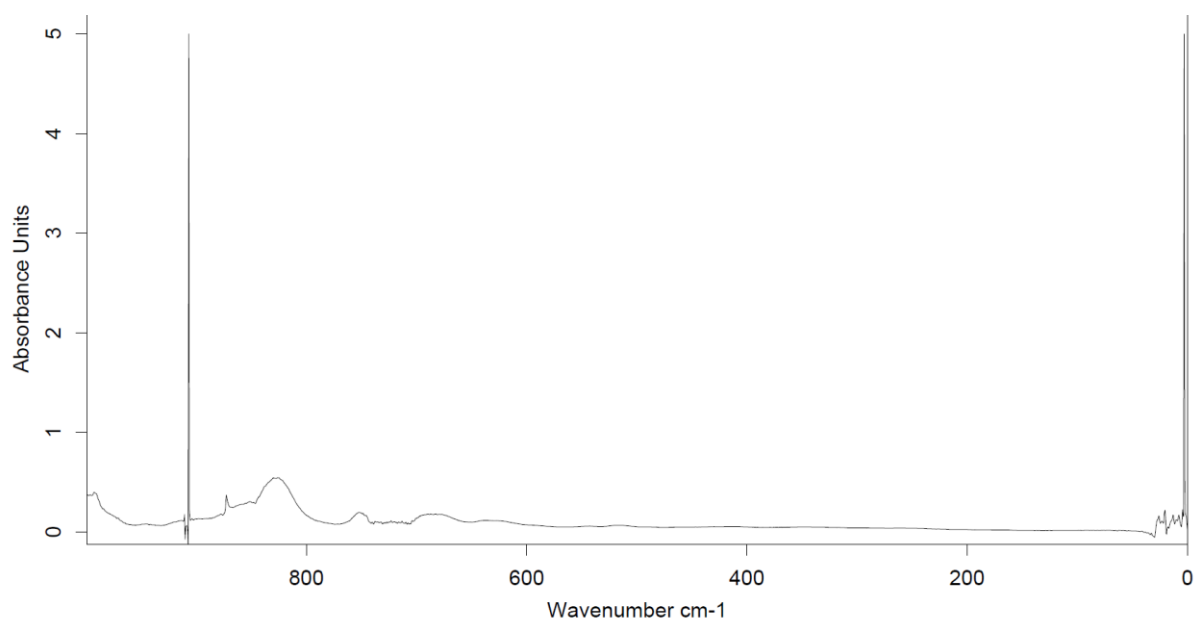


Figure C.18: IR spectrum of FSSA sample 19

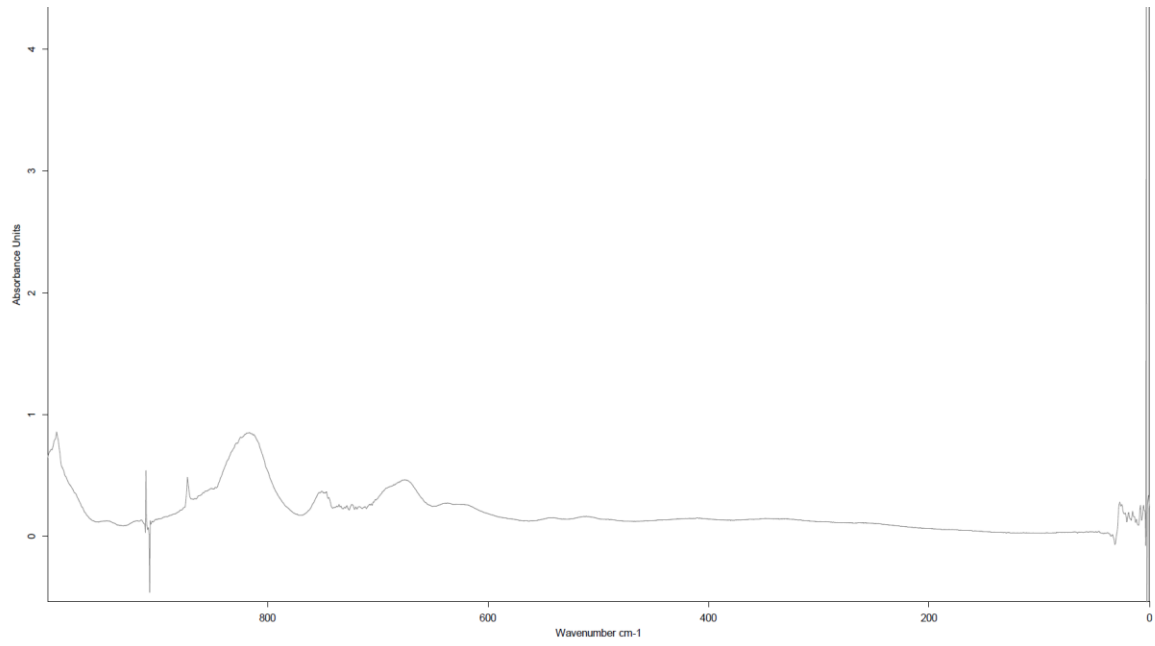


Figure C.19: IR spectrum of Victoria Police sample 91

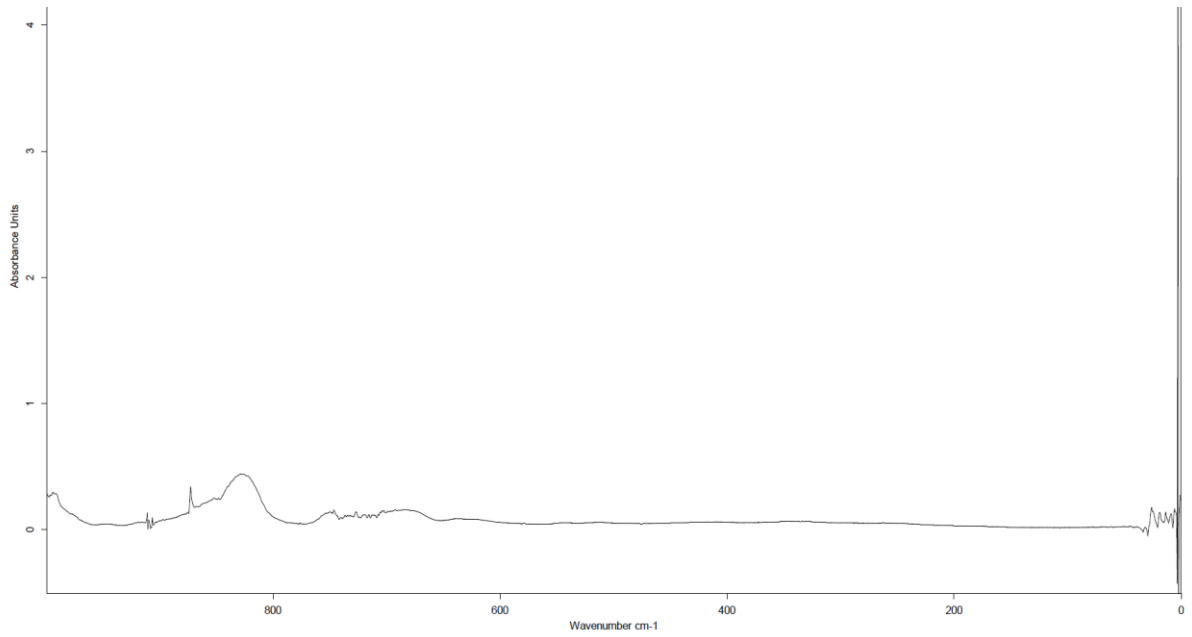


Figure C.20: IR spectrum of Victoria Police sample 100

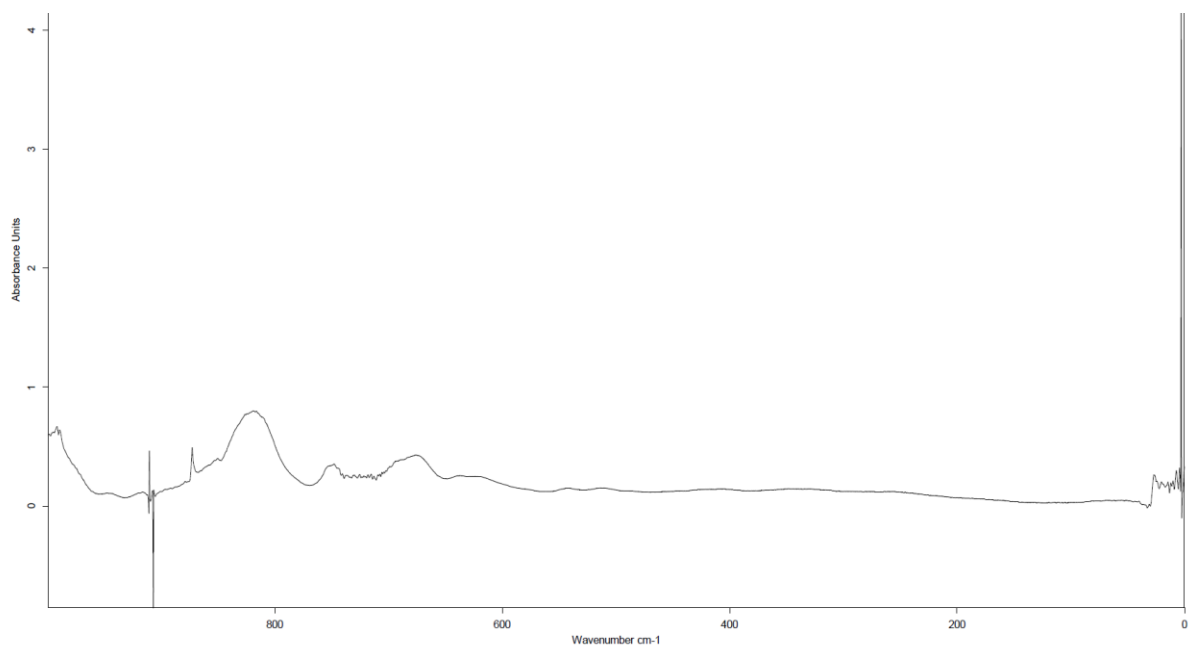


Figure C.21: IR spectrum of Victoria Police sample 103

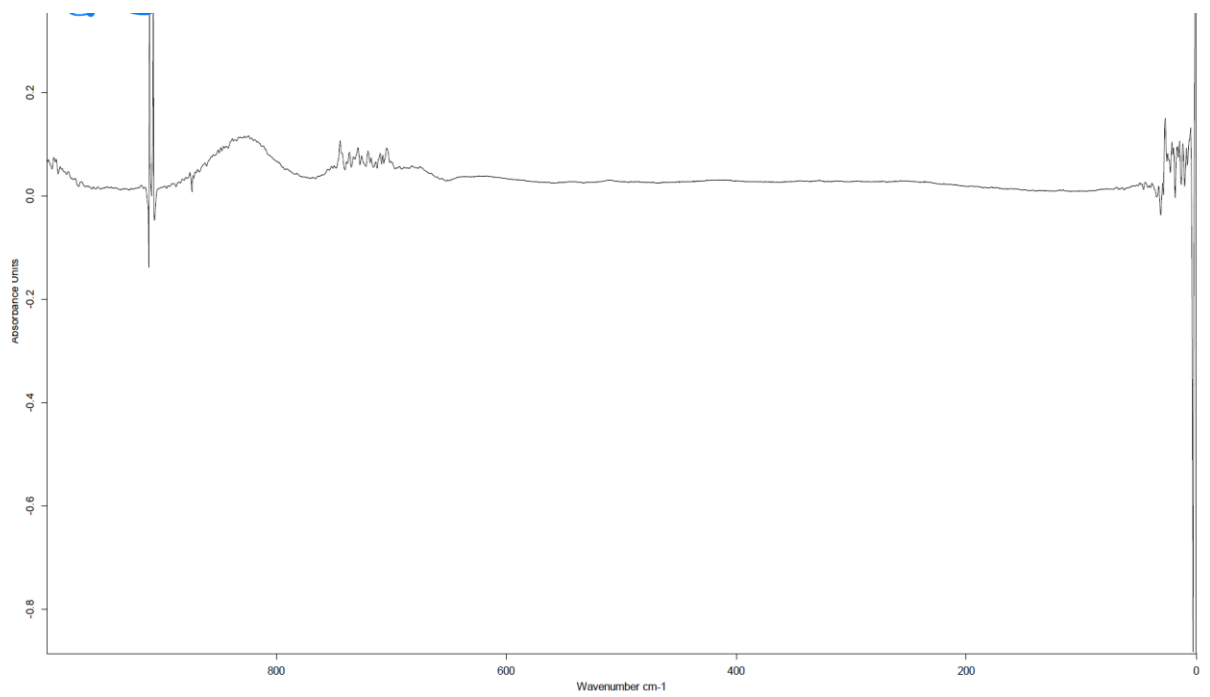


Figure C.22: IR spectrum of Victoria Police sample 119

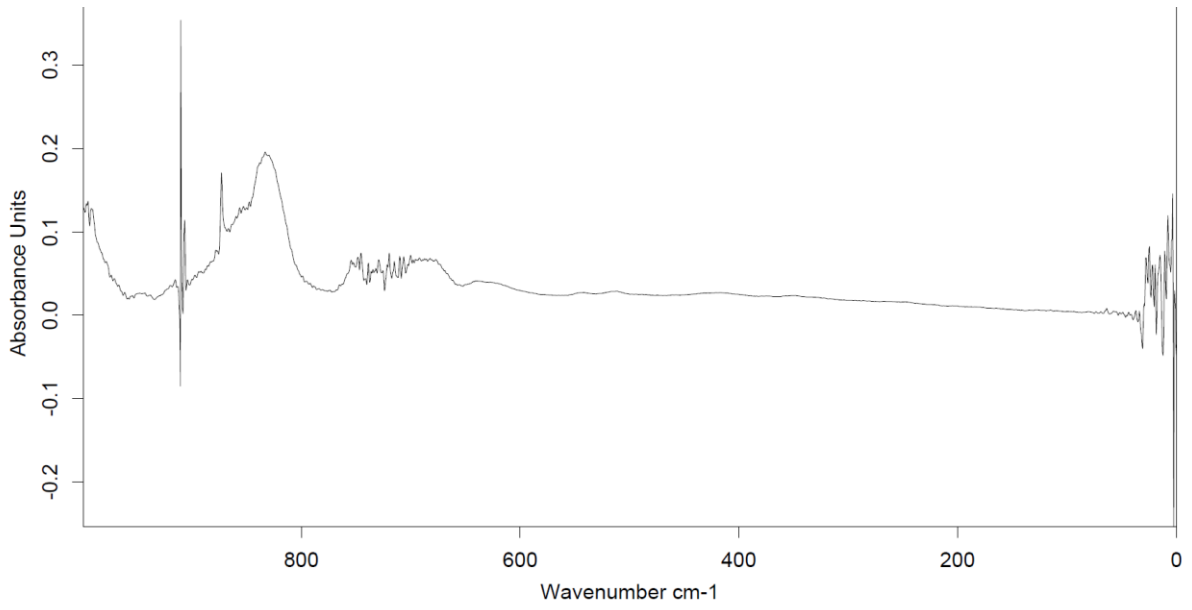


Figure C.23: IR spectrum of Victoria Police sample 126

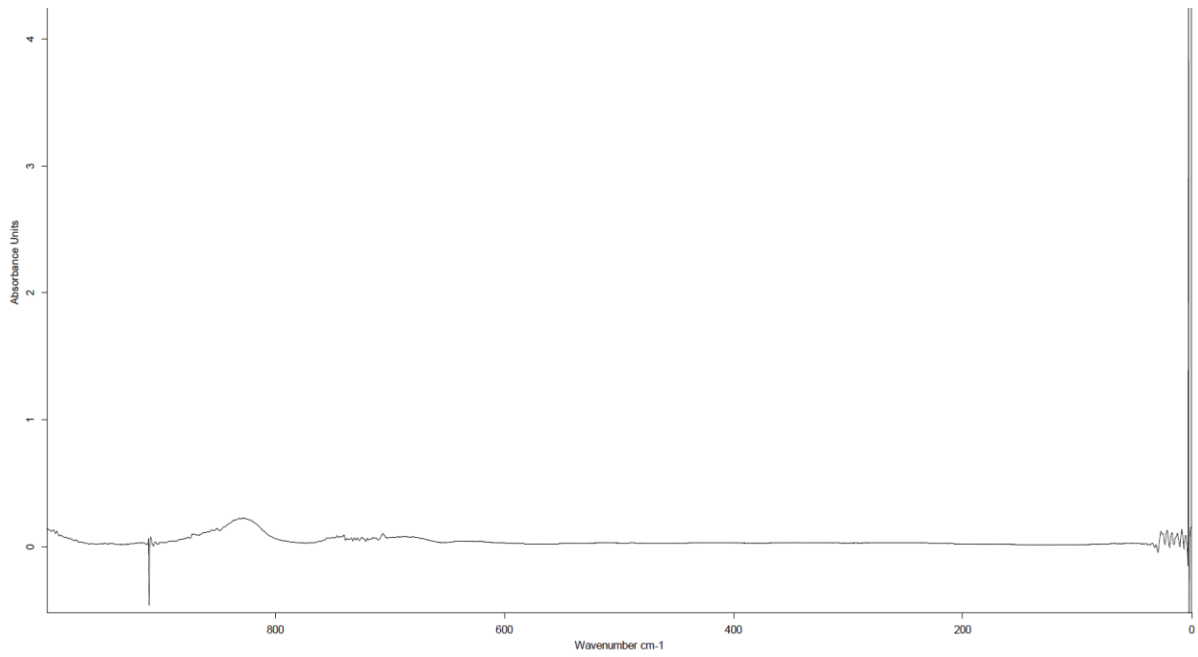


Figure C.24: IR spectrum of Victoria Police sample 146

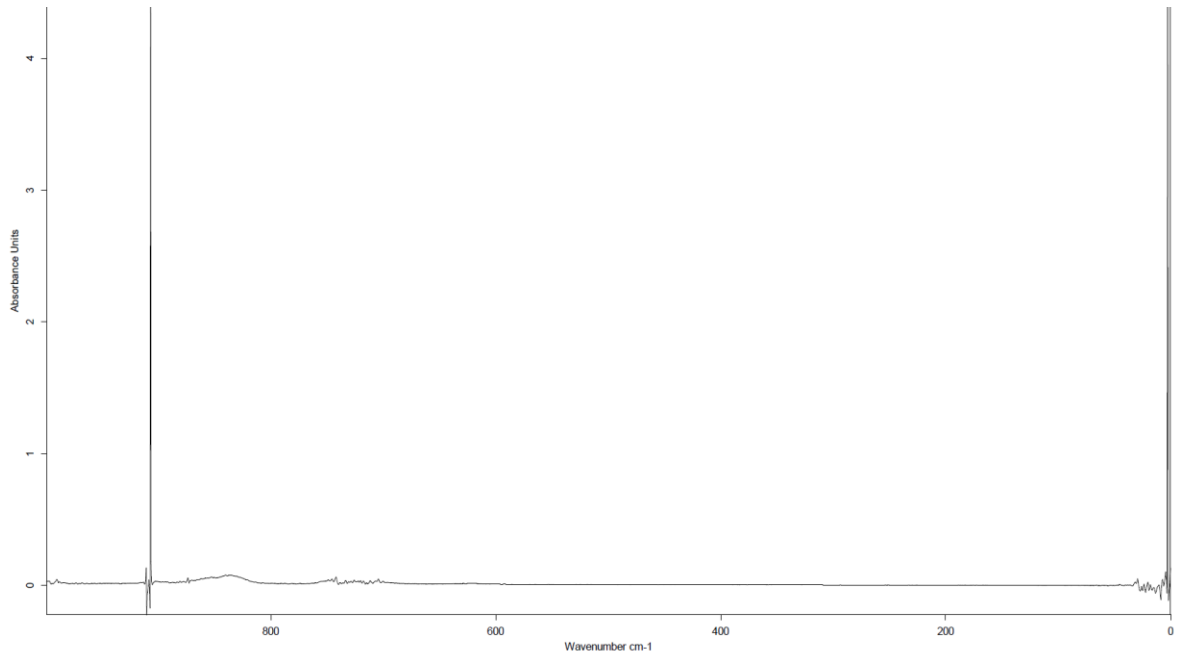


Figure C.25: IR spectrum of Victoria Police sample 253

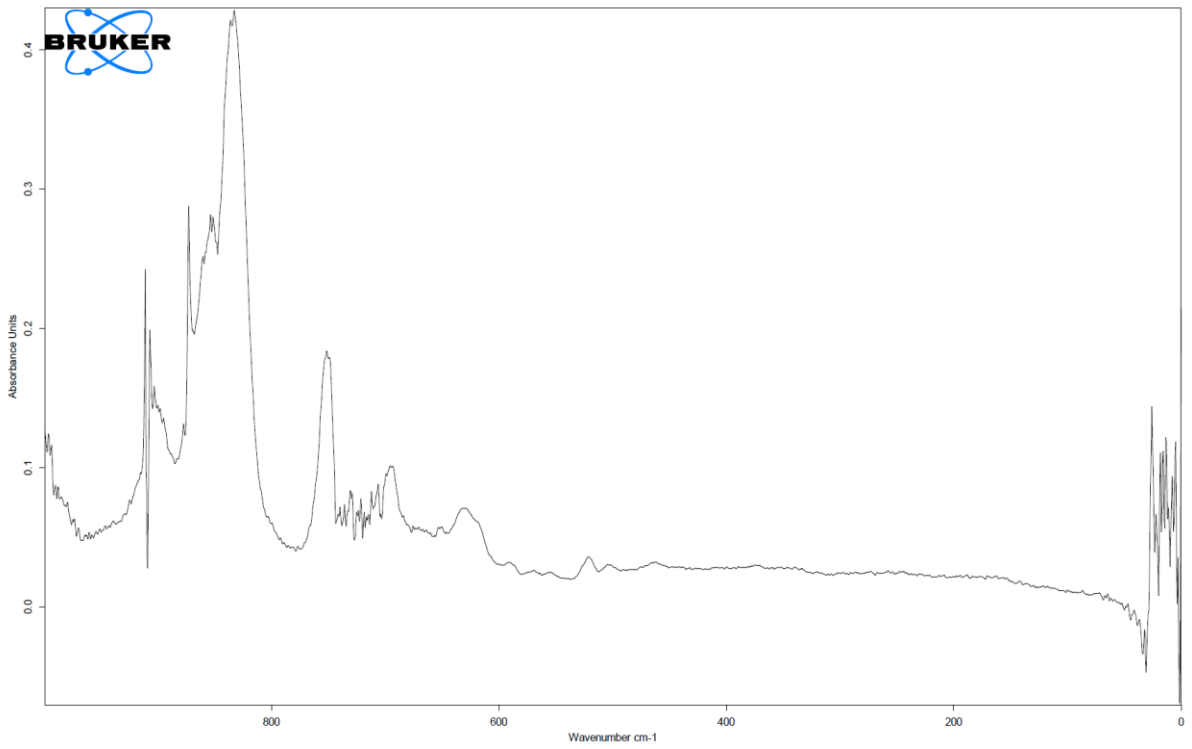


Figure C.26: IR spectrum of Victoria Police sample 256

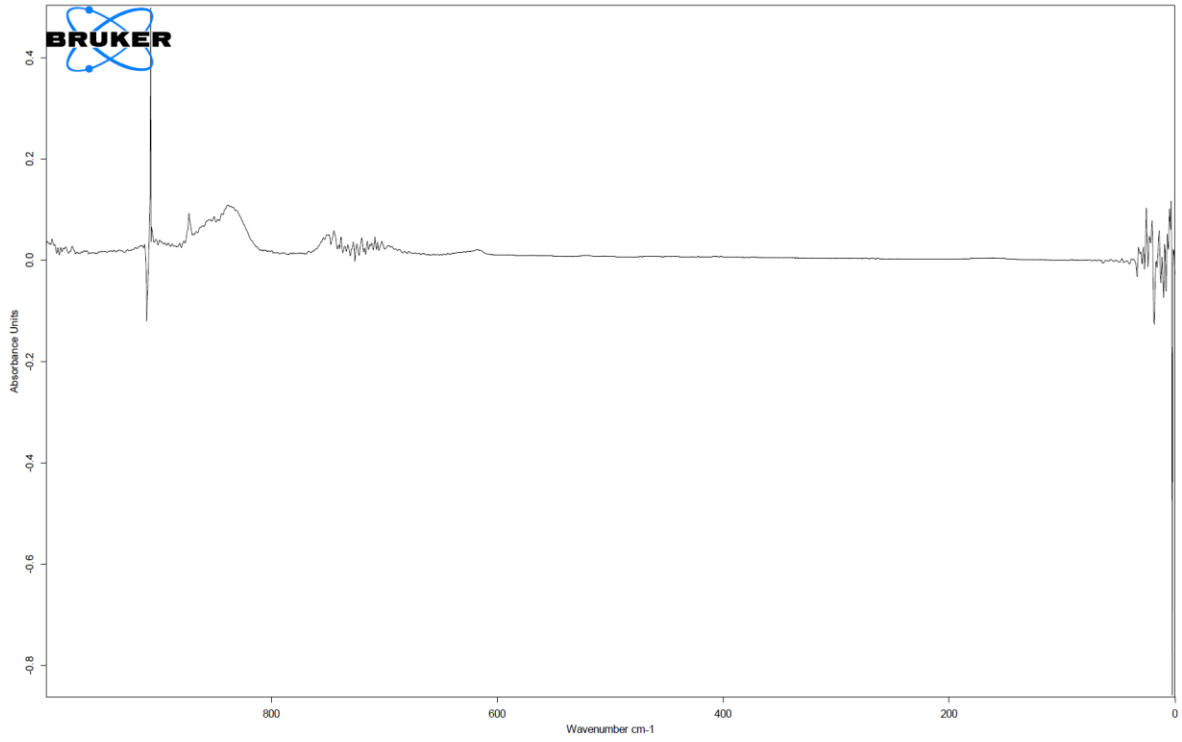


Figure C.27: IR spectrum of Victoria Police sample 274

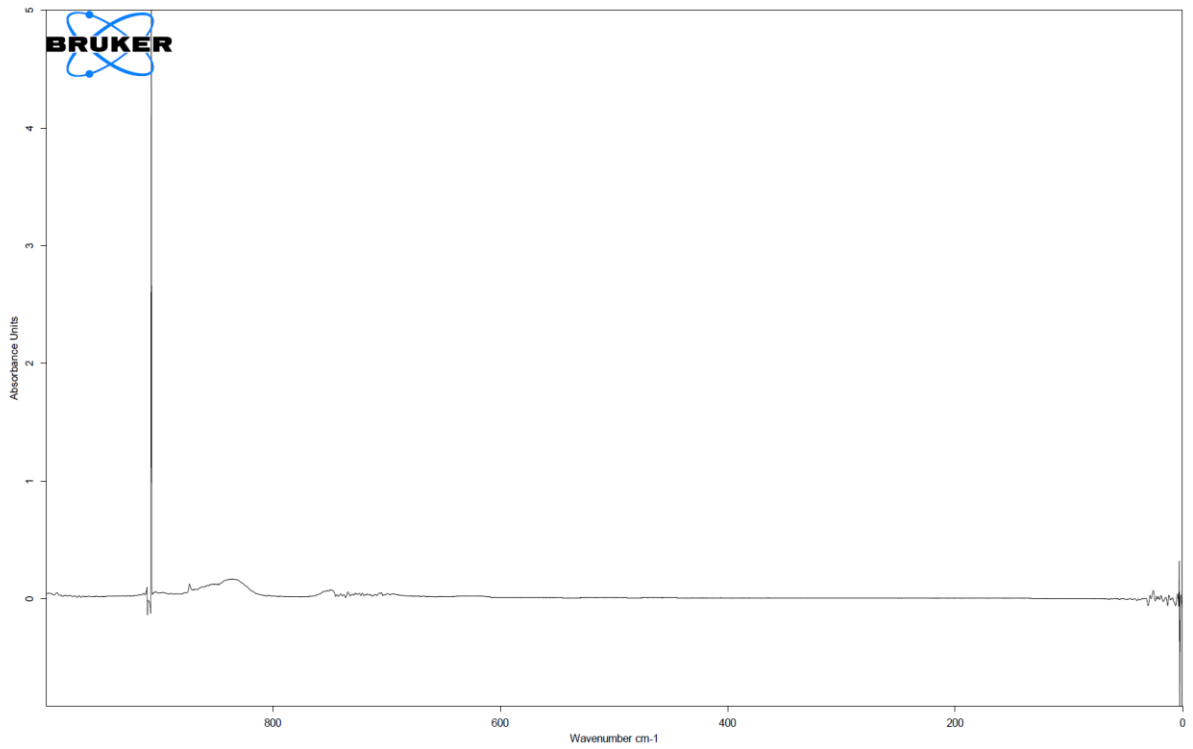


Figure C.28: IR spectrum of Victoria Police sample 279

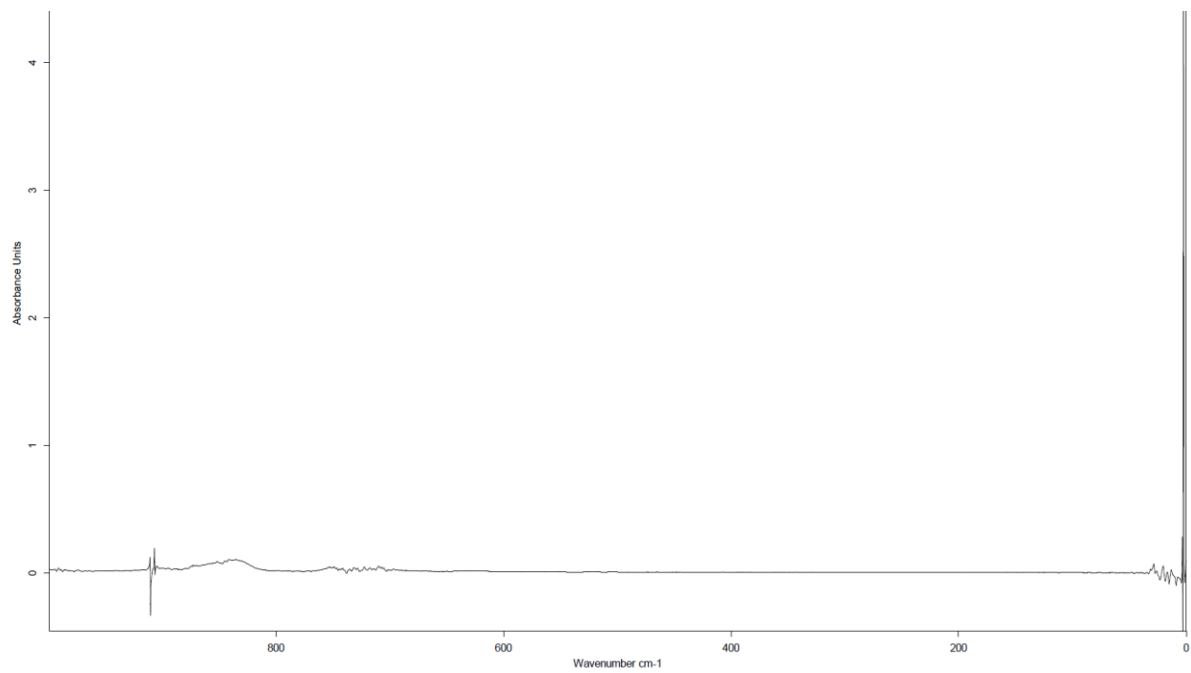


Figure C.29: IR spectrum of Victoria Police sample 285

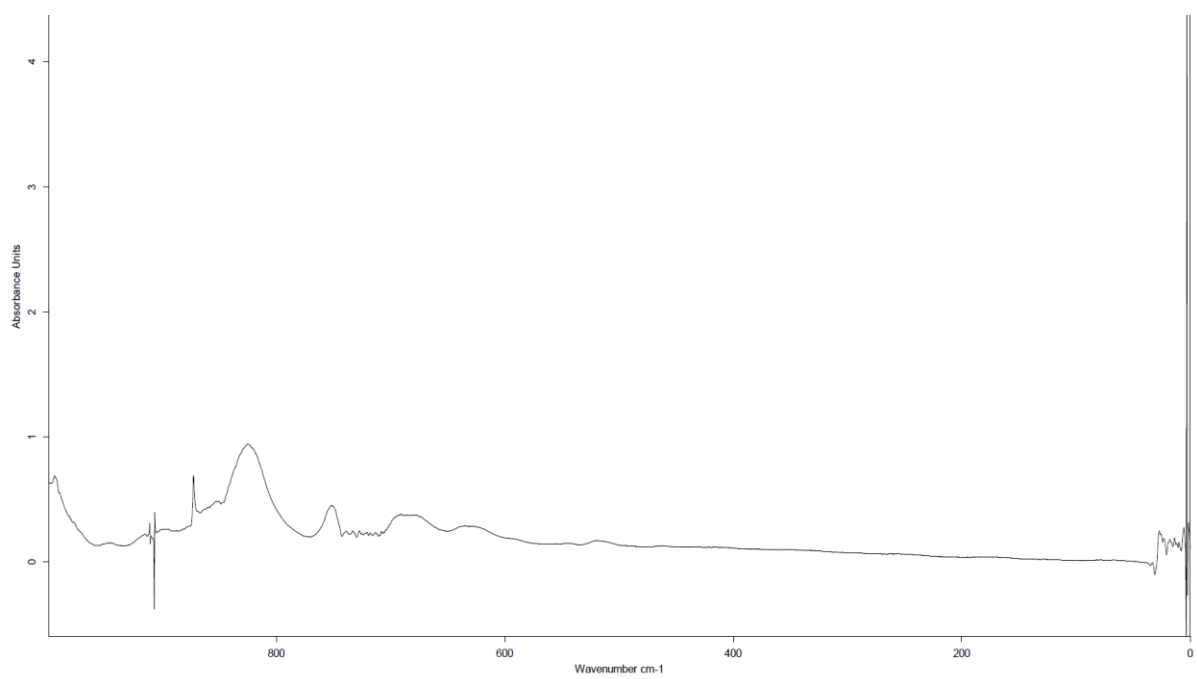


Figure C.30: IR spectrum of Victoria Police sample 303

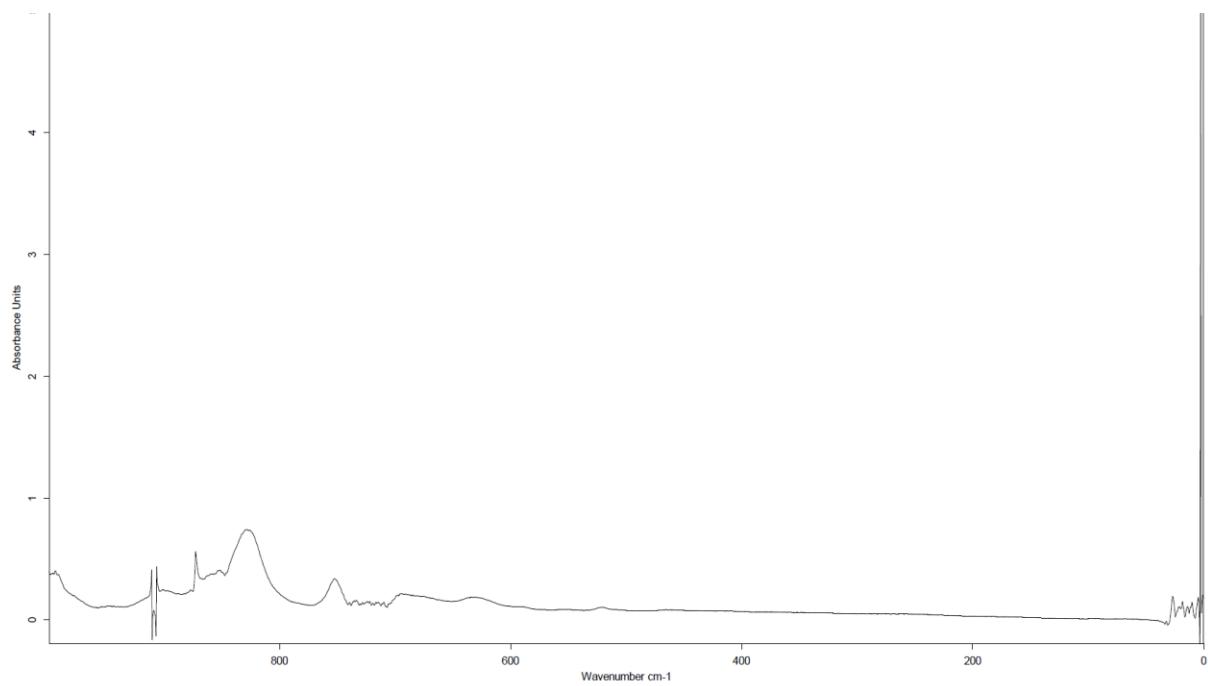


Figure C.31: IR spectrum of Victoria Police sample 304

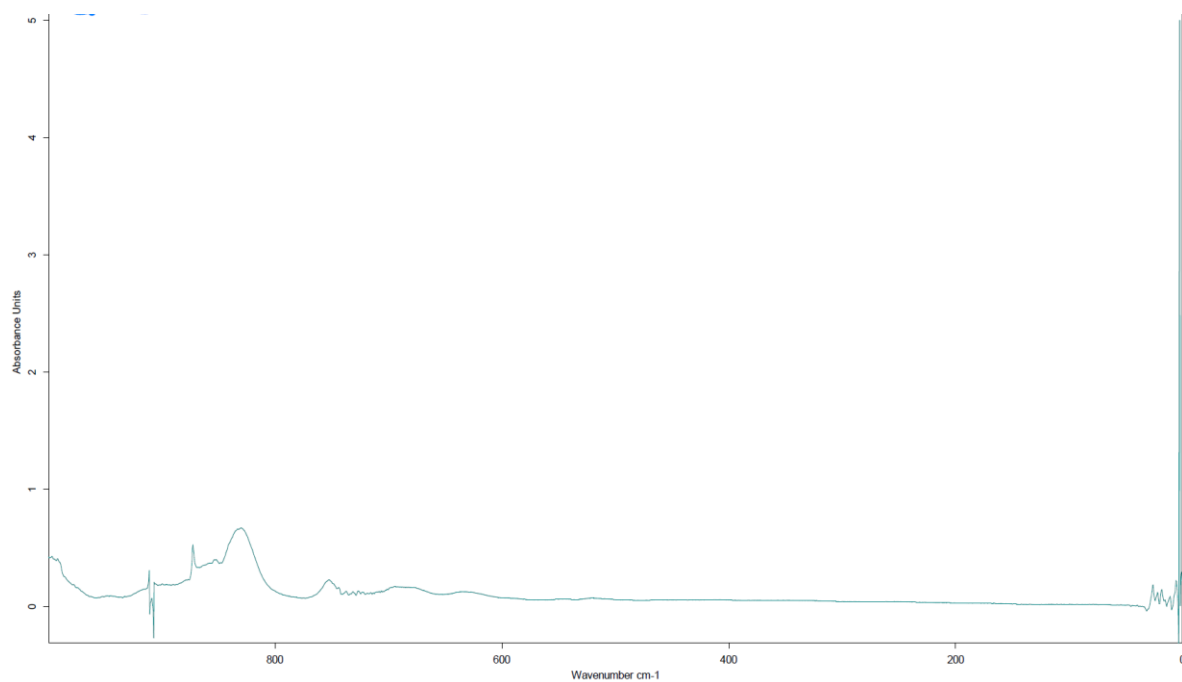


Figure C.32: IR spectrum of Victoria Police sample 305

D. Appendix – LDI spectra of propellants

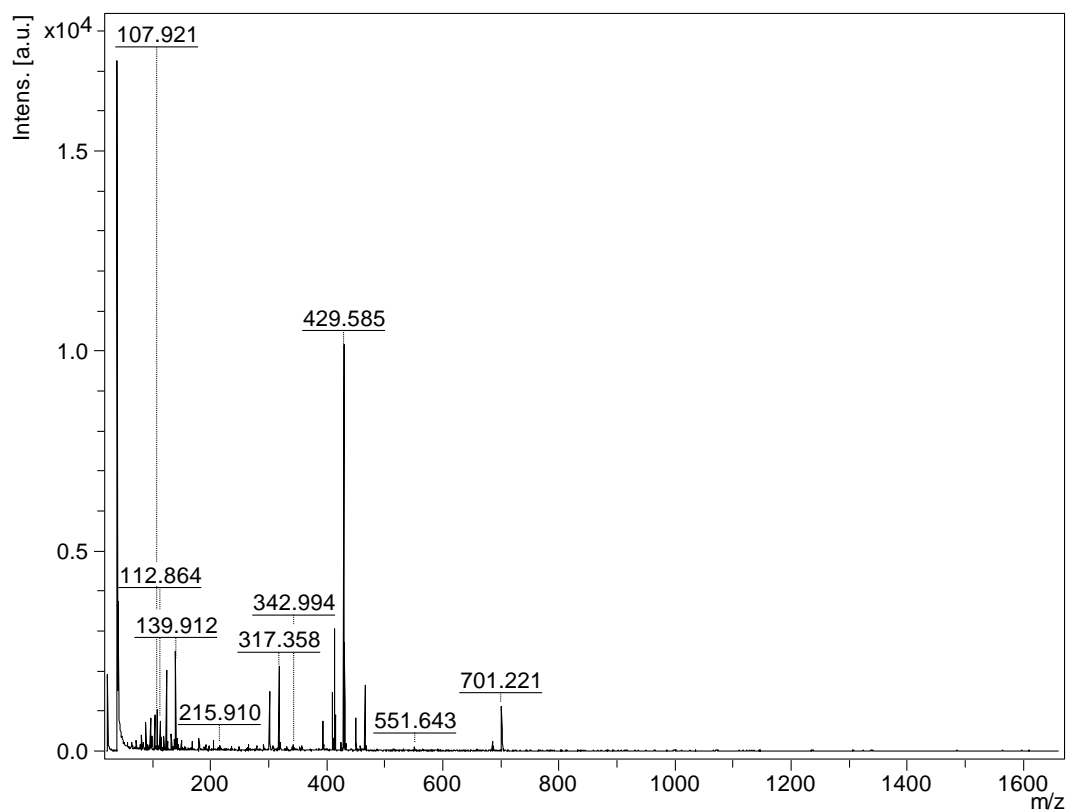


Figure D.1: LDI spectrum of propellant solvation solids FSSA sample 1

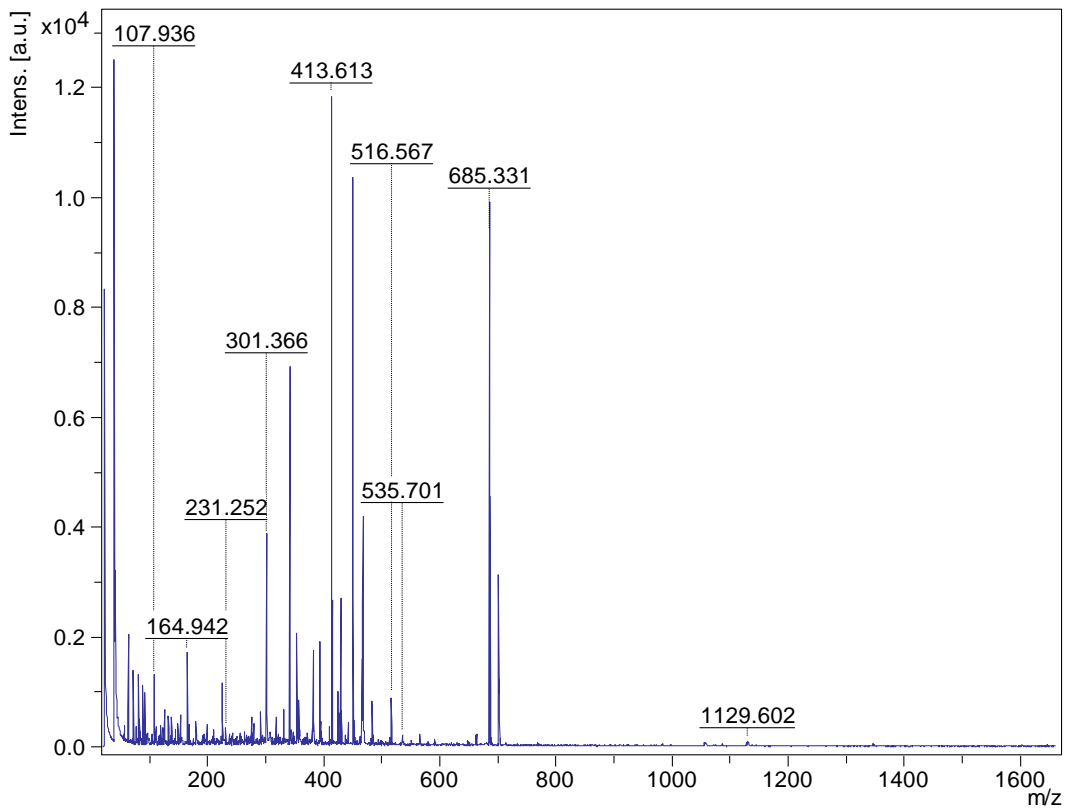


Figure D.2: LDI spectrum of propellant solvation solids FSSA sample 2

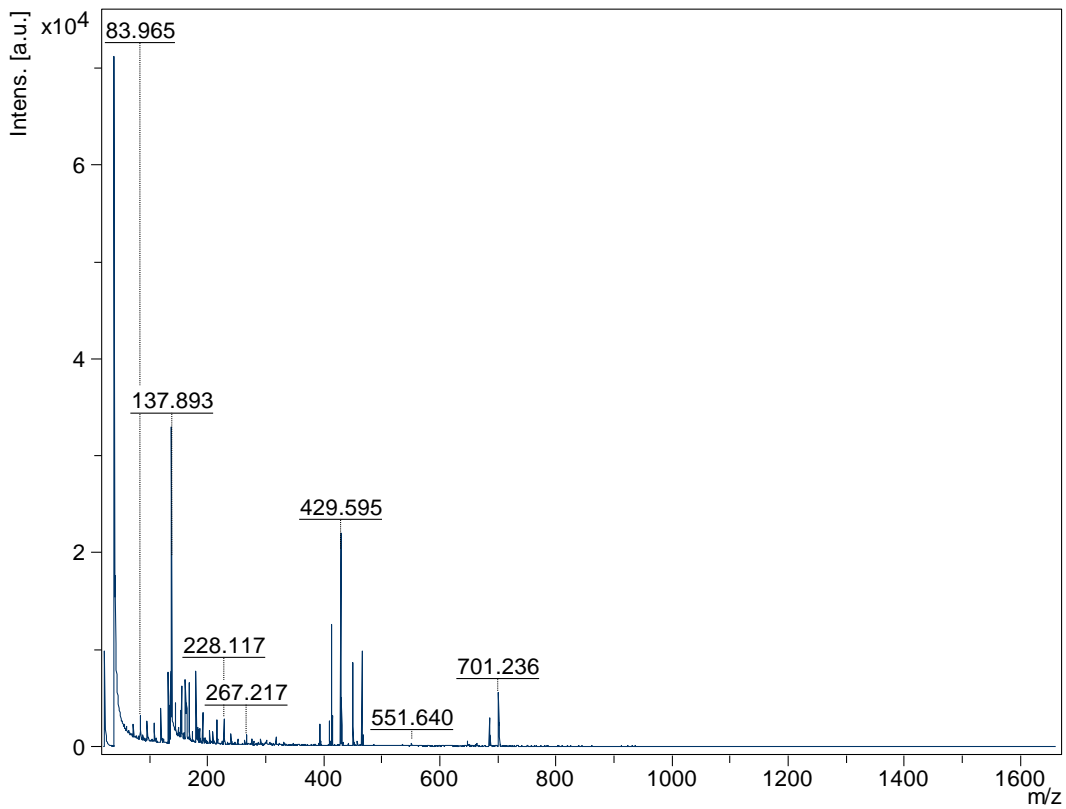


Figure D.3: LDI spectrum of propellant solvation solids FSSA sample 3

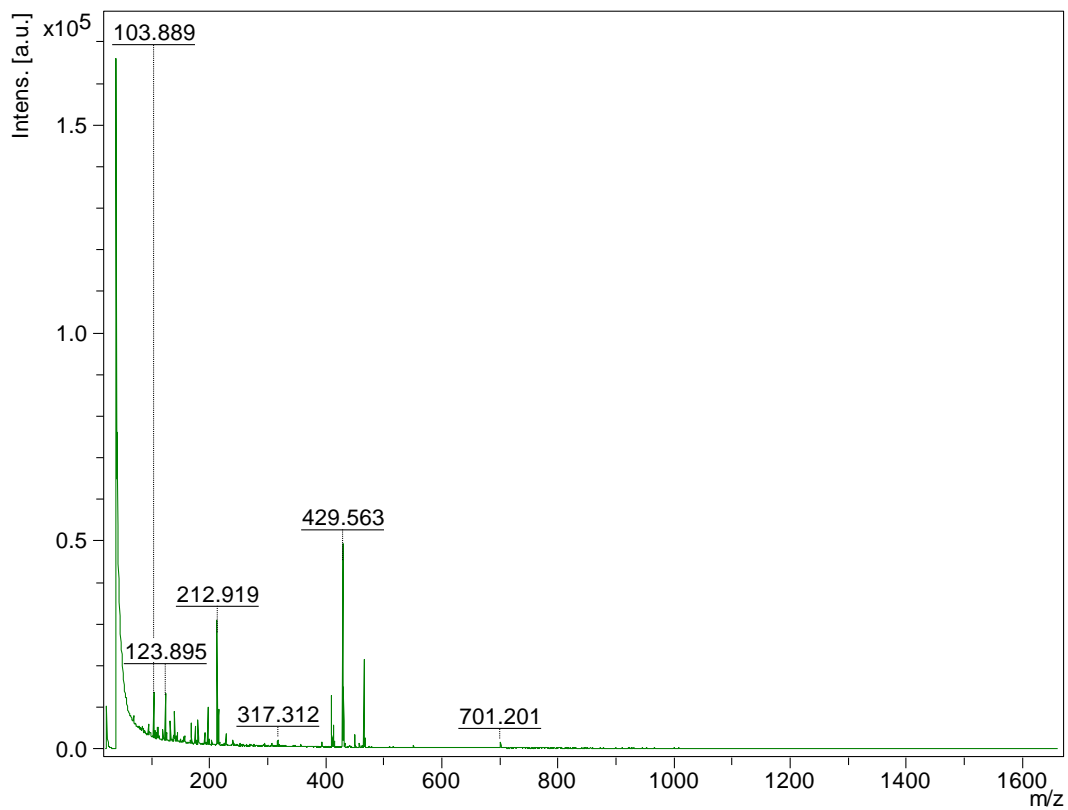


Figure D.4: LDI spectrum of propellant solvation solids FSSA sample 4

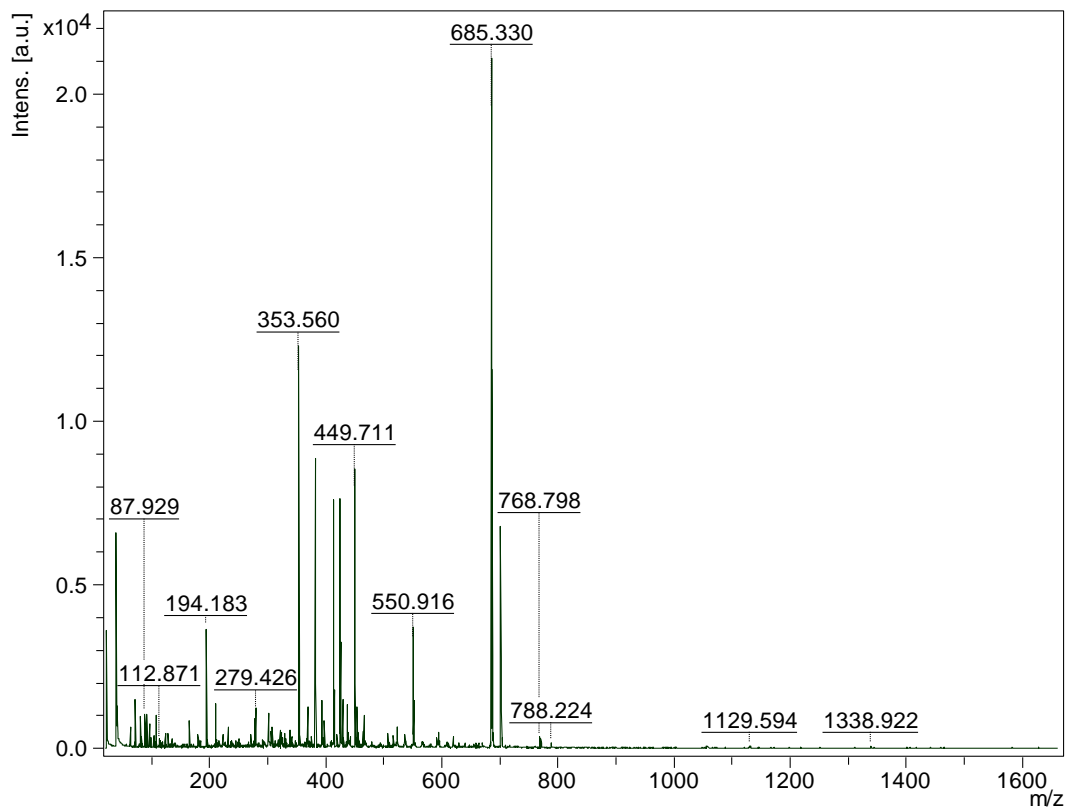


Figure D.5: LDI spectrum of propellant solvation solids FSSA sample 6

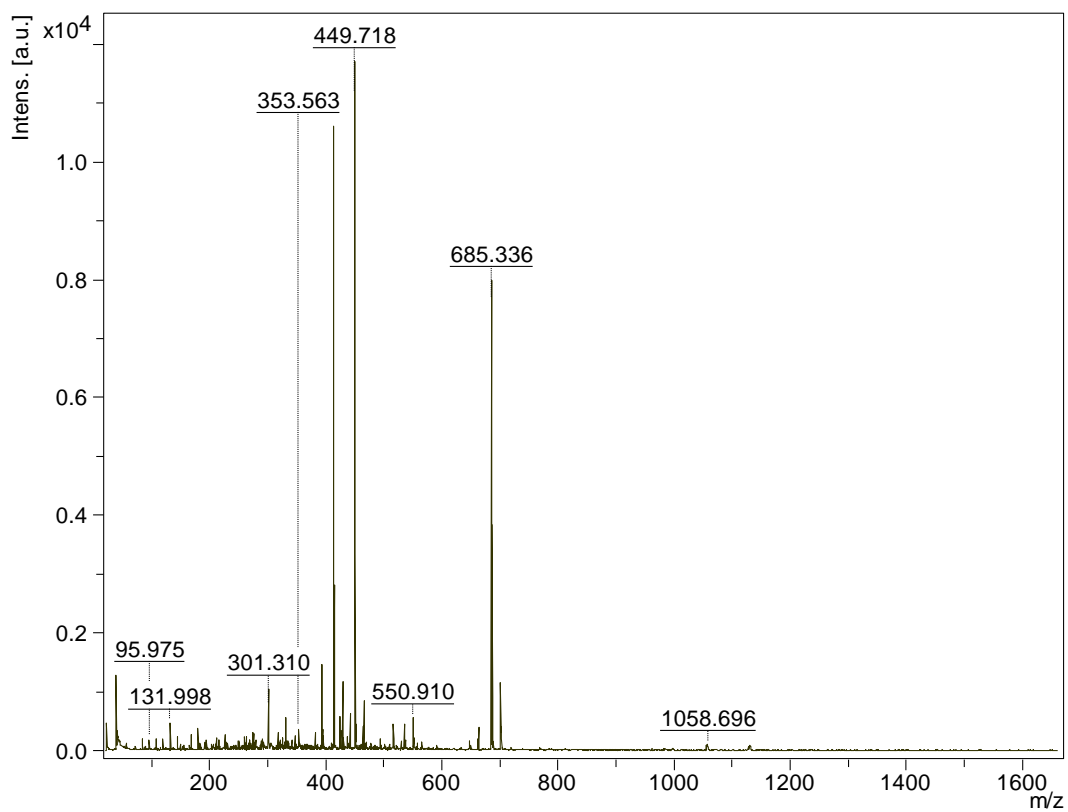


Figure D.6: LDI spectrum of propellant solvation solids FSSA sample 7

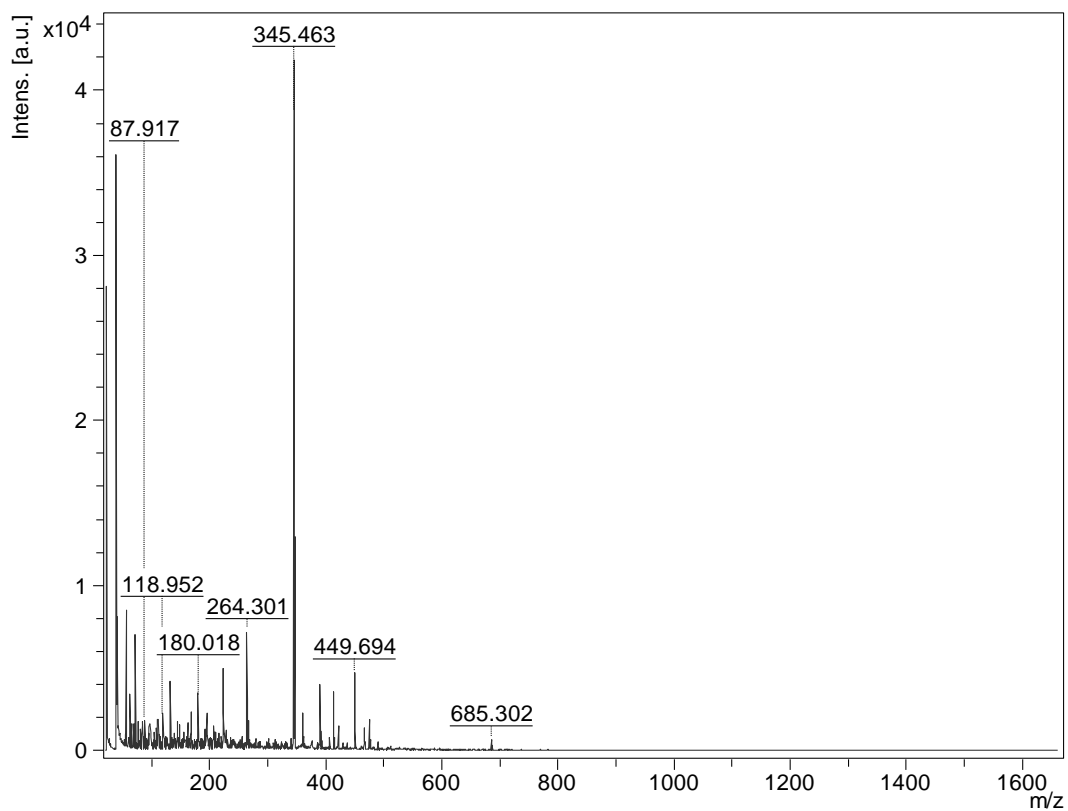


Figure D.7: LDI spectrum of propellant solvation solids FSSA sample 8

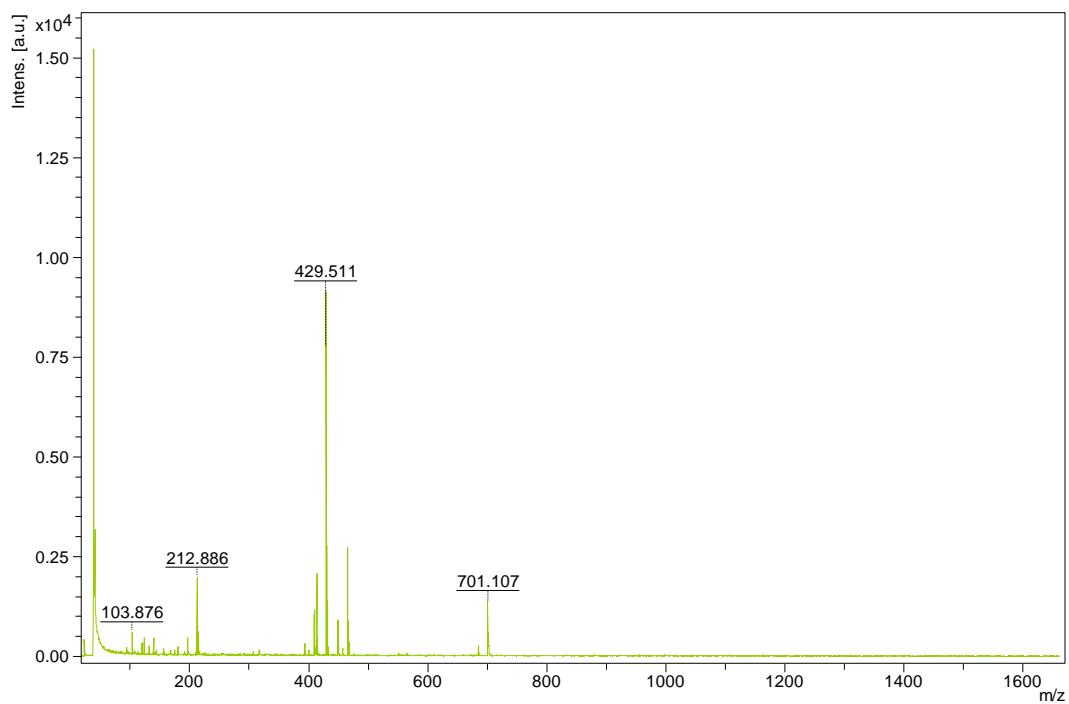


Figure D.8: LDI spectrum of propellant solvation solids FSSA sample 9

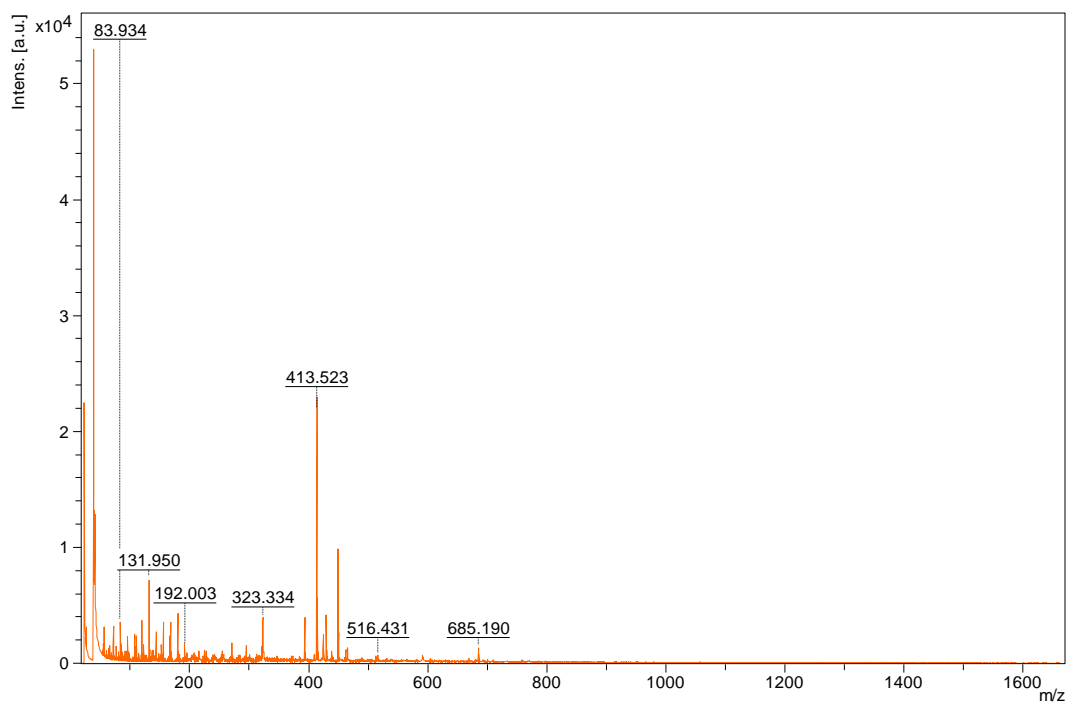


Figure D.9: LDI spectrum of propellant solvation solids FSSA sample 10

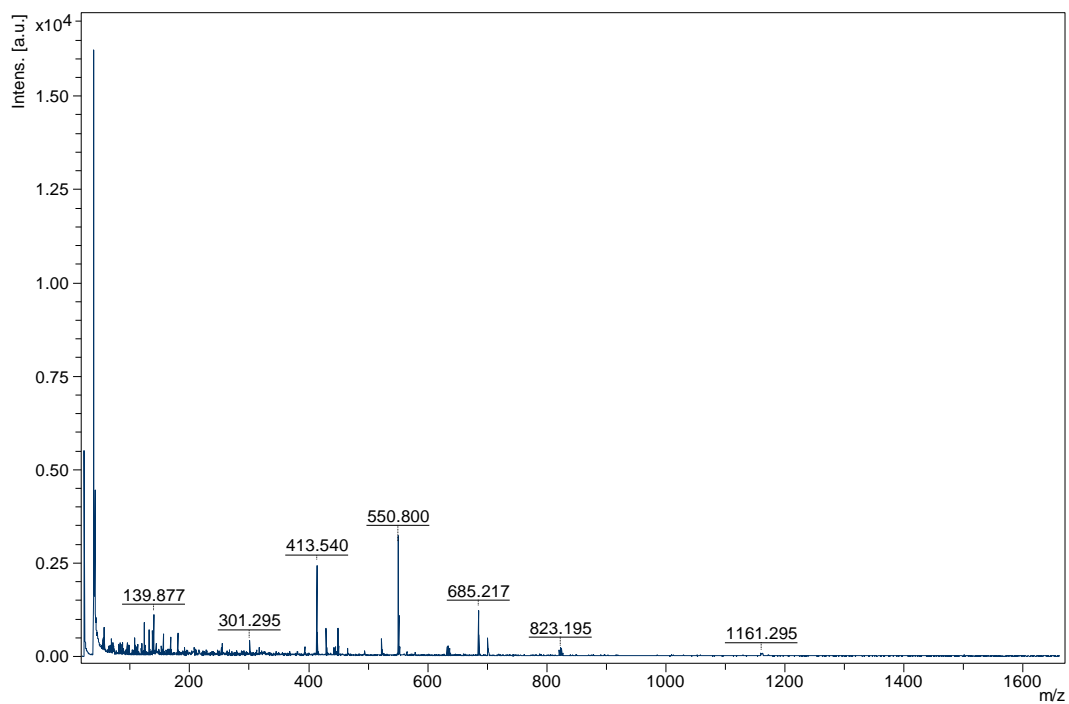


Figure D.10: LDI spectrum of propellant solvation solids FSSA sample 11

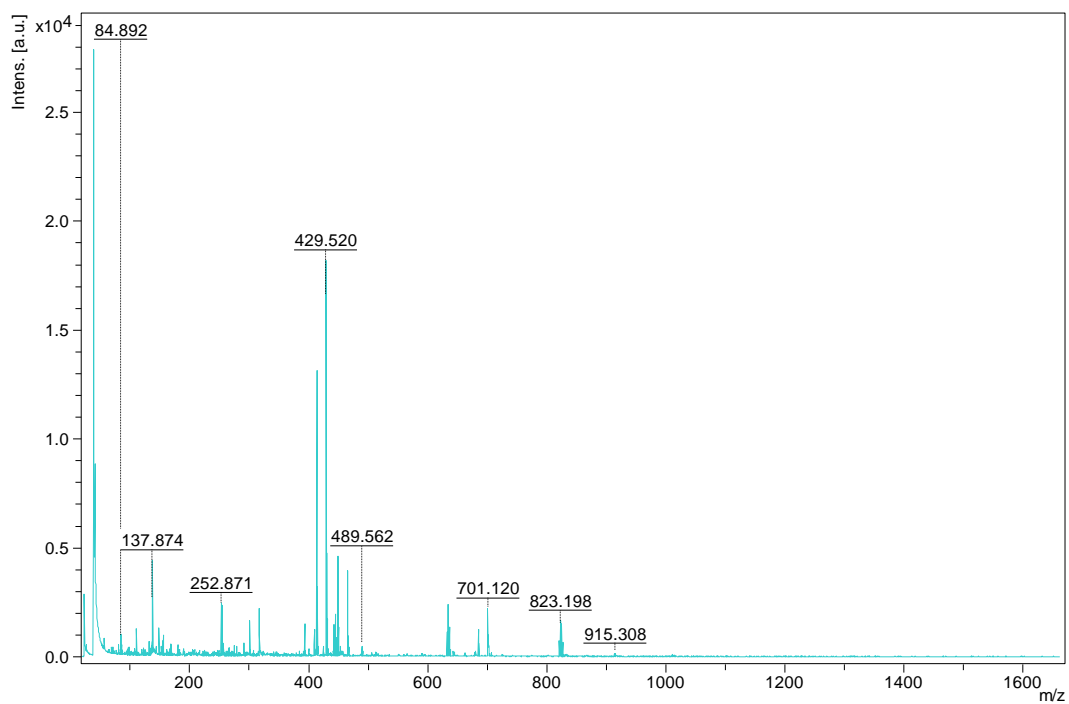


Figure D.11: LDI spectrum of propellant solvation solids FSSA sample 12

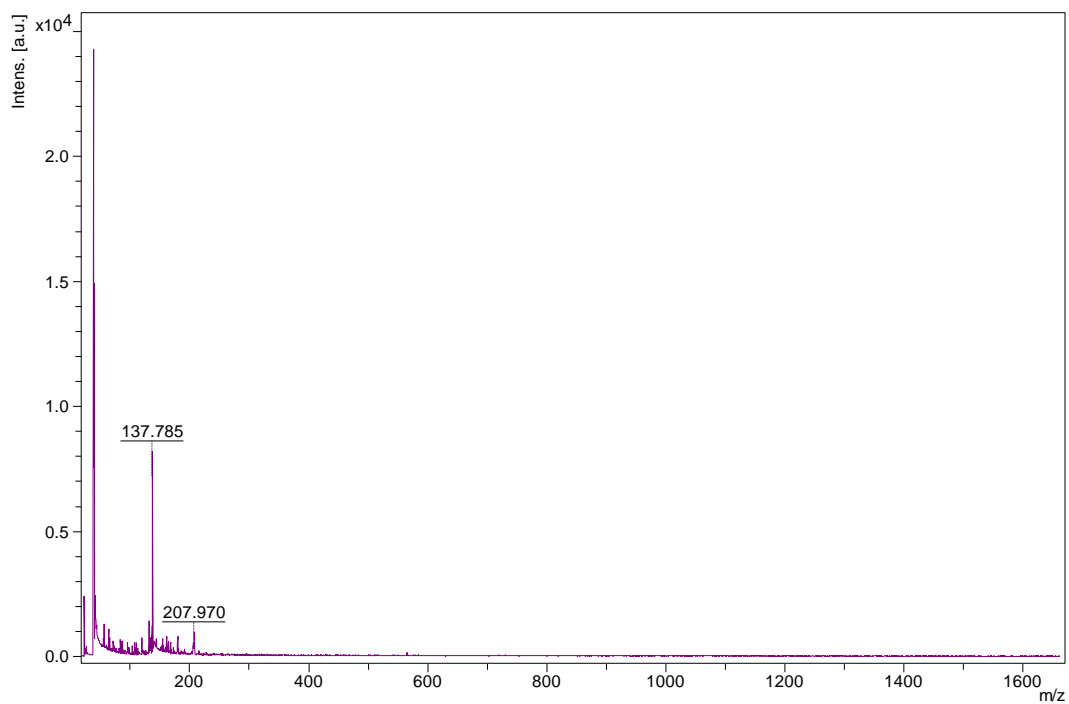


Figure D.12: LDI spectrum of propellant solvation solids FSSA sample 13

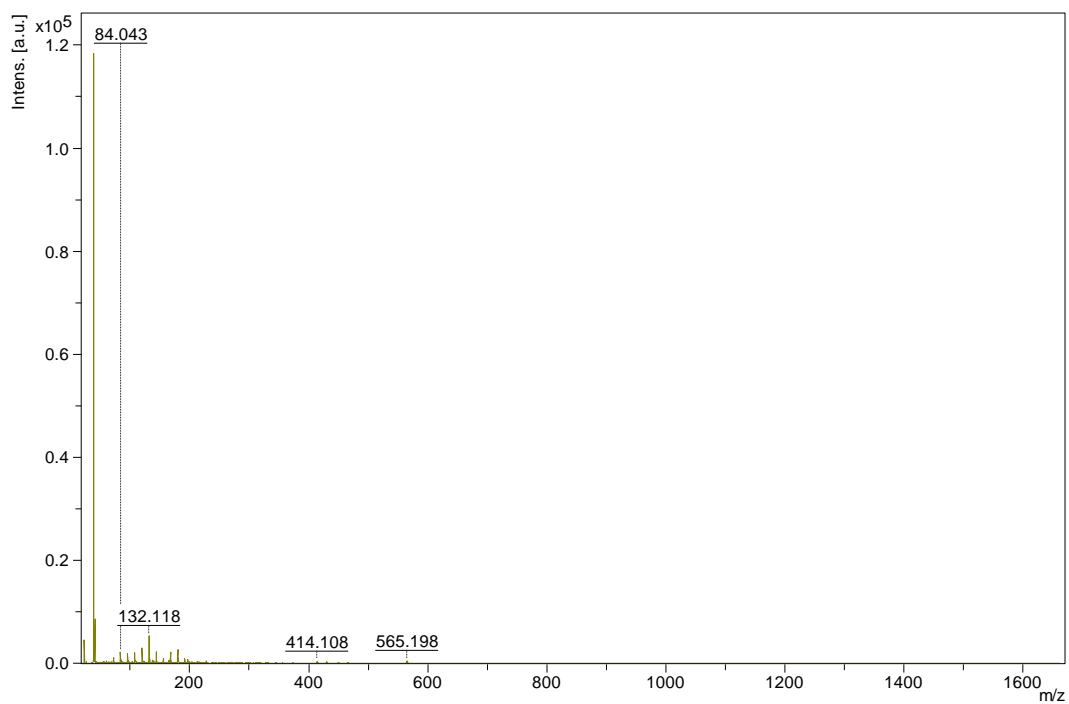


Figure D.13: LDI spectrum of propellant solvation solids FSSA sample 14

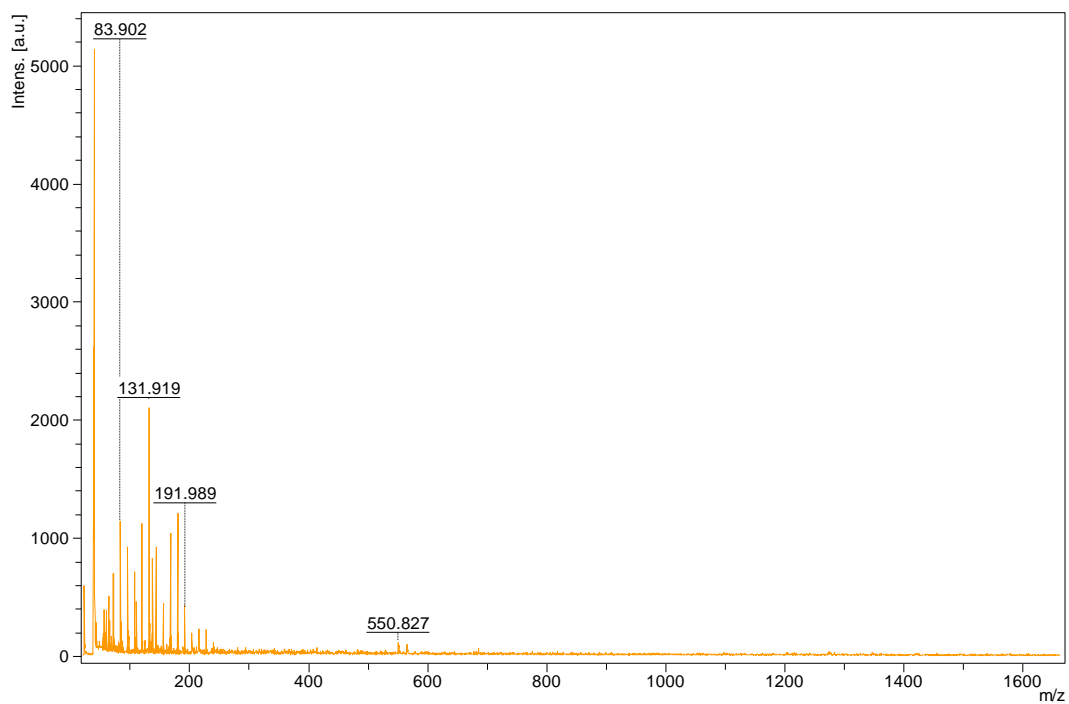


Figure D.14: LDI spectrum of propellant solvation solids FSSA sample 15

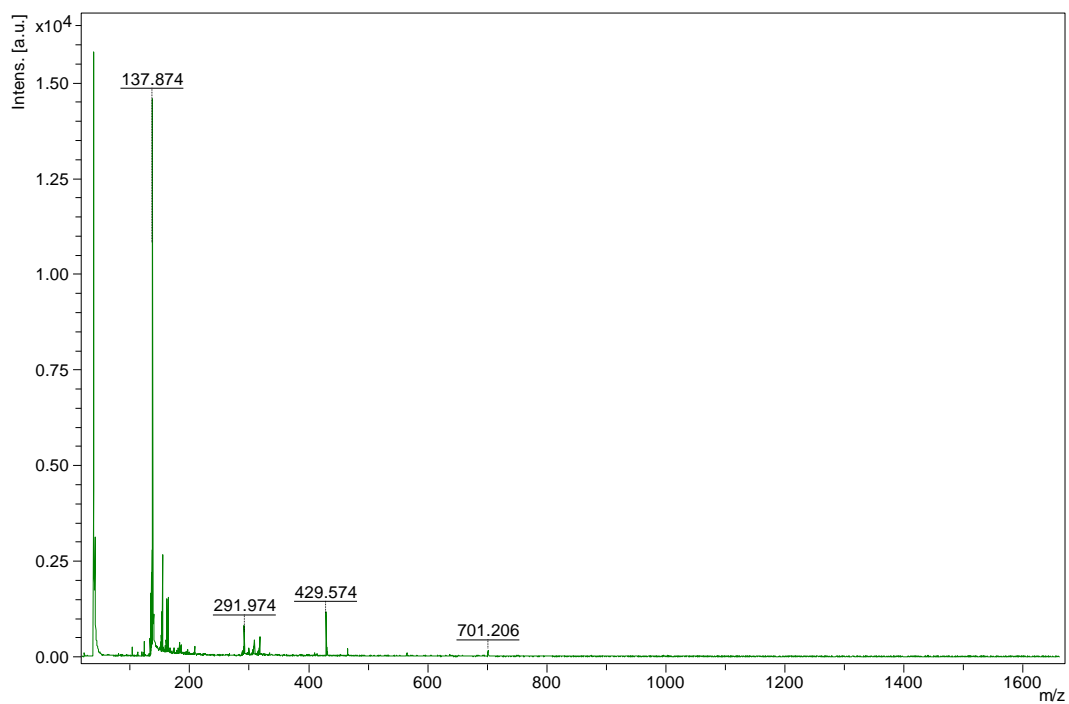


Figure D.15: LDI spectrum of propellant solvation solids FSSA sample 16

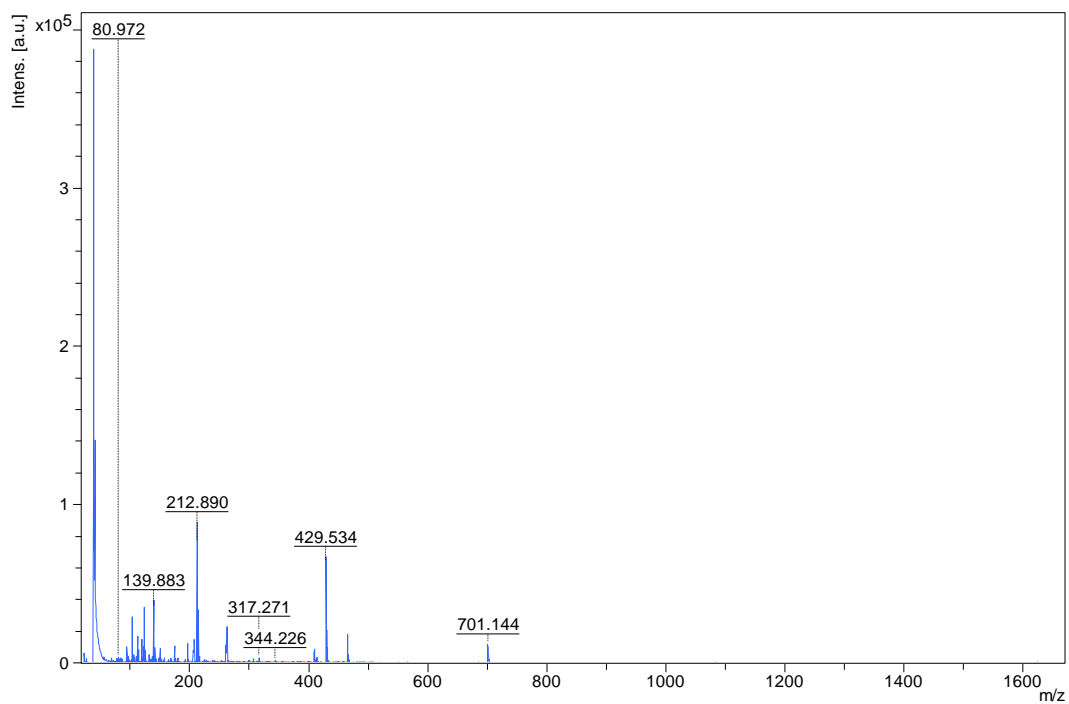


Figure D.16: LDI spectrum of propellant solvation solids FSSA sample 17

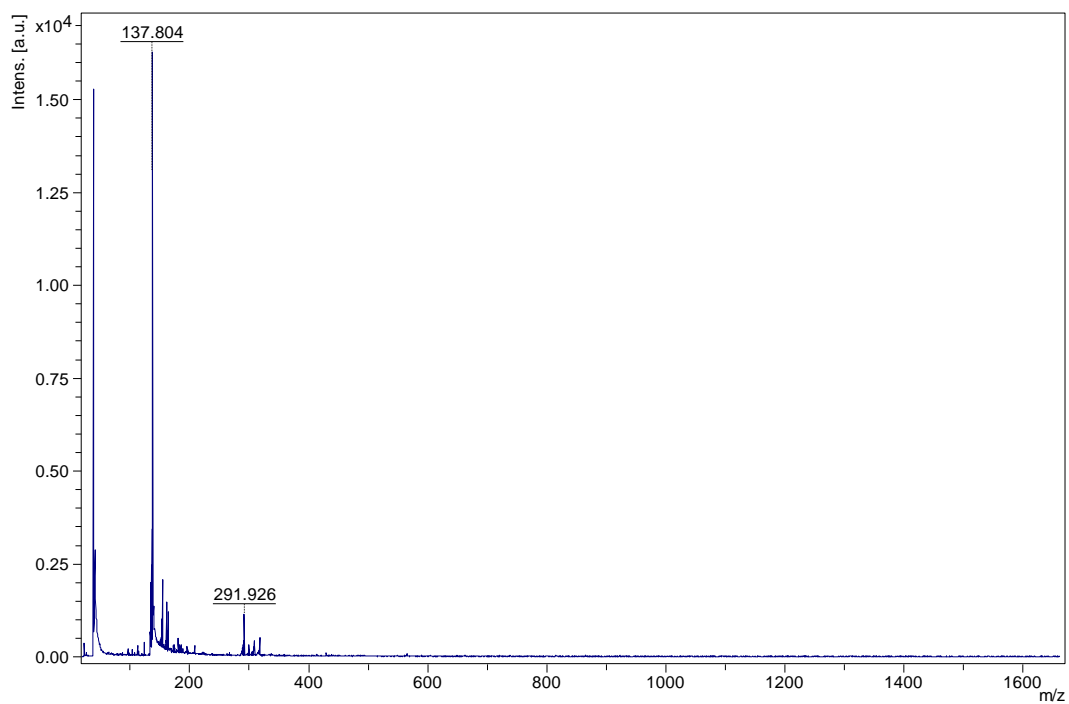


Figure D.17: LDI spectrum of propellant solvation solids FSSA sample 18

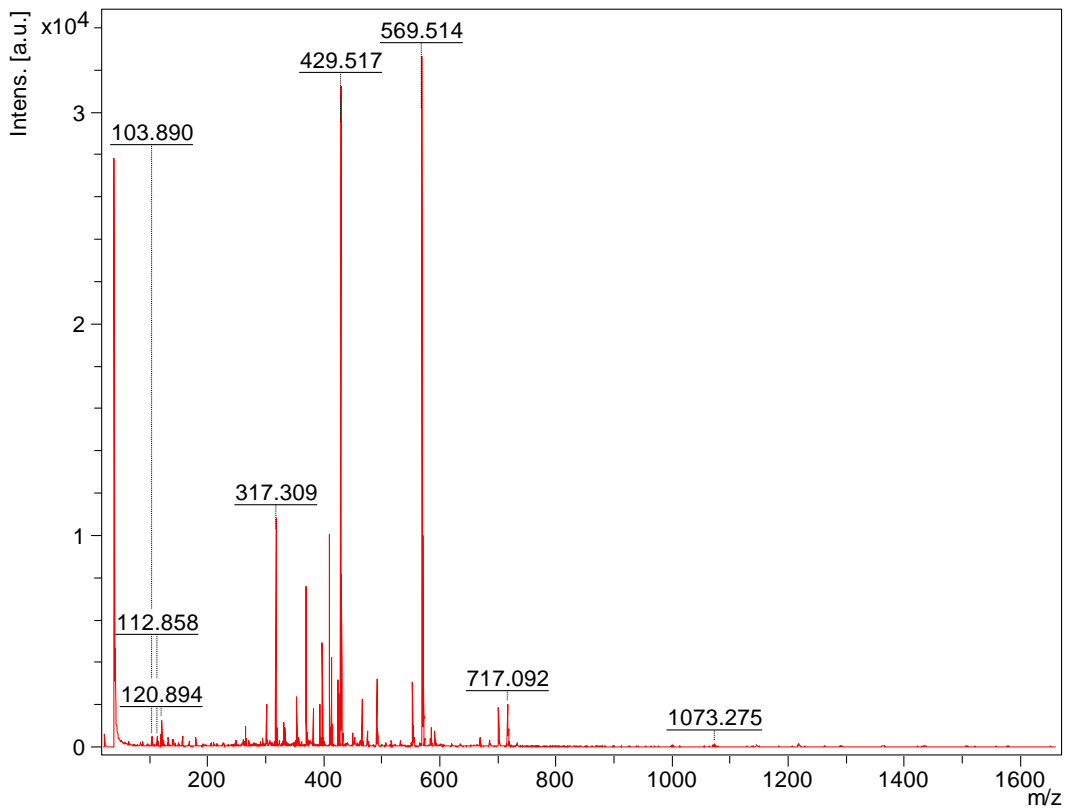


Figure D.18: LDI spectrum of FSSA sample 1

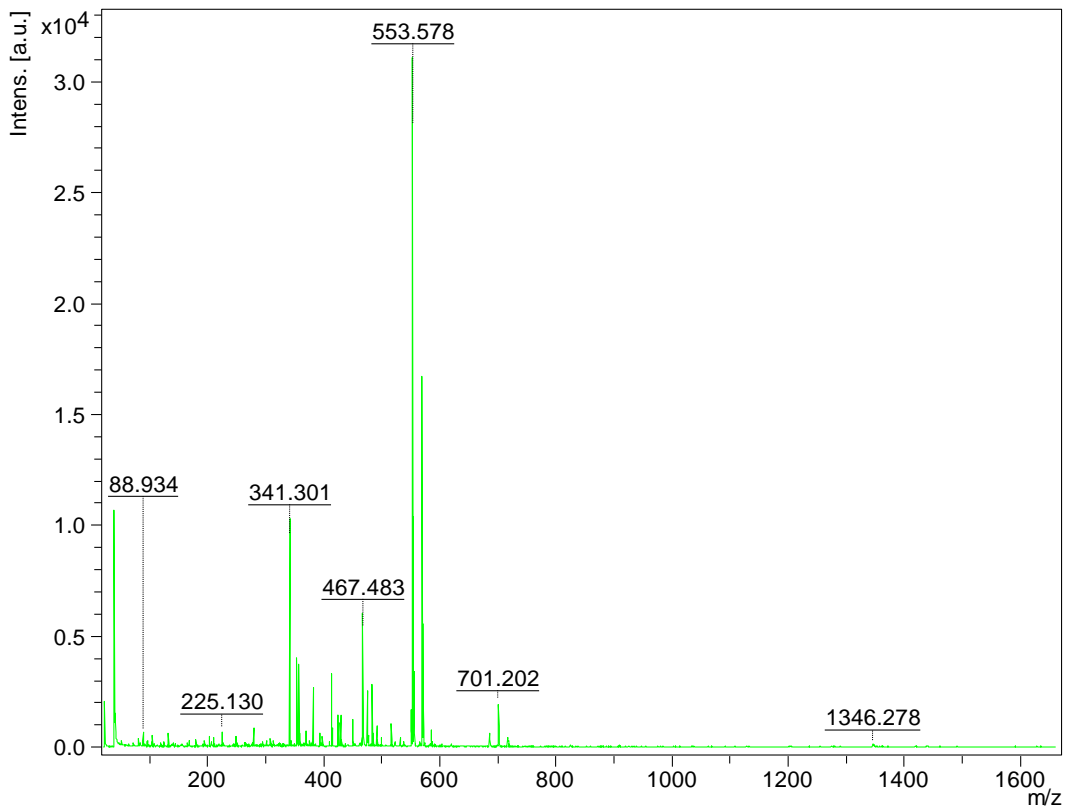


Figure D.19: LDI spectrum of FSSA sample 2

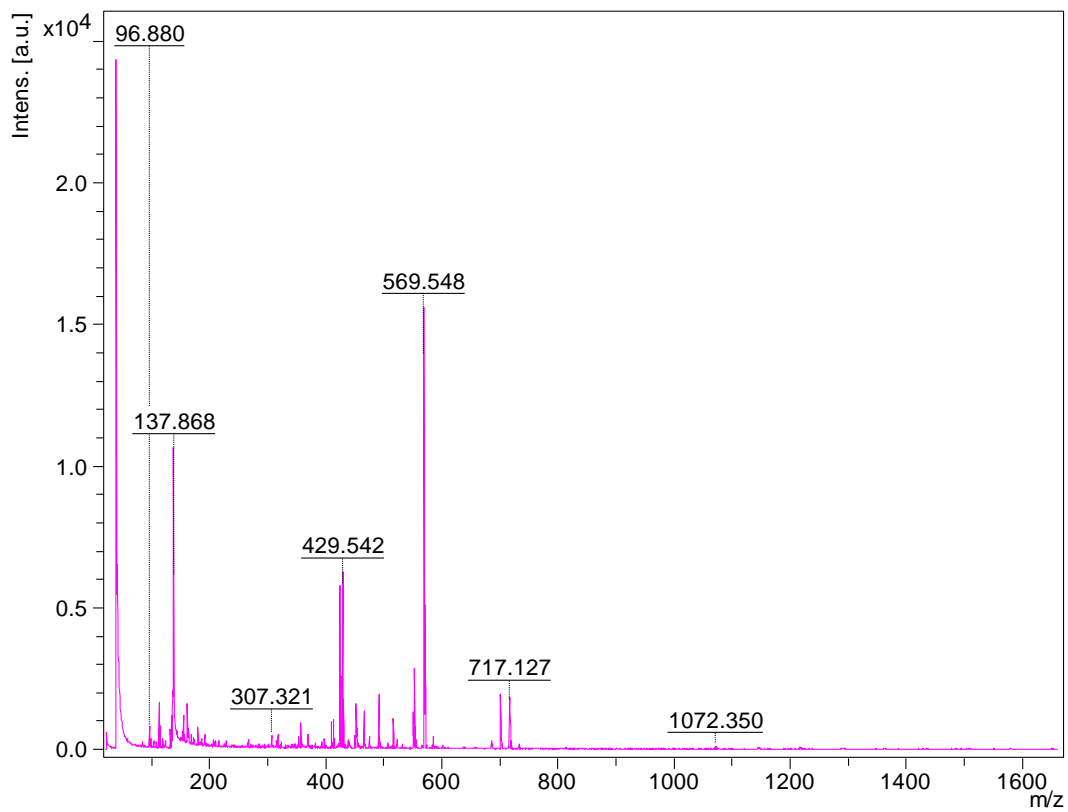


Figure D.20: LDI spectrum of FSSA sample 3

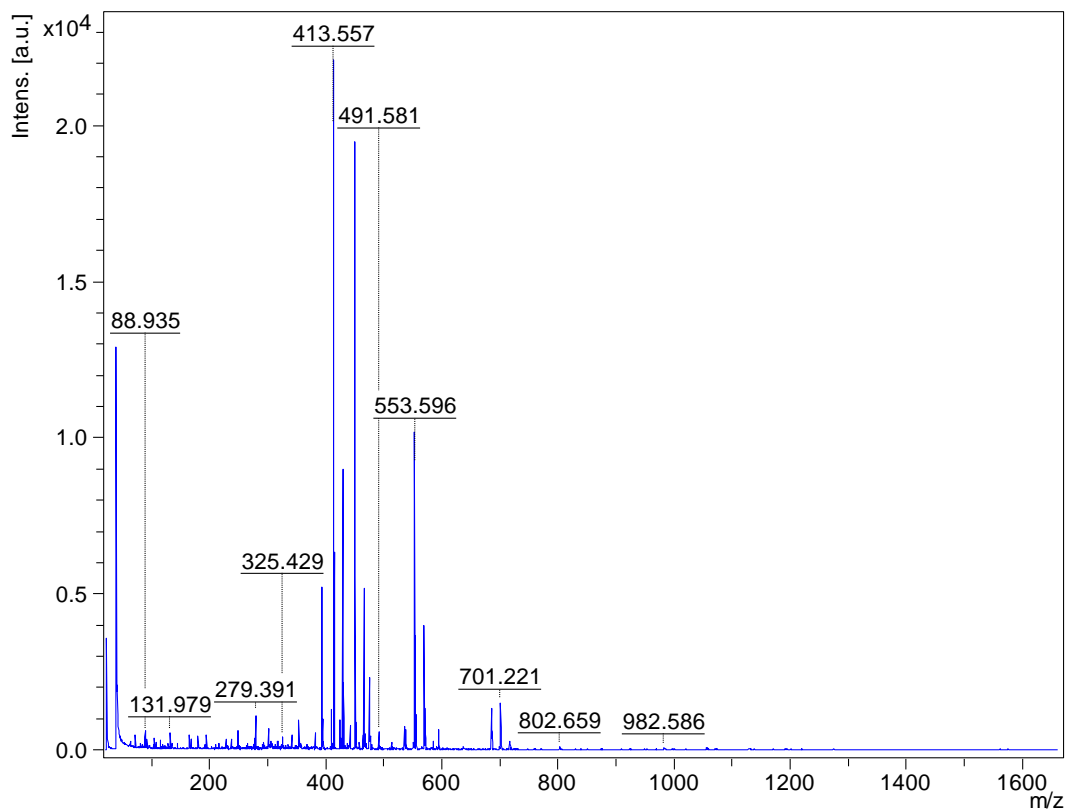


Figure D.21: LDI spectrum of FSSA sample 4

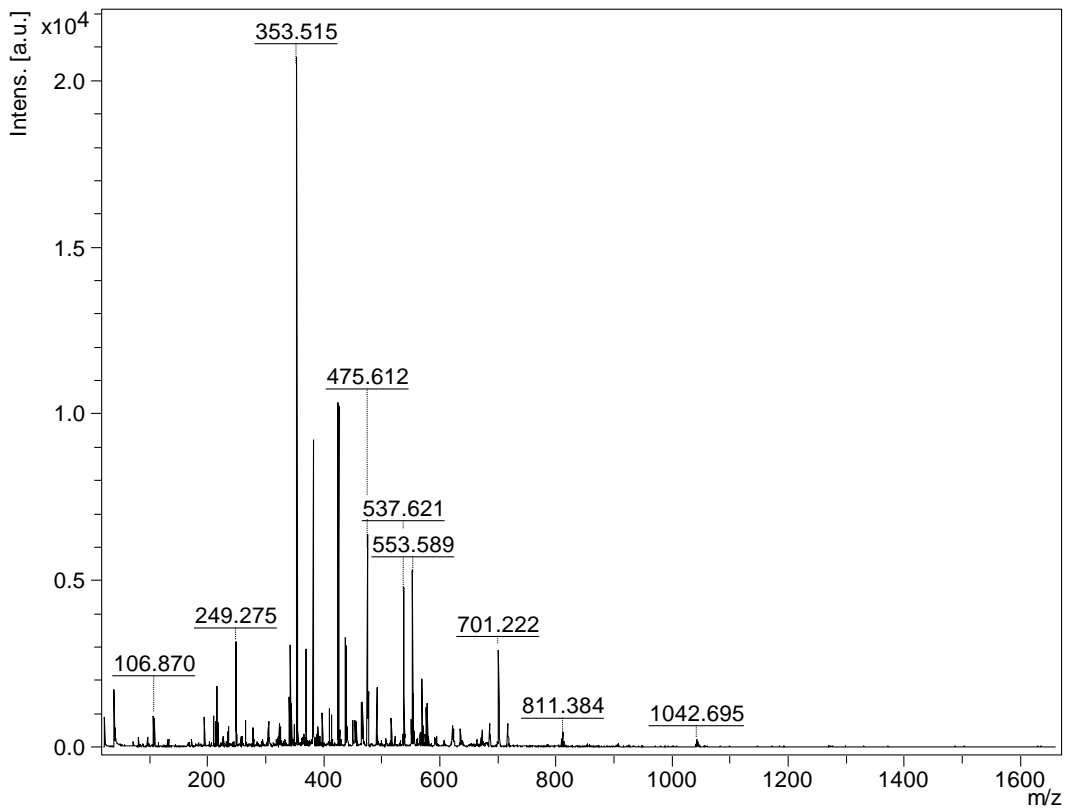


Figure D.22: LDI spectrum of FSSA sample 6

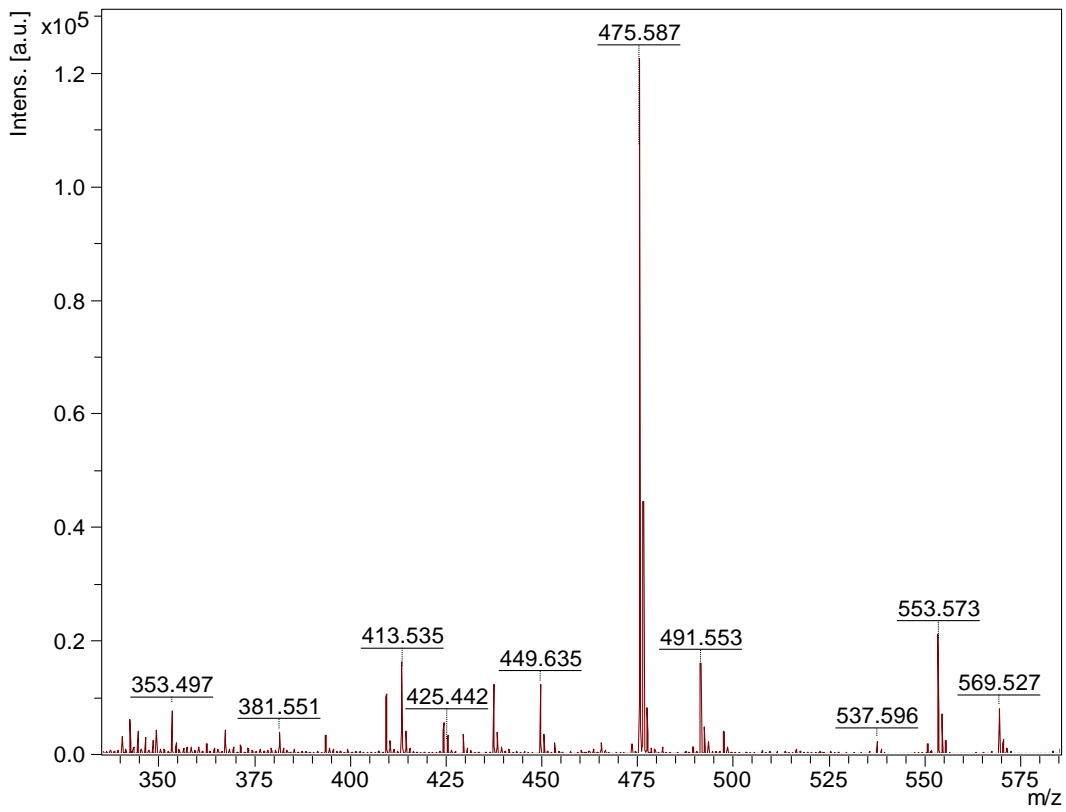


Figure D.23: LDI spectrum of FSSA sample 7

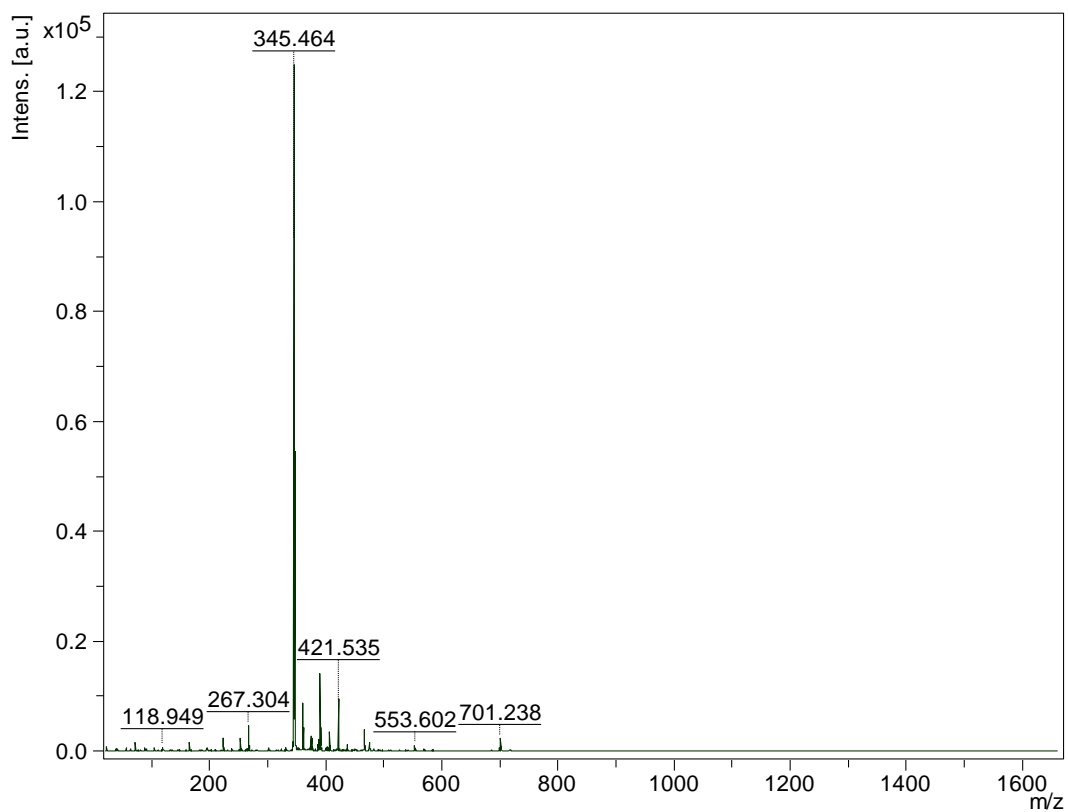


Figure D.24: LDI spectrum of FSSA sample 8

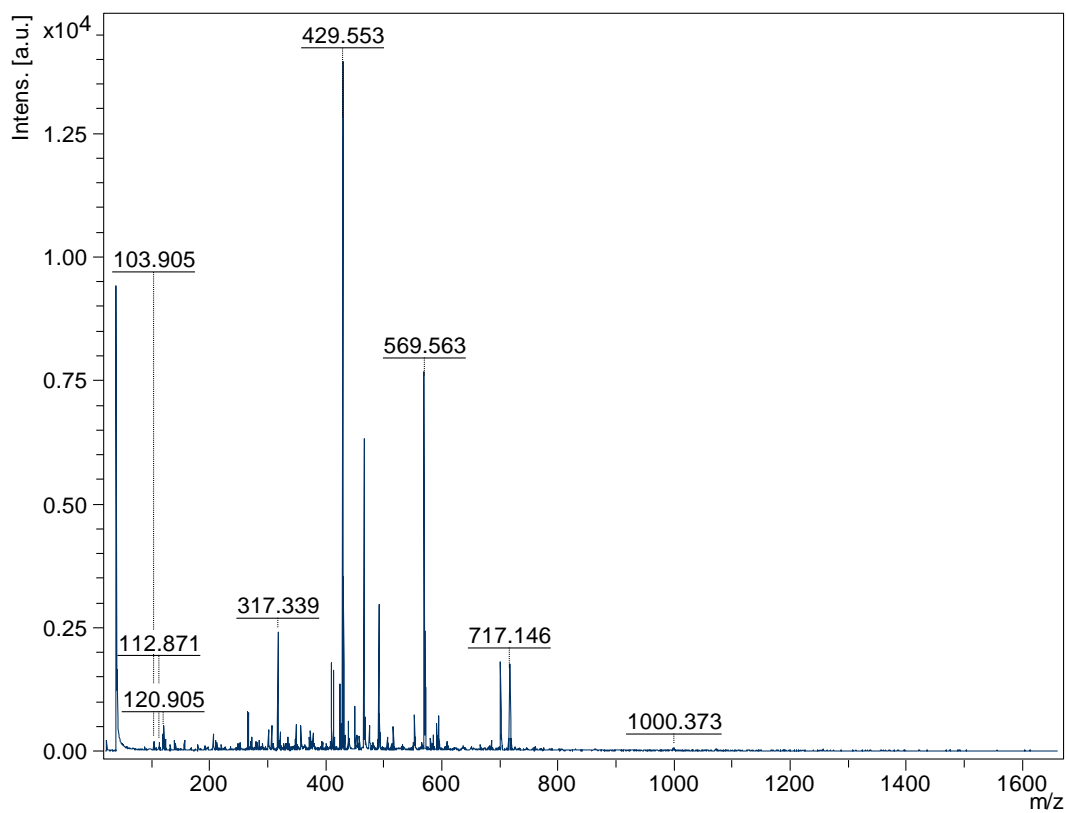


Figure D.25: LDI spectrum of FSSA sample 9

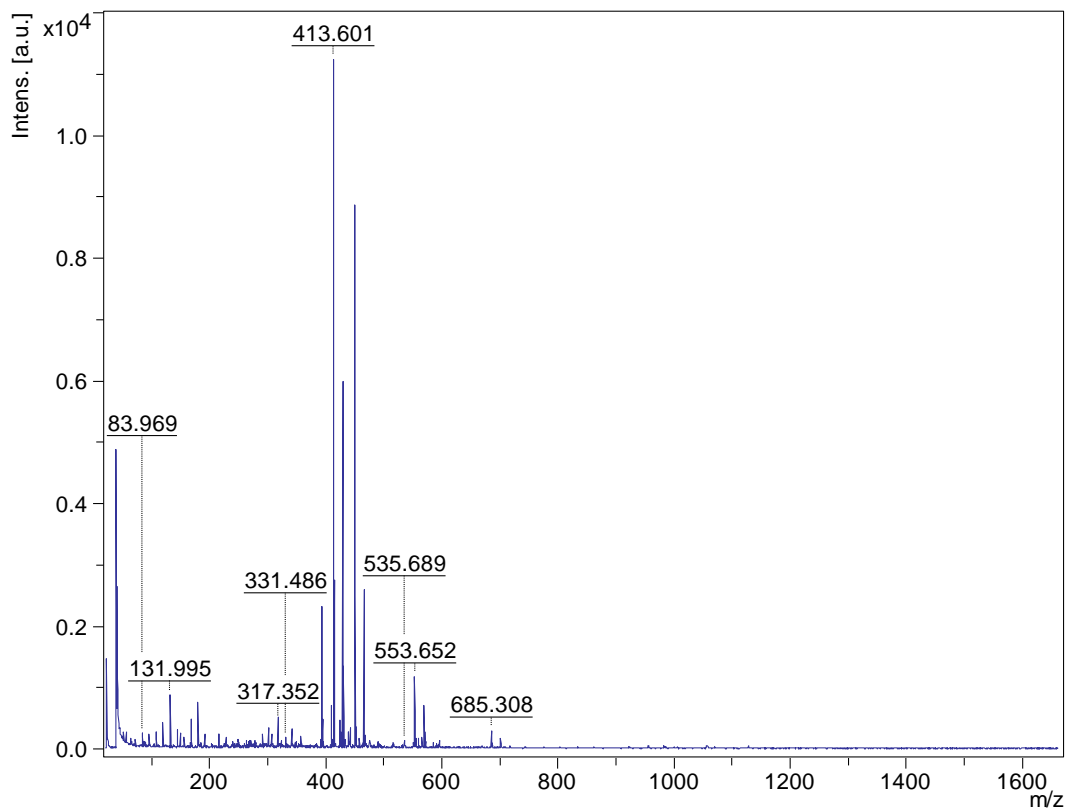


Figure D.26: LDI spectrum of FSSA sample 10

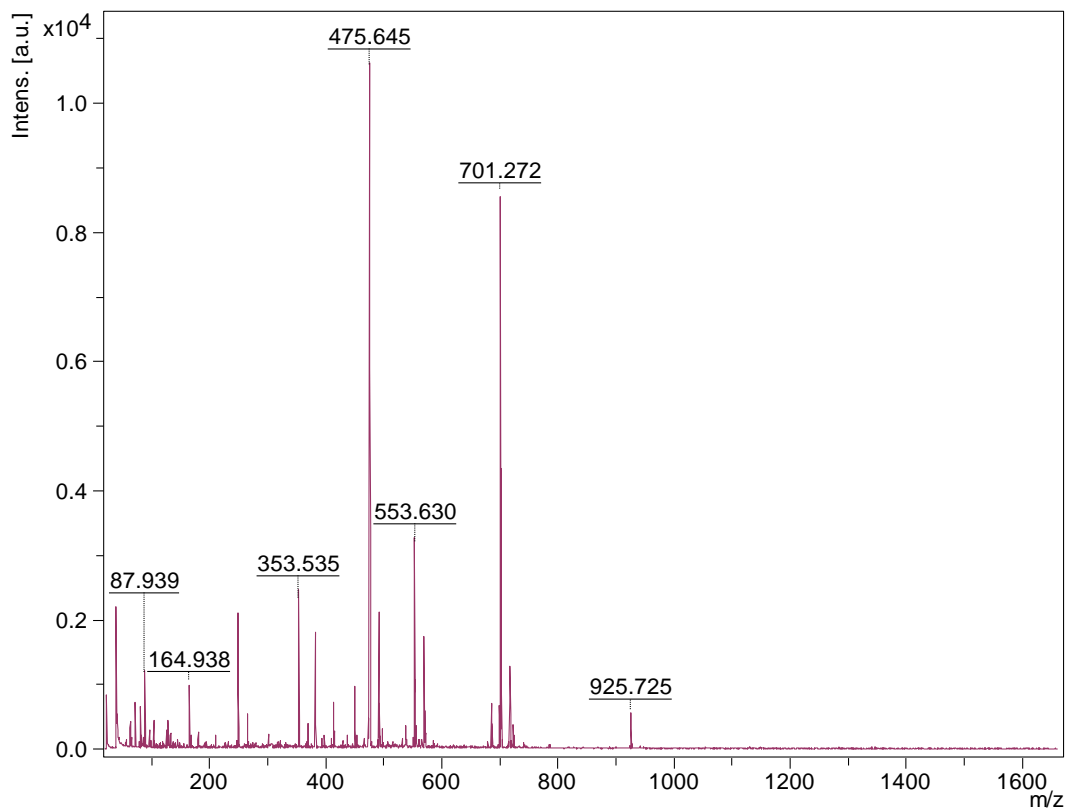


Figure D.27: LDI spectrum of FSSA sample 11

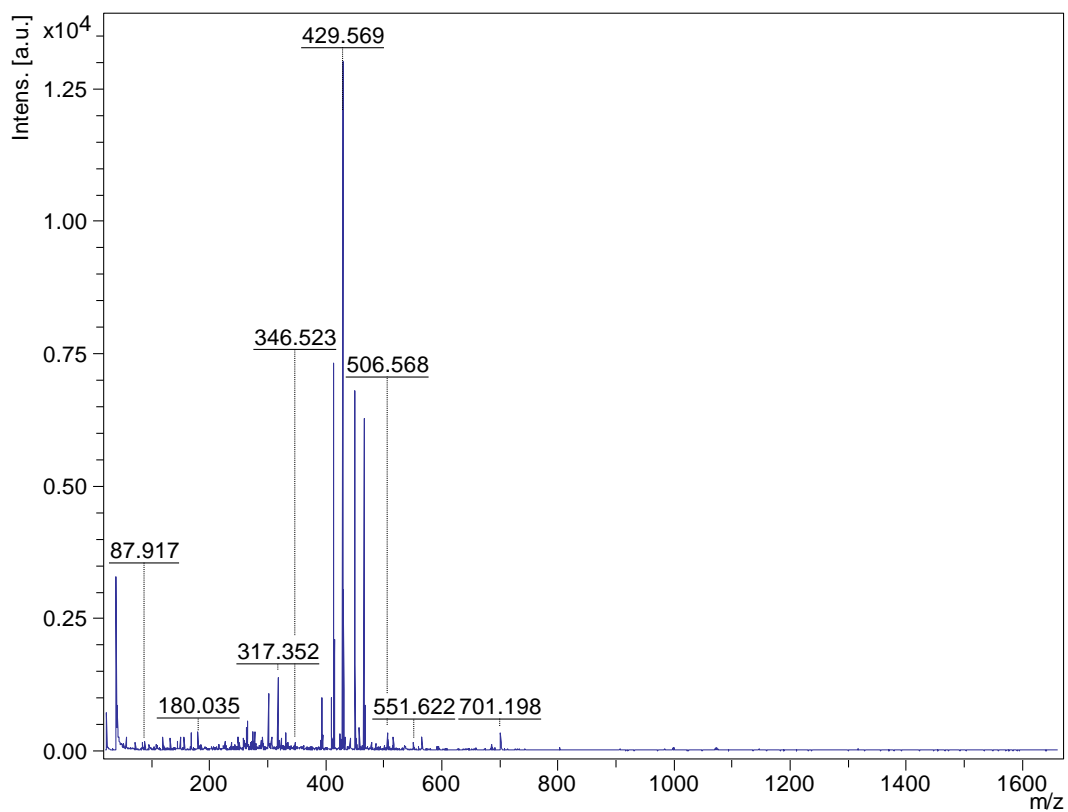


Figure D.28: LDI spectrum of FSSA sample 12

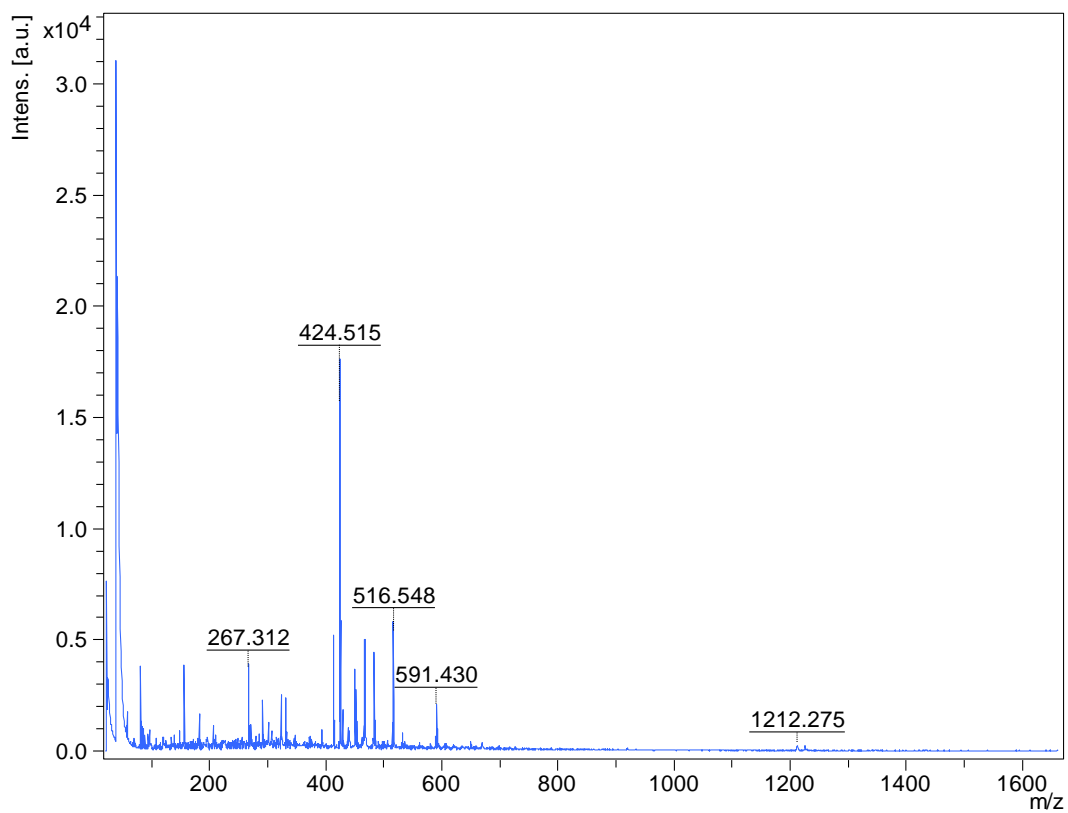


Figure D.29: LDI spectrum of FSSA sample 13

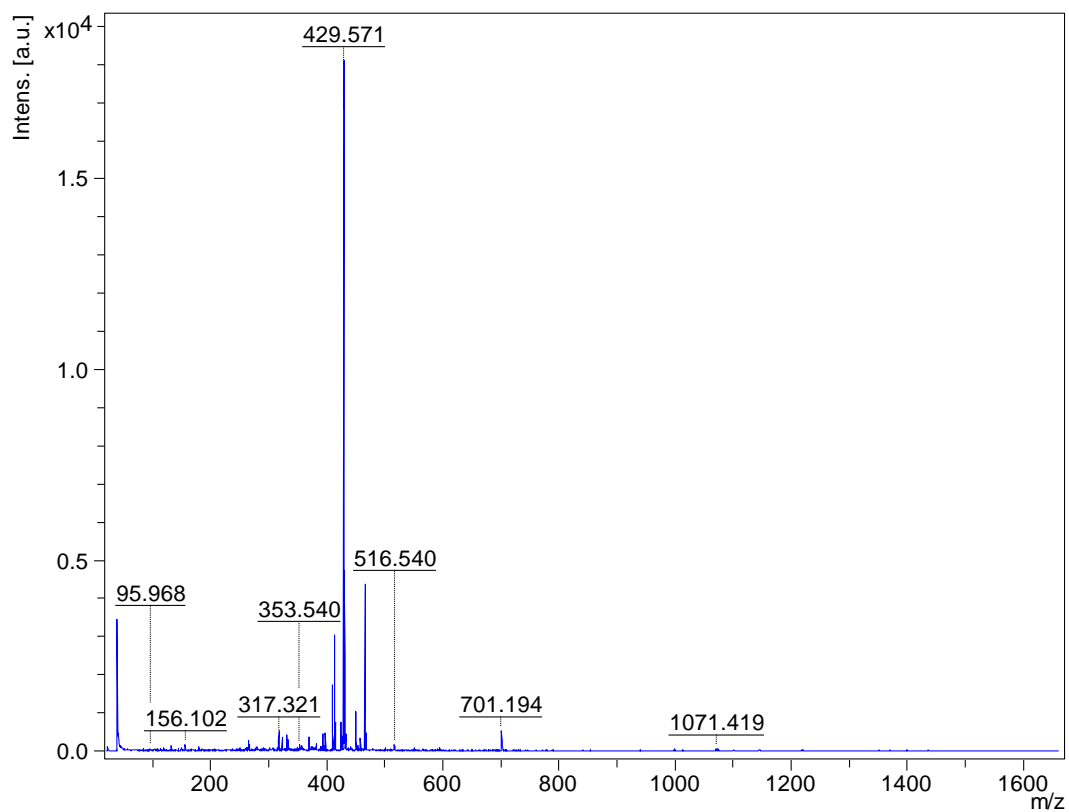


Figure D.30: LDI spectrum of FSSA sample 14

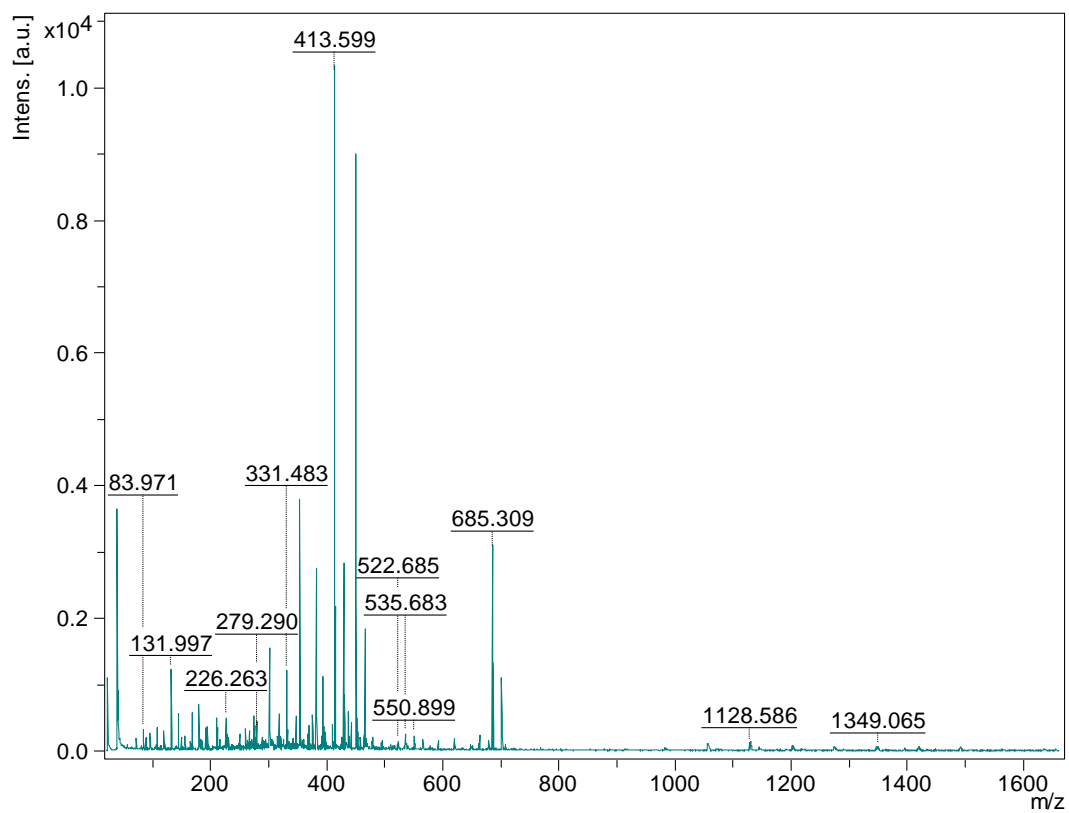


Figure D.31: LDI spectrum of FSSA sample 15

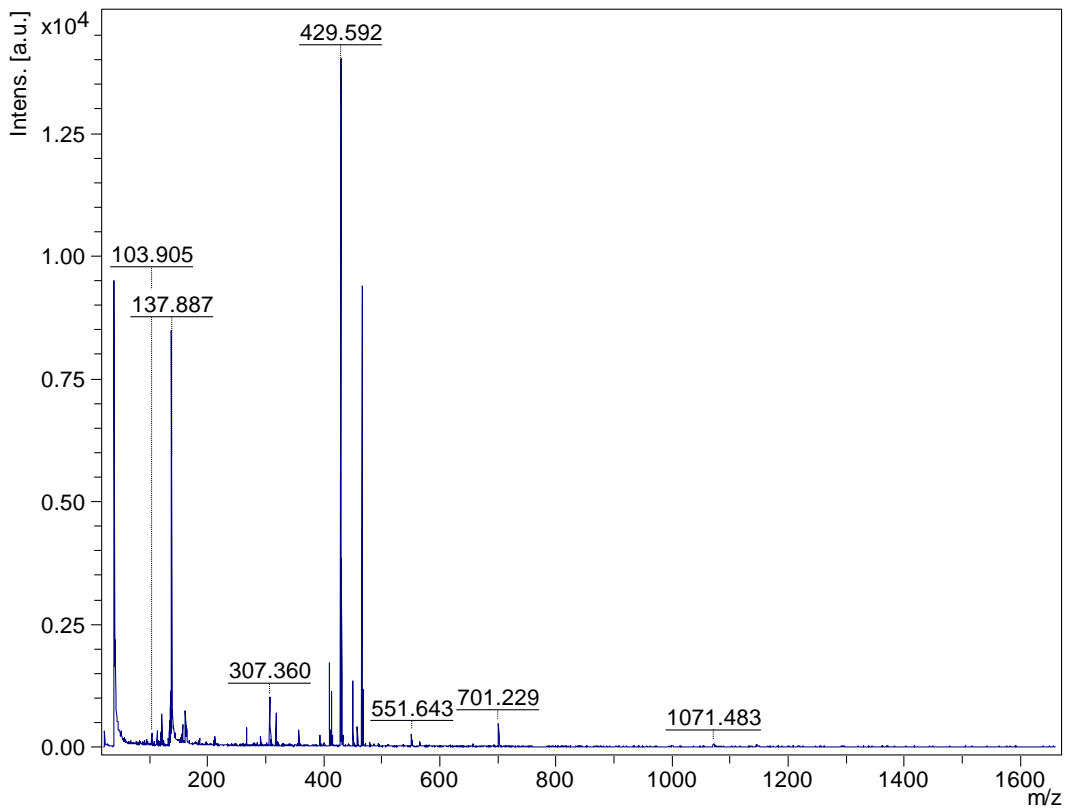


Figure D.32: LDI spectrum of FSSA sample 16

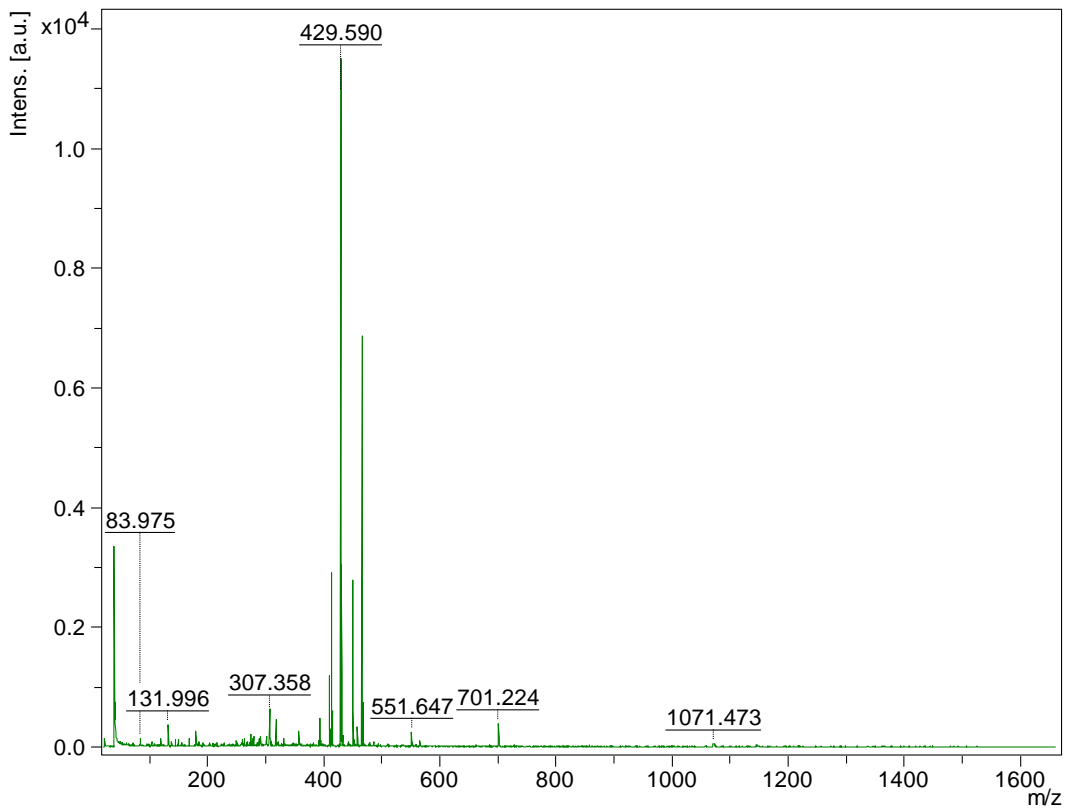


Figure D.33: LDI spectrum of FSSA sample 17

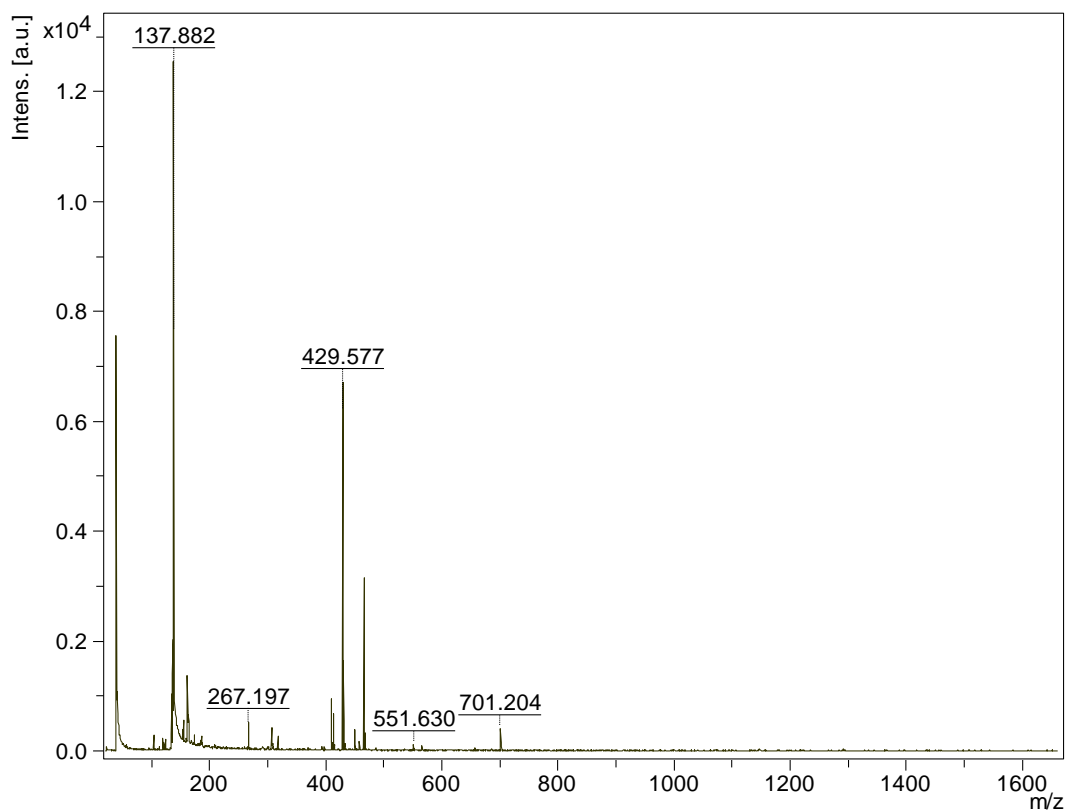


Figure D.34: LDI spectrum of FSSA sample 18

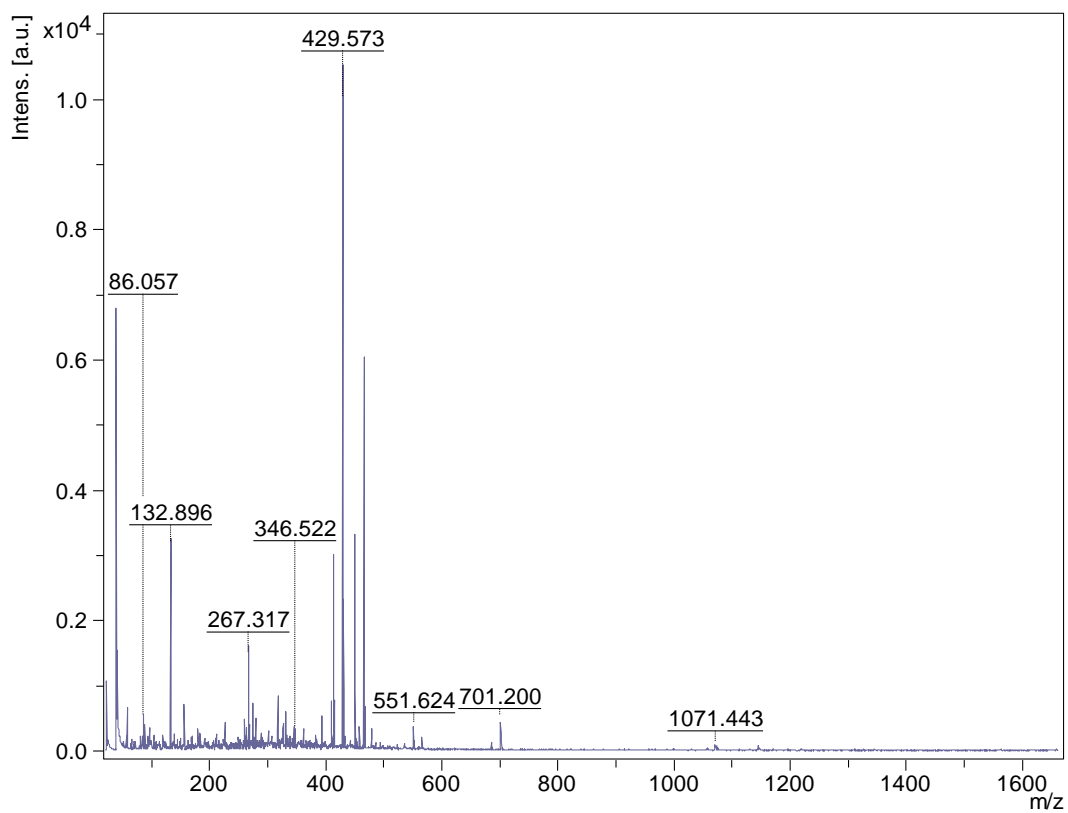


Figure D.35: LDI spectrum of FSSA sample 19

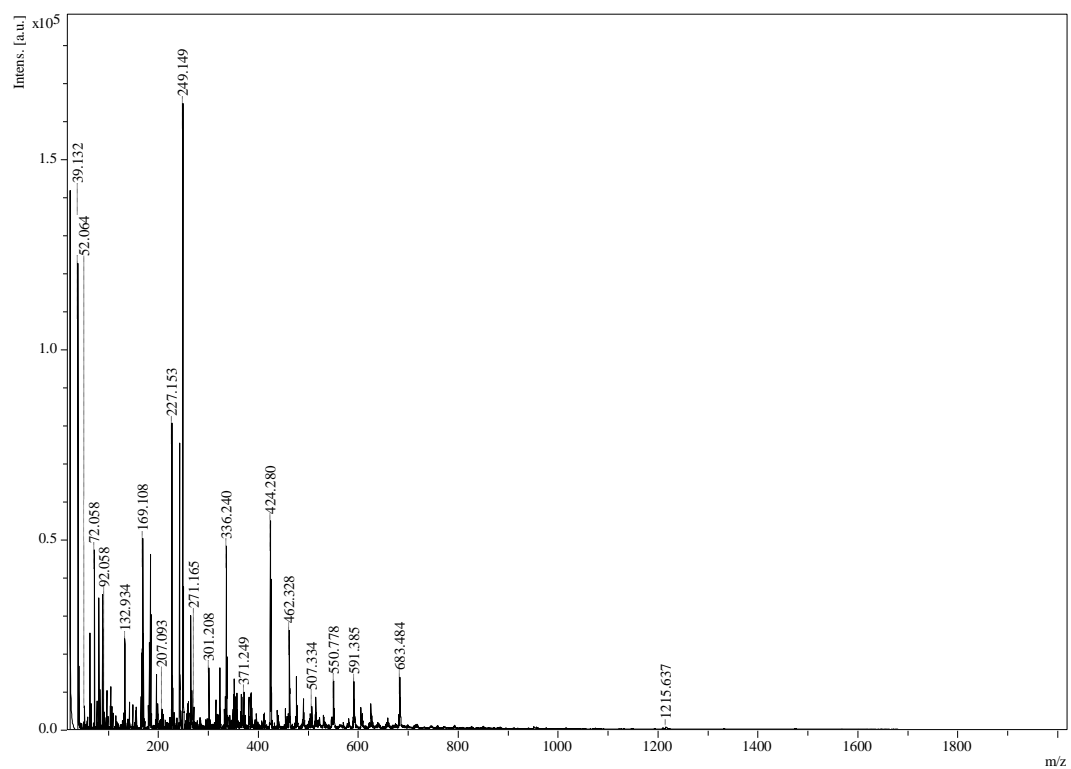


Figure D.36: LDI spectrum of stabilizer mixture

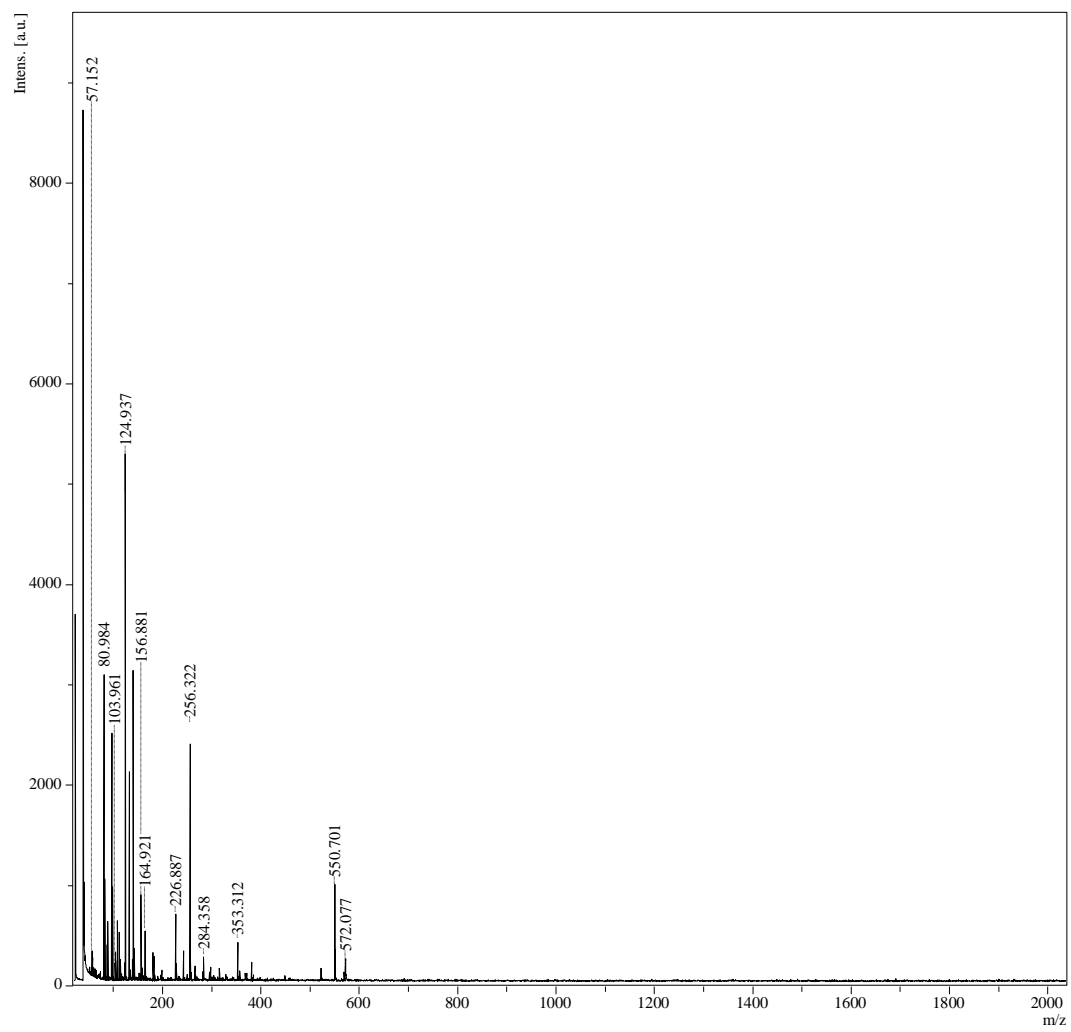


Figure D.37: LDI spectrum of 2,4-DNT

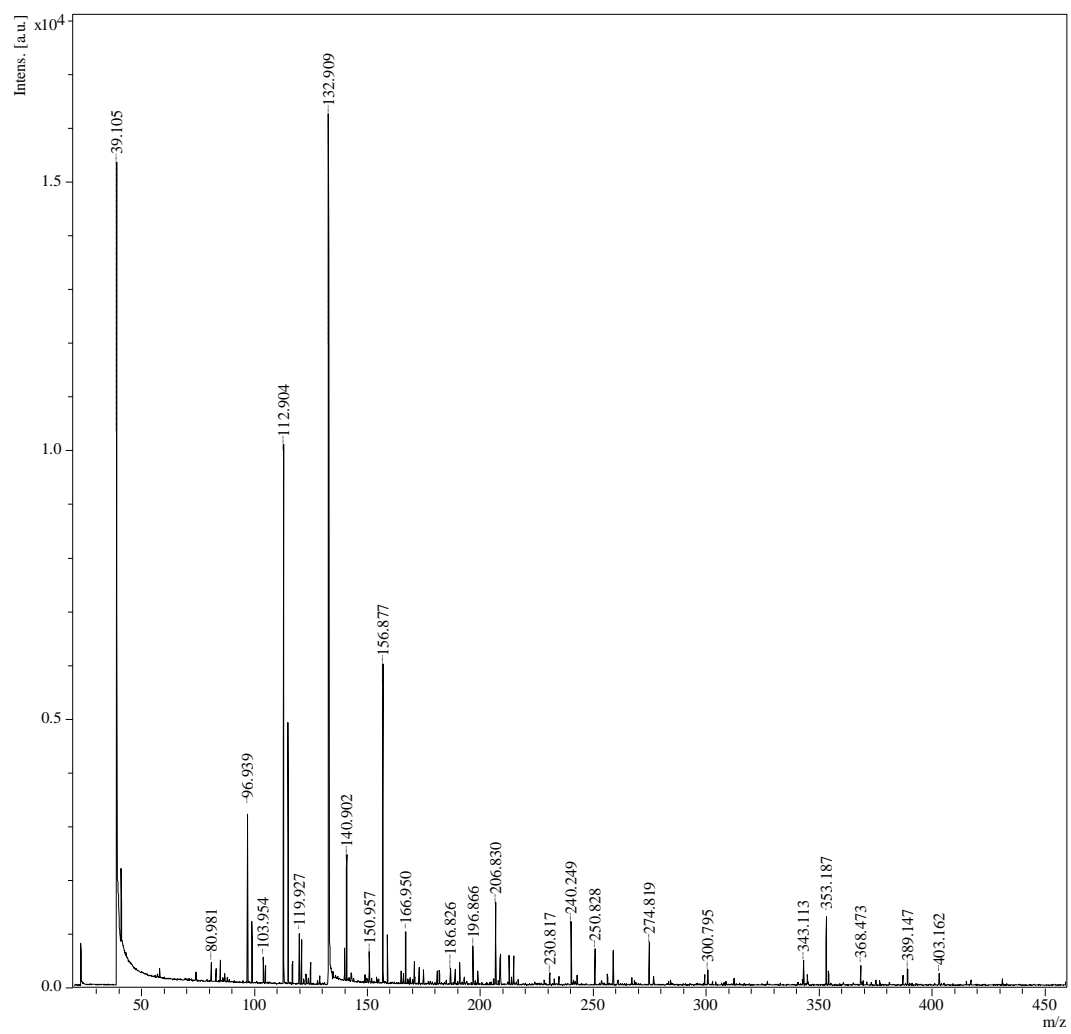


Figure D.38: LDI spectrum of 2,6-DNT

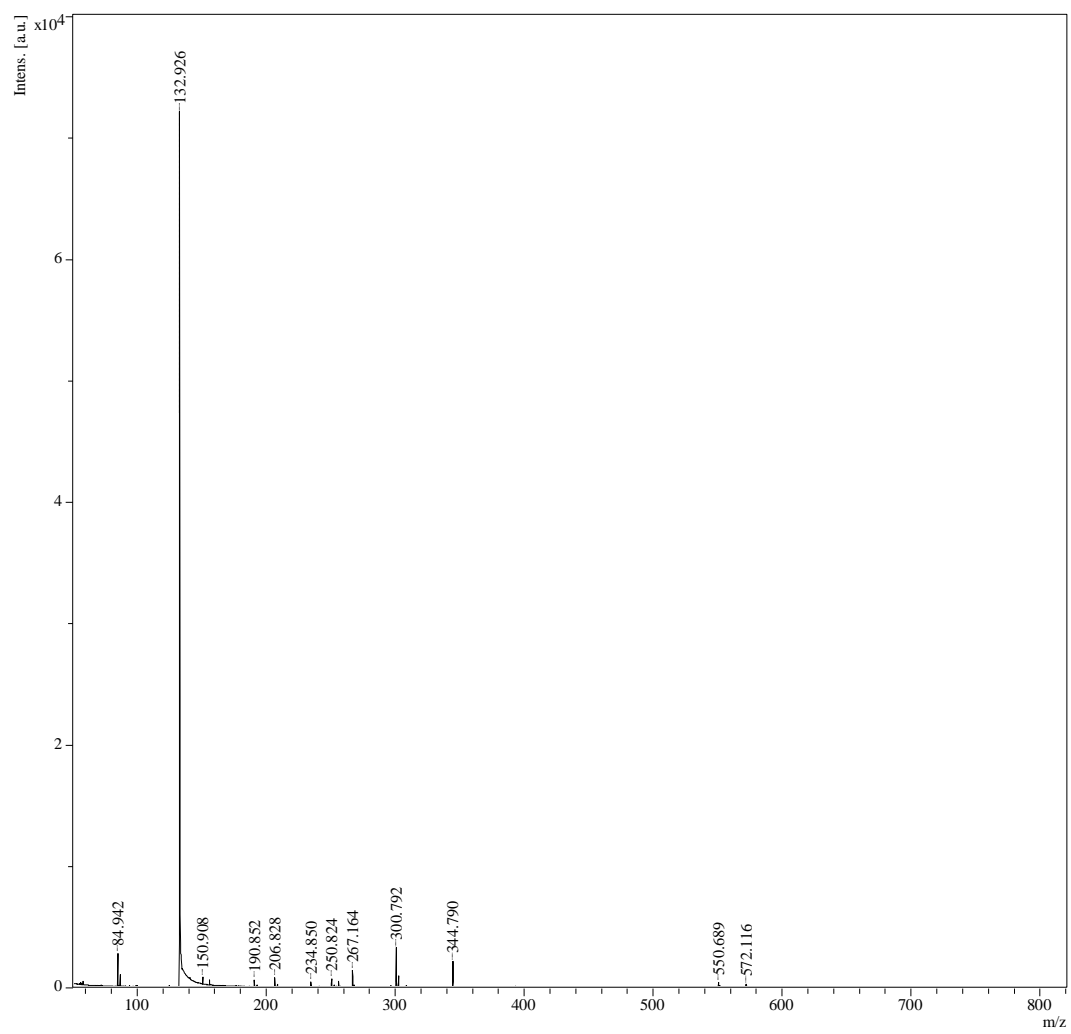


Figure D.39: LDI spectrum of 2nDPA

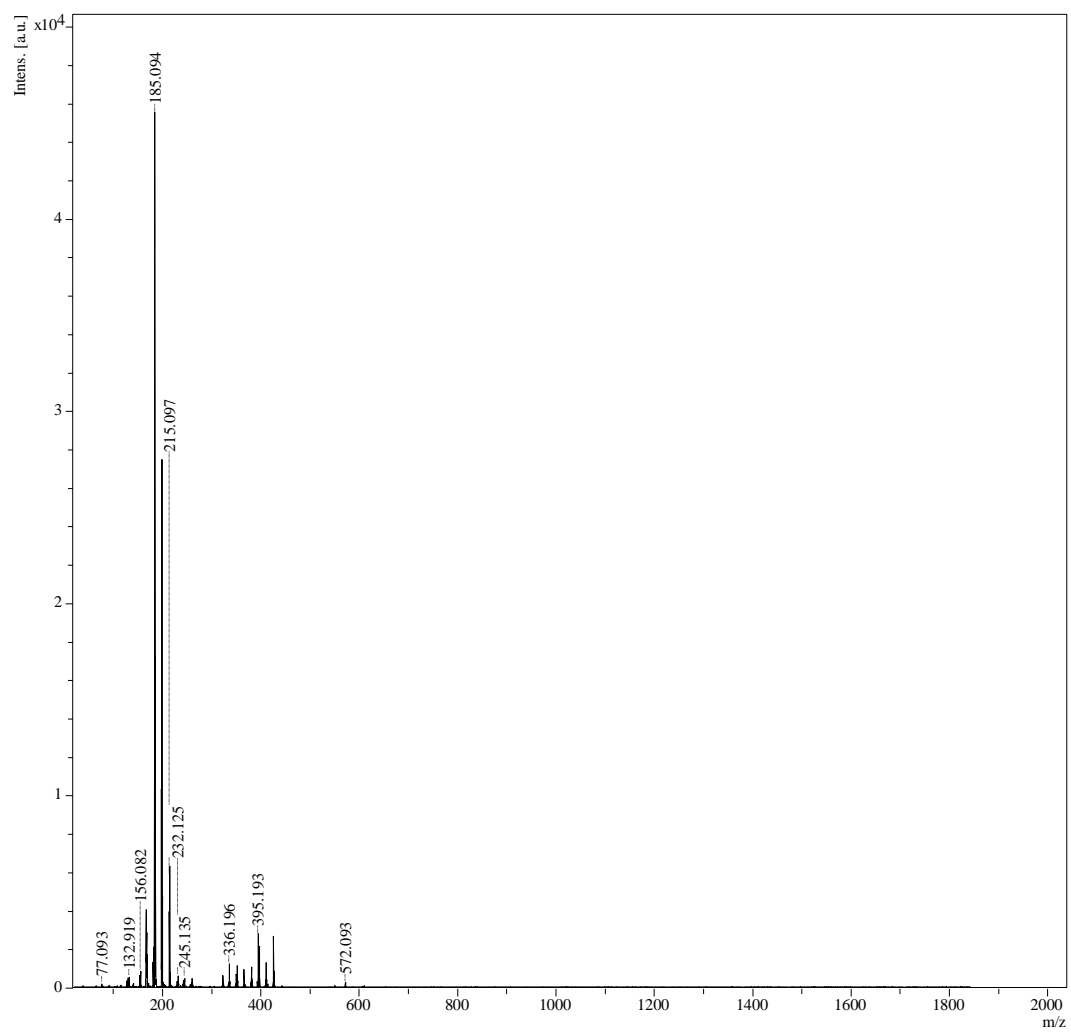


Figure D.40: LDI spectrum of 4nDPA

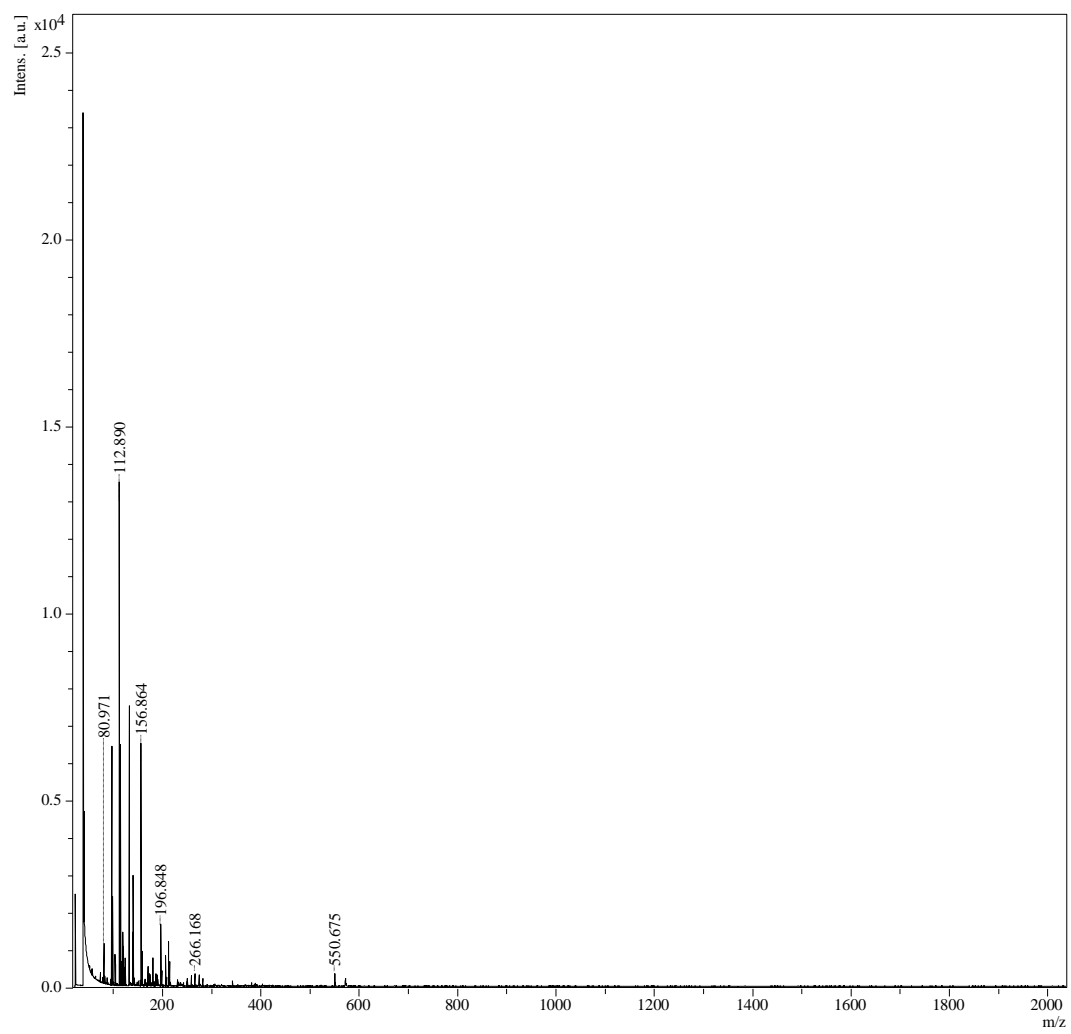


Figure D.41: LDI spectrum of AKII

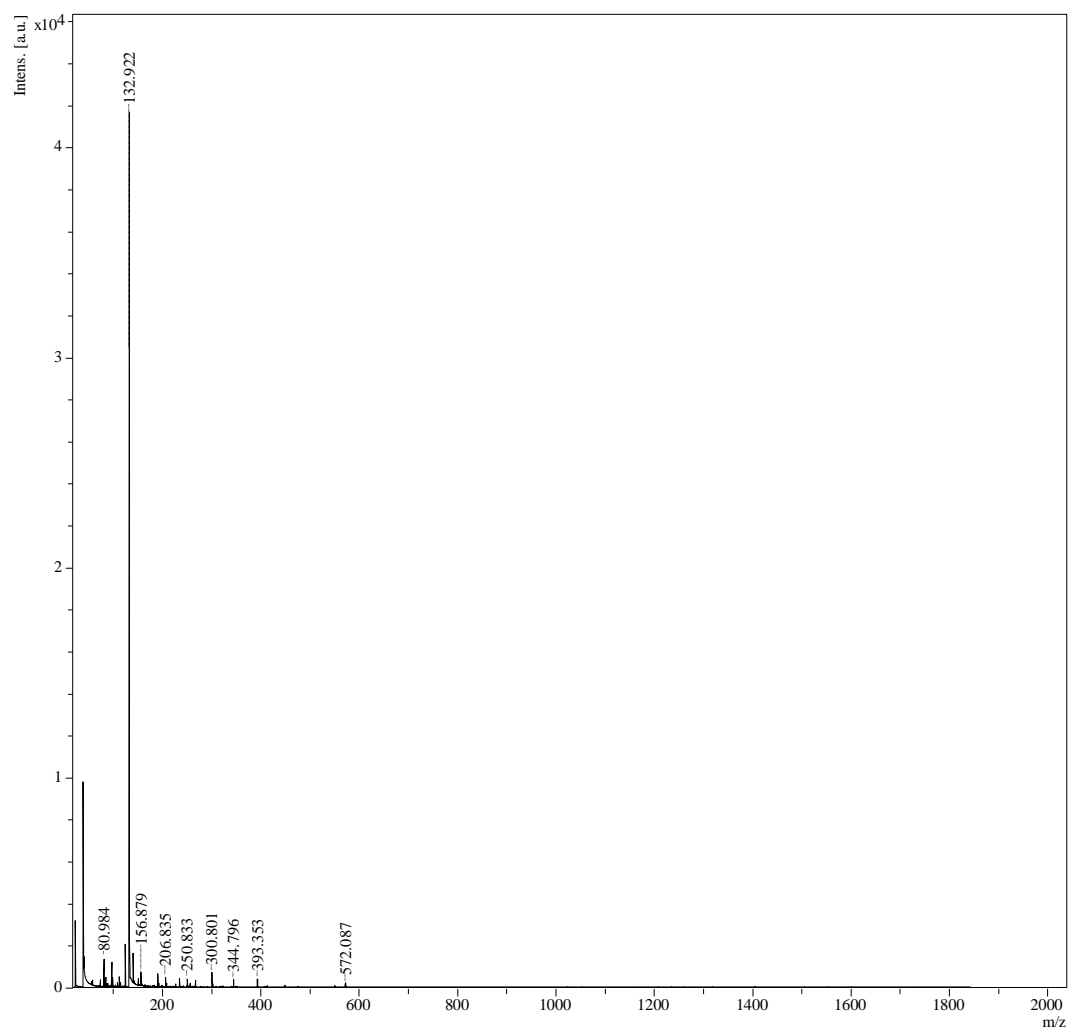


Figure D.42: LDI spectrum of DBP

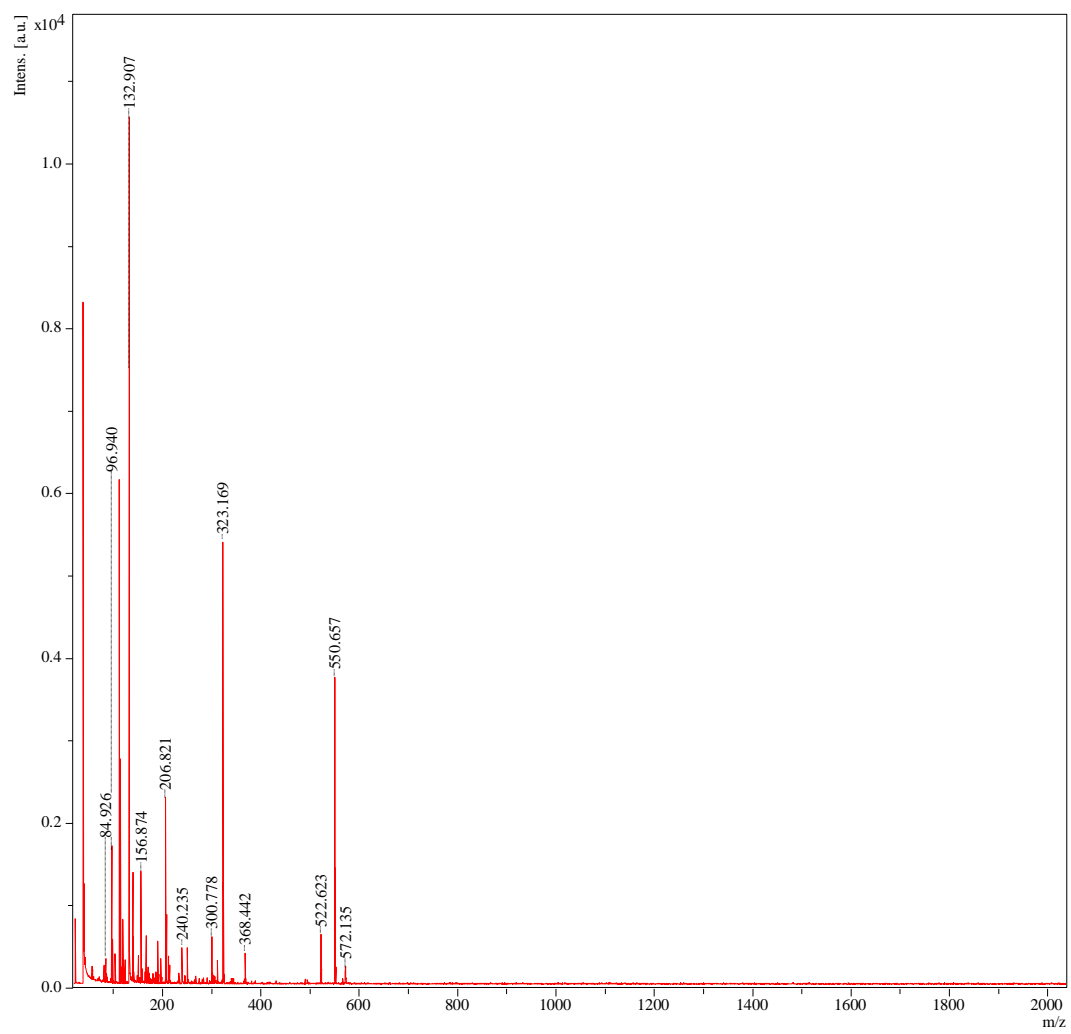


Figure D.43: LDI spectrum of DPA

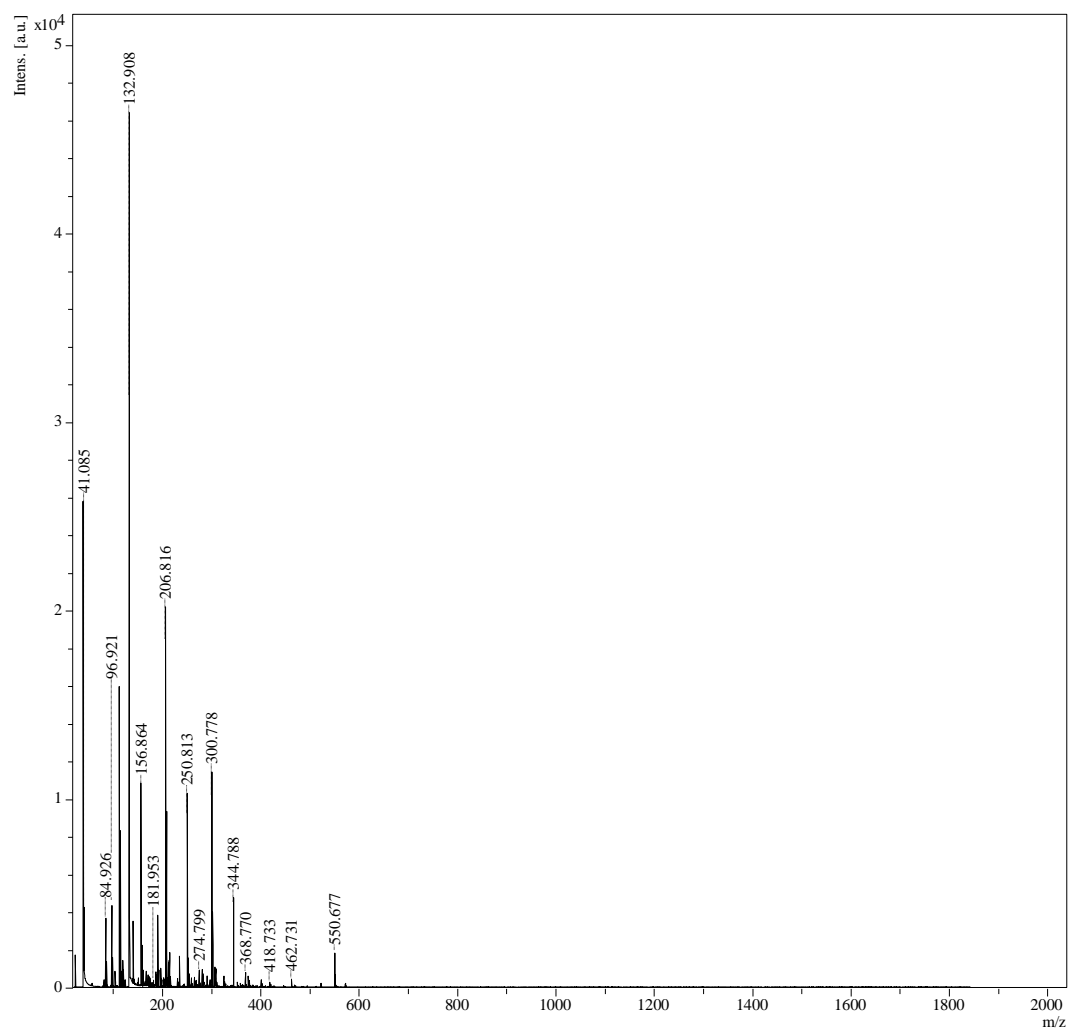


Figure D.44: LDI spectrum of EC

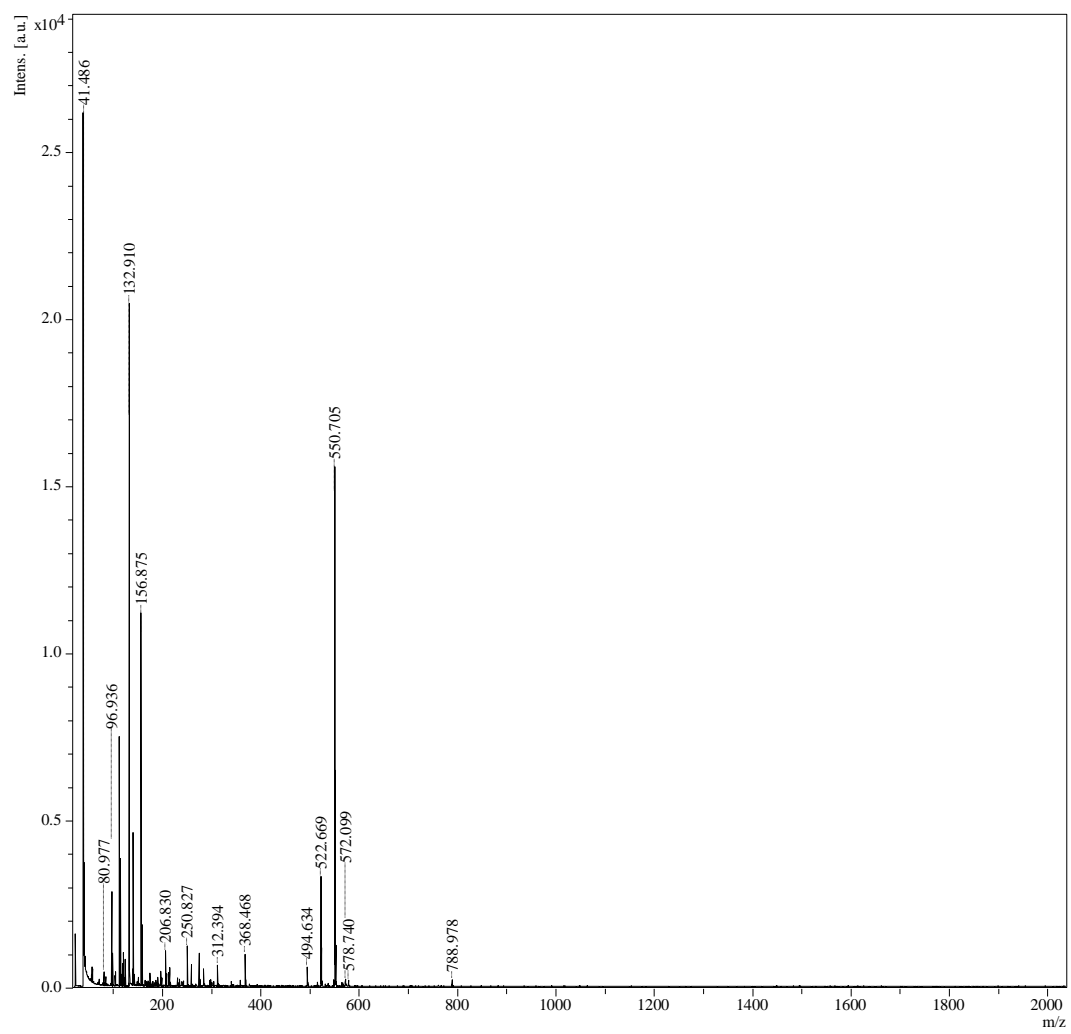


Figure D.45: LDI spectrum of MC

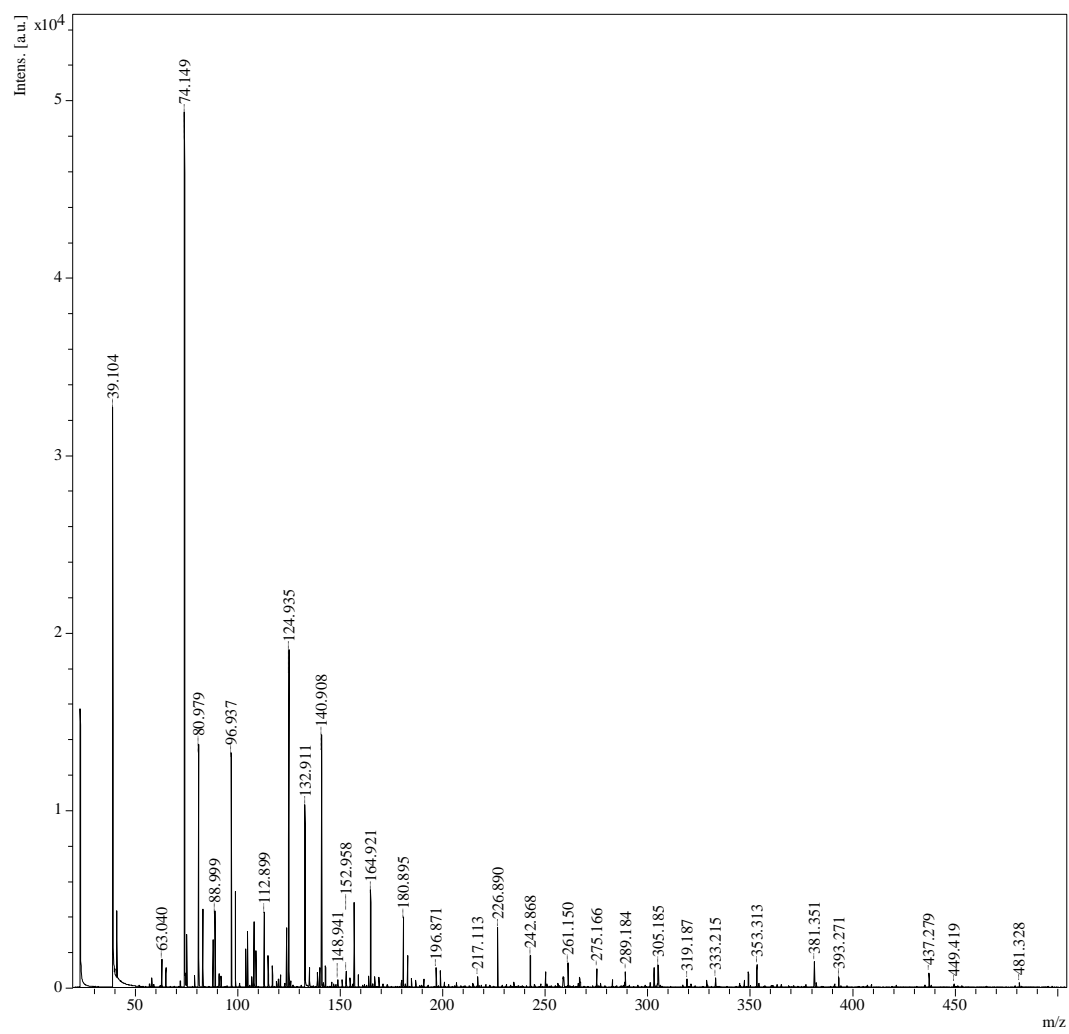


Figure D.46: LDI spectrum of nitrocellulose

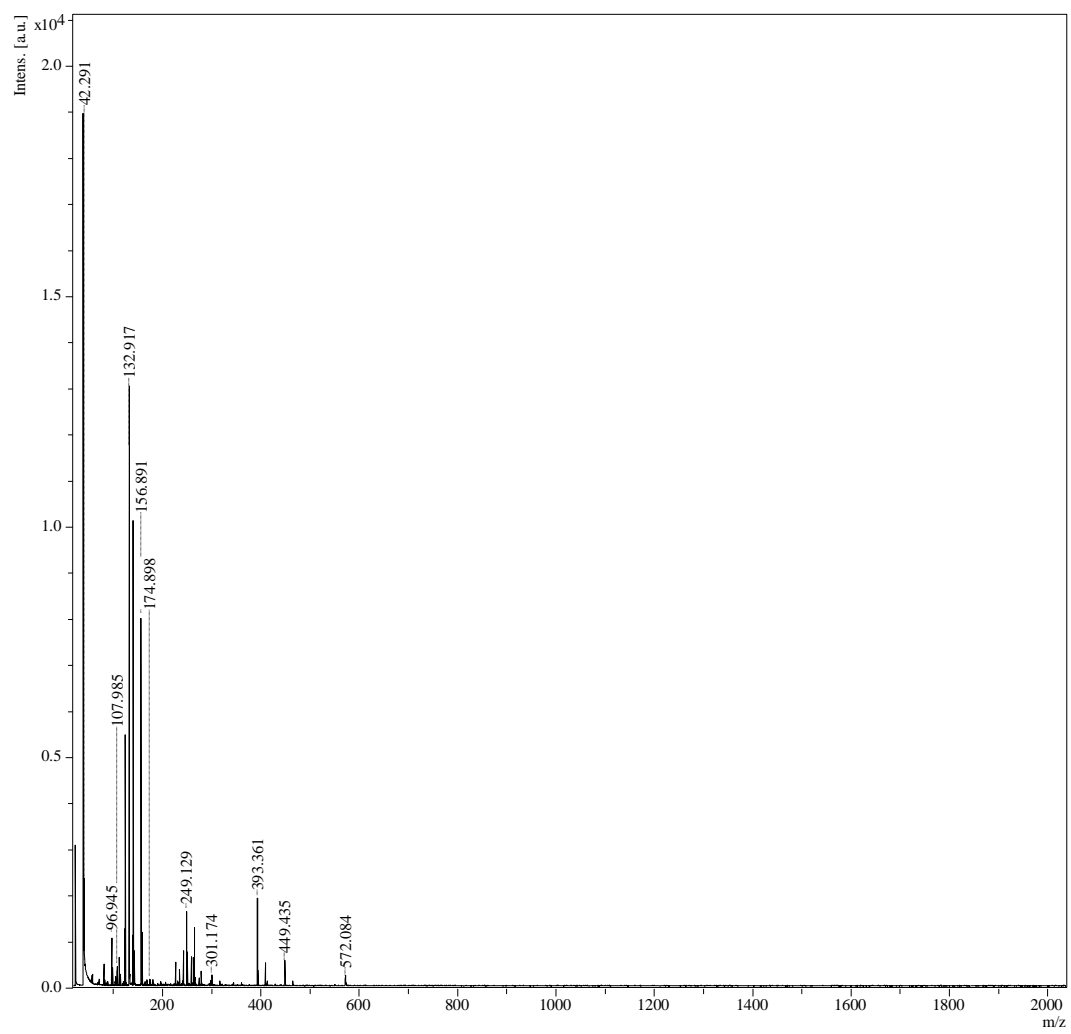


Figure D.47: LDI spectrum of nitroglycerin

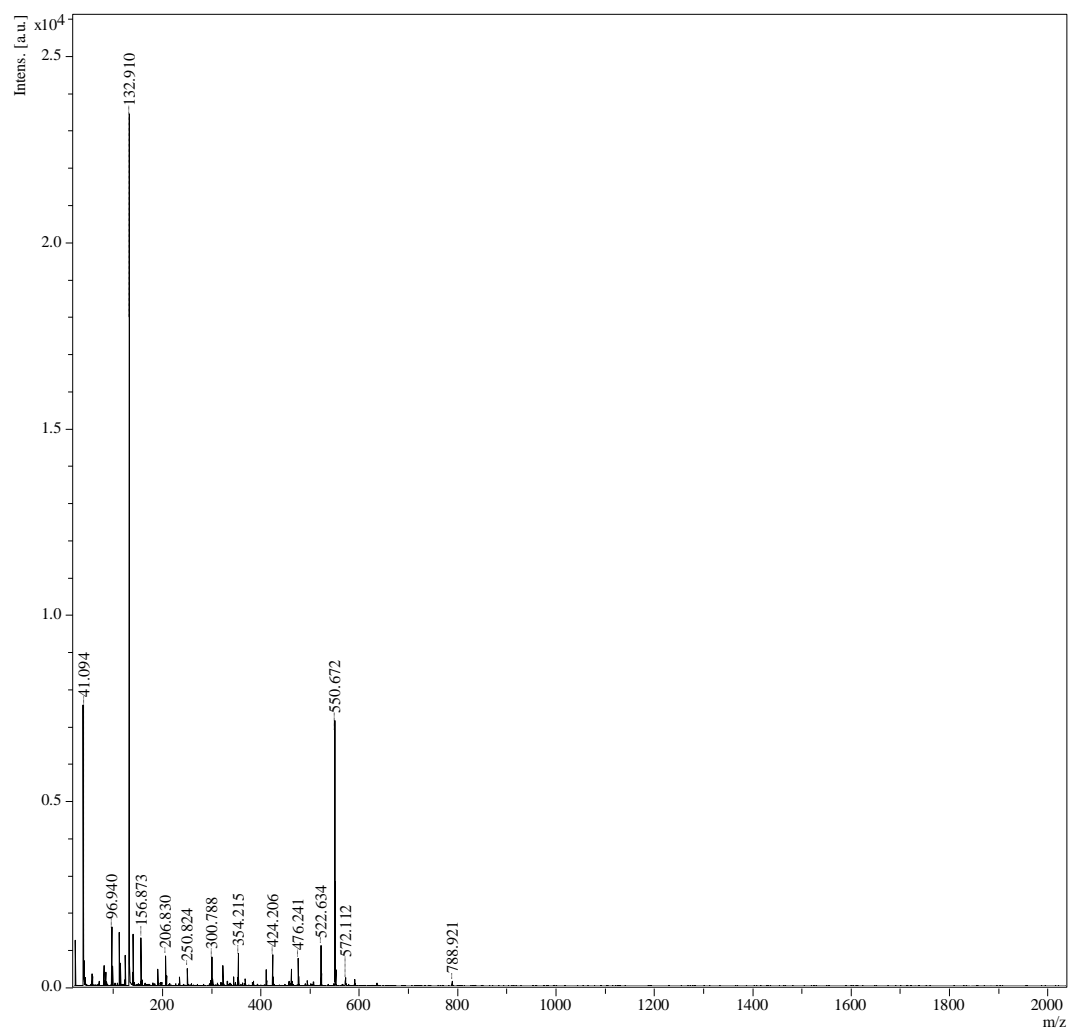


Figure D.48: LDI spectrum of NnitrosoDPA

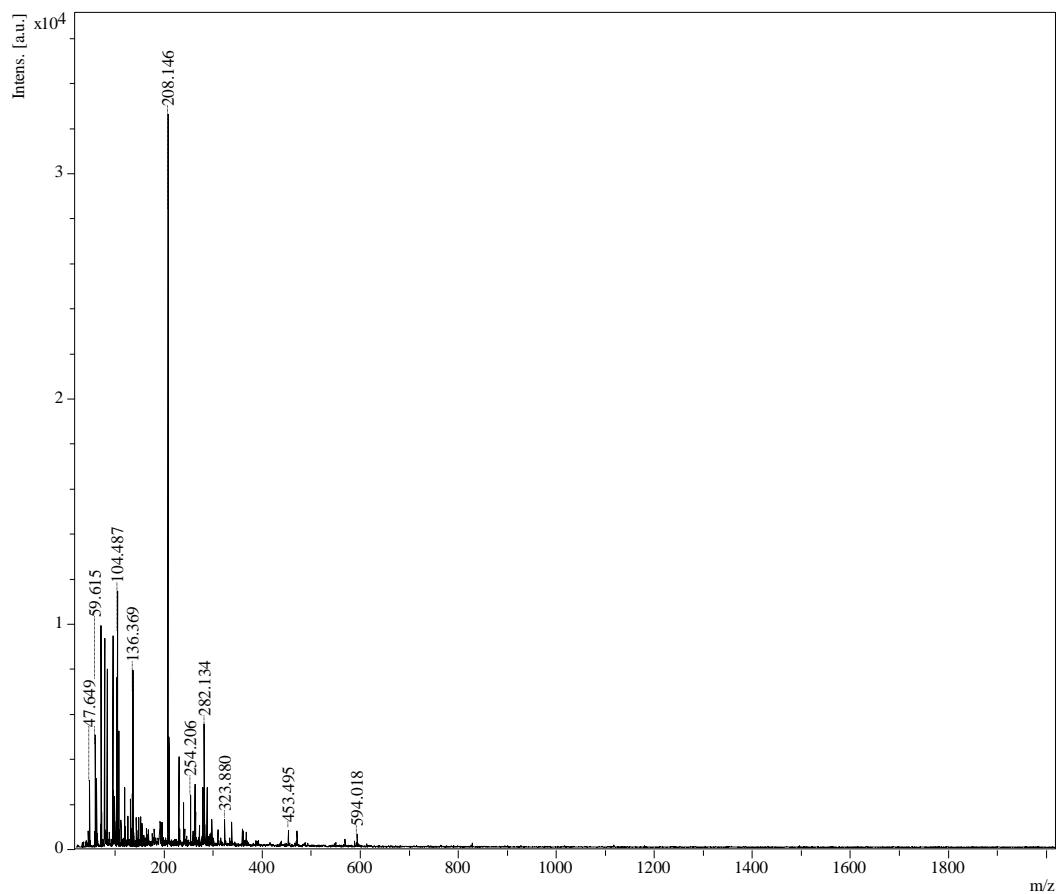


Figure D.49: Negative LDI spectrum of nitrocellulose

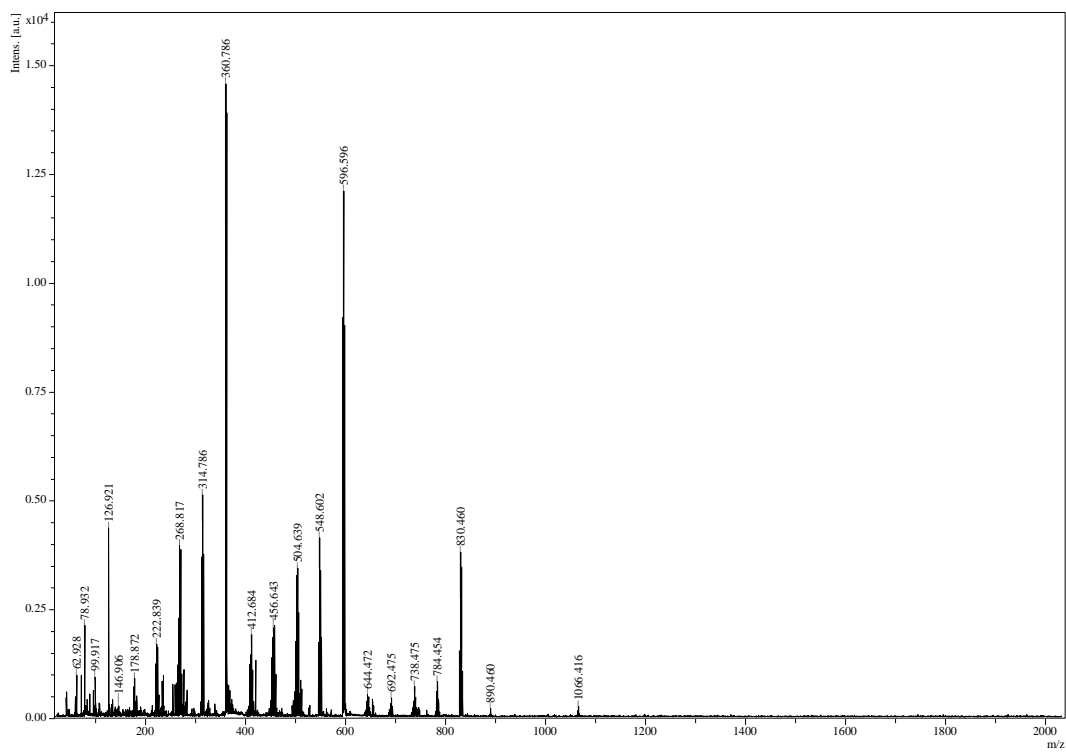


Figure D.50: Negative LDI spectrum of 2nDPA

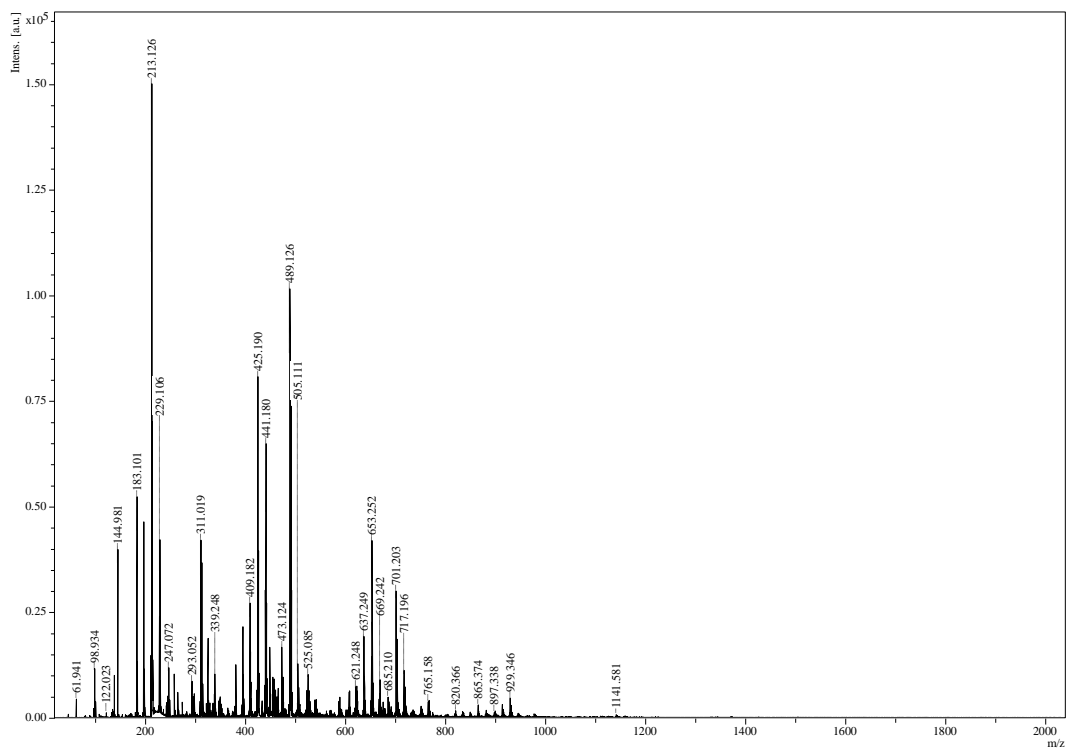


Figure D.51: Negative LDI spectrum of 4nDPA

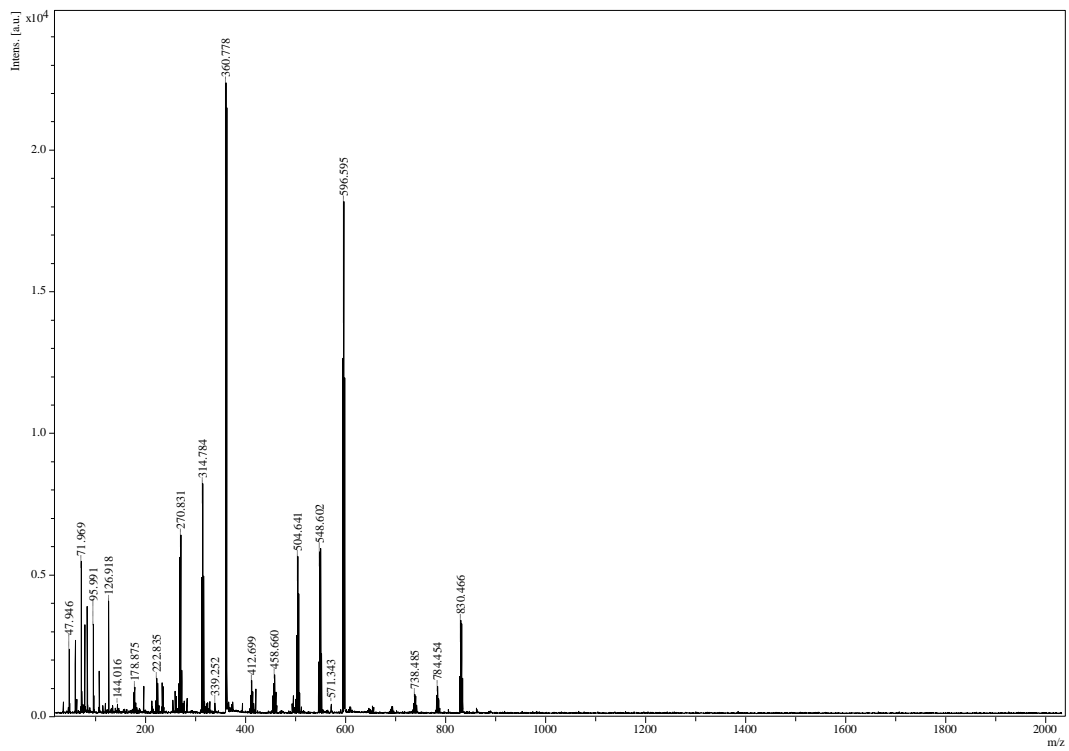


Figure D.52: Negative LDI spectrum of EC

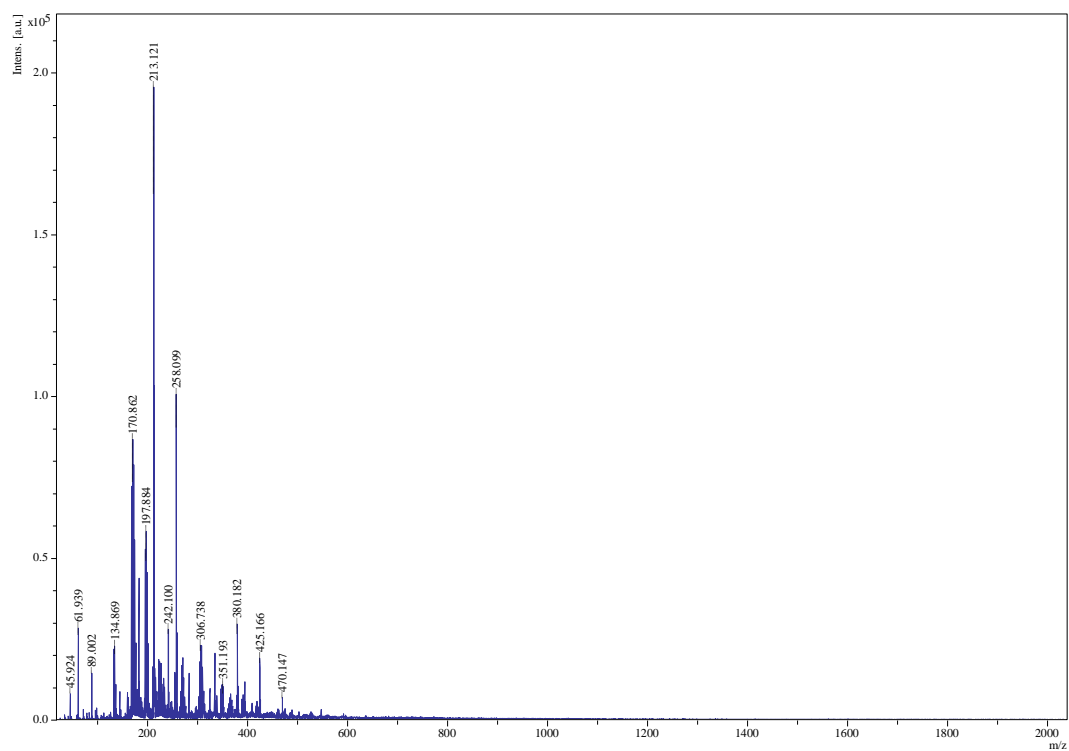


Figure D.53: Negative LDI spectrum of NnitrosoDPA

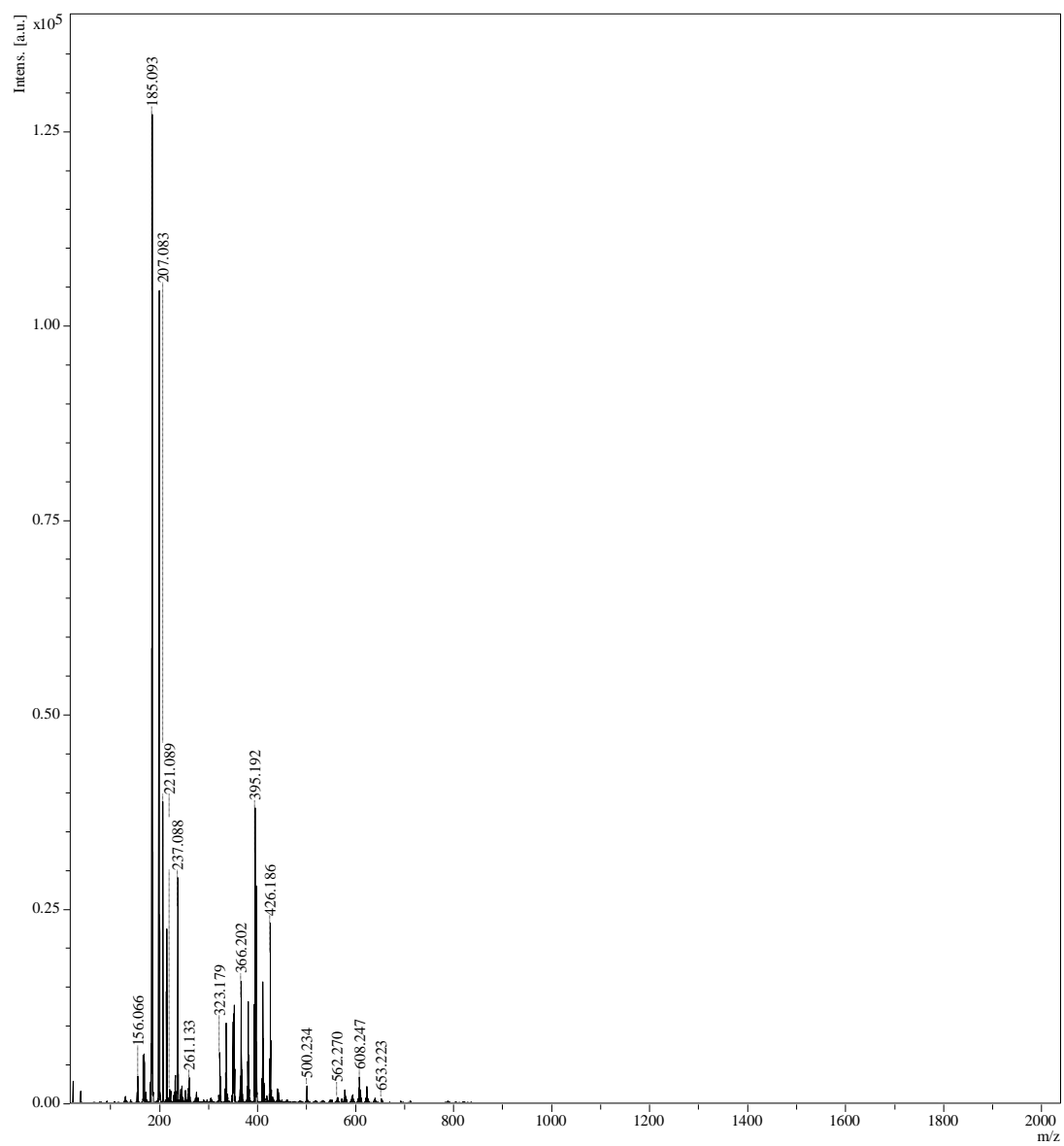


Figure D.54: LDI spectrum of 4nDPA in ethanol

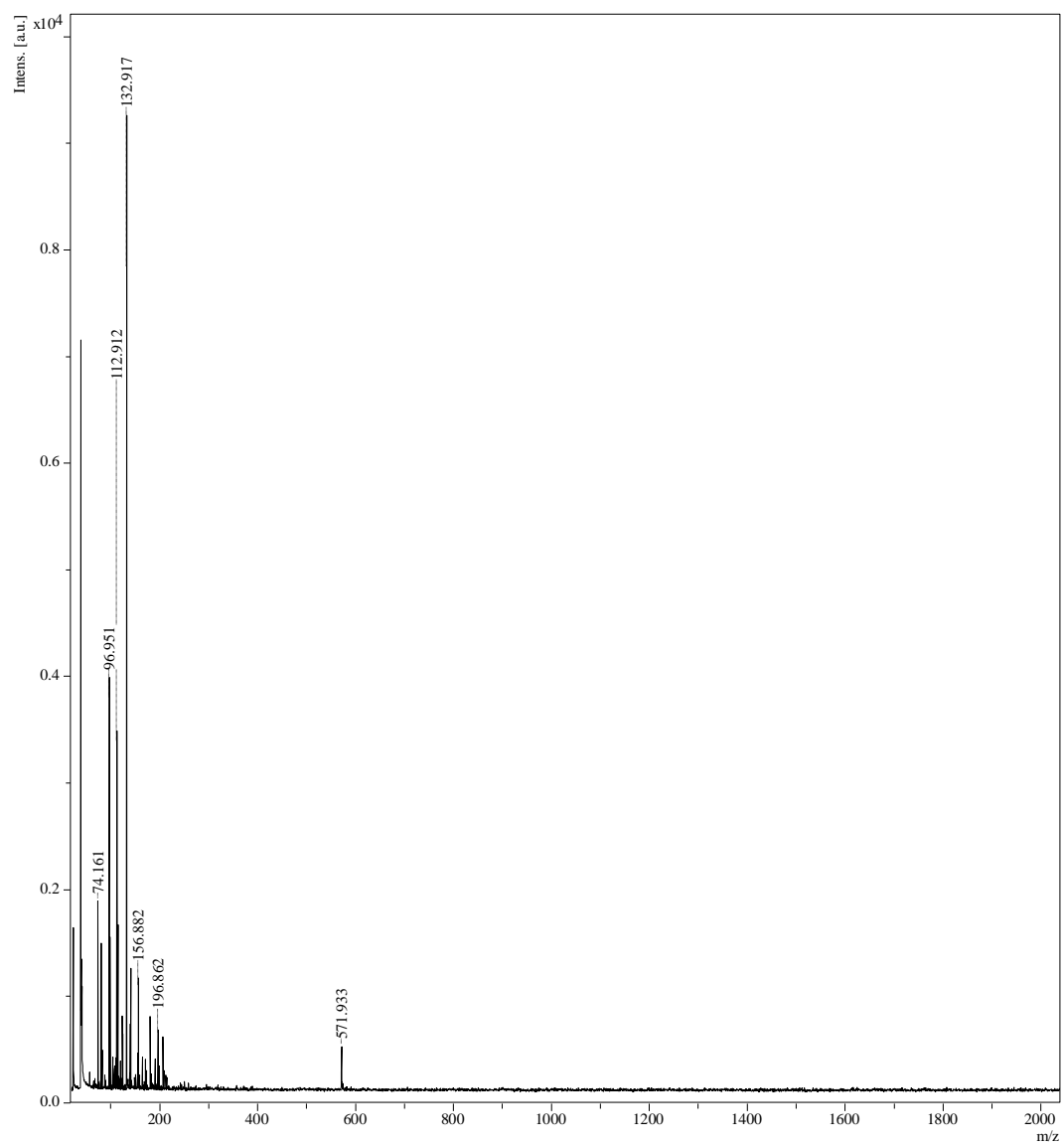


Figure D.55: LDI spectrum of DBP in ethanol

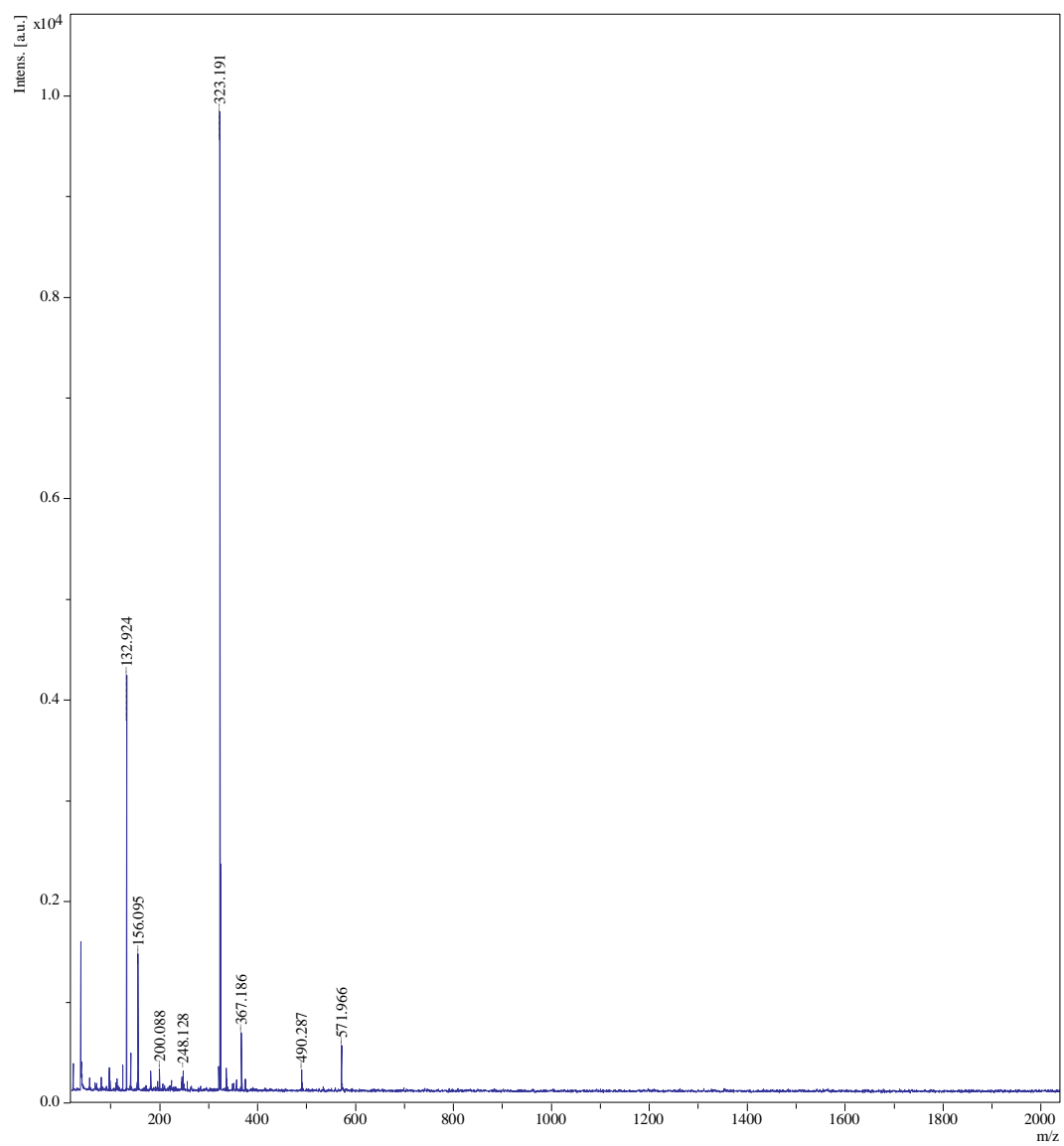


Figure D.56: LDI spectrum of DPA in ethanol

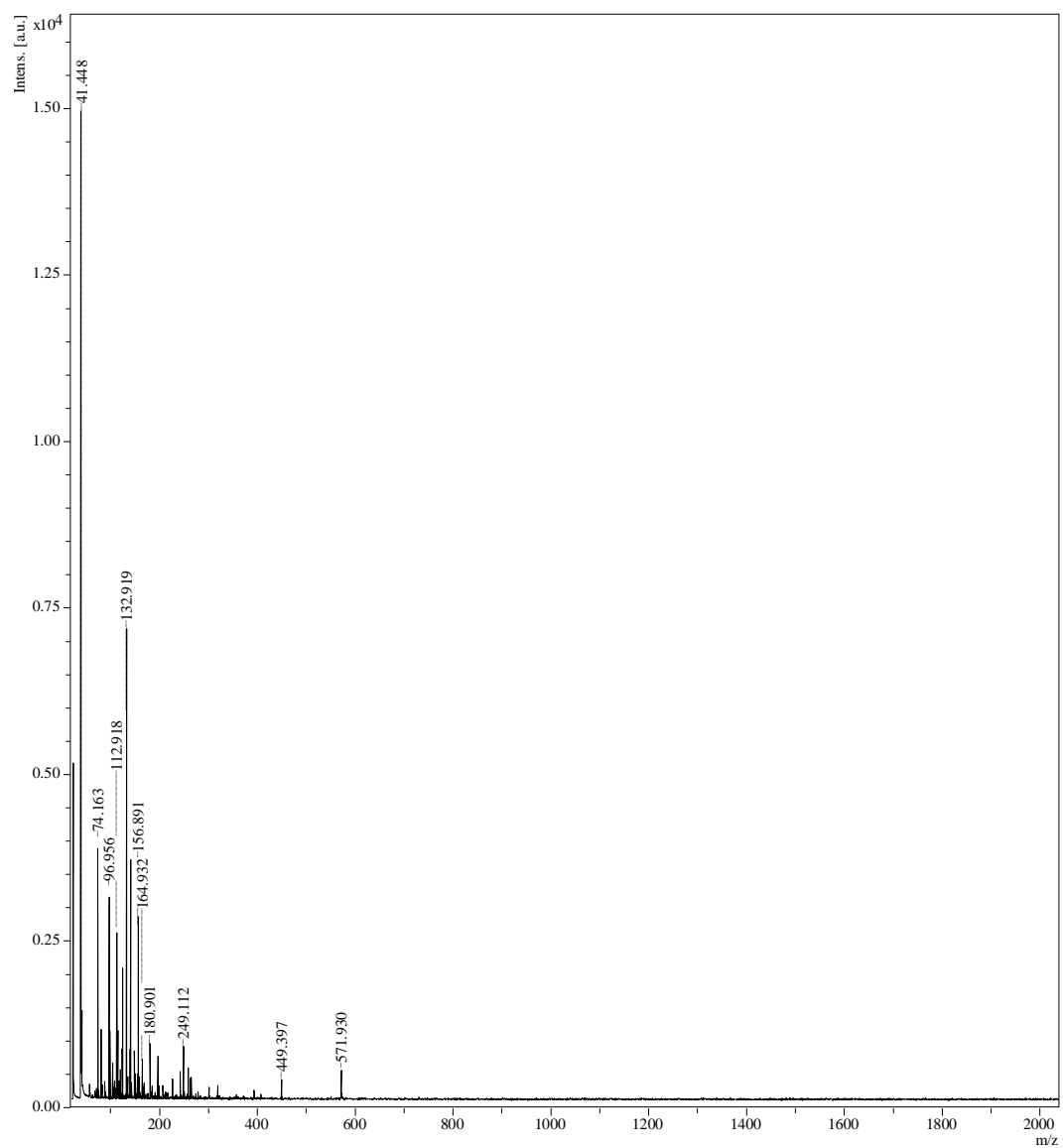


Figure D.57: LDI spectrum of MC in ethanol

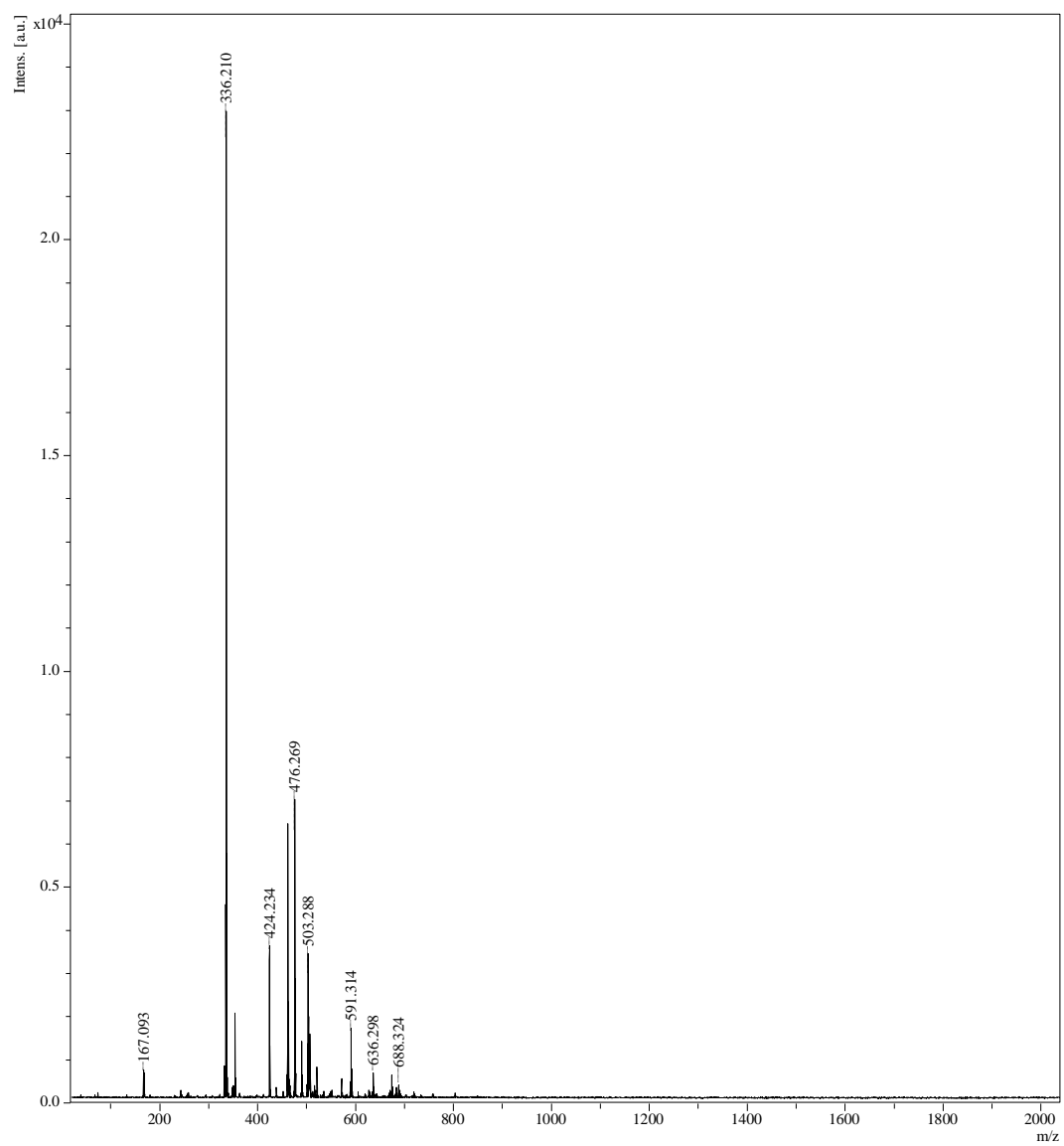


Figure D.58: LDI spectrum of NnitrosoDPA in ethanol

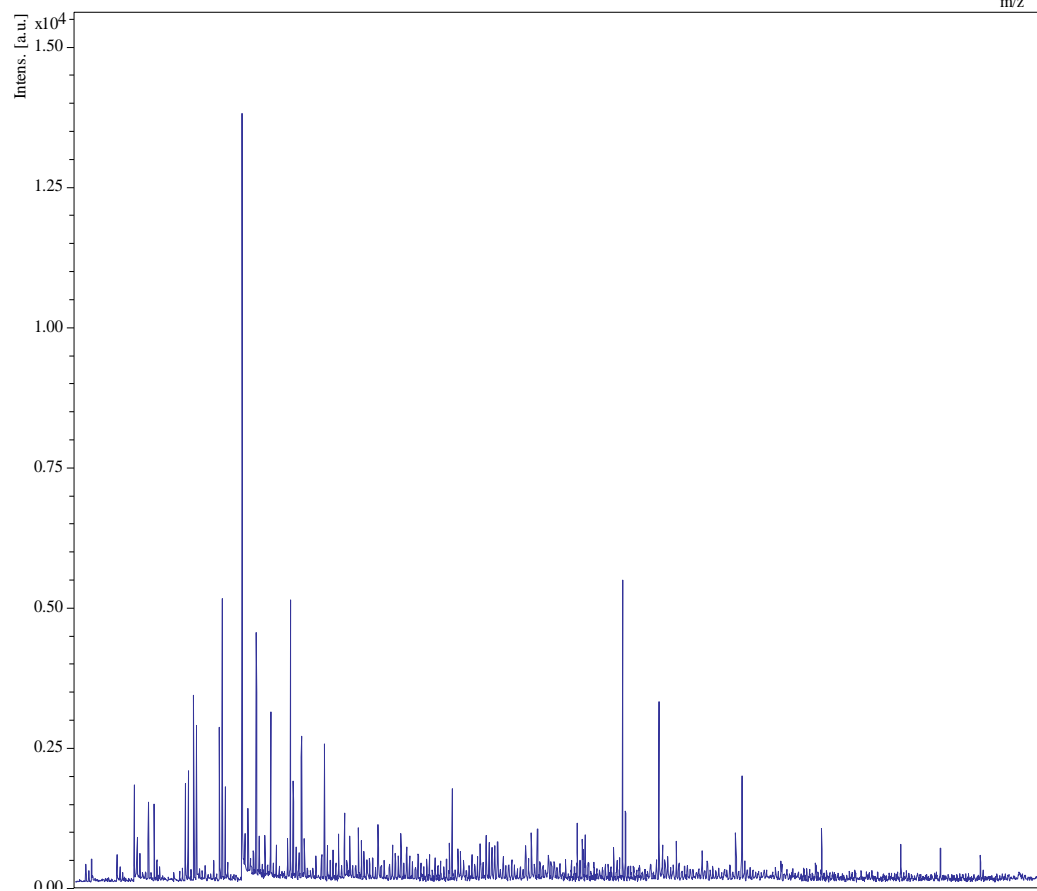
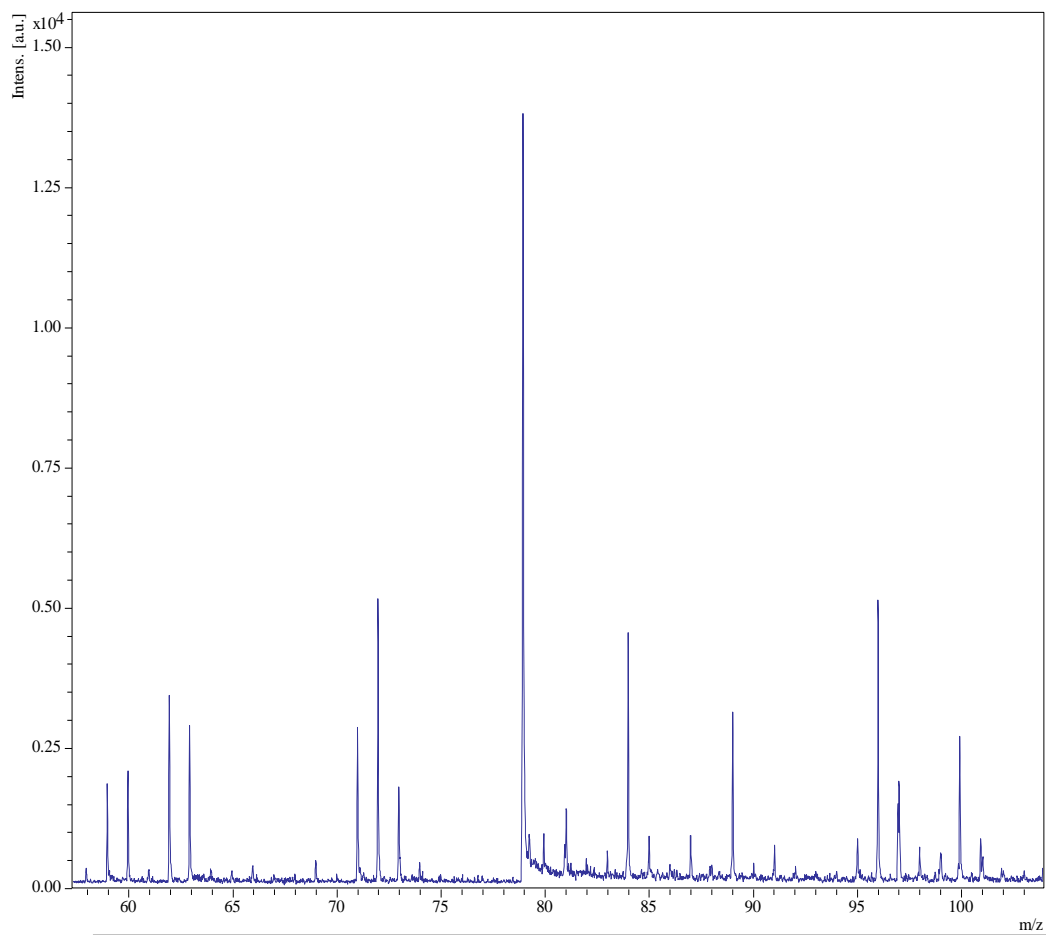


Figure D.59: Negative LDI spectrum of 2nDPA in ethanol

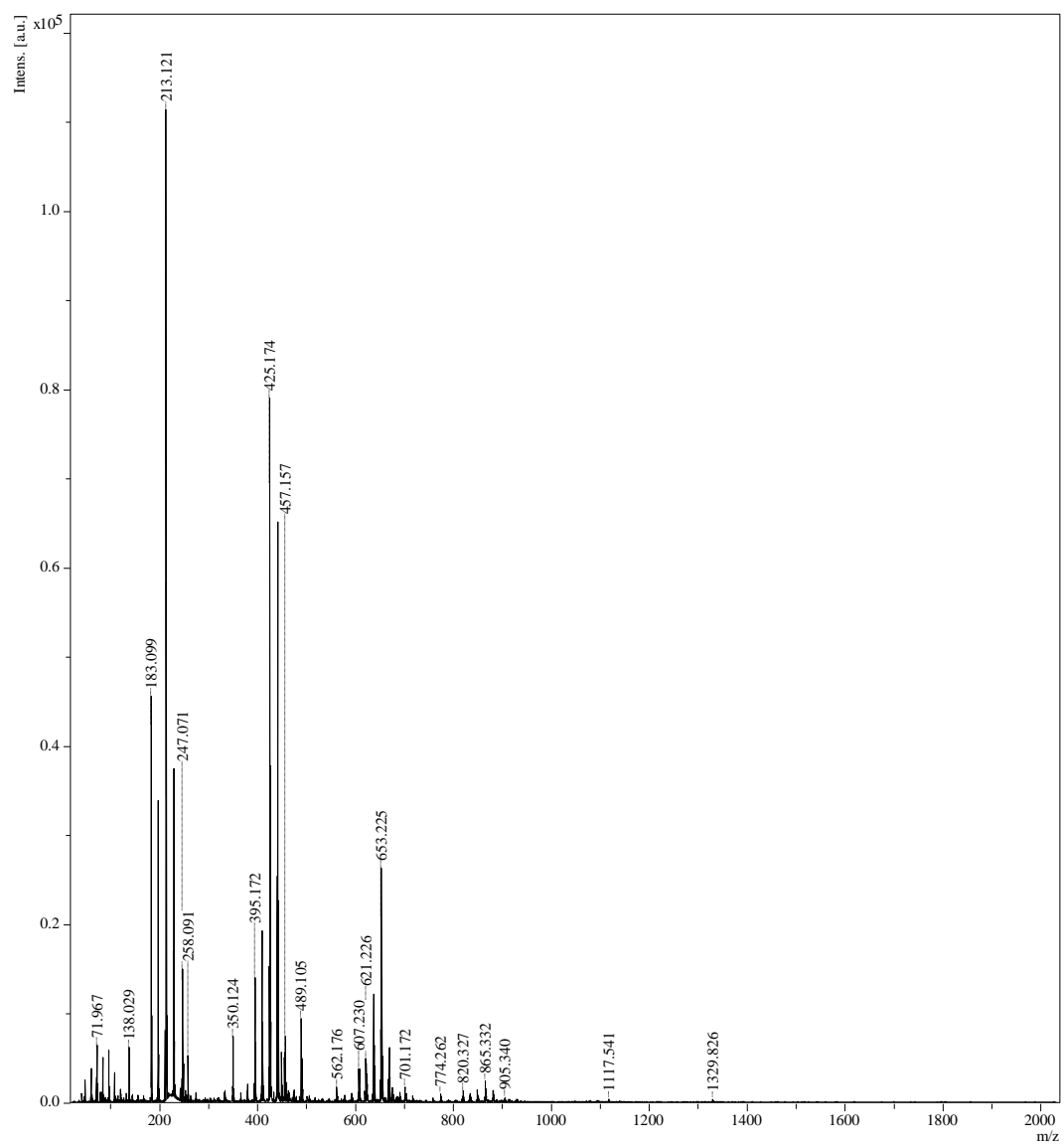


Figure D.60: Negative LDI spectrum of 4nDPA in ethanol

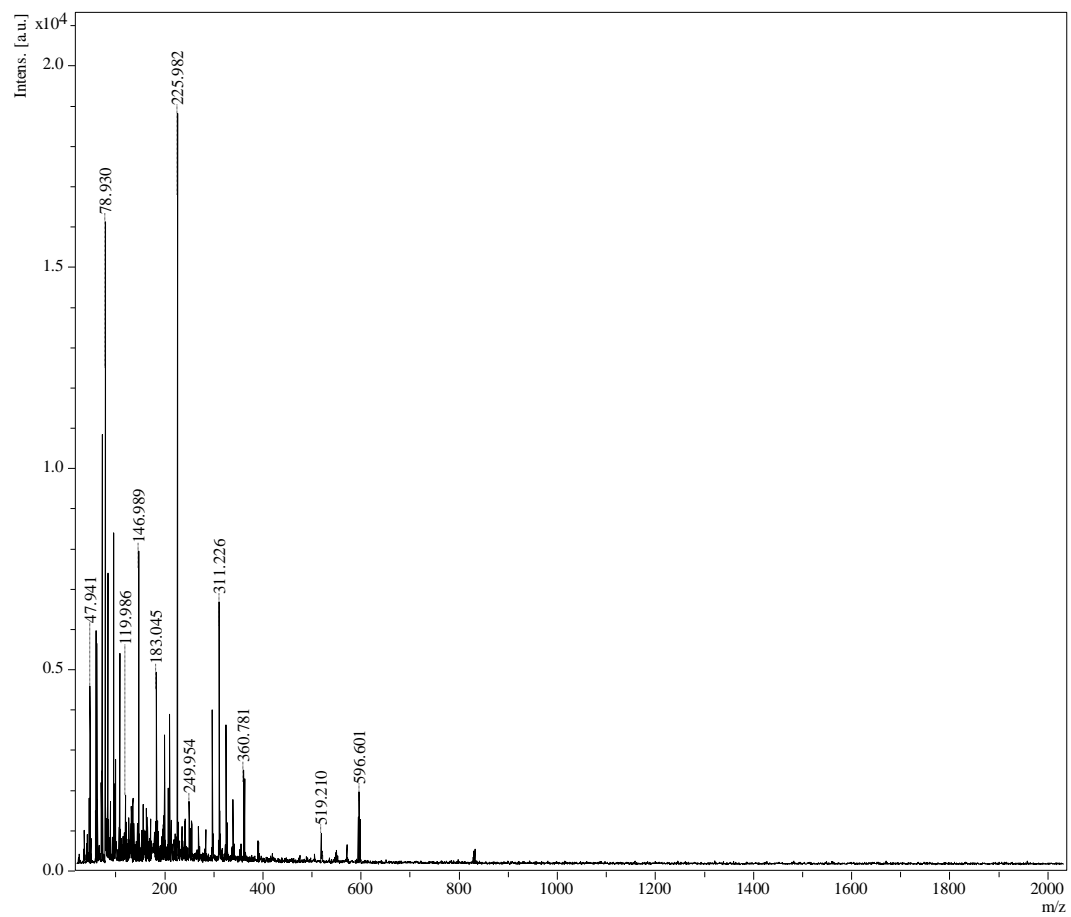


Figure D.61: Negative LDI spectrum of DBP in ethanol

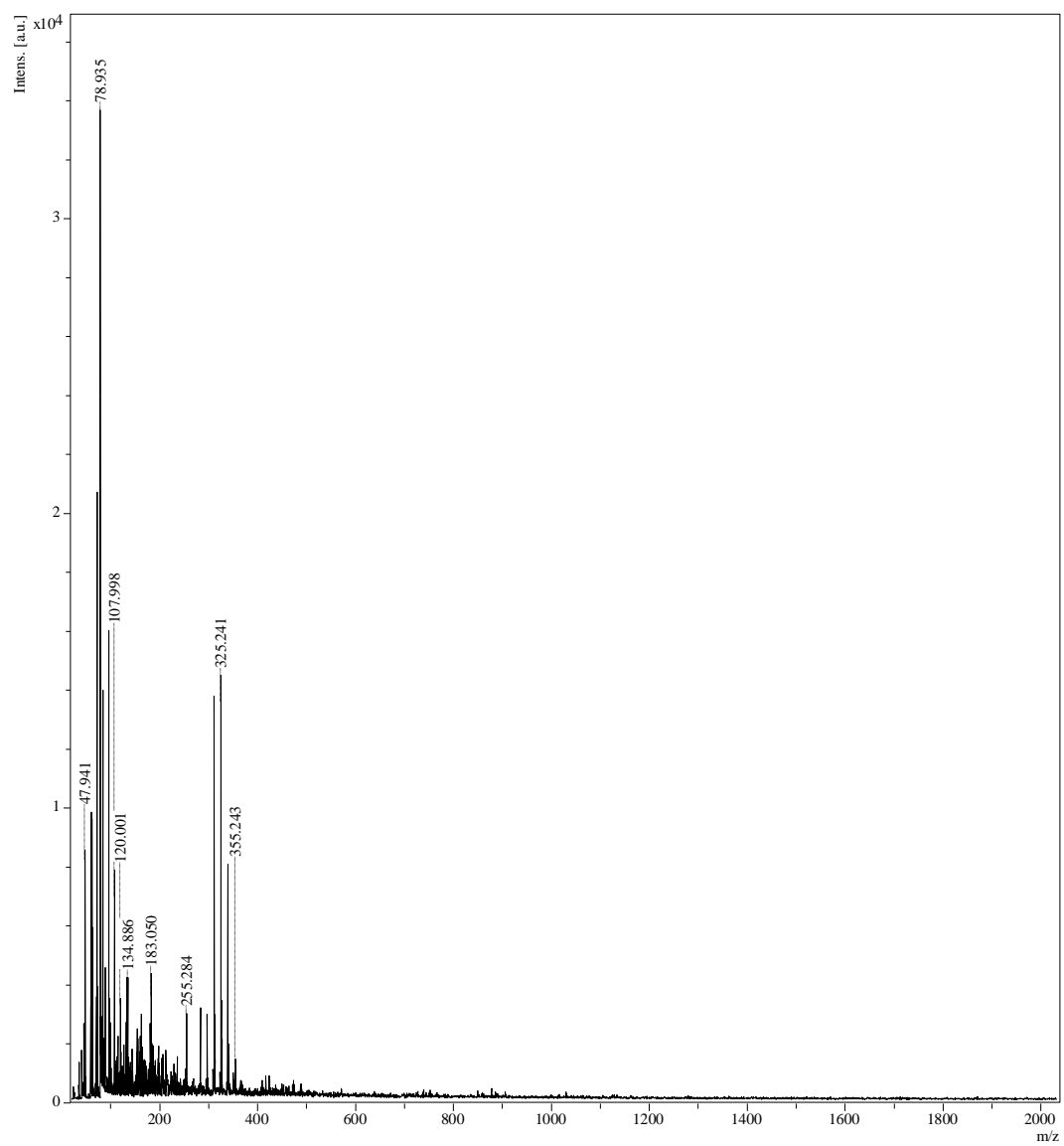


Figure D.62: Negative LDI spectrum of DPA in ethanol

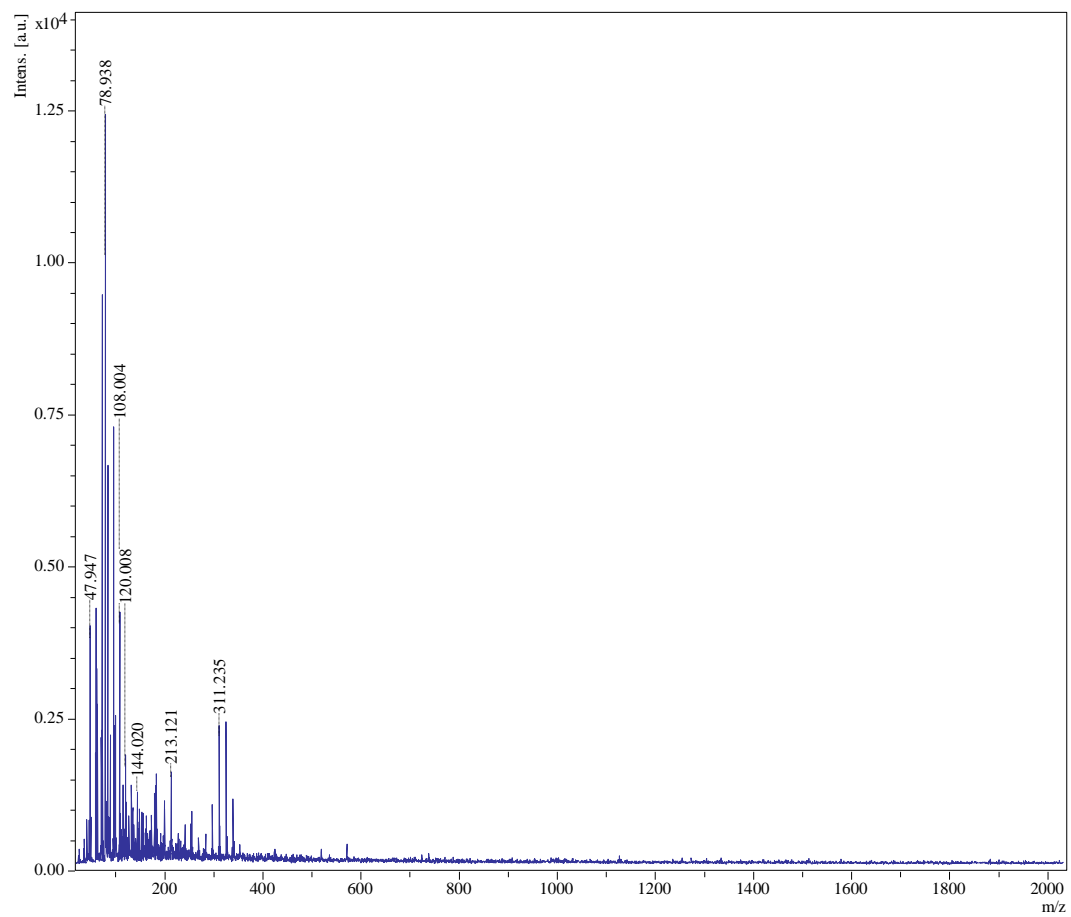


Figure D.63: Negative LDI spectrum of EC in ethanol

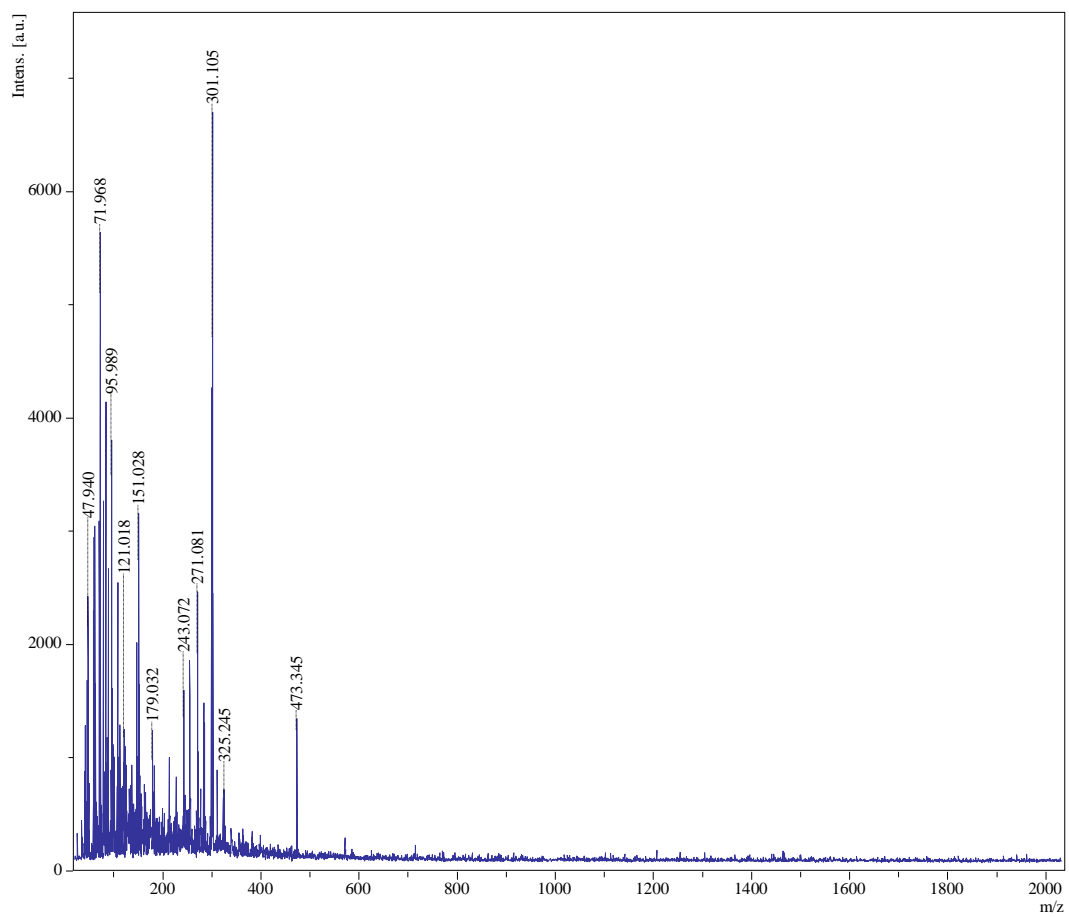


Figure D.64: Negative LDI spectrum of nitrocellulose in ethanol

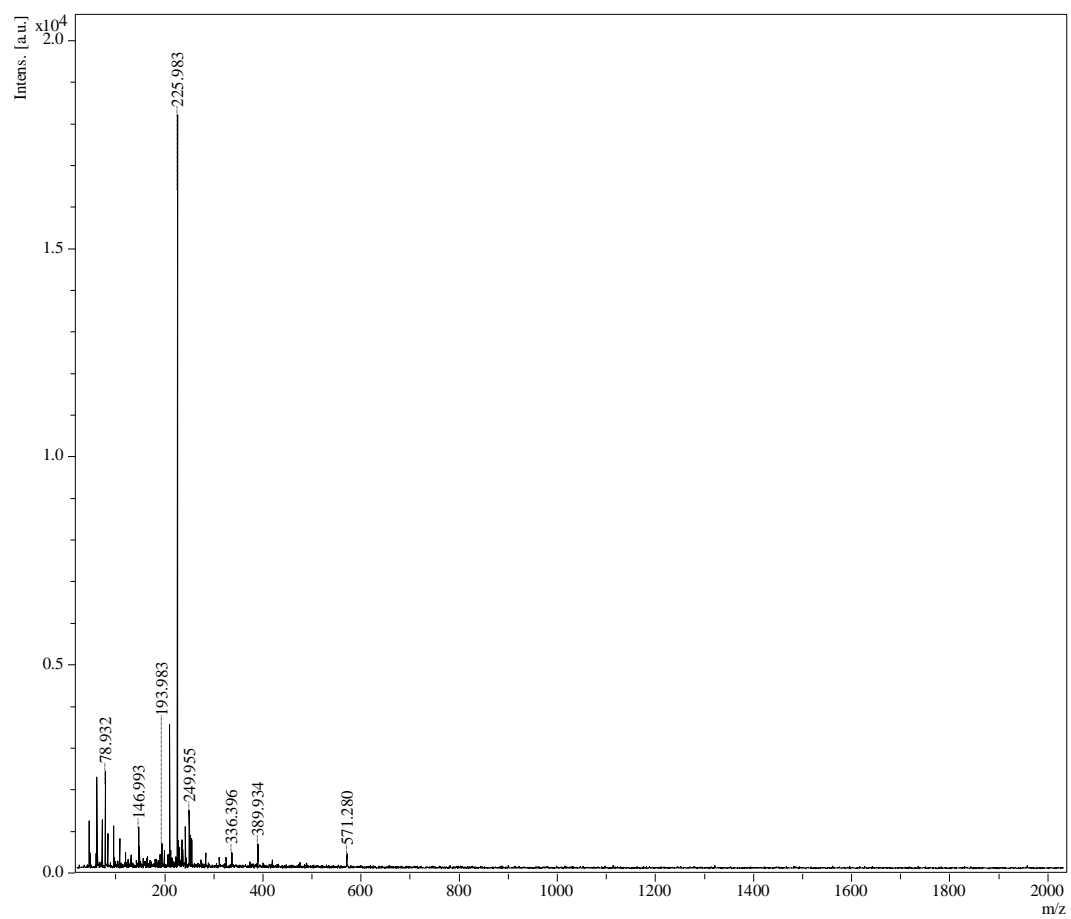


Figure D.65: Negative LDI spectrum of nitroglycerin in ethanol

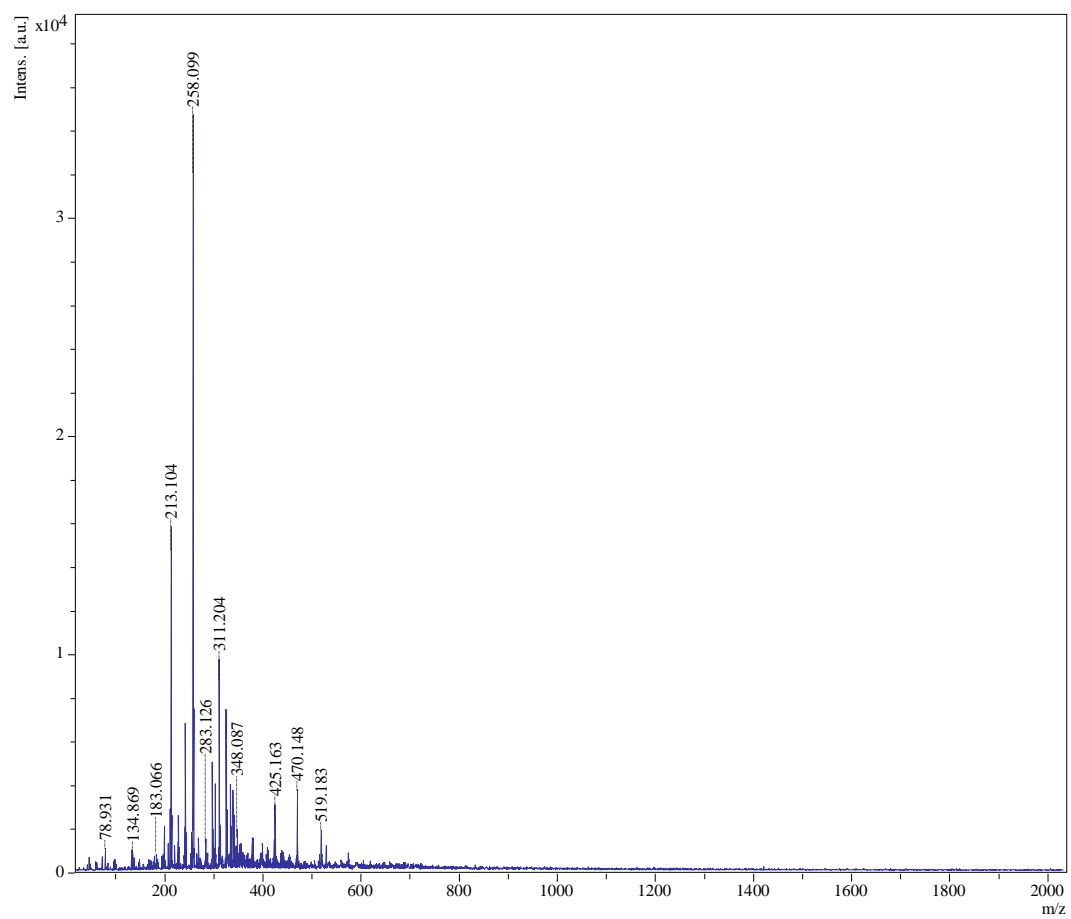


Figure D.66: Negative LDI spectrum of NnitrosoDPA in ethanol

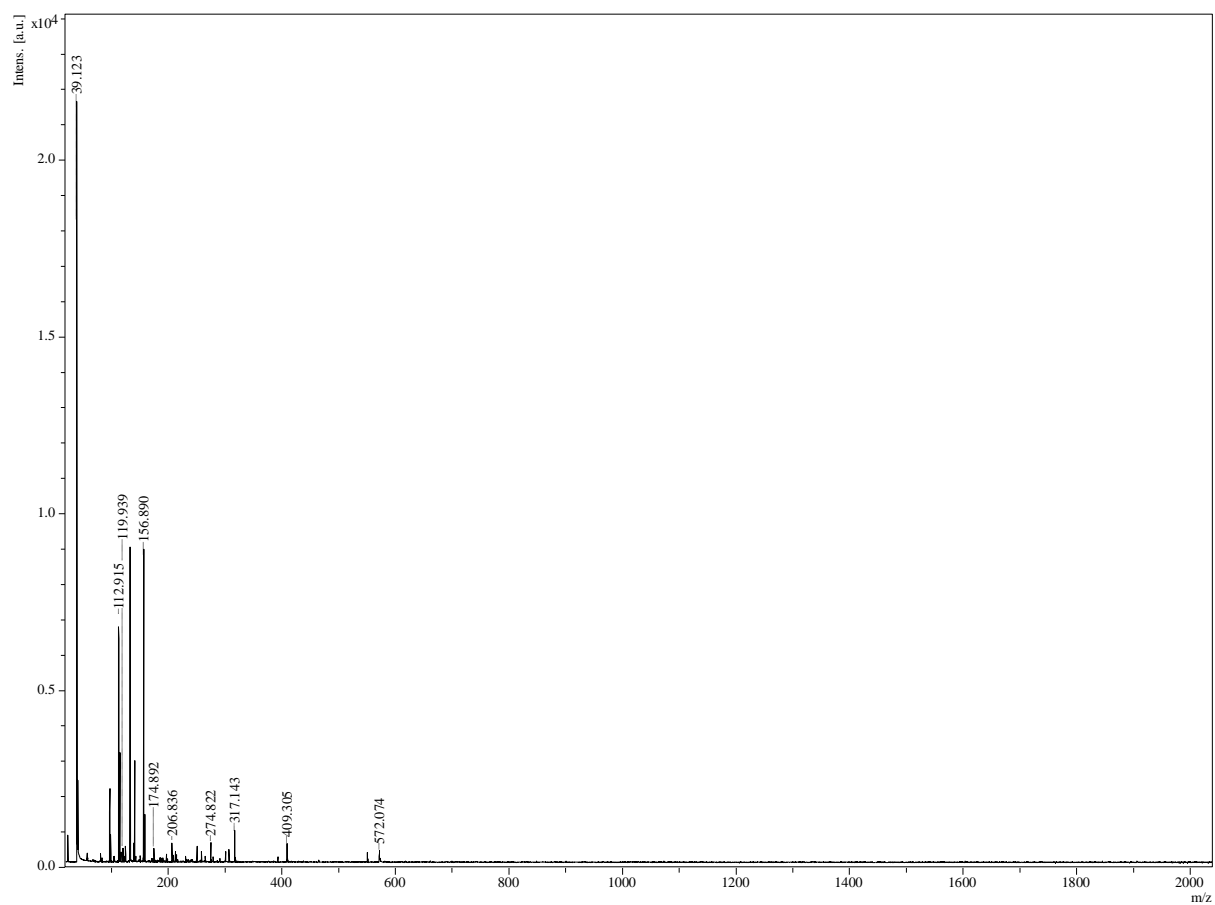


Figure D.67: LDI spectrum of DST group sample A

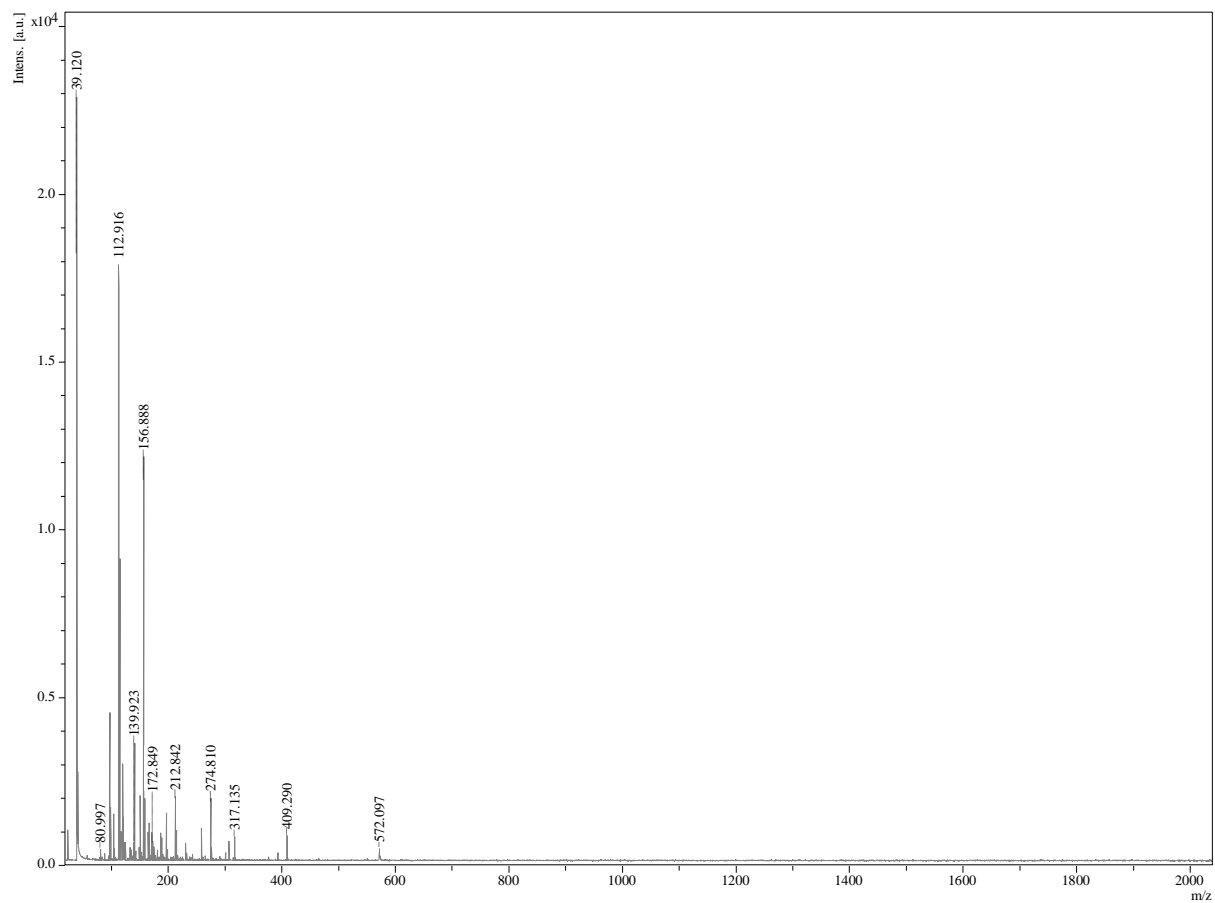


Figure D.68: LDI spectrum of DST group sample B

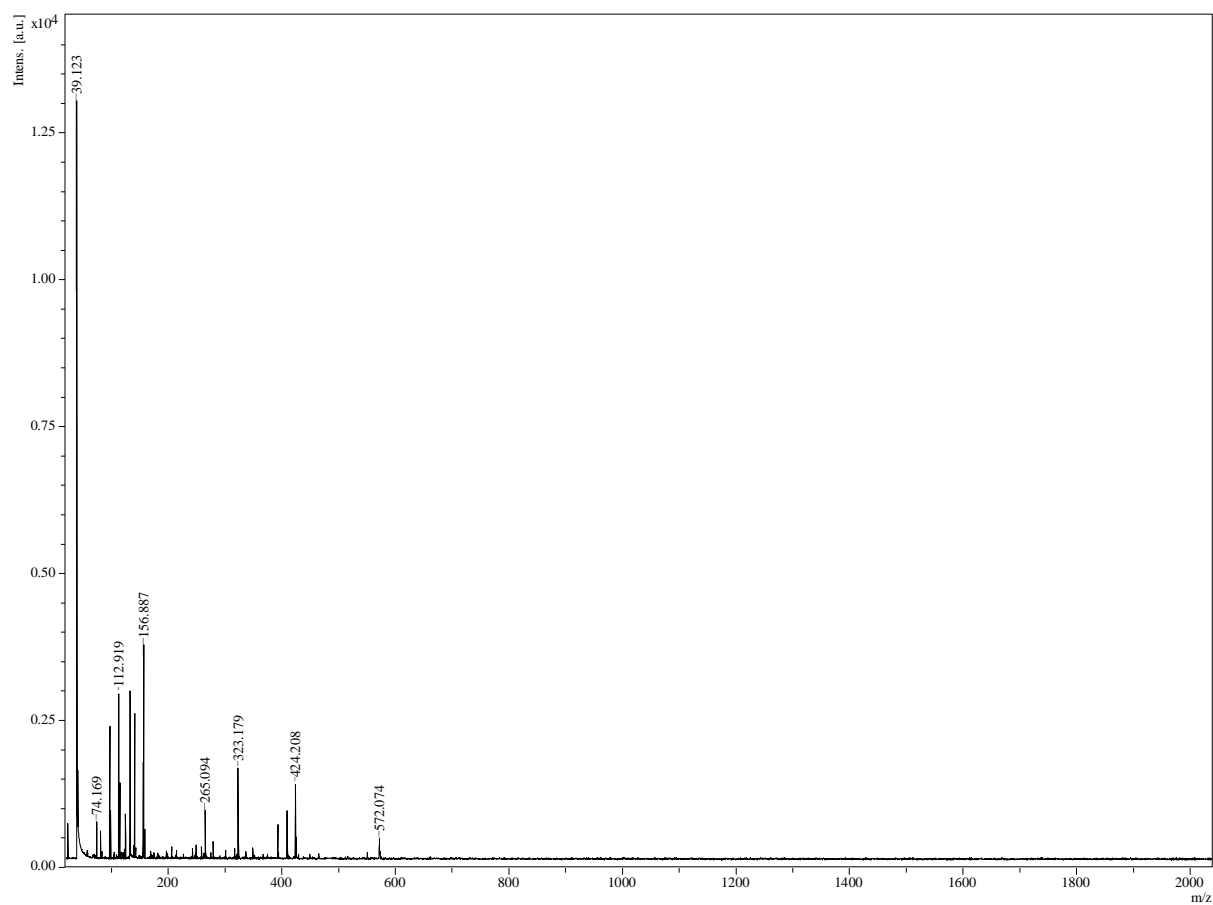


Figure D.69: Spectrum of DST group sample C

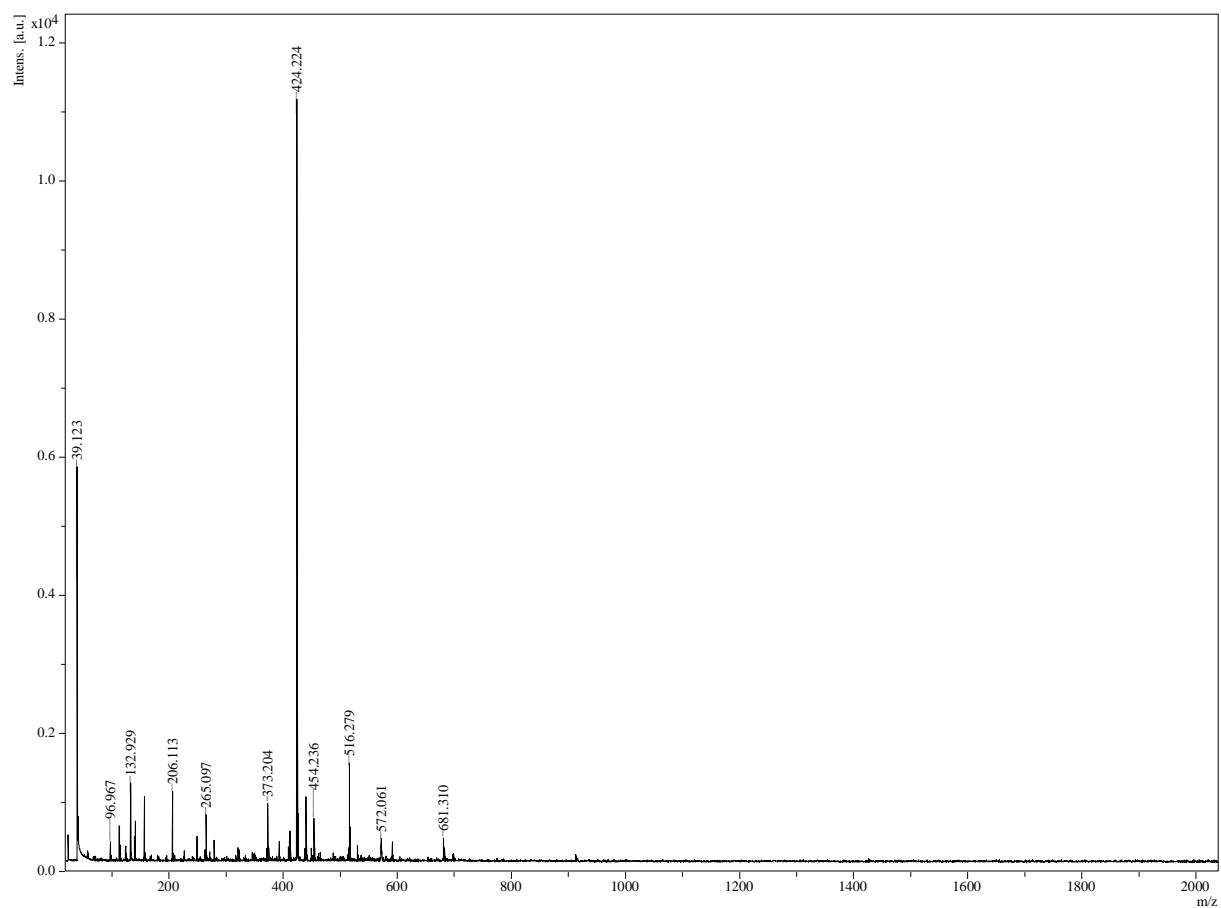


Figure D.70: LDI spectrum of DST group sample D

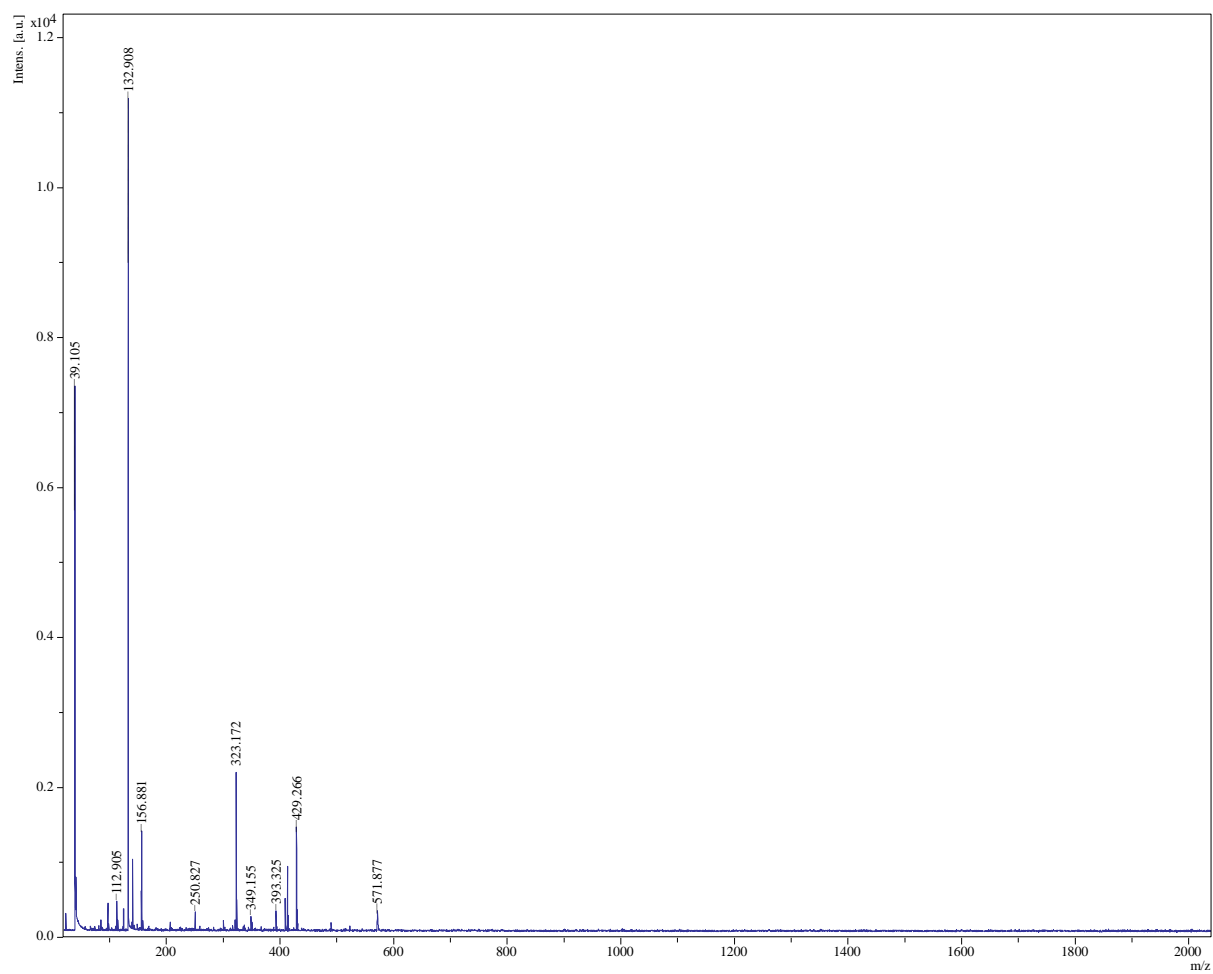


Figure D.71: LDI spectrum of DST group sample A in ethanol

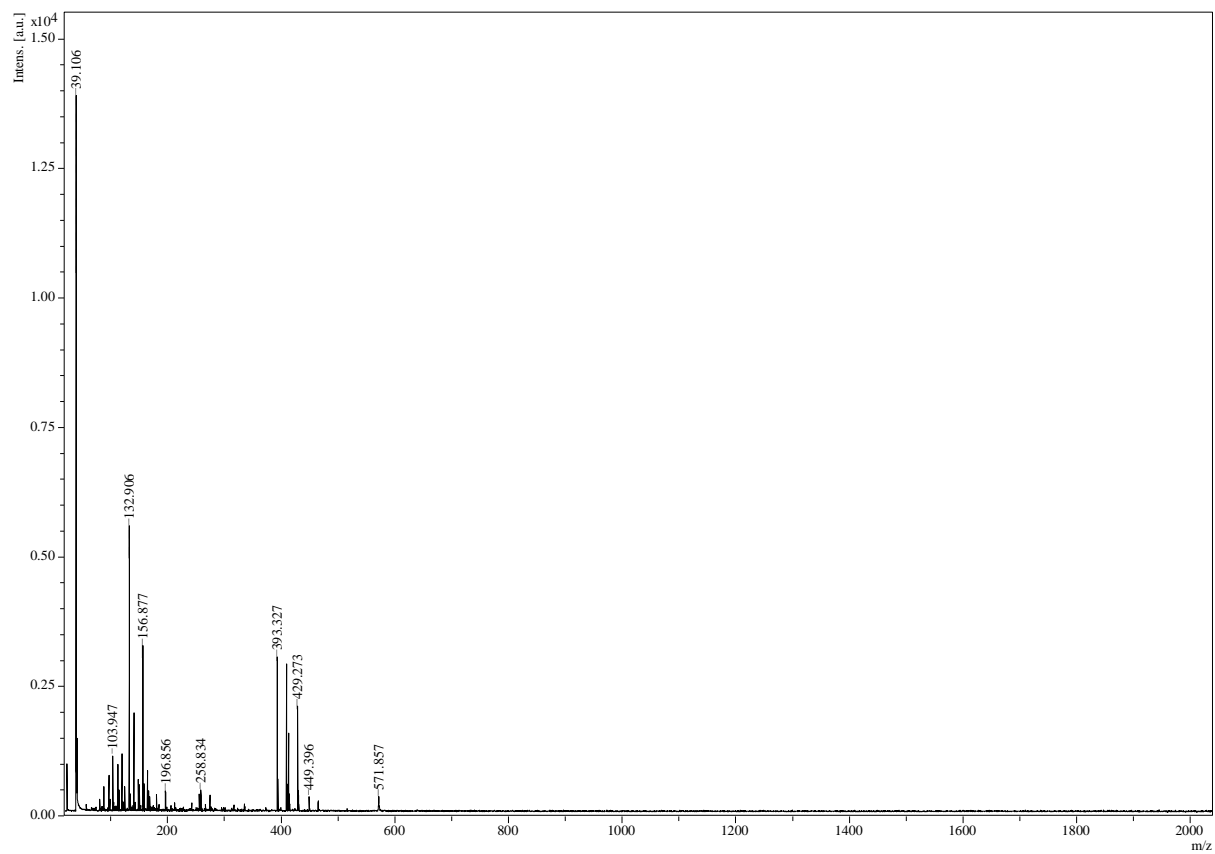


Figure D.72: LDI spectrum of DST group sample B in ethanol

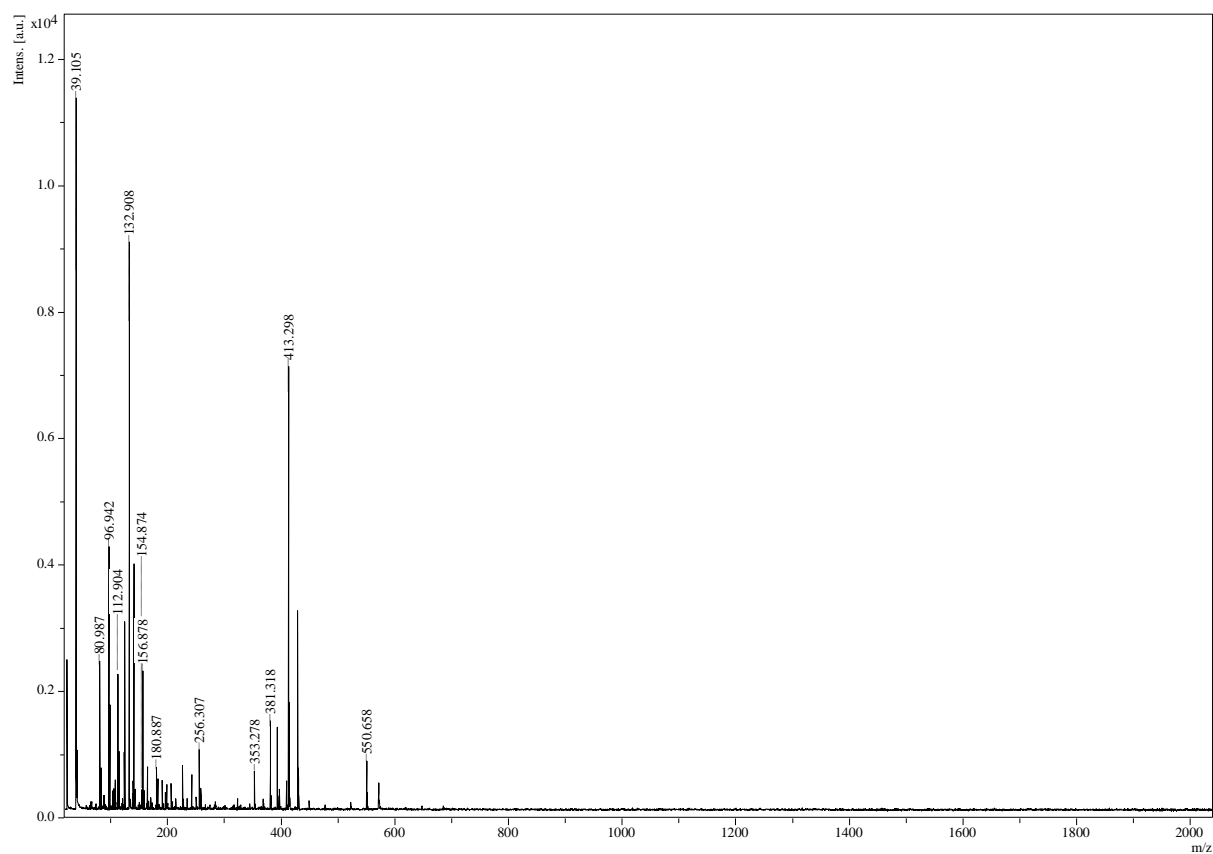


Figure D.73: LDI spectrum of DST group sample C in ethanol

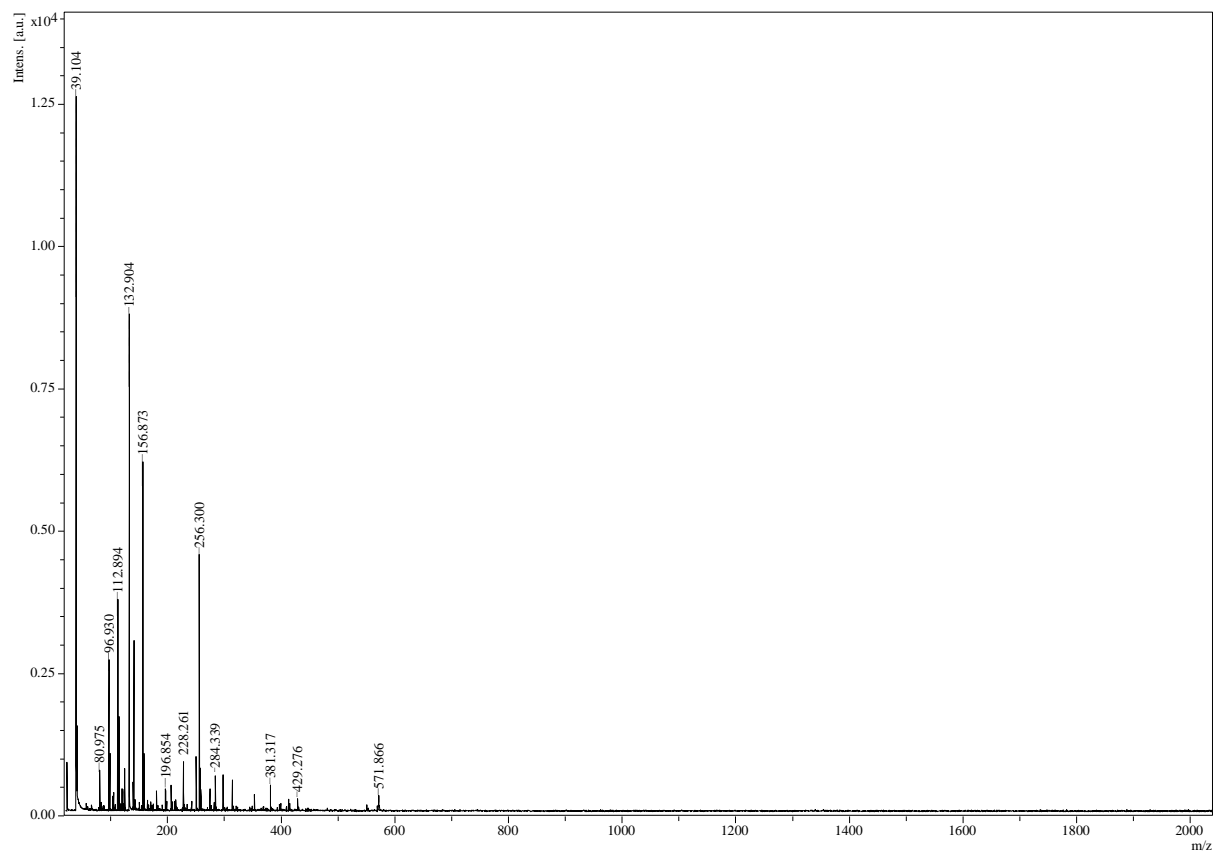


Figure D.74: LDI spectrum of DST group sample D in ethanol