

Supplementary Information

Investigation of the fuzzy complex between RSV nucleoprotein and phosphoprotein to optimize an inhibition assay by fluorescence polarization

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NMR Spectra

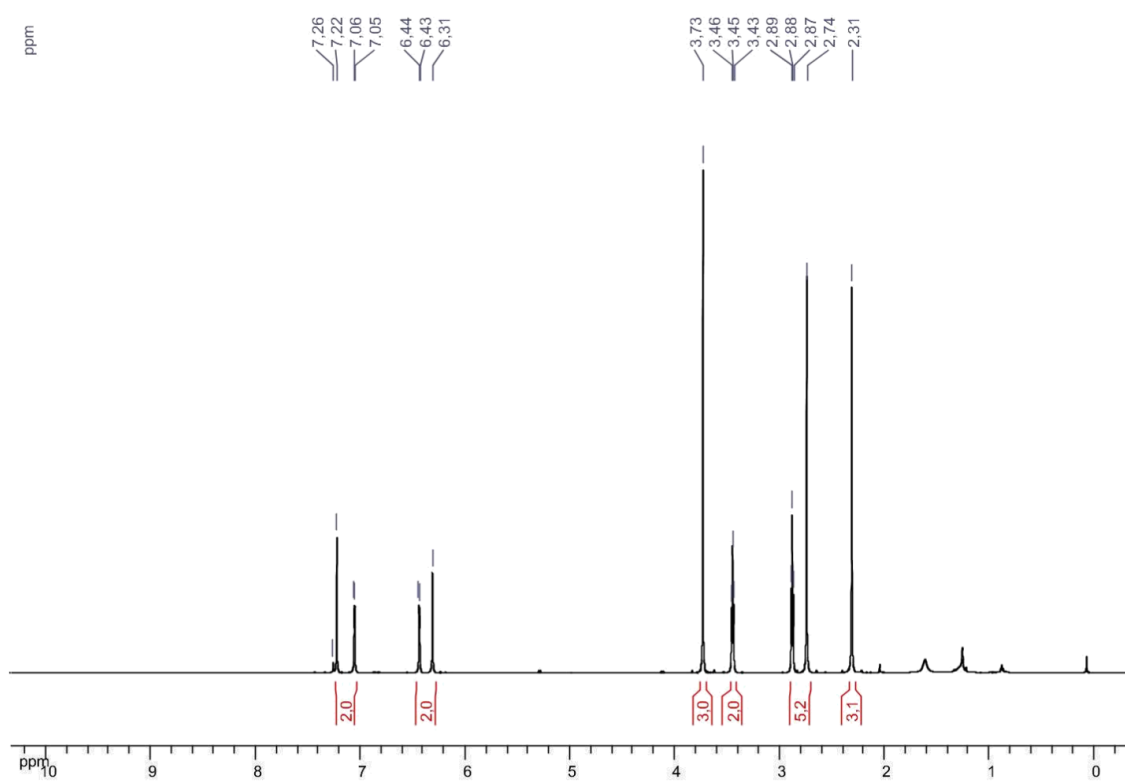


Figure S1. ¹H NMR spectrum of **5** (699Mz, CDCl₃).

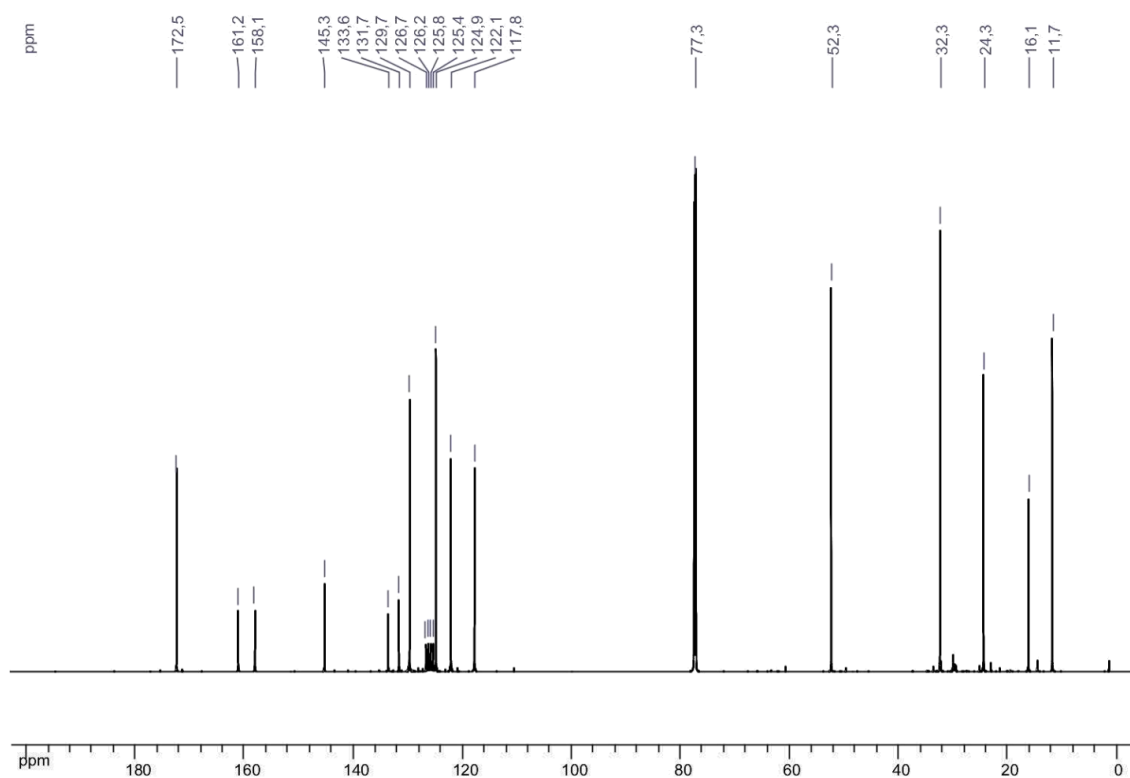


Figure S2. ¹³C NMR spectrum of **5** (176 Mz, CDCl₃).

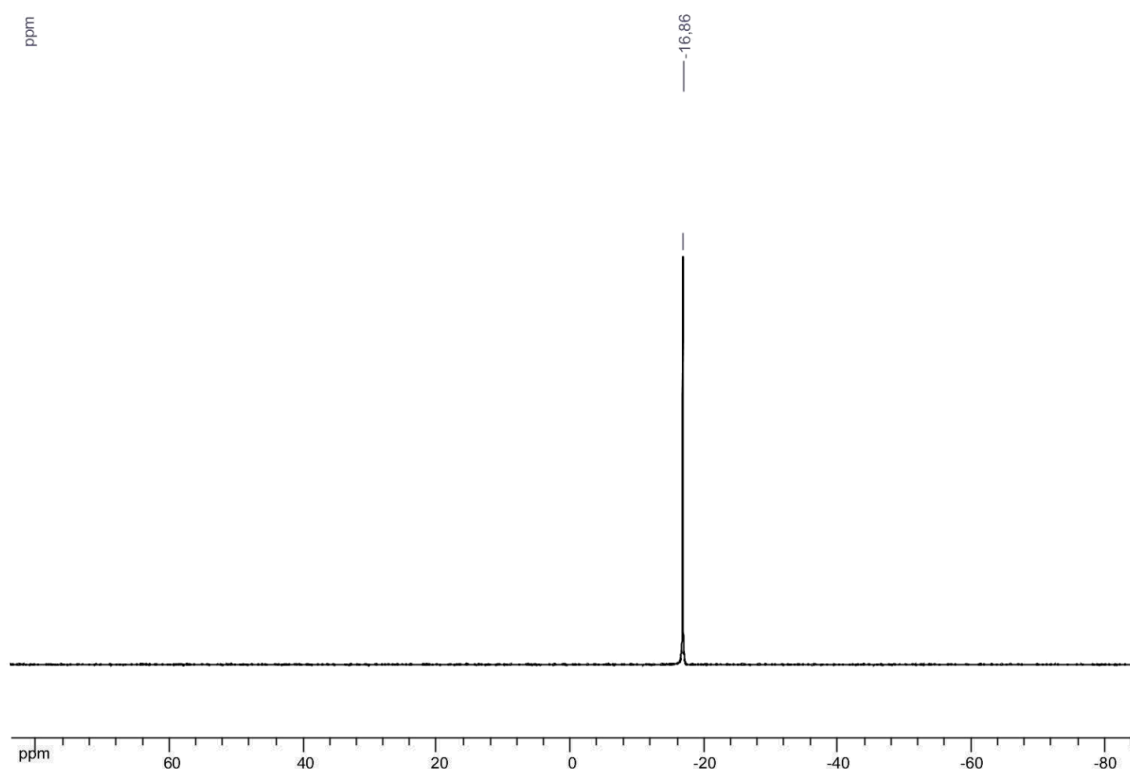


Figure S3. ¹¹B NMR spectrum of **5** (176 Mz, CD₂Cl₂).

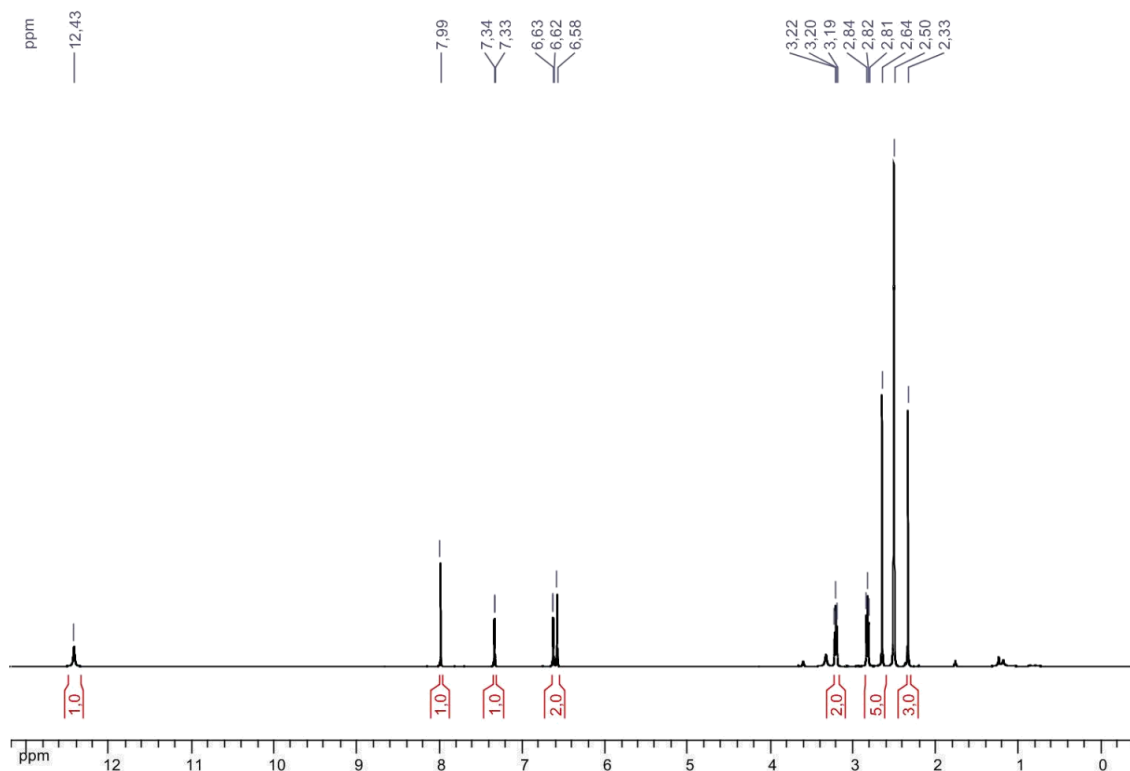


Figure S4. ¹H NMR spectrum of **6** (699Mz, DMSO, *d*₆).

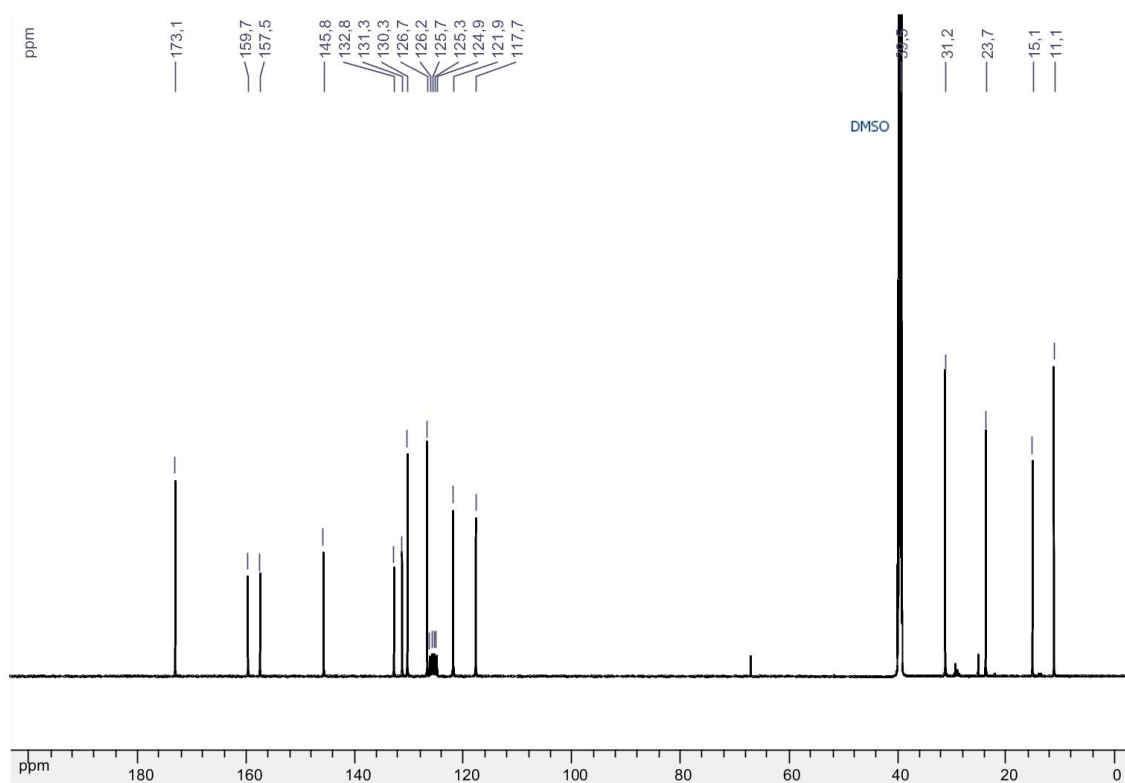


Figure S5. ¹³C NMR spectrum of **6** (176 Mz, DMSO, *d*₆).

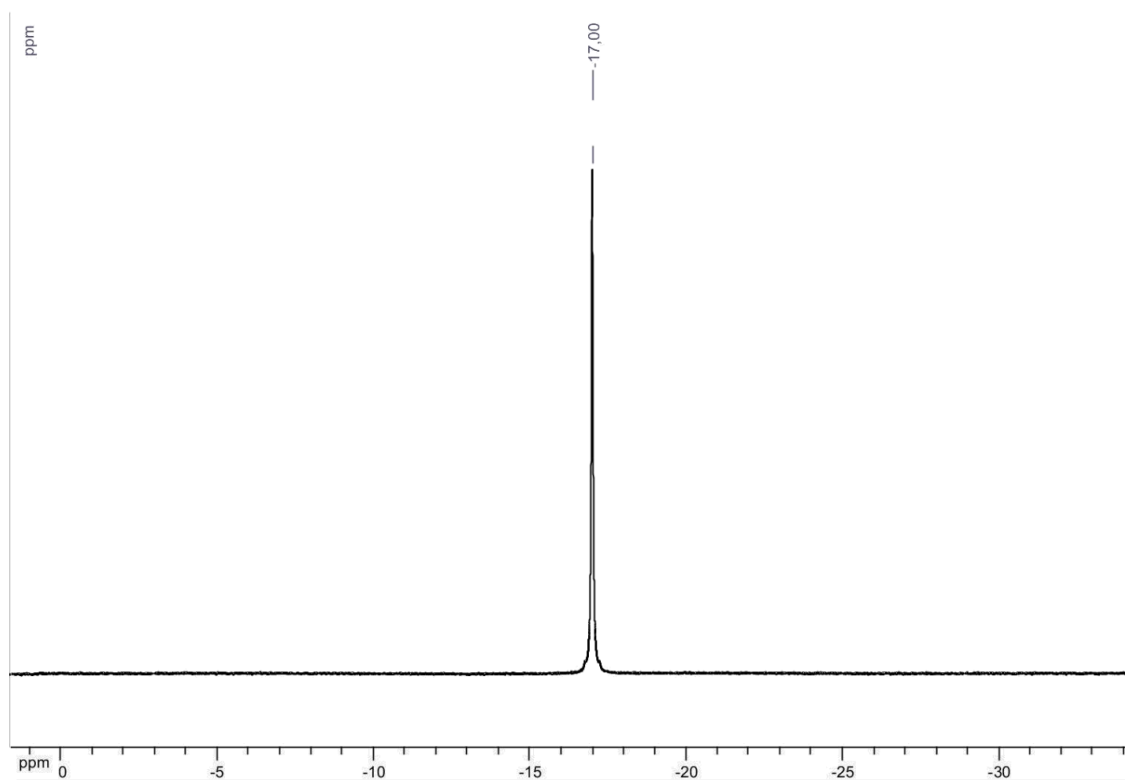


Figure S6. ^{11}B NMR spectrum of **6** (176 Mz, CD_2Cl_2).

UPLC Traces

Sample name: **P₃**

Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH

Solvent B: Acetonitrile +0,1% HCOOH

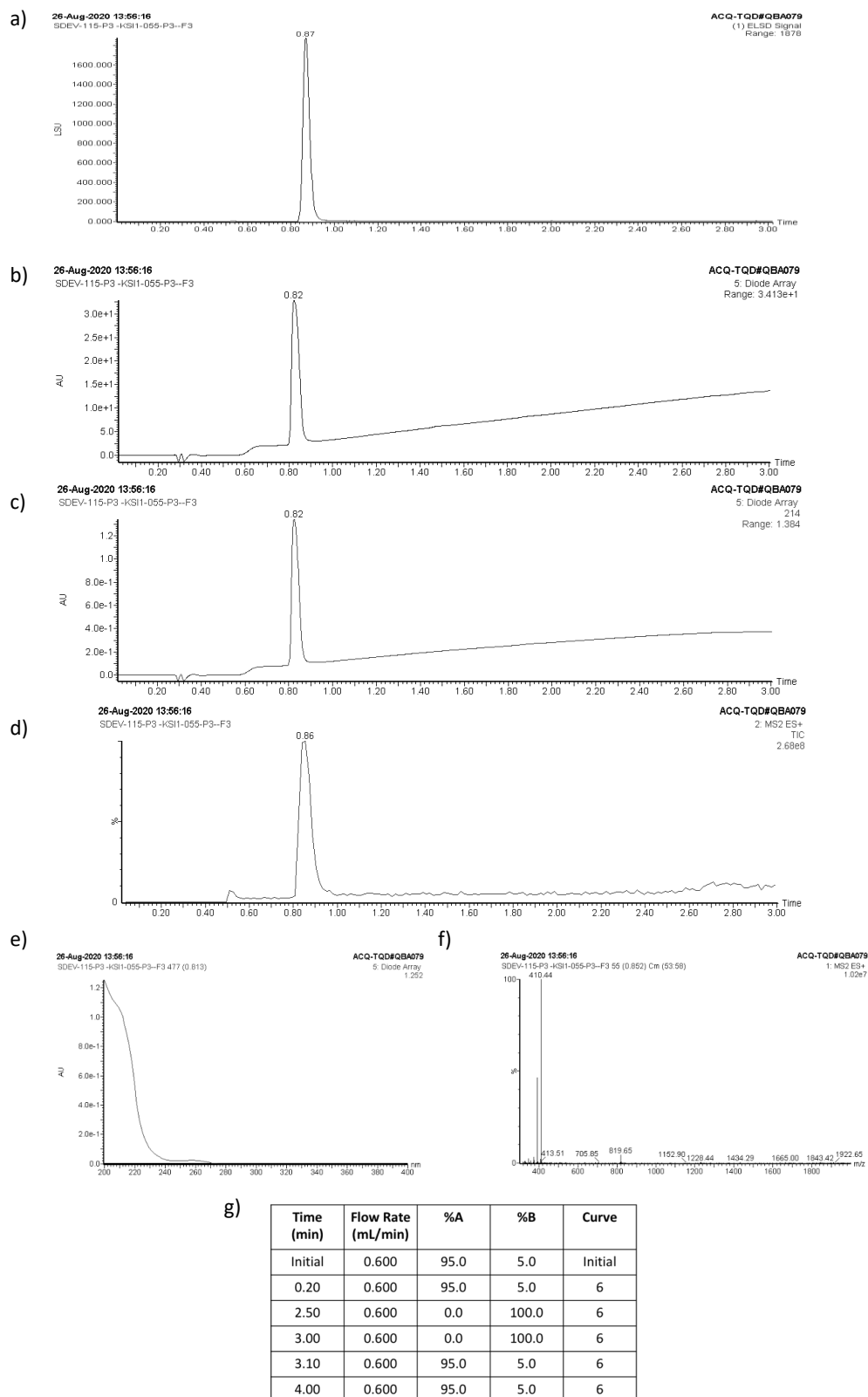


Figure S7. UPLC analysis of **P₃**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **P₄**
 Column: BEH C18 2.1x50 mm 1.7 µm

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

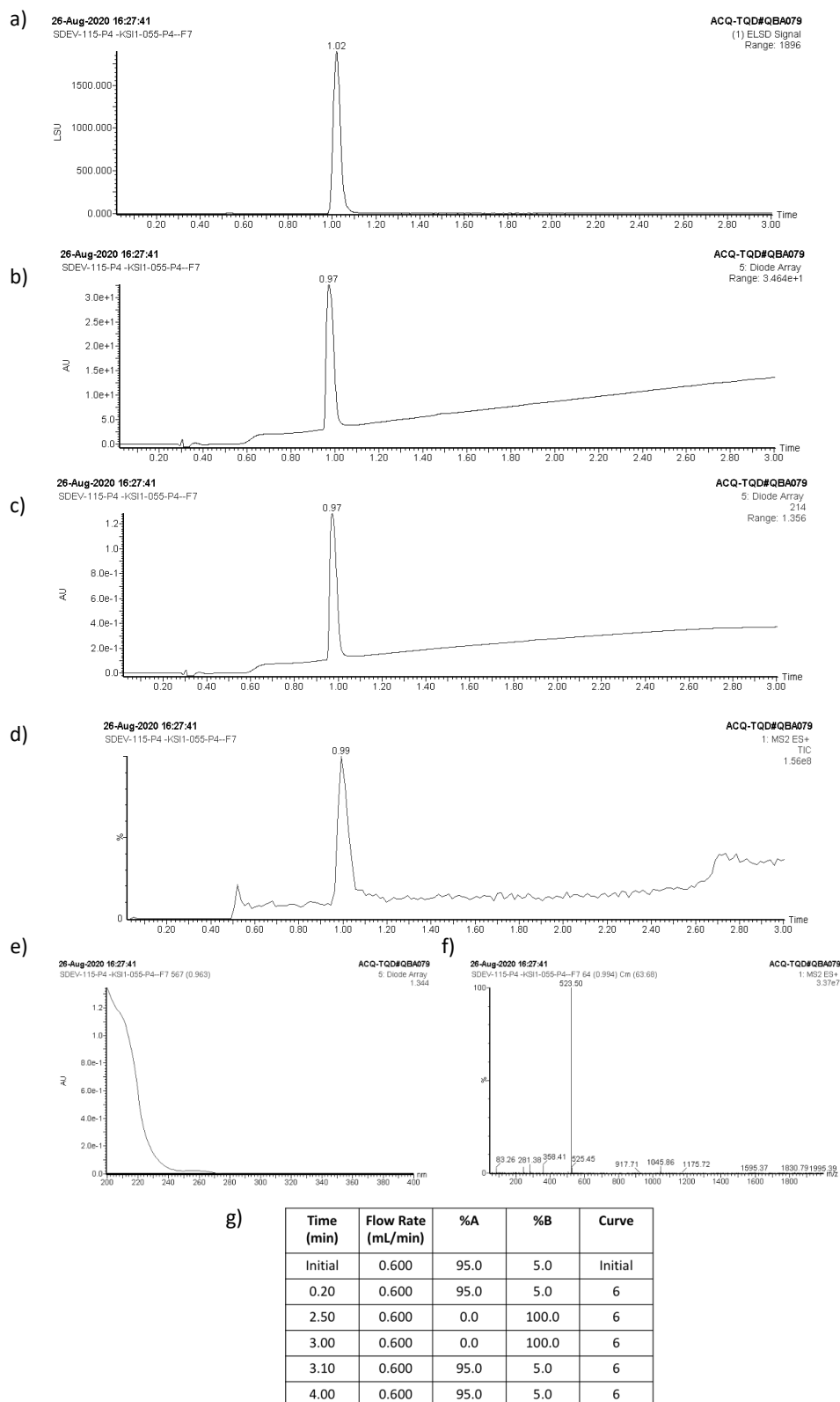


Figure S8. UPLC analysis of **P₄**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ:214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **P_{5E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

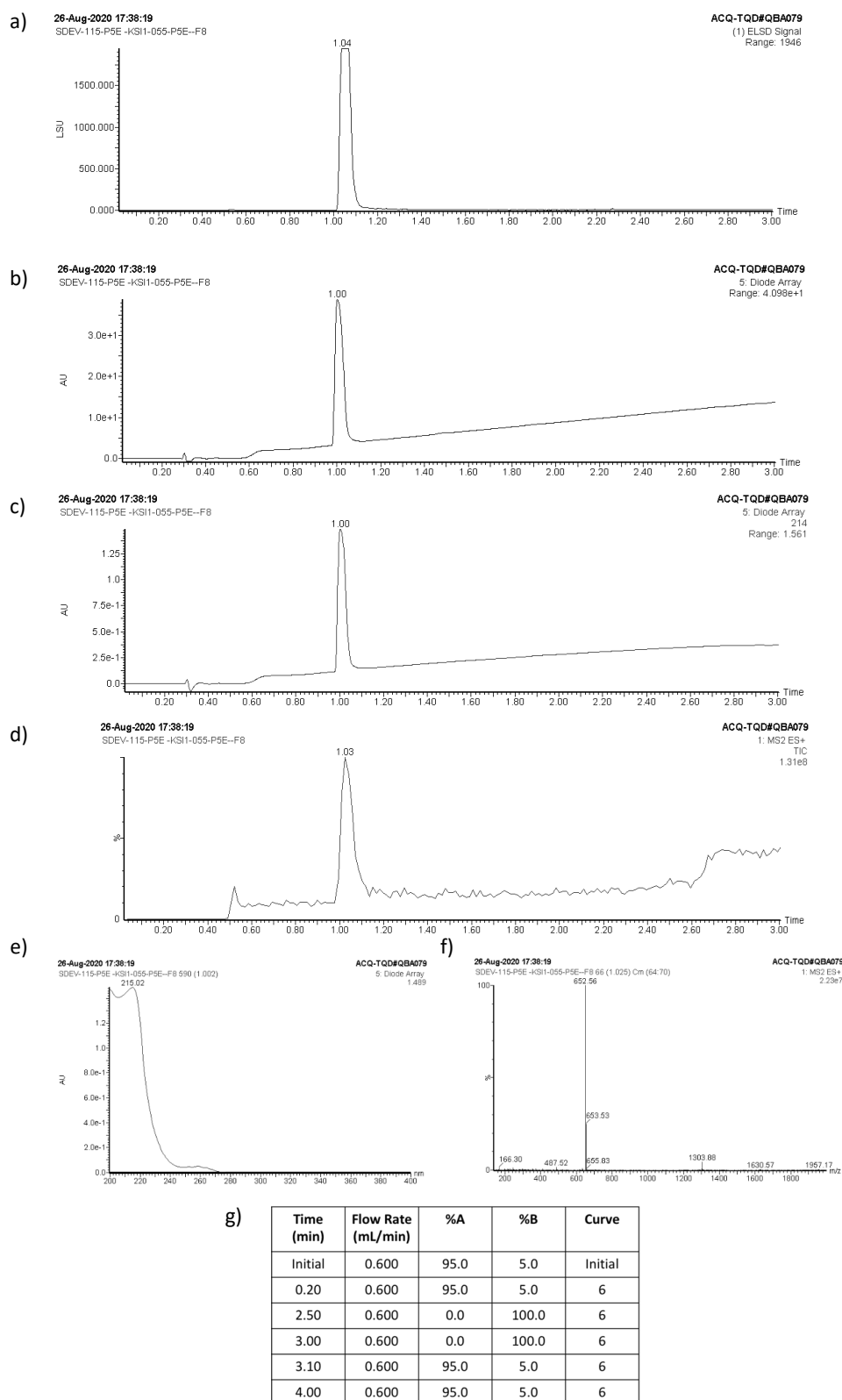


Figure S9. UPLC analysis of **P_{5E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **P_{7E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

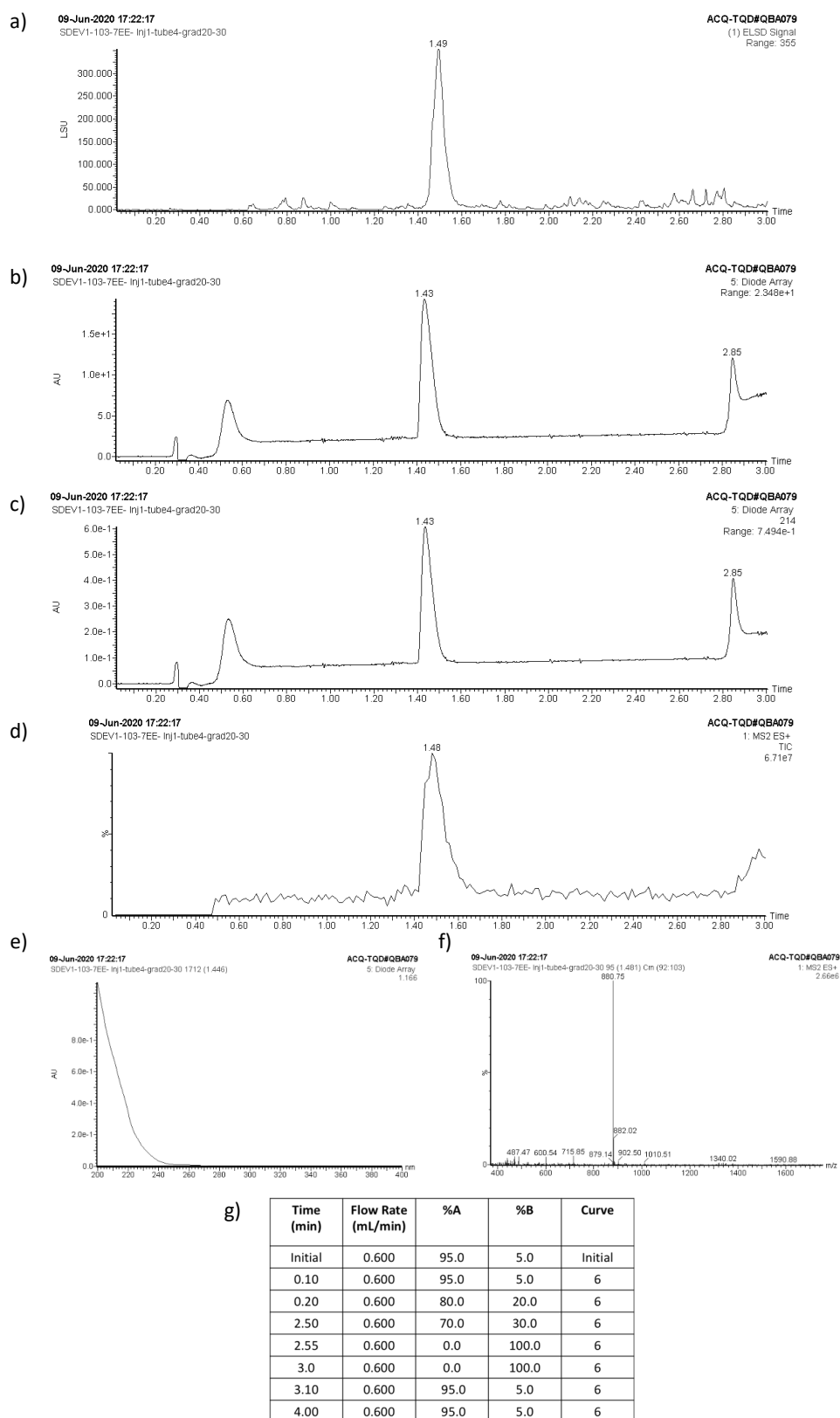


Figure S10. UPLC analysis of **P_{7E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **P_{7E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

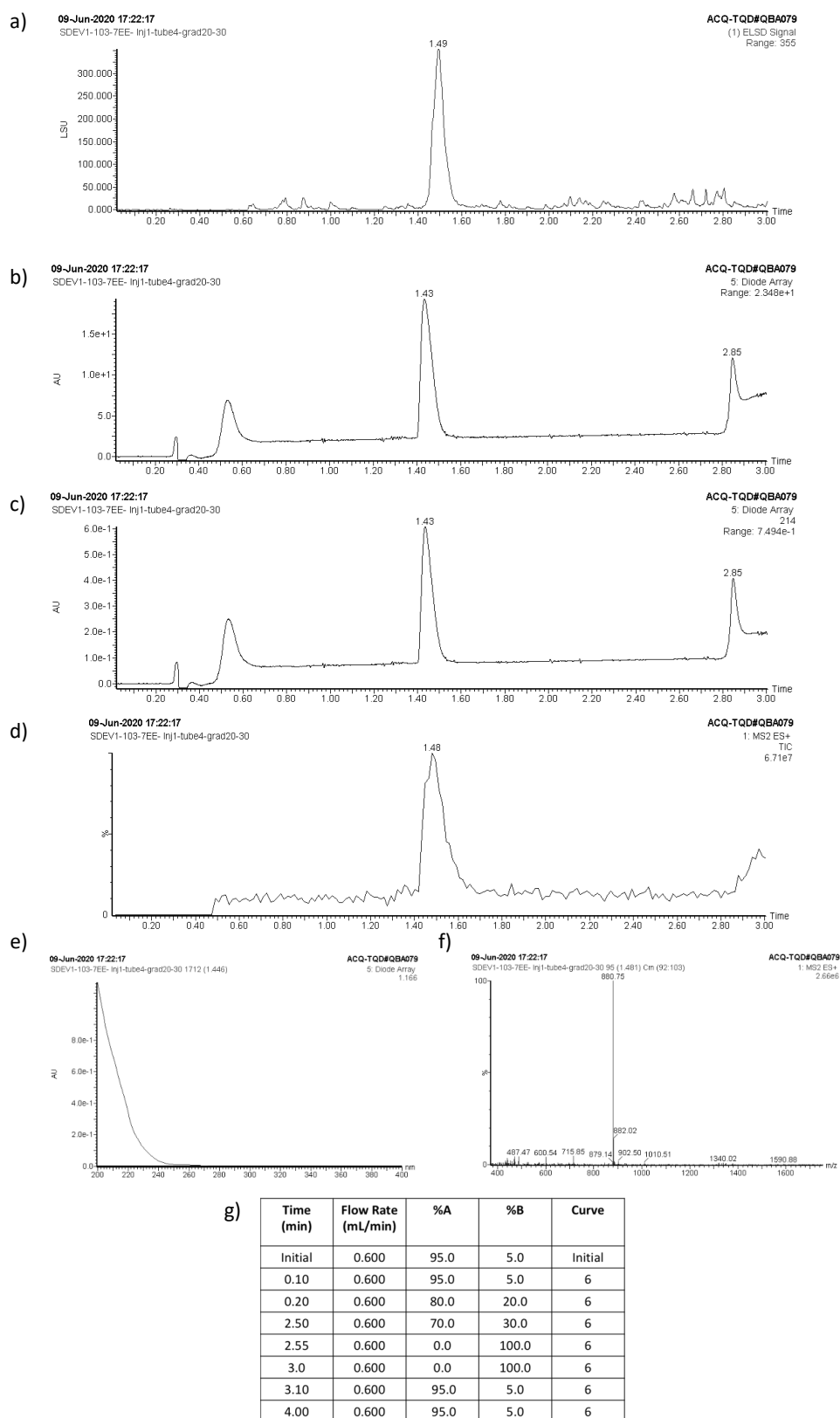


Figure S11. UPLC analysis of **P_{9E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **P_{11E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

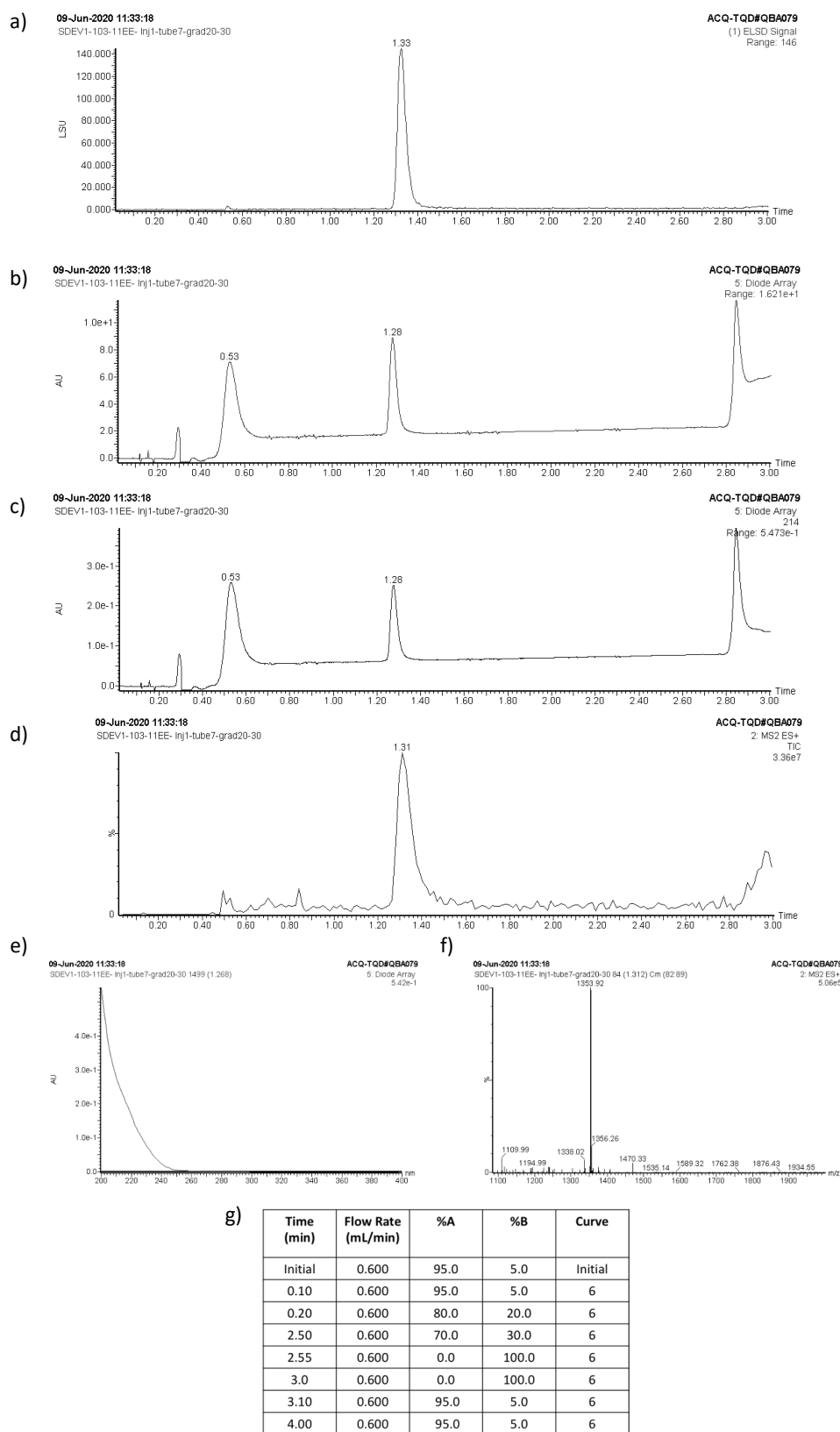


Figure S12. UPLC analysis of **P_{11E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **F₃**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

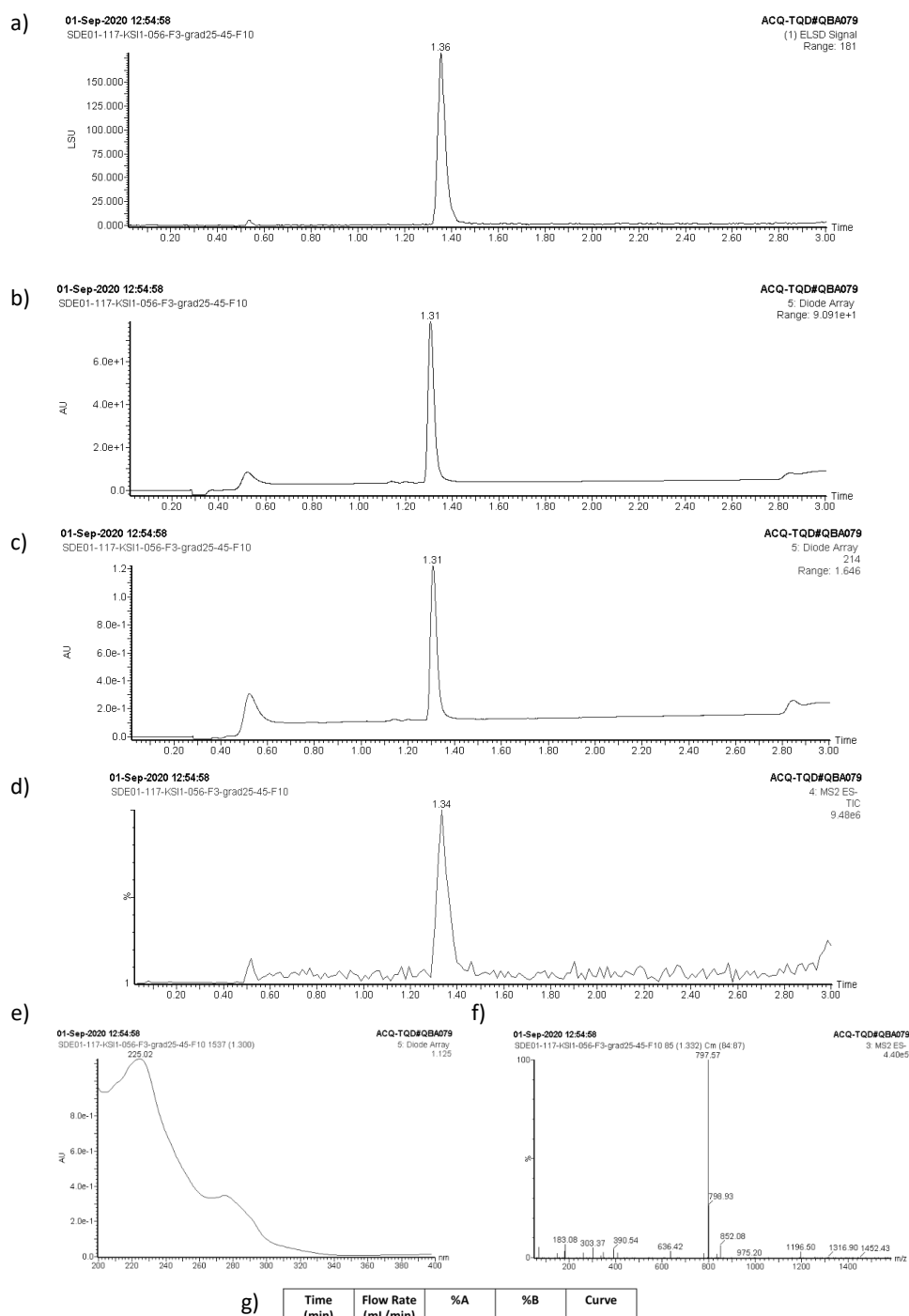


Figure S13. UPLC analysis of **F₃**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁻), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **F4**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

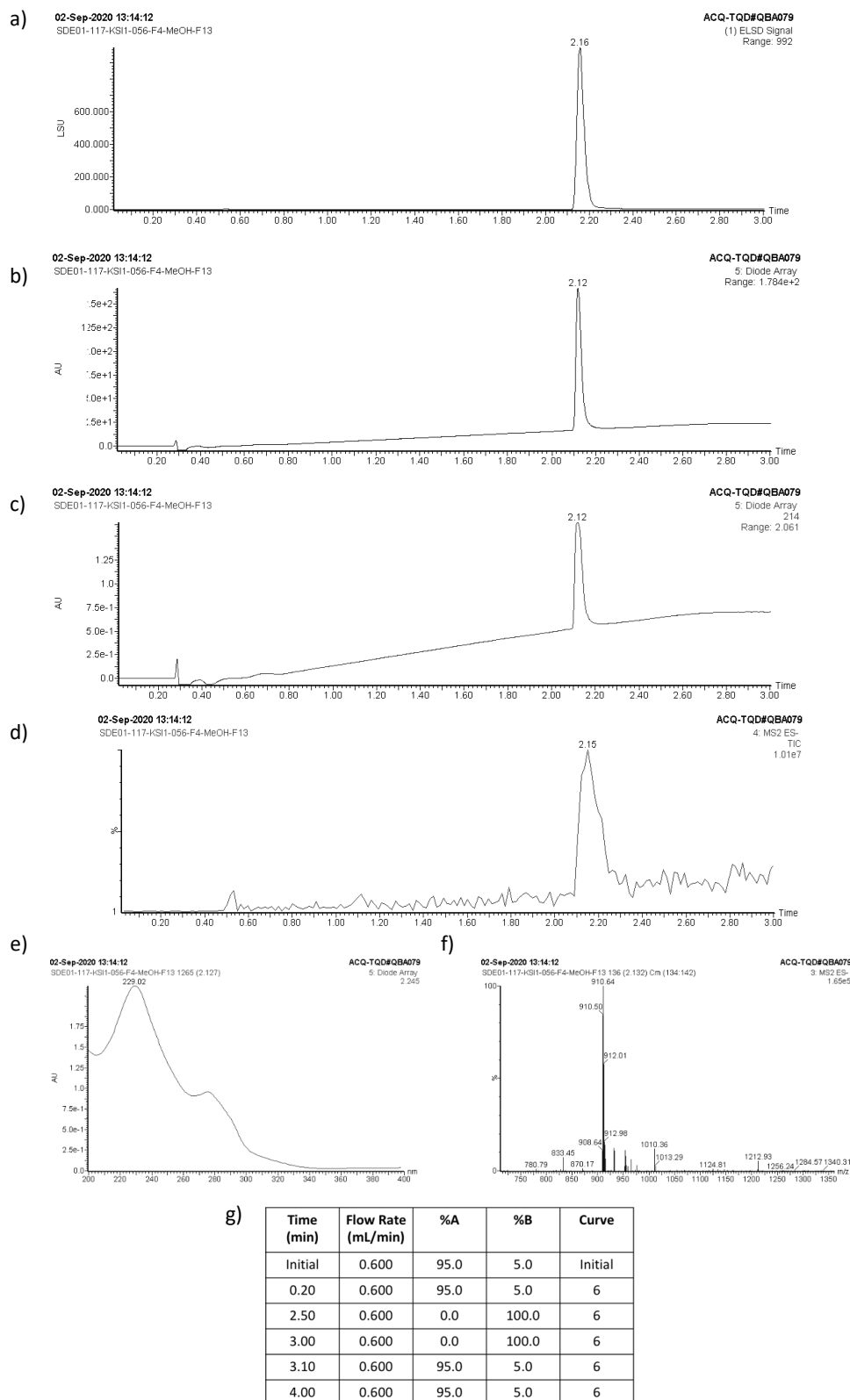


Figure S14. UPLC analysis of **F4**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **F_{5E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

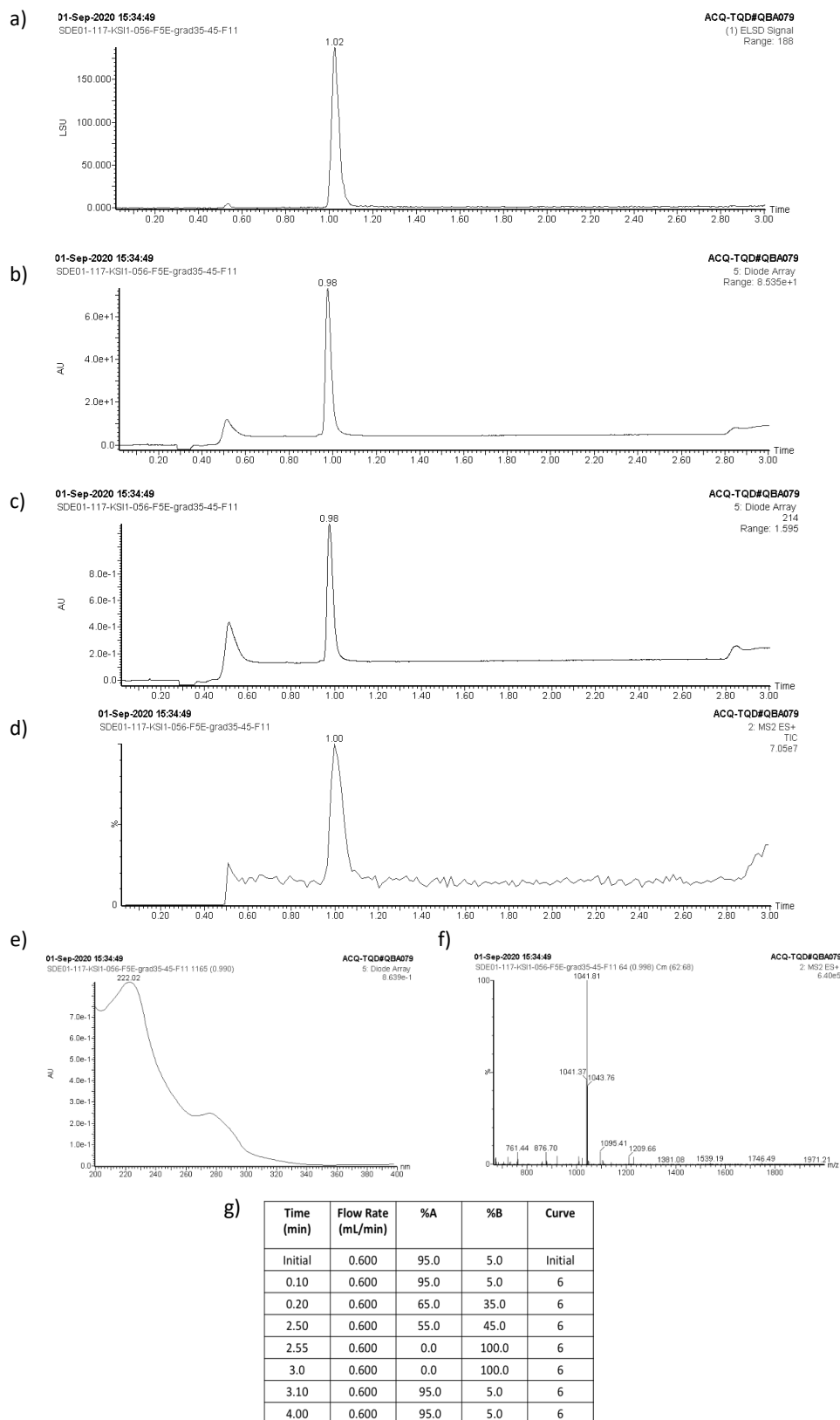


Figure S15. UPLC analysis of **F_{5E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **F7E**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

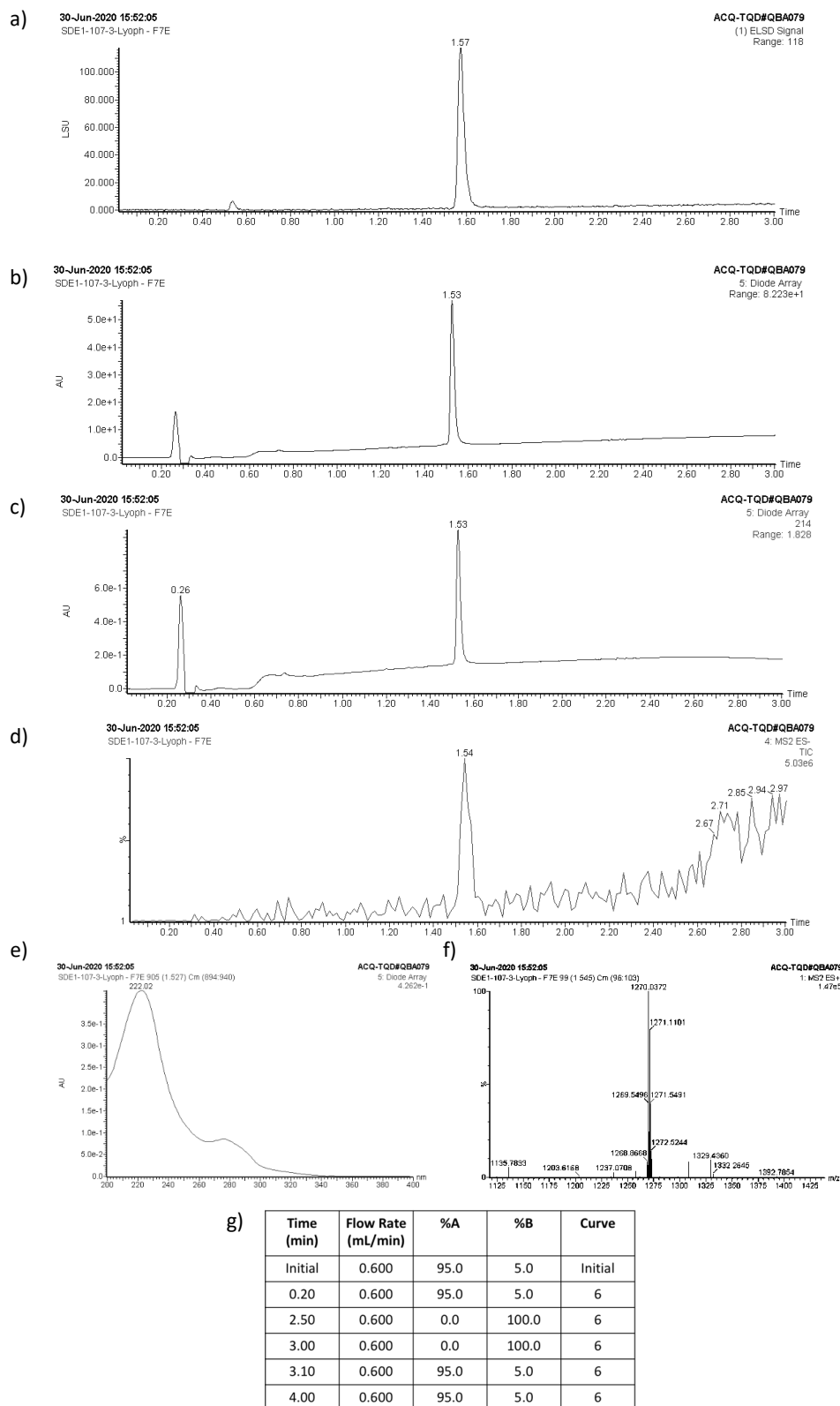


Figure S16. UPLC analysis of **F7E**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **F_{9E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

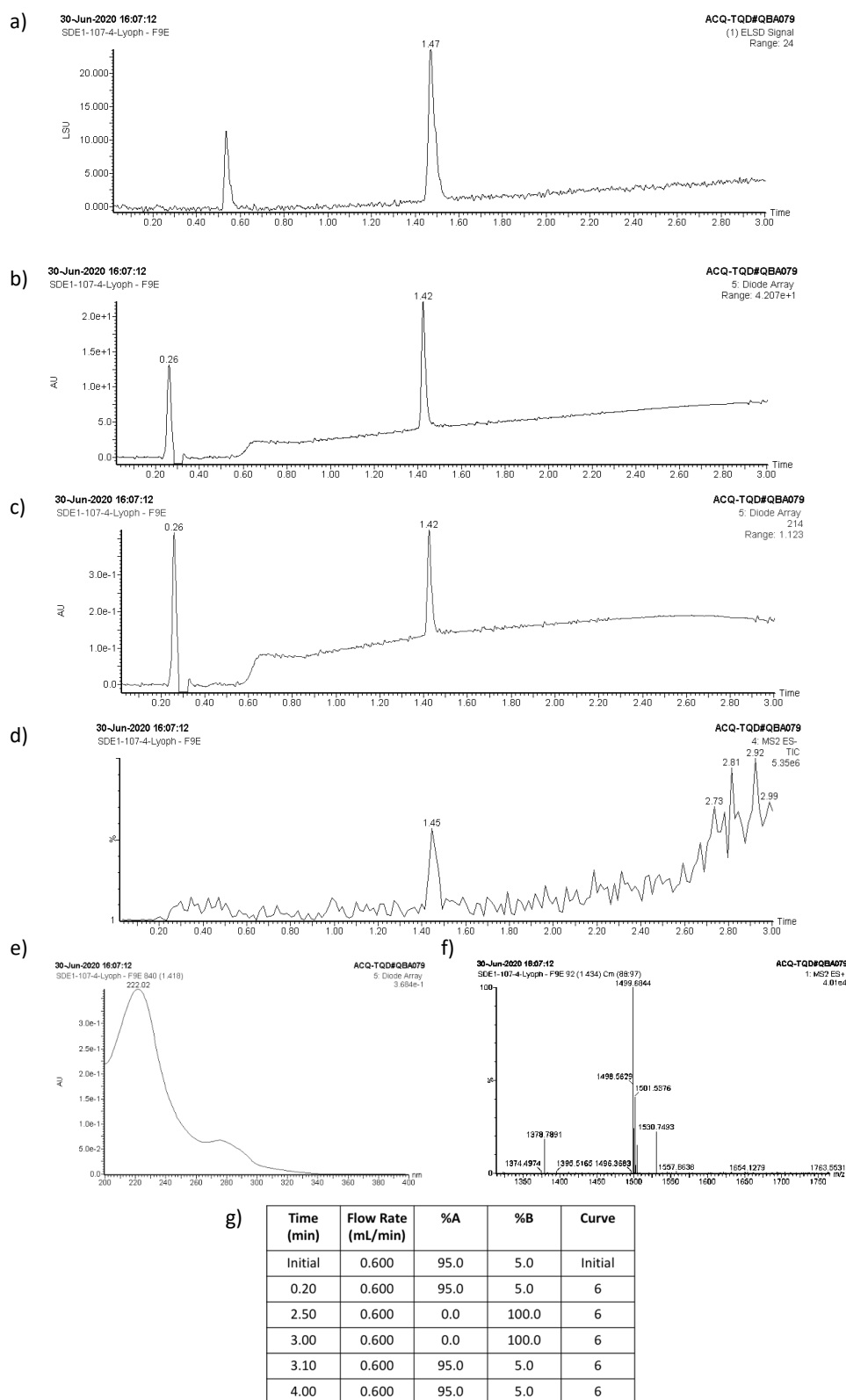


Figure S17. UPLC analysis of **F_{9E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **F_{11E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

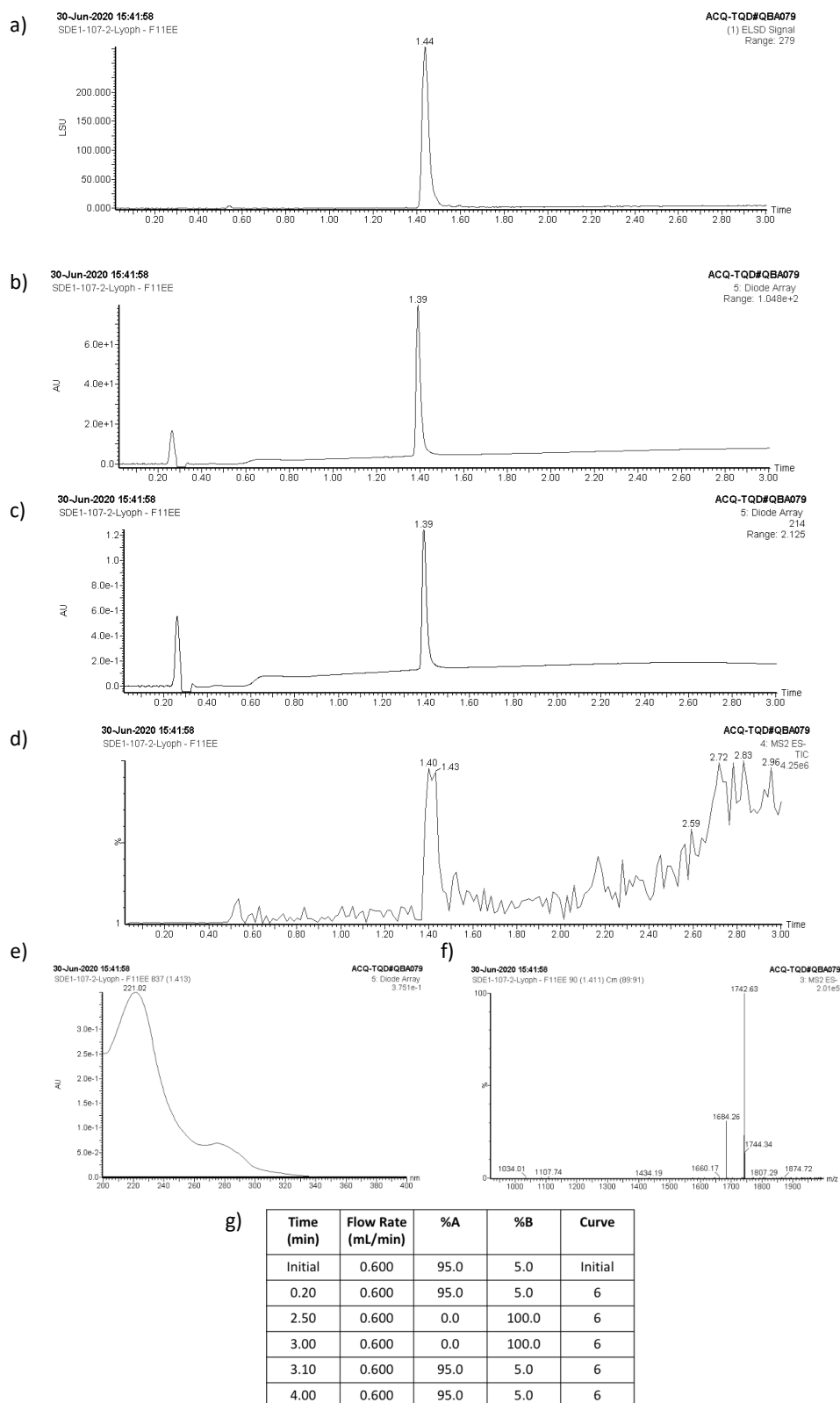


Figure S18. UPLC analysis of **F_{11E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **F_{11SE}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

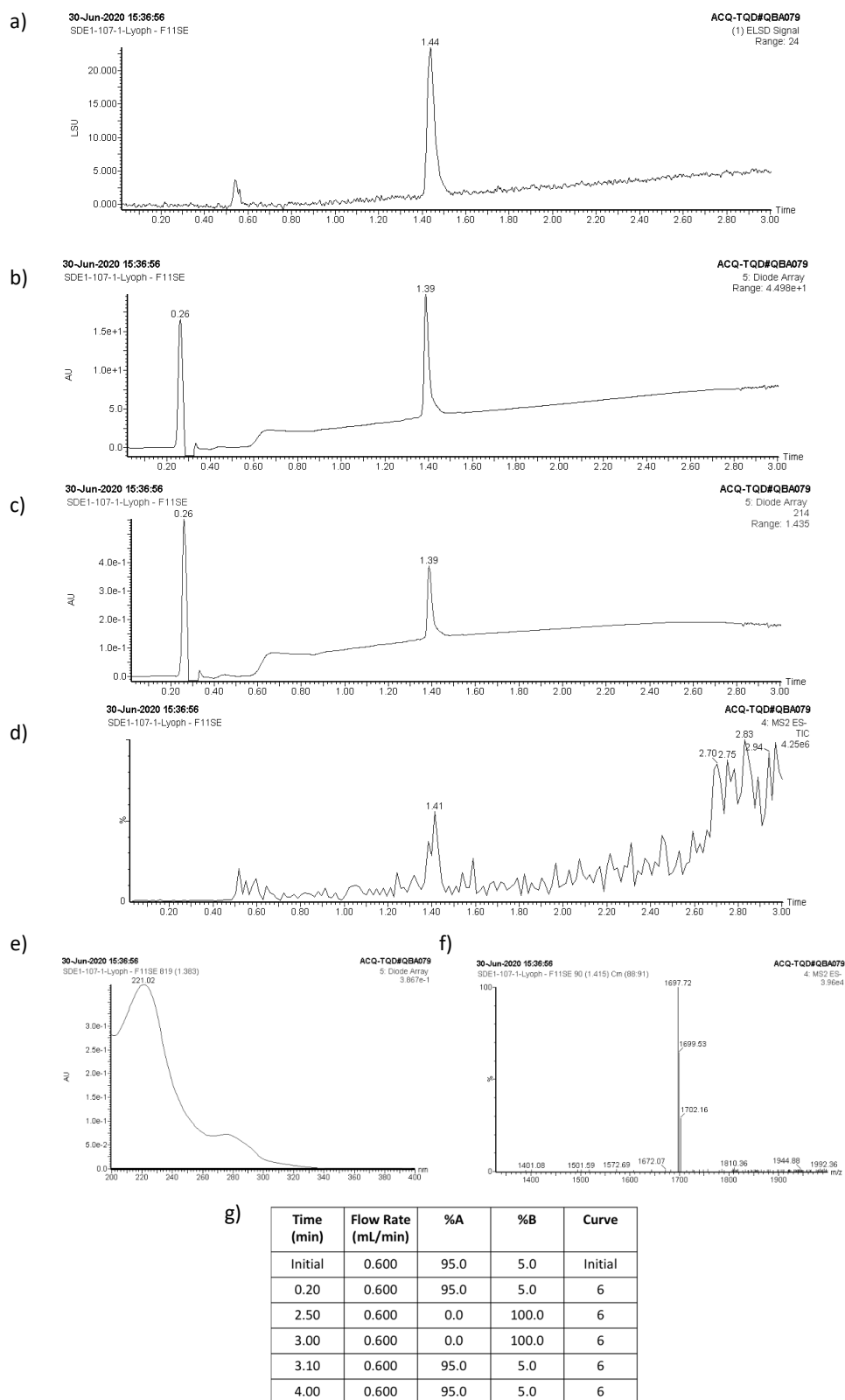


Figure S19. UPLC analysis of **F_{11SE}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **F_{11SS}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

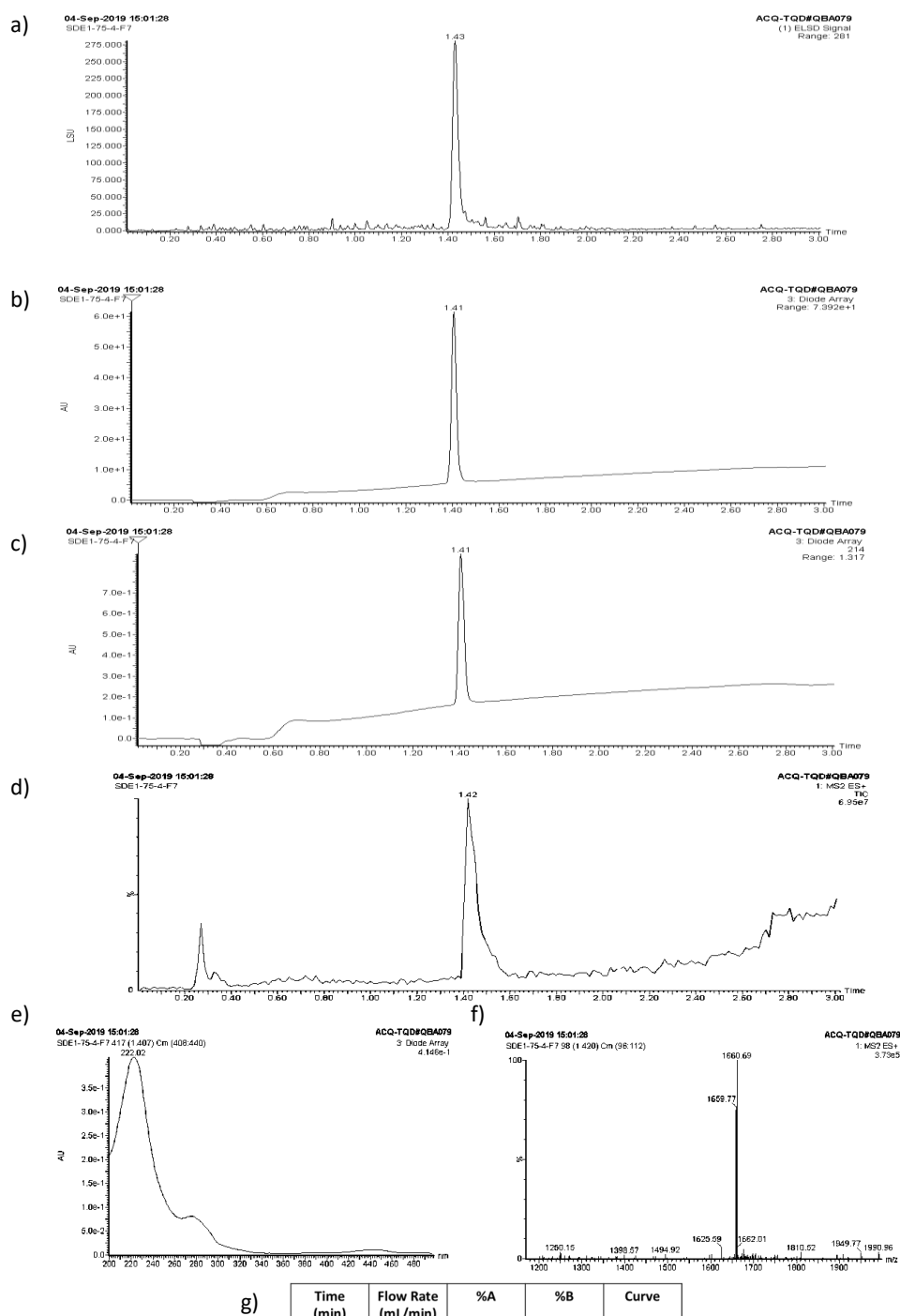
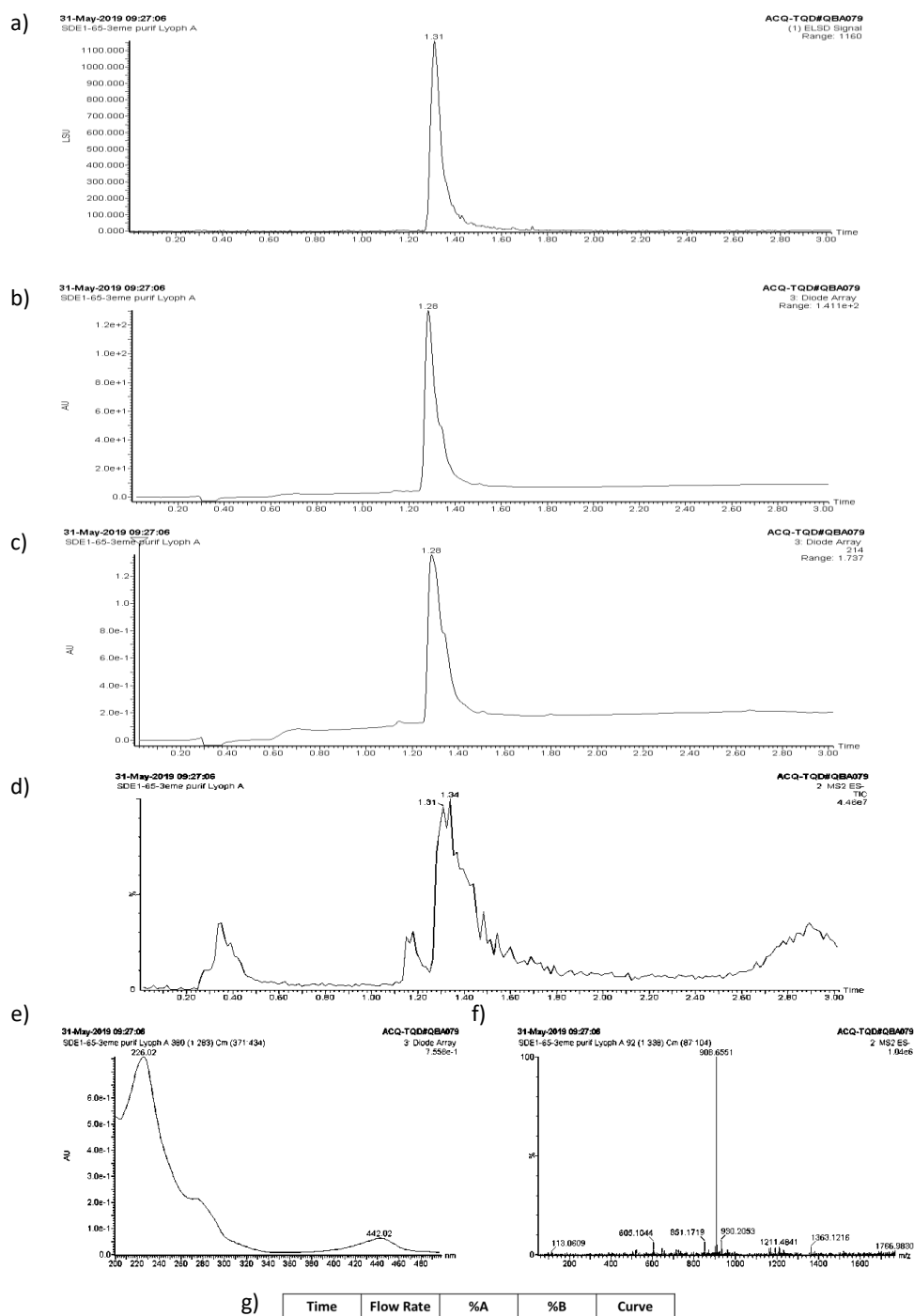


Figure S20. UPLC analysis of **F_{11SS}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **pF₁₁**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH



g)

Time (min)	Flow Rate (mL/min)	%A	%B	Curve
Initial	0.600	95.0	5.0	Initial
0.10	0.600	95.0	5.0	6
0.20	0.600	80.0	20.0	6
2.50	0.600	70.0	30.0	6
2.55	0.600	0.0	100.0	6
3.0	0.600	0.0	100.0	6
3.10	0.600	95.0	5.0	6
4.00	0.600	95.0	5.0	6

Figure S21. UPLC analysis of **pF₁₁**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **BCN_{5E}**

Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH

Solvent B: Acetonitrile +0,1% HCOOH

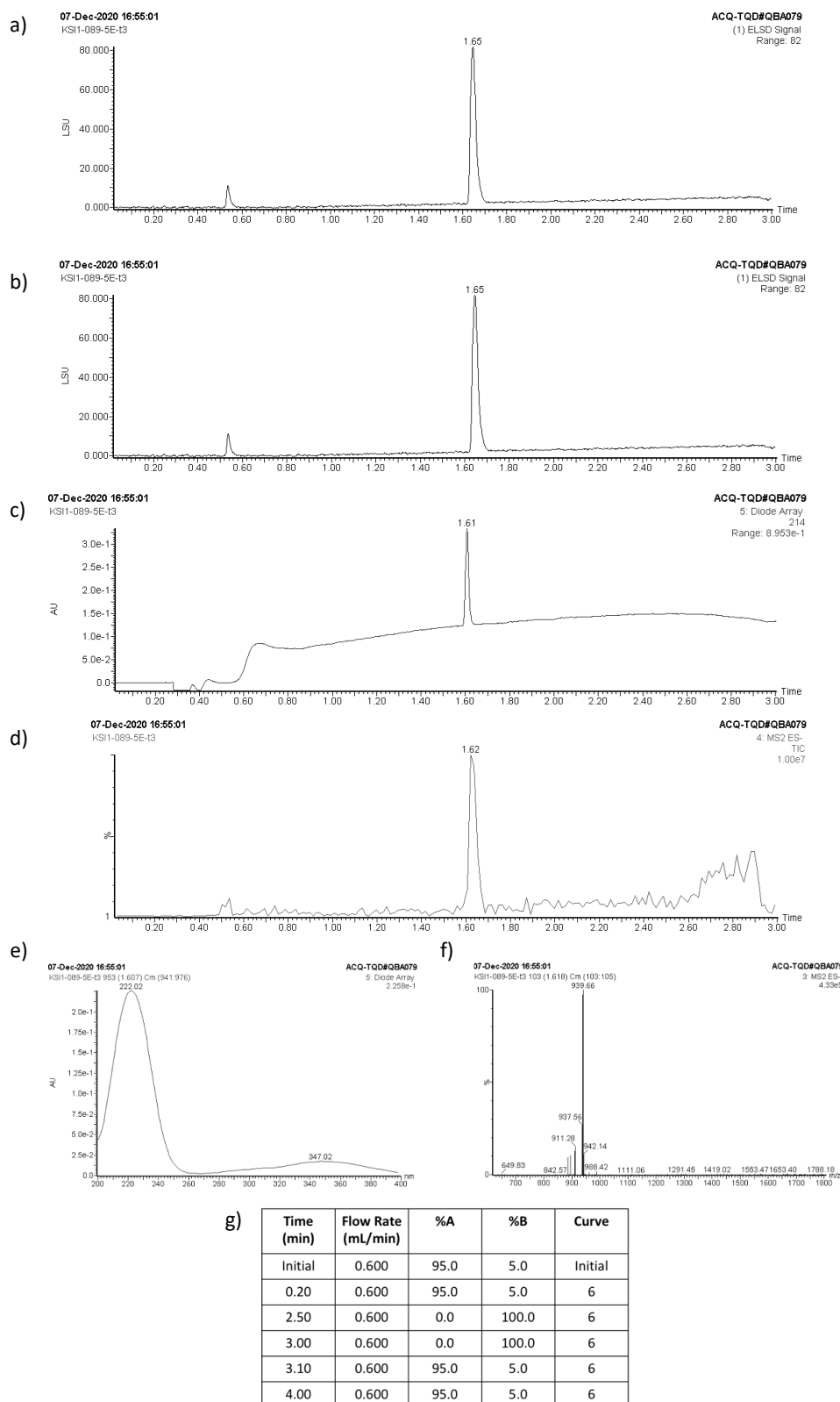


Figure S22. UPLC analysis of **BCN_{5E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **BCN_{6E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

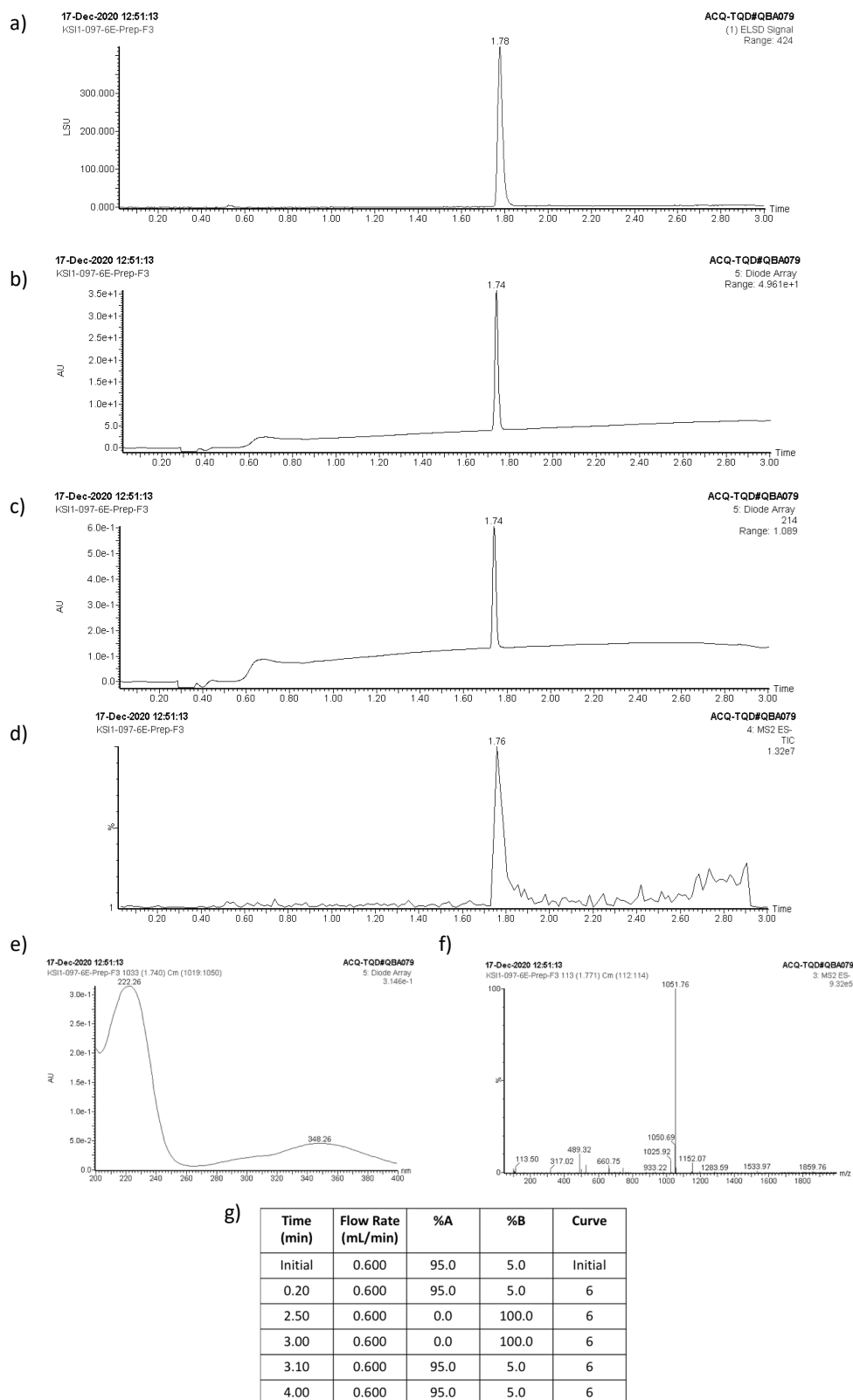


Figure S23. UPLC analysis of **BCN_{6E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **BCN_{7E}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

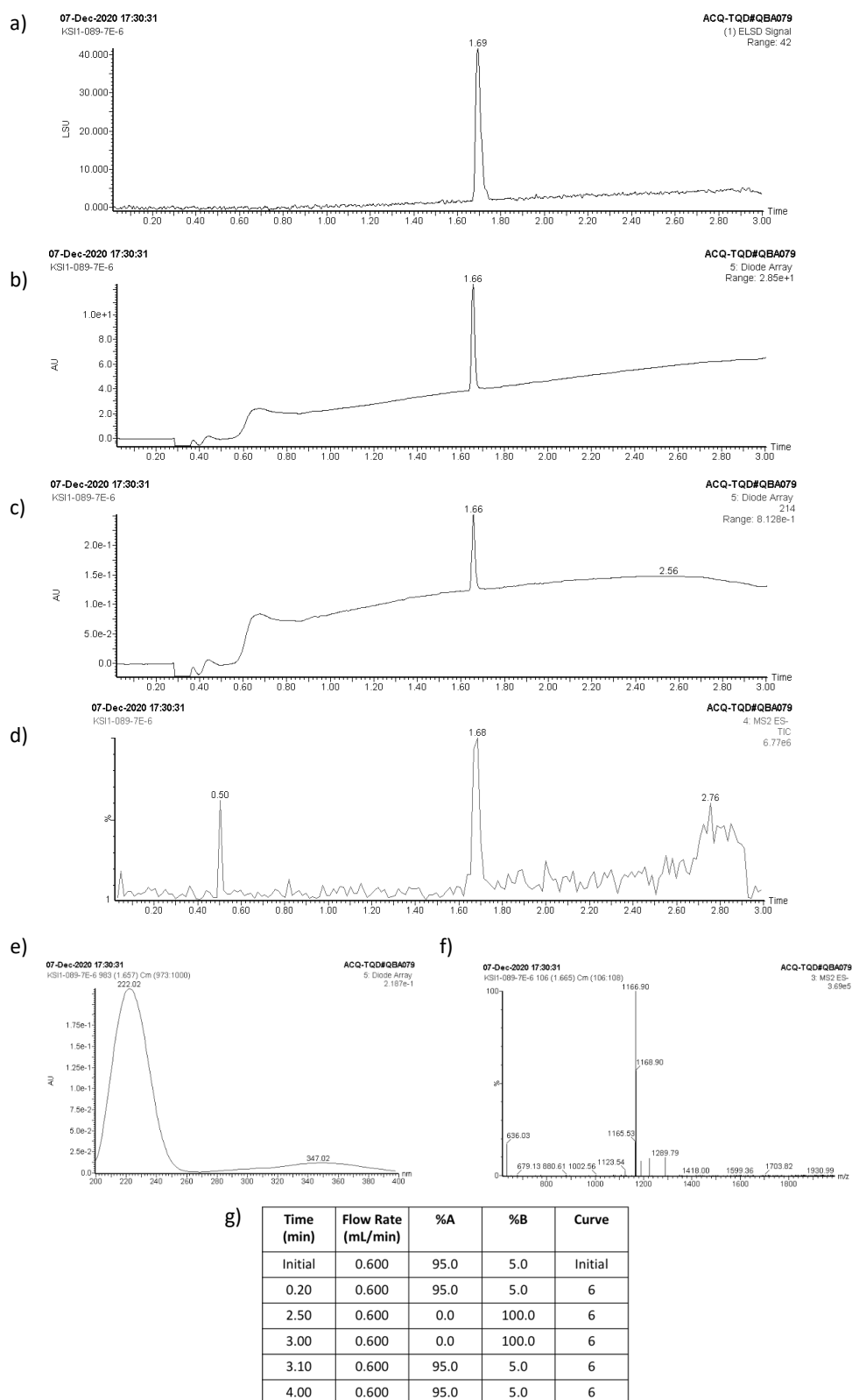


Figure S24. UPLC analysis of **BCN_{7E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **BCN_{8E}**

Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH

Solvent B: Acetonitrile +0,1% HCOOH

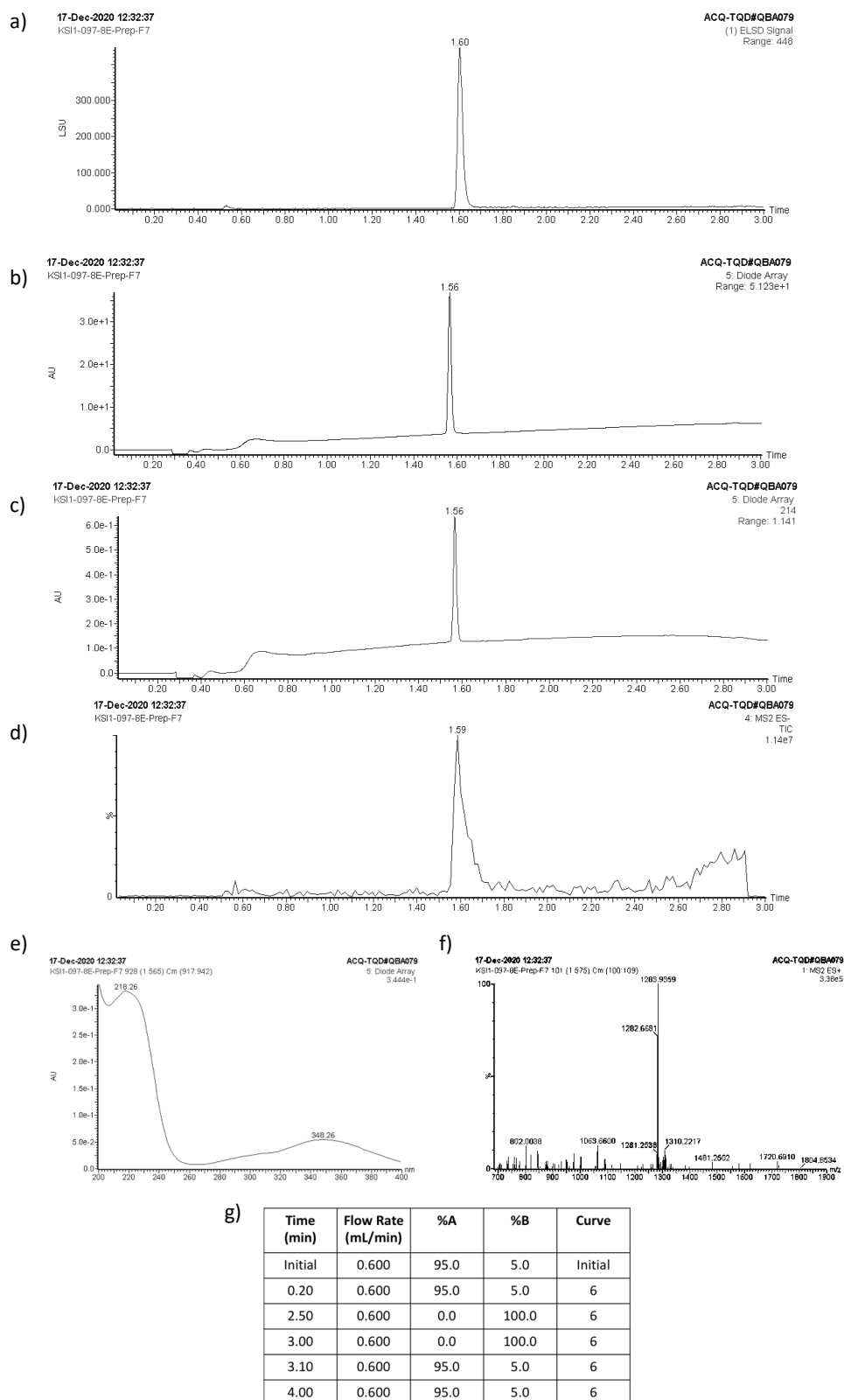


Figure S25. UPLC analysis of **BCN_{8E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **BCN_{9E}**

Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH

Solvent B: Acetonitrile +0,1% HCOOH

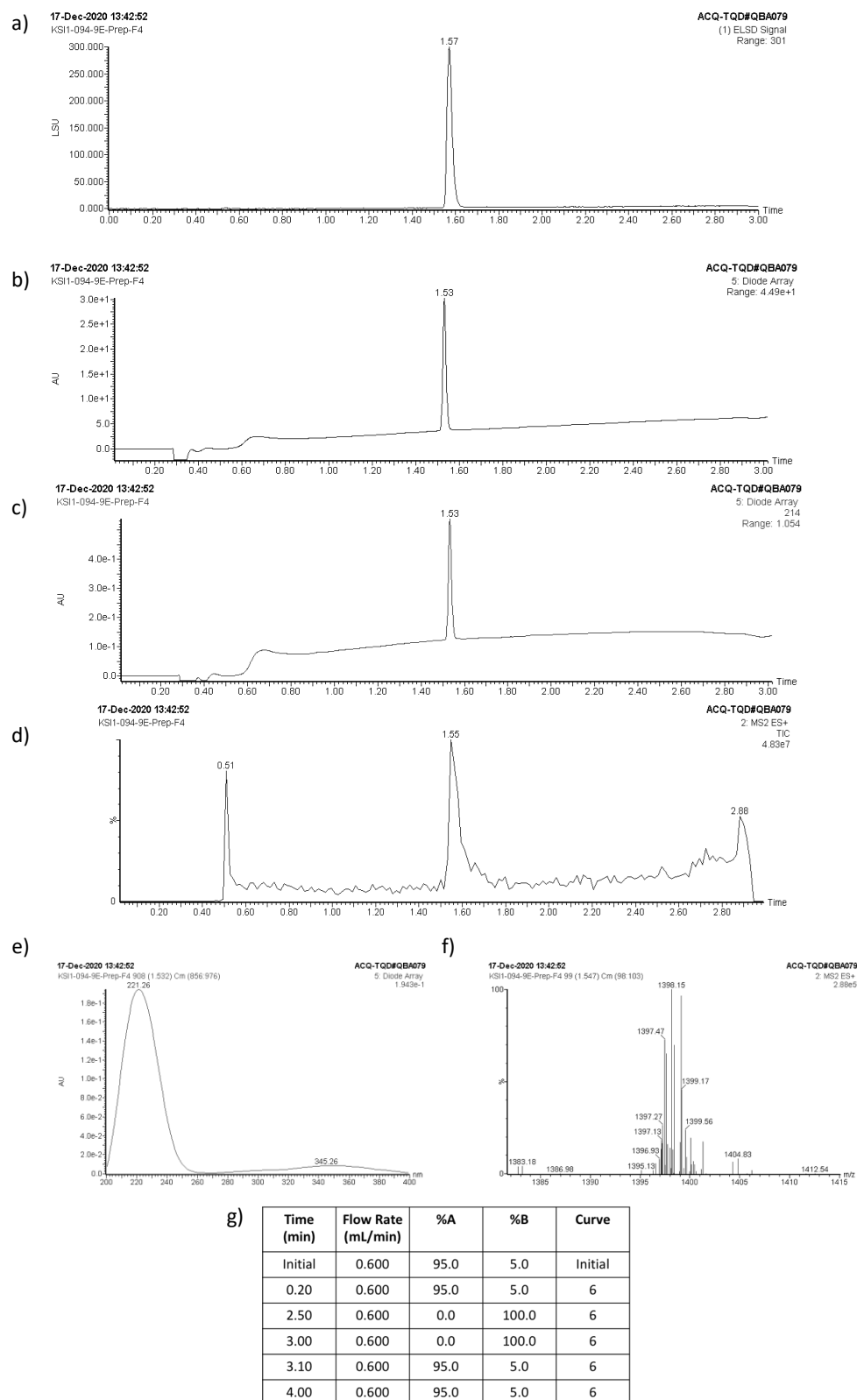


Figure S26. UPLC analysis of **BCN_{9E}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI⁺), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **BCN_{10EE}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

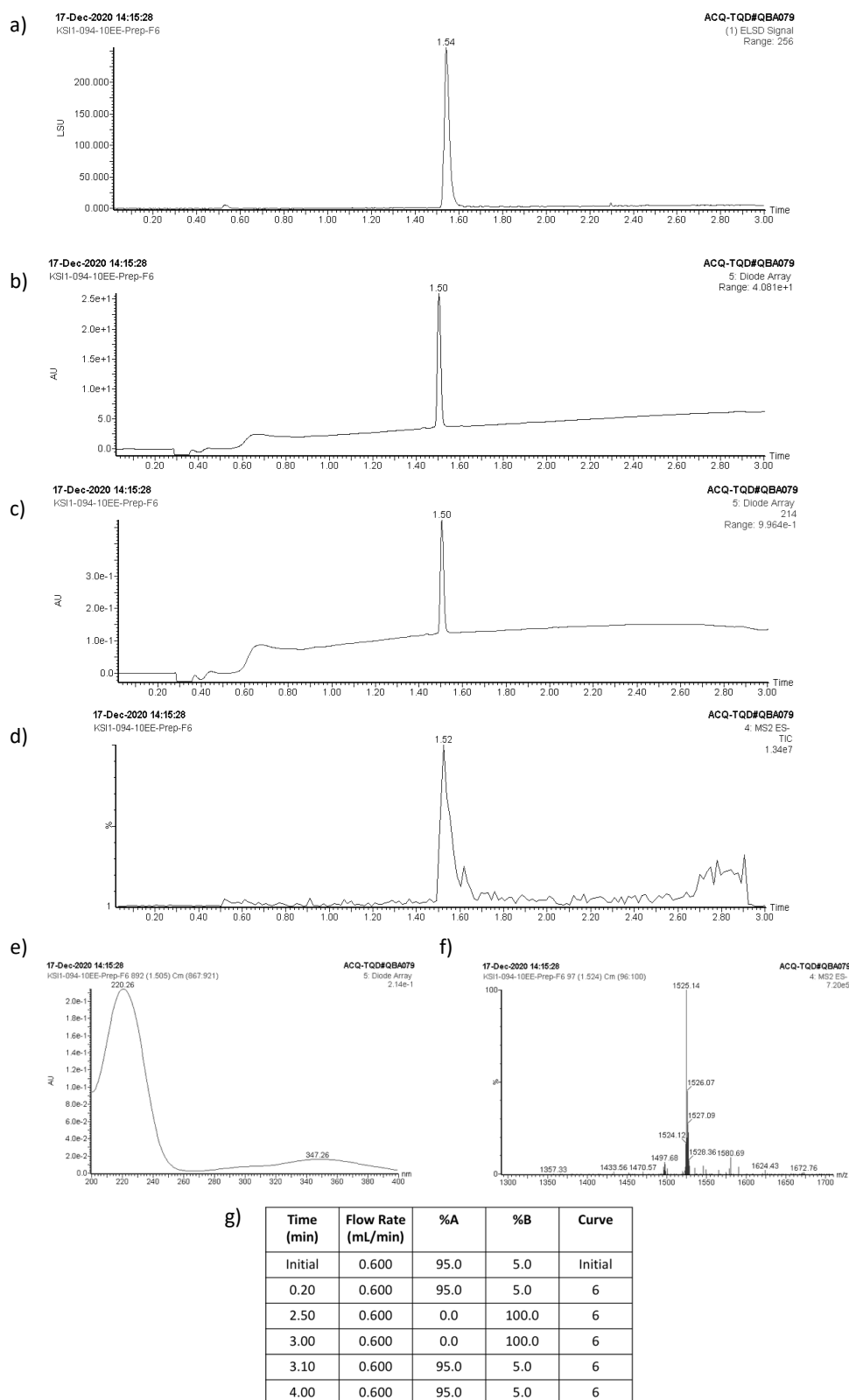


Figure S27. UPLC analysis of **BCN_{10EE}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **BCN_{11EE}**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

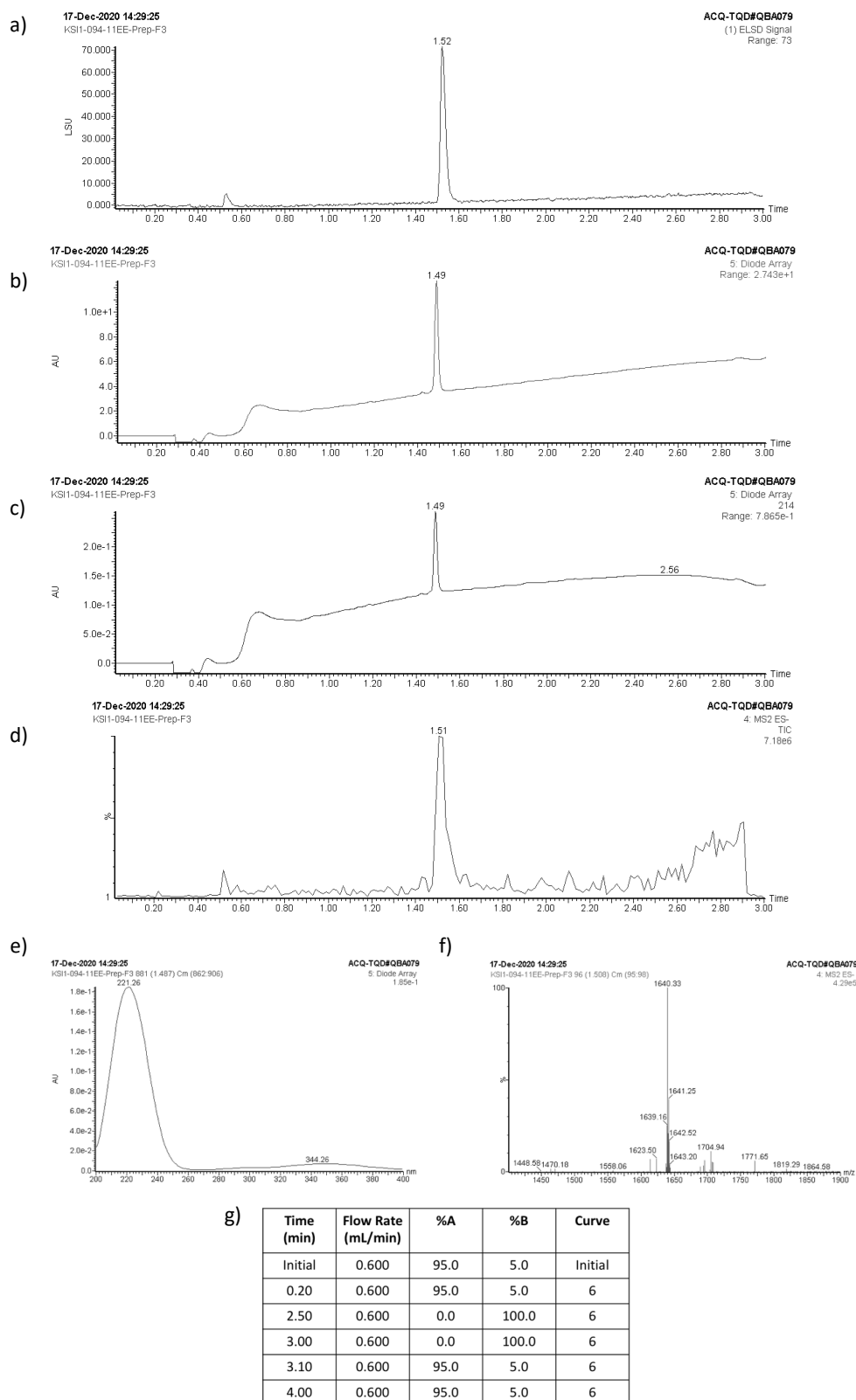


Figure S28. UPLC analysis of **BCN_{11EE}**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **BCN₁₁SE**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

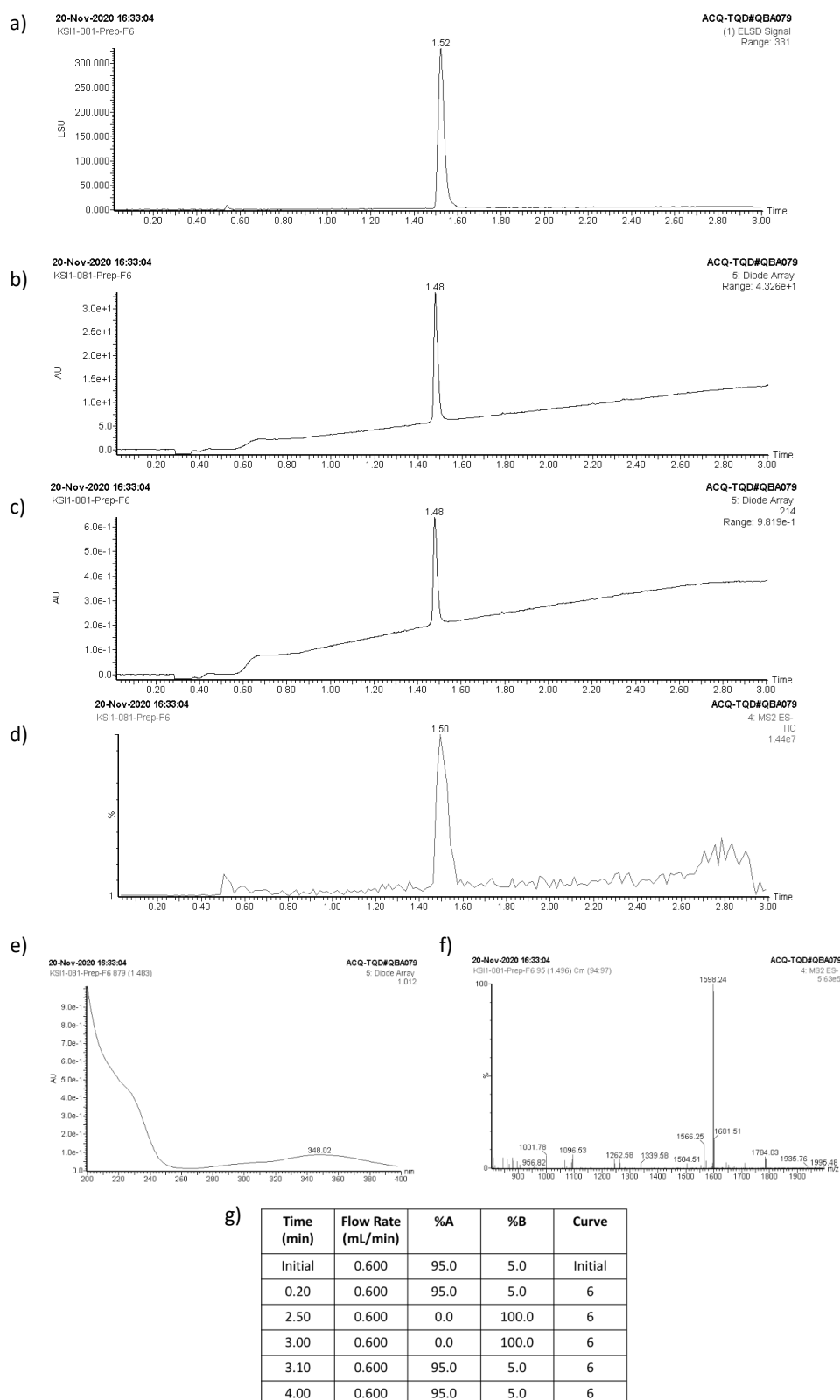


Figure S29. UPLC analysis of **BCN₁₁SE**. a) ELSD detector, b) Photodiode array detector (absorbance maximum for each compound between 220–500), c) Photodiode array detector (λ :214nm), d) Mass detector (ESI), e) absorption spectra of the compound, f) Mass spectra of the compound, g) gradient.

Sample name: **Blank**
 Column: BEH C18 2.1x50 mm 1.7 μ m

Solvent A: H₂O+0.1% HCOOH
 Solvent B: Acetonitrile +0,1% HCOOH

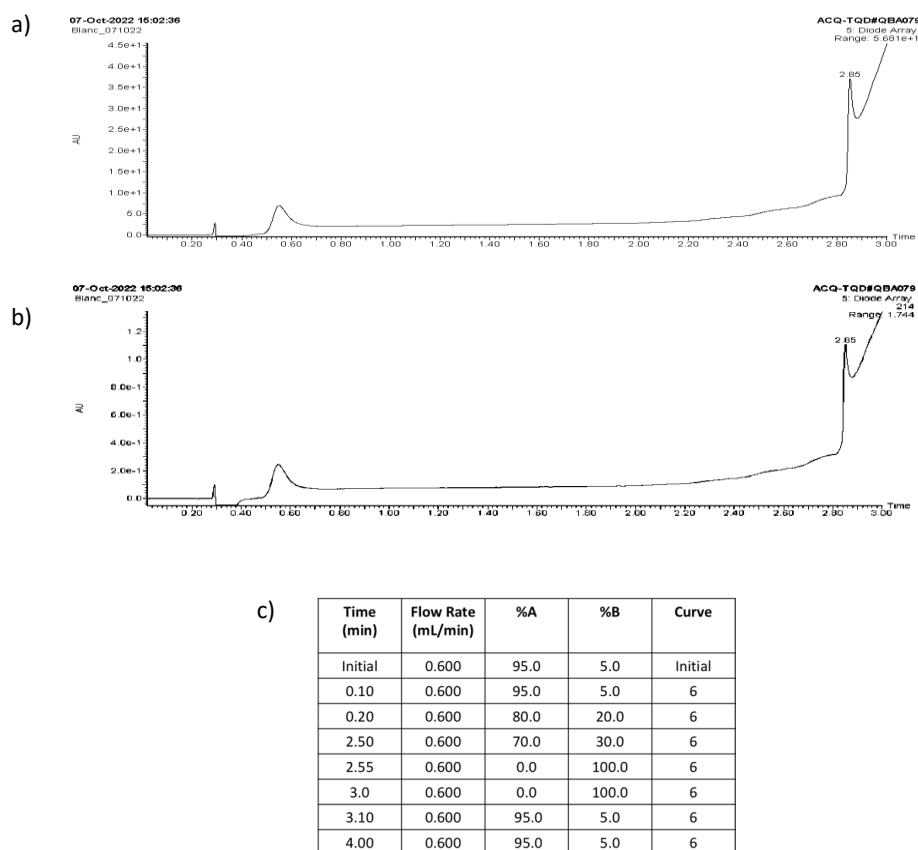
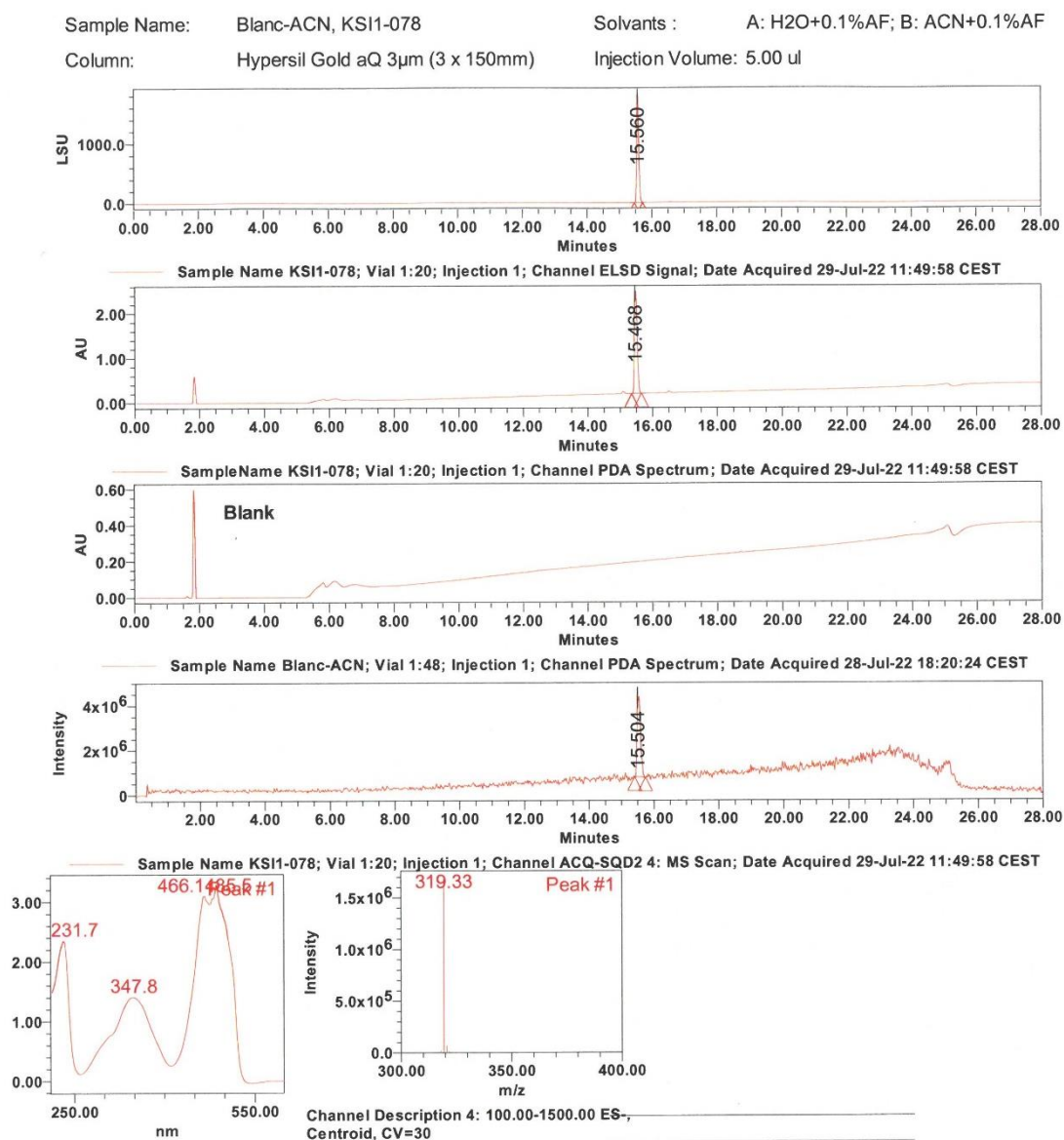


Figure S30. UPLC analysis of **Blank**. a) Photodiode array detector (absorbance maximum for each compound between 220–500), b) Photodiode array detector (λ :214nm), c) gradient.

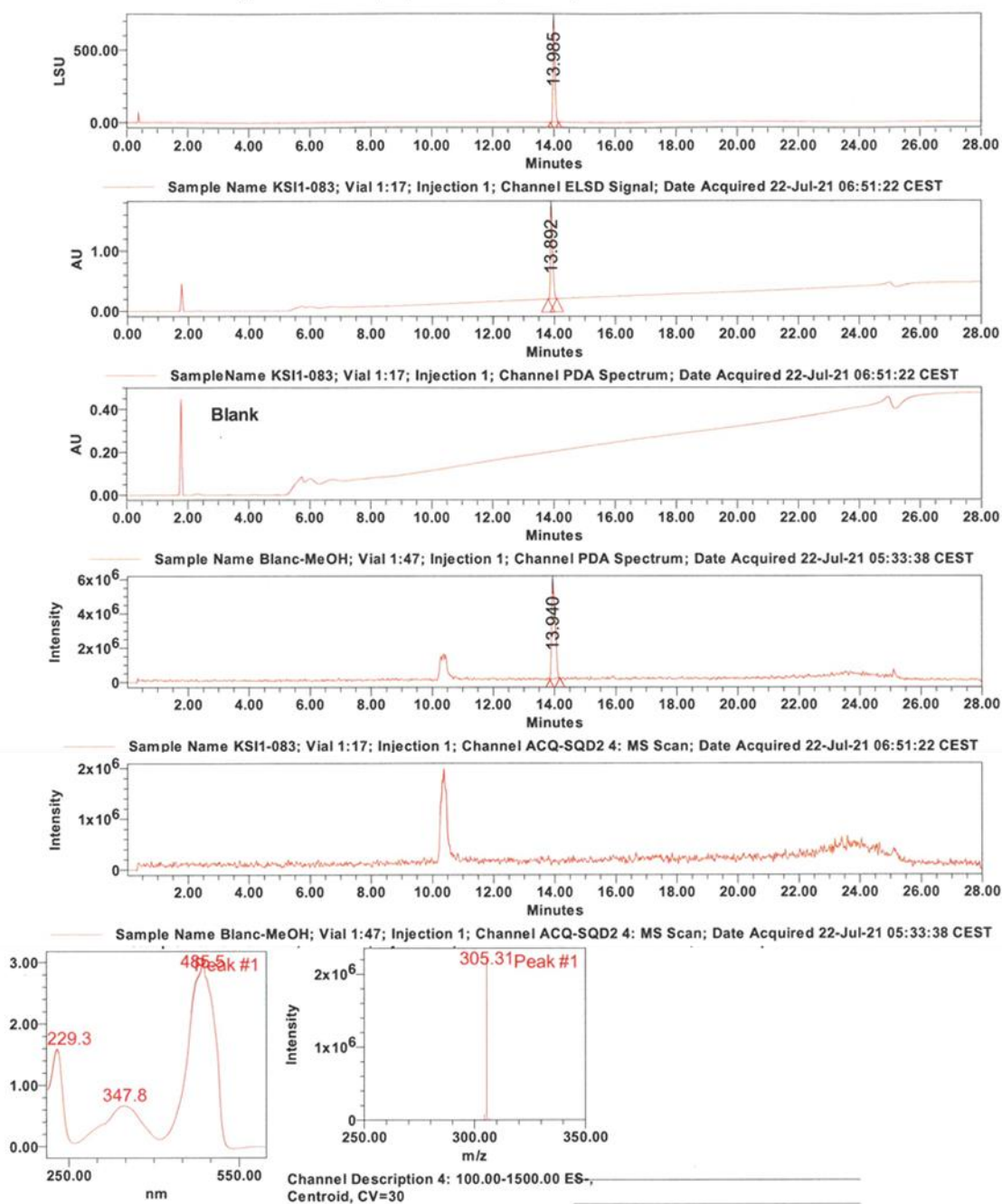
HPLC Traces



	Time (min)	Flow Rate (mL/min)	%A	%B	%C	%D	Curve
1	Initial	0.500	100.0	0.0	0.0	0.0	Initial
2	3.00	0.500	100.0	0.0	0.0	0.0	6
3	23.00	0.500	0.0	100.0	0.0	0.0	6
4	28.00	0.500	0.0	100.0	0.0	0.0	6
5	29.00	0.500	100.0	0.0	0.0	0.0	6
6	39.00	0.500	100.0	0.0	0.0	0.0	6
7	40.00	0.000	100.0	0.0	0.0	0.0	6

Figure S31. HPLC analysis of **7**. from the top to the bottom: ELSD detector, Photodiode Array Detector, Blank with Photodiode Array Detector and Mass detector (ESI), absorption spectra of the compound (left), Mass spectra of the compound (right) and gradient.

Sample Name: KSI1-083, Blanc-MeOH Solvents : A: H2O+0.1%AF; B: ACN+0.1%AF
 Column: Hypersil Gold aQ 3µm (3 x 150mm) Injection Volume: 5.00 µl



	Time (min)	Flow Rate (mL/min)	%A	%B	%C	%D	Curve
1	Initial	0.500	100.0	0.0	0.0	0.0	Initial
2	3.00	0.500	100.0	0.0	0.0	0.0	6
3	23.00	0.500	0.0	100.0	0.0	0.0	6
4	28.00	0.500	0.0	100.0	0.0	0.0	6
5	29.00	0.500	100.0	0.0	0.0	0.0	6
6	39.00	0.500	100.0	0.0	0.0	0.0	6
7	40.00	0.000	100.0	0.0	0.0	0.0	6

Figure S32. HPLC analysis of **5**. from the top to the bottom: ELSD detector, Photodiode Array Detector, Blank with Photodiode Array Detector, Mass detector (ESI⁻), Blank with Mass detector (ESI⁻), absorption spectra of the compound (left), Mass spectra of the compound (right) and gradient.

UV-Visible Absorption and fluorescence Spectra

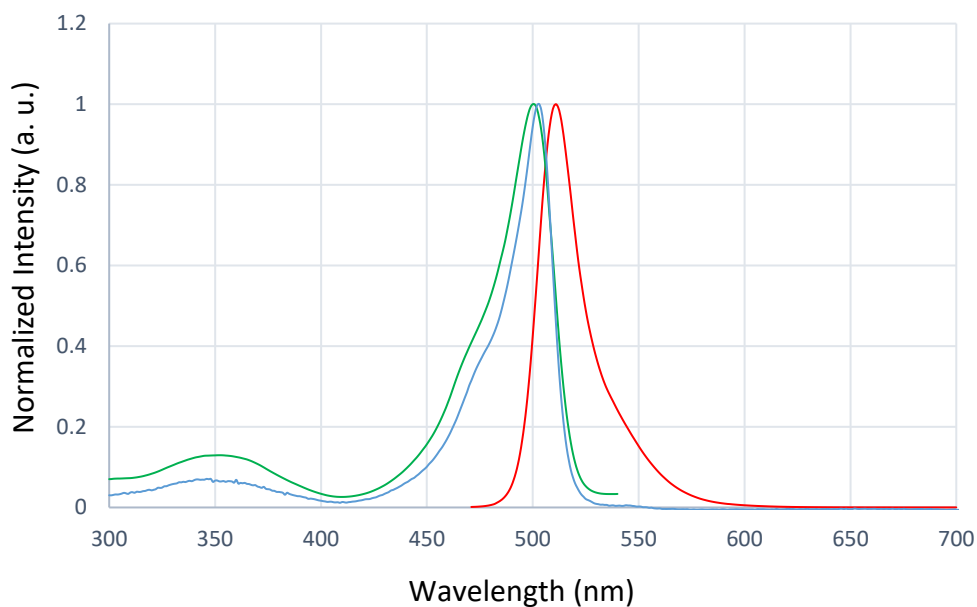


Figure S33. UV-Visible absorption Spectrum (blue) of **BCN_{10EE}** [5.00 μ M] in Tris buffer 20mM pH:7.8, recorded on Varian Cary 100 spectrophotometer. Fluorescence excitation (green, λ_{em} = 350nm) and emission spectra (red, λ_{ex} = 450nm) of **BCN_{10EE}** [2.50 μ M] in Tris buffer 20mM pH:7.8 at 25°C recorded on HITACI F-2500 spectrofluorometer.