

How do HYNIC-conjugated peptides bind technetium? Insights from LC-MS and stability studies.

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Dalton Discussion 10

Supplementary Information

Tables A – H: LC-MS data for ^{99}Tc peptide conjugates, including HPLC profile and ES-MS assignments

Table I – HPLC data on $^{99\text{m}}\text{Tc}$ and ^{99}Tc labeled peptides

Figure: High resolution detail of molecular ions to demonstrate confidence in number of protons displaced during Tc-binding

Throughout, calculated m/z values are based on the following exact molecular mass data calculated for uncharged molecules and atoms using ChemDraw analytical tool

HYNIC-nanogastrin conjugate = 1279.5 (M^+ 1280.5, M 1278.5)

HYBA-nanogastrin conjugate = 1278.5 (M^+ 1279.5, M 1277.5)

Tc = 98.9

Nicotinic acid = 123.03

Tricine = 179.08

N,N'-Ethylenediamine diacetic acid (EDDA) = 176.08

Trifluoroacetic acid (TFA) = 113.99

Acetonitrile (ACN) = 41.03

In each table, P refers to the unlabelled peptide conjugate (HYNIC-nanogastrin or HYBA-nanogastrin)

TABLE A
Unlabelled peptides

| peptide | Method A, B, C | % of base peak | m/z calc | m/z obs | Assignment | Inferred solution species from which in originates |
|--------------------------------------|----------------|----------------|----------|---------|---|--|
| HYNIC-nanogastrin | C | 100 | 640.8 | 640.9 | $[\text{P}+2\text{H}]^{2+}$ | P |
| | C | 45 | 1280.5 | 1280.5 | $[\text{P}+\text{H}]^+$ | |
| HYBA-nanogastrin | C | 100 | 639.3 | 639.3 | $[(\text{P}-2\text{H})+2\text{H}]^{2+}$ | P-2H |
| | C | 30 | 1277.5 | 1277.3 | $[(\text{P}-2\text{H})+\text{H}]^+$ | |
| | C | 30 | 640.5 | 640.2 | $[\text{P}+2\text{H}]^{2+}$ | P |
| | C | 15 | 1279.5 | 1279.4 | $[\text{P}+\text{H}]^+$ | |
| HYNIC-[gly ⁸]nanogastrin | B | 100 | 1208.2 | 1208.4 | $[\text{P}+\text{H}]^+$ | P |
| | B | 20 | 604.1 | 604.8 | $[\text{P}+2\text{H}]^{2+}$ | |

TABLE B
P = Nanogastrin-hynic, coligand = tricine

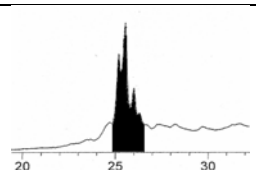
| HPLC peak selected | Method A,B,C | % of base peak | m/z calc | m/z obs | Assignment | Inferred solution species from which in originates |
|---|--------------|----------------|----------|---------|--|--|
|  | B | 100 | 777.2 | 777.5 | $[(\text{P}+\text{Tc}+\text{Tri}-5\text{H})+2\text{H}]^{2+}$ | (P+Tc+Tri-5H) |
| | B | 15 | 1553.5 | 1553.2 | $[(\text{P}+\text{Tc}+\text{Tri}-5\text{H})+\text{H}]^+$ | |
| | A | 90 | 1551.5 | 1551.4 | $[(\text{P}+\text{Tc}+\text{Tri}-5\text{H})-\text{H}]^-$ | |
| | A | 100 | 1665.5 | 1664.7 | $[(\text{P}+\text{Tc}+\text{Tri}-5\text{H}+\text{TFA})-\text{H}]^-$ | |
| | A | 80 | 1179.5 | 1778.5 | $[(\text{P}+\text{Tc}+\text{Tri}-5\text{H})+2\text{TFA}-\text{H}]^-$ | |
| | C | 100 | 1553.5 | 1553.3 | $[(\text{P}+\text{Tc}+\text{Tri}-5\text{H})+\text{H}]^+$ | |
| | C | 40 | 777.2 | 777.3 | $[(\text{P}+\text{Tc}+\text{Tri}-5\text{H})+2\text{H}]^{2+}$ | |

TABLE C

P = nanogastrin-hynic, coligand = tricine + nicotinic acid

| HPLC peak selected | Method A,B,C | % of base peak | m/z calc | m/z obs | assignment | Inferred solution species from which in originates |
|--------------------|--------------|----------------|----------|---------|-----------------------------------|--|
| | B | 100 | 846.8 | 846.9 | $[(P+O+Tc+Tri+Nic-5H)+2H]^{2+}$ | (P+O+Tc+Nic-5H) |
| | B | 2 | 1692.5 | 1692.2 | $[(P+O+Tc+Tri+Nic-5H)+H]^+$ | |
| | A | 100 | 1690.5 | 1690.3 | $[(P+O+Tc+Tri+Nic-5H)-H]^-$ | |
| | A | 30 | 1804.5 | 1803.0 | $[(P+O+Tc+Tri+Nic+TFA-5H)-H]^-$ | (P+Tc+Tri-5H) |
| | A | 25 | 1551.5 | 1551.0 | $[(P+Tc+Tri-5H)-H]^-$ | |
| | B | 100 | 839.2 | 838.9 | $[(P+Tc+Tri+Nic-5H)+2H]^{2+}$ | (P+Tc+Tri+Nic-5H) |
| | B | 30 | 1676.5 | 1677.3 | $[(P+Tc+Tri+Nic-5H)+H]^+$ | |
| | A | 100 | 1674.5 | 1674.3 | $[(P+Tc+Tri+Nic-5H)-H]^-$ | |
| | A | 15 | 1788.5 | 1787.0 | $[(P+Tc+Tri+Nic+TFA-H)]^-$ | (P+Tc+Tri+2Nic-5H) |
| | C | 100 | 839.2 | 838.9 | $[(P+Tc+Tri+Nic-5H)+2H]^{2+}$ | |
| | C | 10 | 1676.5 | 1676.1 | $[(P+Tc+Tri+Nic-5H)+H]^+$ | (P+Tc+Tri+2Nic-5H) |
| | B | 25 | | 1118.0 | ? | |
| | B | 15 | 899.8 | 900.2 | $[(P+Tc+Tri+2Nic-5H)+2H]^{2+}$ | |
| | C | 30 | 899.8 | 900.6 | $[(P+Tc+Tri+2Nic-5H)+2H]^{2+}$ | |
| | C | 2 | 1799.5 | 1799.9 | $[(P+Tc+Tri+2Nic-5H)+2H]^{2+}$ | |
| | B | 100 | | 1115.5 | ? | (P-H2O+Tc+Tri+Nic-5H) |
| | B | 50 | 829.8 | 829.9 | $[(P+Tc+Tri+Nic-H2O-5H)+2H]^{2+}$ | |
| | A | 80 | 1656.5 | 1656.3 | $[(P+Tc+Tri+Nic-H2O-5H)-H]^-$ | (P+Tc+Tri+Nic-5H) |
| | A | 40 | 1674.5 | 1674.2 | $[(P+Tc+Tri+Nic-5H)-H]^-$ | |
| | A | 35 | 1770.5 | 1768.9 | $[(P+Tc+Tri+Nic+TFA-5H)-H]^-$ | |
| | B | 45 | 839.2 | 838.8 | $[(P+Tc+Tri+Nic-5H)+2H]^{2+}$ | (P+Tc+Tri+Nic-5H) |
| | A | 100 | | 1340.5 | ? | |
| | B | 100 | 866.8 | 867.0 | $[(P+Tc+2Tri-5H)+H]^+$ | (P+Tc+2Tri-5H) |
| | A | 100 | 1730.6 | 1731.4 | $[(P+Tc+2Tri-5H)-H]^-$ | (P+Tc+Tri+Nic-5H) |
| | B | 45 | 839.2 | 838.9 | $[(P+Tc+Tri+Nic-5H)+2H]^{2+}$ | |
| | B | 25 | | 1043.2 | ? | (P+Tc+Tri+Nic-5H) |
| | B | 20 | | 930.1 | ? | |
| | A | 20 | | 1843.3 | ? | |
| | B | 100 | | 1128.2 | ? | (P+Tc+Tri+Nic-5H) |
| | B | 40 | | 838.8 | ? | |

TABLE D

P = NG-HYNIC, coligand = Tricine+EDDA

| HPLC peak selected | Method A,B,C | % of base peak | m/z calc | m/z obs | assignment | Inferred solution species from which in originates |
|--------------------|--------------|----------------|----------|---------|-----------------------------|--|
| | B | 100 | 863.8 | 864.0 | $[(P+Tc+2EDDA-5H)+2H]^{2+}$ | P+Tc+2EDDA-5H |
| | B | 12 | 1726.6 | 1726.2 | $[(P+Tc+2EDDA-5H)+H]^+$ | |
| | A | 70 | 1724.6 | 1724.3 | $[(P+Tc+2EDDA-5H)-H]^-$ | |
| | A | 35 | 1838.6 | 1838.5 | $[(P+Tc+2EDDA+TFA-5H)-H]^-$ | (P+Tc+EDDA-5H) |
| | C | 100 | 863.8 | 863.9 | $[(P+Tc+2EDDA-5H)+2H]^{2+}$ | |
| | C | 7 | 1726.6 | 1726.1 | $[(P+Tc+2EDDA-5H)+H]^+$ | (P+Tc+EDDA-5H) |
| | B | 3 | 1550.5 | 1550.2 | $[(P+Tc+EDDA-5H)+H]^+$ | |
| | C | 3 | 1550.5 | 1551.3 | $[(P+Tc+EDDA-5H)+H]^+$ | |
| | B | 20 | | 1151.4 | ? | |
| | A | 100 | | 1376.8 | ? | |
| | A | 65 | | 1263.6 | ? | (P+Tc+EDDA-5H) |
| | B | 100 | | 668.9 | ? | |
| | B | 60 | | 863.9 | ? | (P+Tc+EDDA-5H) |
| | B | 45 | | 1017.3 | ? | |
| | B | 35 | | 1336.4 | ? | |
| | A | 100 | | 1334.5 | ? | (P+Tc+EDDA-5H) |
| | A | 80 | | 1447.6 | ? | |

TABLE E
P = NG-HYBA, coligand = tricine

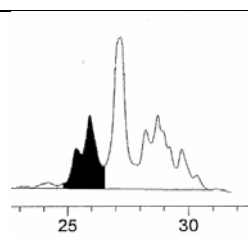
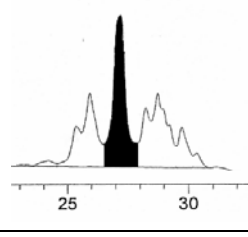
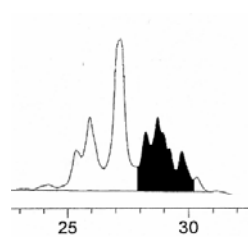
| HPLC peak selected | Method A,B,C | % of base peak | m/z calc | m/z obs | assignment | Inferred solution species from which in originates |
|---|--|----------------|----------|---------|-------------------------------|--|
|  | A | 100 | 1550.5 | 1550.3 | $[(P+Tc+Tri-5H)-H]^-$ | [P+Tc+Tri-5H] |
| | A | 95 | 1664.5 | 1663.7 | $[(P+Tc+Tri+TFA-5H)-H]^-$ | |
| | B | 100 | 797.3 | 797.3 | $[(P+Tc+Tri+ACN-5H)+2H]^{2-}$ | |
| | B | 15 | 776.8 | 776.9 | $[(P+Tc+Tri-5H)+2H]^{2-}$ | |
| | B | 5 | 1552.5 | 1552.2 | $[(P+Tc+Tri-5H)+H]^-$ | |
| | B | 3 | 1593.5 | 1593.4 | $[(P+Tc+Tri+ACN-5H)+H]^-$ | |
| | A | 35 | | 1704.5 | ? | |
| | A | 30 | | 1818.5 | ? | |
|  | A | 100 | 1550.5 | 1550.4 | $[(P+Tc+Tri-5H)-H]^-$ | [P+Tc+Tri-5H] |
| | A | 25 | 1664.5 | 1663.2 | $[(P+Tc+Tri+TFA-5H)H]^-$ | |
| | B | 40 | 776.8 | 777.0 | $[(P+Tc+Tri-5H)+2H]^{2-}$ | |
| | B | 20 | | 1552.3 | $[(P+Tc+Tri-5H)+H]^+$ | |
| | A | 25 | 1729.6 | 1729.2 | $[(P+Tc+2Tri-5H)-H]^-$ | [P+Tc+2Tri-5H] |
| | B | 100 | 866.3 | 866.4 | $[(P+Tc+2Tri-5H)+2H]^{2+}$ | |
| | B | 20 | 1731.6 | 1732.1 | $[(P+Tc+2Tri-5H)+H]^+$ | |
| | A | 25 | | 1859.2 | ? | |
| | A | 20 | | 1745.8 | ? | |
| | A | 50 | | 1704.6 | ? | |
| | A | 30 | | 1436.5 | ? | |
| | B | 30 | | 1719.8 | ? | |
| | B | 25 | | 817.8 | ? | |
| |  | A | 100 | | 1375.9 | ? |
| A | | 65 | | 1418.7 | ? | |
| A | | 15 | | 1460.5 | ? | |
| A | | 100 | | 1333.4 | ? | |
| A | | 85 | | 1446.6 | ? | |
| A | | 40 | | 1460.9 | ? | |
| A | | 35 | | 1347.5 | ? | |
| A | | 100 | | 1387.7 | ? | |
| A | | 55 | | 1274.6 | ? | |
| A | | 100 | | 1444.6 | ? | |
| A | | 85 | | 1331.5 | ? | |
| A | | 100 | | 1444.8 | ? | |
| A | | 95 | | 1331.5 | ? | |
| B | | 100 | | 1335.4 | ? | |
| B | | 70 | | 1349.4 | ? | |
| B | | 50 | | 668.4 | ? | |
| B | | 40 | | 632.9 | ? | |

TABLE F

P = NG-HYBA, coligand = Tricine + Nicotinic acid

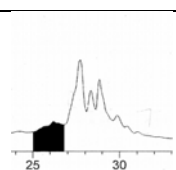
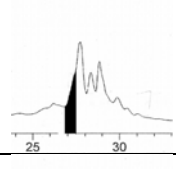
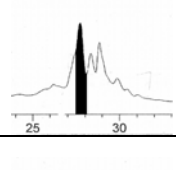
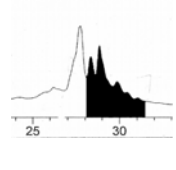
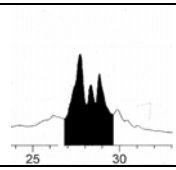
| HPLC peak selected | Method A,B,C | % of base peak | m/z calc | m/z obs | assignment | Inferred solution species from which in originates |
|--|--------------|----------------|----------|---------|---------------------------------|--|
|  | A | 100 | 1275.5 | 1275.5 | $[(P-2H)-H]^-$ | [P-2H] |
| | A | 60 | 1389.5 | 1388.6 | $[(P+TFA-2H)-H]^-$ | |
| | A | 65 | | 1811.8 | ? | |
|  | A | 100 | | 1256.9 | ? | |
| | A | 70 | | 1370.3 | ? | |
| | A | 70 | | 1437.5 | ? | |
| | A | 70 | | 1549.9 | ? | |
| | A | 50 | | 1462.7 | ? | |
|  | A | 100 | 1796.5 | 1795.9 | $[(P+Tc+Tri+2Nic-5H)-5H]^-$ | [P+Tc+Tri+2Nic-5H] |
| | A | 20 | 1910.5 | 1909.1 | $[(P+Tc+Tri+2Nic+TFA-5H)-5H]^-$ | |
| | A | 45 | 1673.5 | 1673.2 | $[(P+Tc+Tri+Nic-5H)-5H]^-$ | [P+Tc+Tri+Nic-5H] |
| | A | 25 | 1550.5 | 1550.6 | $[(P+Tc+Tri)-5H]^-$ | [P+Tc+Tri-5H] |
|  | A | 100 | | 1375.8 | ? | |
| | A | 80 | | 1262.6 | ? | |
| | A | 55 | | 1418.7 | ? | |
| | A | 45 | | 1305.6 | ? | |
| | A | 100 | | 1333.4 | ? | |
| | A | 95 | | 1456.7 | ? | |
| | A | 80 | | 1343.5 | ? | |
| | A | | | 1446.4 | ? | |
| | A | 100 | | 1403.6 | ? | |
| | A | | | 1440.7 | ? | |
|  | B | 100 | 899.8 | 899.7 | $[(P+Tc+Tri+2Nic-5H)+2H]^{2+}$ | [P+Tc+Tri+2Nic-5H] |
| | B | 3 | 1798.6 | 1799.1 | $[(P+Tc+Tri+2Nic-5H)+H]^+$ | |
| | C | 100 | 899.8 | 899.6 | $[(P+Tc+Tri+2Nic-5H)+2H]^{2+}$ | |
| | B | 40 | 838.3 | 838.8 | $[(P+Tc+Tri+Nic-5H)+2H]^{2+}$ | [P+Tc+Tri+Nic-5H] |
| | B | 3 | 1675.5 | 1677.3 | $[(P+Tc+Tri+Nic-5H)+H]^+$ | |
| | B | | | | | |
| | C | 70 | 838.3 | 838.5 | $[(P+Tc+Tri+Nic-5H)+2H]^{2+}$ | |

TABLE G
P = NG-HYBA, coligand = tricine + EDDA

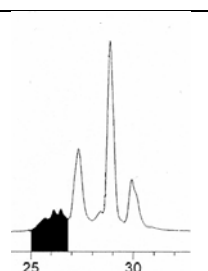
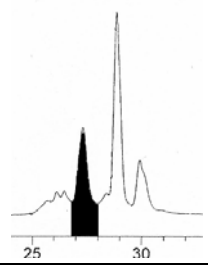

| HPLC peak selected | Method A,B,C | % of base peak | m/z calc | m/z obs | Assignment | Inferred solution species from which in originates |
|---|--|----------------|----------|---------|-----------------------------|--|
|  | B | 100 | 775.2 | 775.4 | $[(P+Tc+EDDA-5H)+2H]^{2+}$ | [P+Tc+EDDA-5H] |
| | B | 10 | 1549.5 | 1549.3 | $[(P+Tc+EDDA-5H)+H]^+$ | |
| | A | 100 | 1661.5 | 1660.7 | $[(P+Tc+EDDA+TFA-5H)-H]^-$ | |
| | A | 35 | 1547.5 | 1547.4 | $[(P+Tc+EDDA-5H)-H]^-$ | |
| | C | 100 | 775.2 | 775.2 | $[(P+Tc+EDDA-5H)+2H]^{2+}$ | |
| | C | 20 | 1549.5 | 1549.4 | $[(P+Tc+EDDA-5H)+H]^+$ | |
| | A | 20 | 1389.5 | 1388.6 | $[(P-2H+TFA)-H]^-$ | [P-2H] |
|  | B | 100 | 863.3 | 863.5 | $[(P+Tc+2EDDA-5H)+2H]^{2+}$ | [P+Tc+2EDDA-5H] |
| | B | 50 | 1725.6 | 1725.3 | $[(P+Tc+2EDDA-5H)+H]^+$ | |
| | A | 100 | 1723.6 | 1723.3 | $[(P+Tc+2EDDA-5H)-H]^-$ | |
| | A | 25 | 1837.6 | 1835.9 | $[(P+Tc+2EDDA+TFA-5H)-H]^-$ | |
| | C | 100 | 863.3 | 863.3 | $[(P+Tc+2EDDA-5H)+2H]^{2+}$ | |
| | C | 10 | 1725.6 | 1725.1 | $[(P+Tc+2EDDA-5H)+H]^+$ | |
| | B | 60 | 1549.5 | 1549.3 | $[(P+Tc+EDDA-5H)+H]^+$ | [P+Tc+EDDA-5H] |
| | B | 20 | | 676.4 | ? | |
| | B | 20 | | 1351.4 | ? | |
| | B | 20 | | 1281.3 | ? | |
| | A | 70 | | 1462.6 | ? | |
| | A | 55 | | 1349.4 | ? | |
| |  | B | 100 | | 1336.0 | ? |
| B | | 20 | | 668.4 | ? | |
| B | | 5 | | 1781.0 | ? | |
| A | | 100 | | 1333.5 | ? | |
| A | | 90 | | 1446.6 | ? | |
| A | | 3 | | 1583.5 | ? | |
| B | | 100 | | 1335.5 | ? | |
| B | | 40 | | 668.4 | ? | |
| B | | 20 | | 1249.4 | ? | |
| A | | 100 | | 1333.5 | ? | |
| A | | 60 | | 1446.6 | ? | |
| A | | 35 | | 1416.8 | ? | |
| A | | 25 | | 1303.6 | ? | |

TABLE H
P = HYNIC-[gly⁸]nanogastrin, coligand = tricine

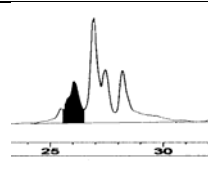
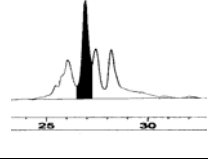
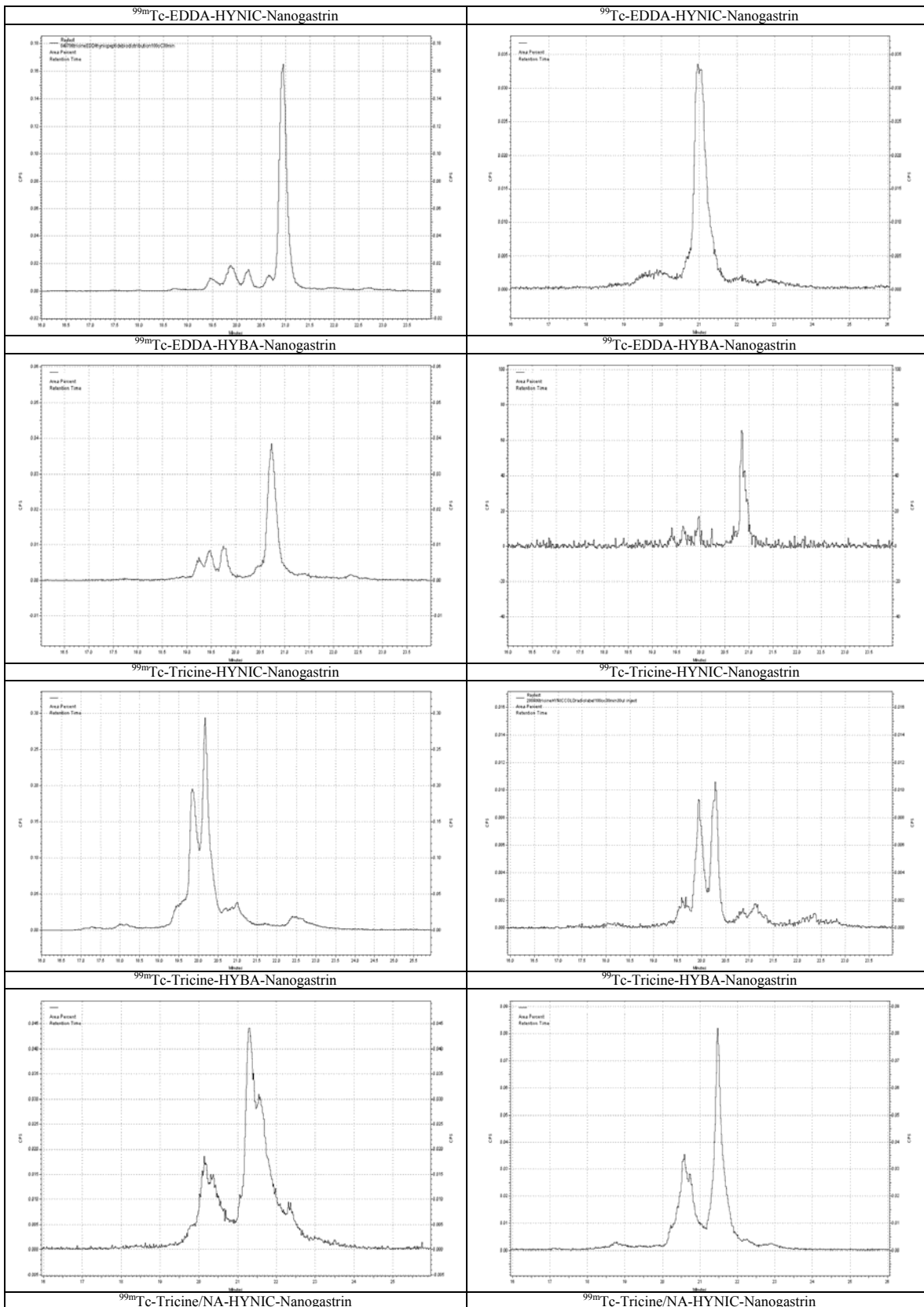
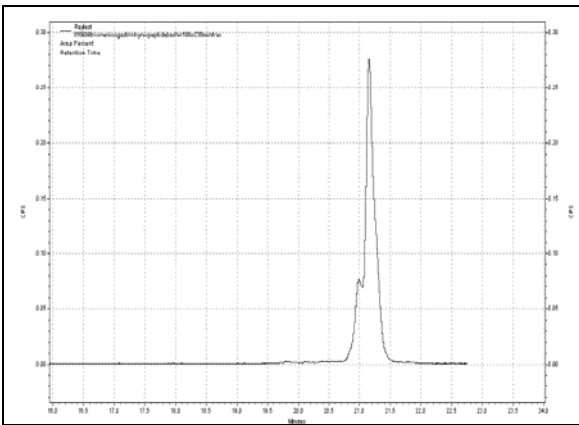
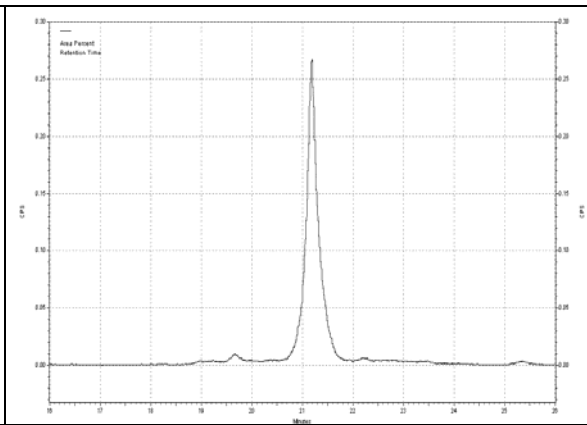
| HPLC peak selected | Method A,B,C | % of base peak | m/z calc | m/z obs | Assignment | Inferred solution species from which in originates |
|---|--------------|----------------|----------|---------|----------------------------|--|
|  | C | 100 | 741.1 | 741.5 | $[(P+Tc+Tri-5H)+2H]^{2+}$ | [P+Tc+Tri-5H] |
| | C | 40 | 1481.2 | 1481.3 | $[(P+Tc+Tri-5H)+H]^+$ | |
|  | C | 100 | 741.1 | 741.9 | $[(P+Tc+Tri-5H)+2H]^{2+}$ | [P+Tc+2Tri-5H] |
| | C | 70 | 1481.2 | 1482.4 | $[(P+Tc+Tri-5H)+H]^+$ | |
| | C | 100 | 830.6 | 830.7 | $[(P+Tc+2Tri-5H)+2H]^{2+}$ | |
| | C | 15 | 1660.2 | 1660.9 | $[(P+Tc+2Tri-5H)+H]^+$ | |

Table I. RP-HPLC analysis – Radiometric traces (Method 2) of ^{99m}Tc and ^{99}Tc labeled peptides

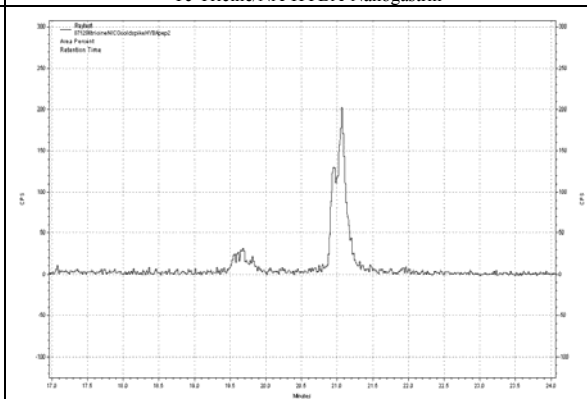
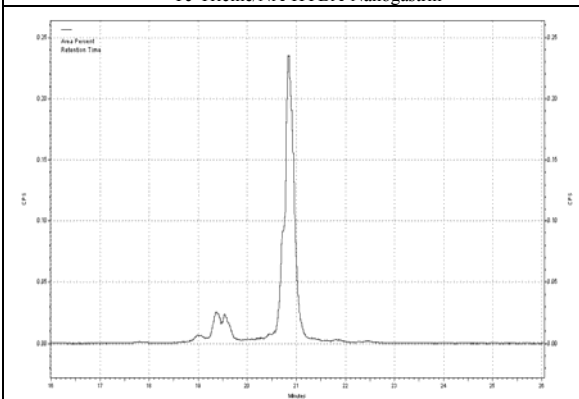




^{99m}Tc-Tricine/NA-HYBA-Nanogastrin



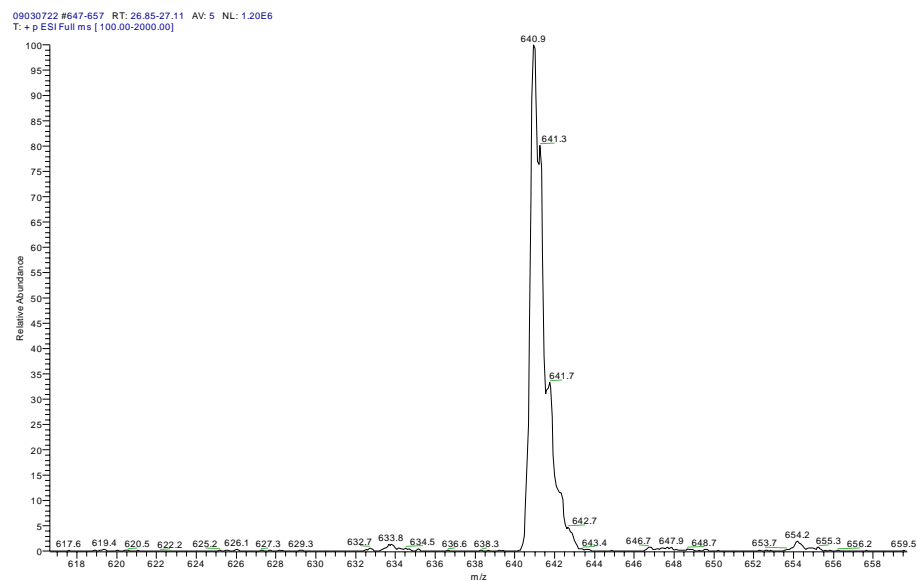
^{99m}Tc-Tricine/NA-HYBA-Nanogastrin



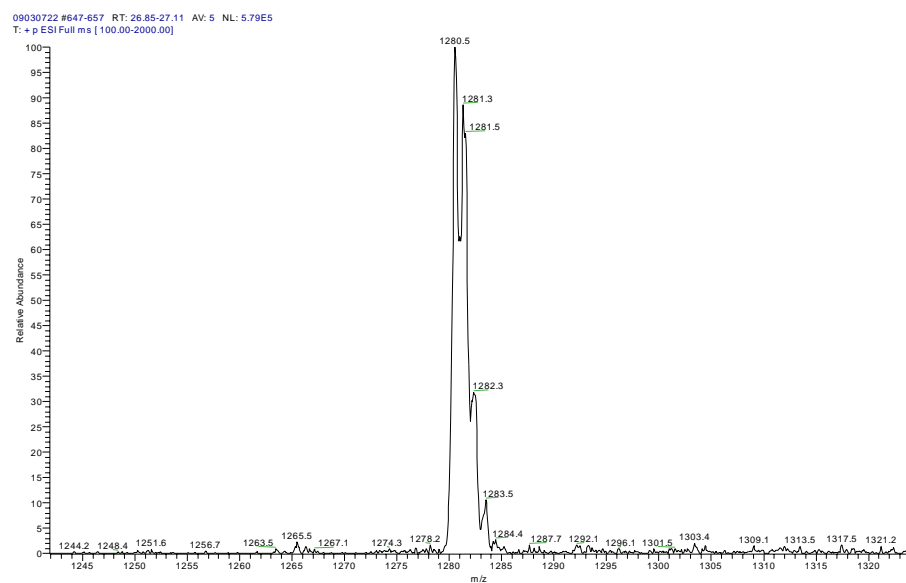
Figure

High resolution detail of molecular ions to demonstrate confidence in number of protons displaced during Tc-binding

HYNIC-gastrin, $[M+2H]^{2+}$

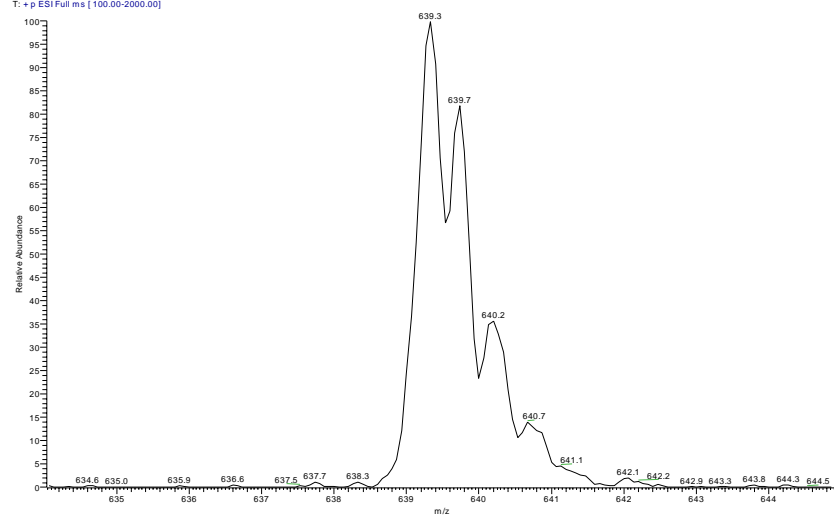


HYNIC-gastrin, $[M+H]^+$



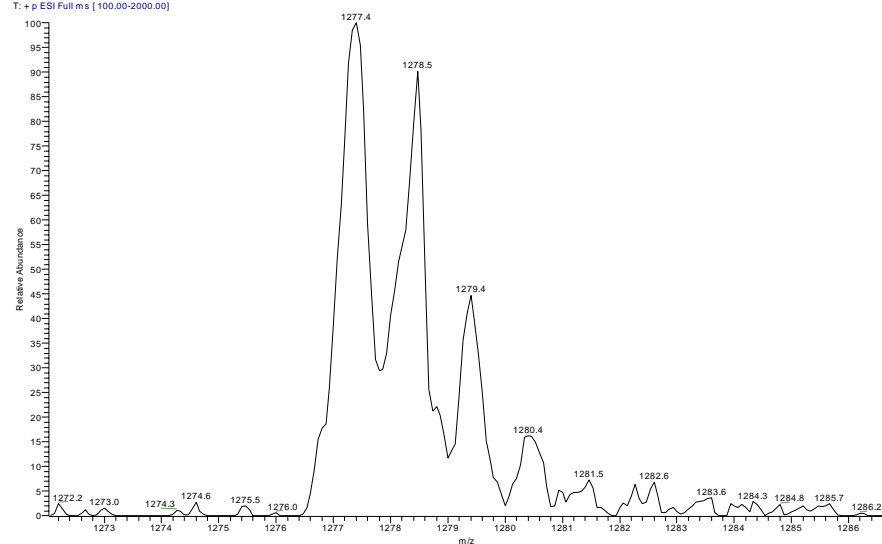
HYBA-gastrin, [M+2H]²⁺

09030723 #661-667 RT: 25.82-26.04 AV: 4 NL: 6.07E4
T: + p ESI Full ms [100.00-2000.00]



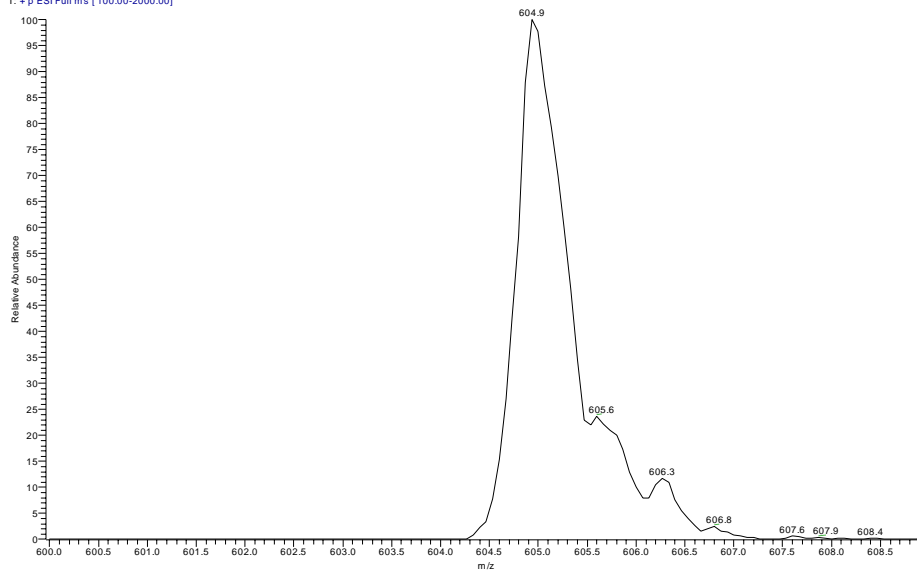
HYBA-gastrin, [M+H]⁺

09030723 #661-667 RT: 25.82-26.04 AV: 4 NL: 2.34E4
T: + p ESI Full ms [100.00-2000.00]



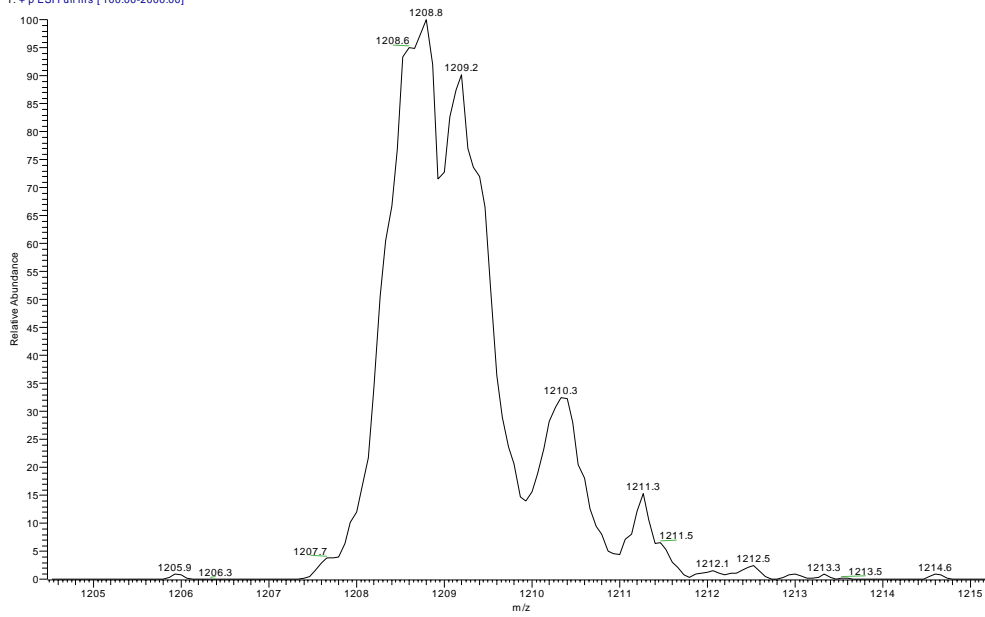
HYNIC-[Gly⁸-gastrin], [M+2H]²⁺

26030701 #485 RT: 22.90 AV: 1 NL: 2.03E6
T: + p ESI Full ms [100.00-2000.00]

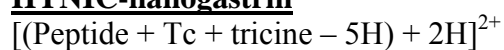


HYNIC-[Gly⁸-gastrin], [M+H]⁺

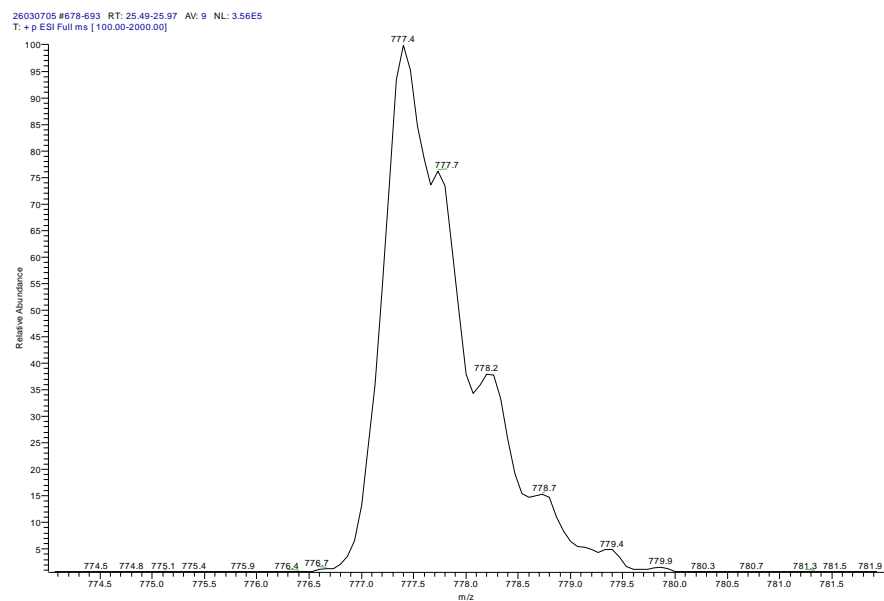
26030701 #485 RT: 22.90 AV: 1 NL: 1.24E6
T: + p ESI Full ms [100.00-2000.00]



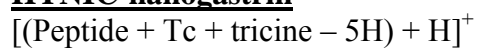
HYNIC-nanogastrin



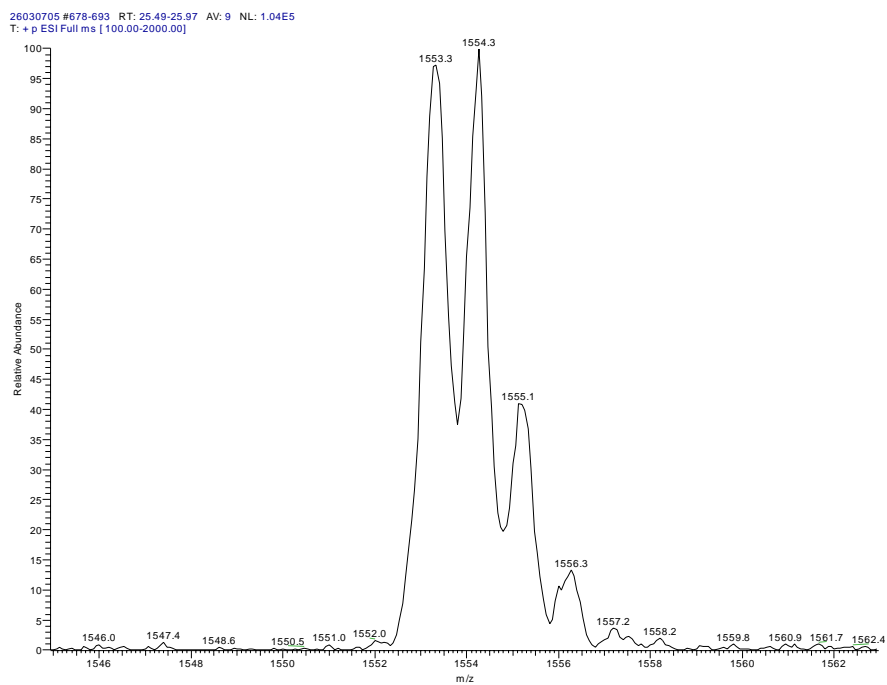
$m/z = 777.4$



HYNIC-nanogastrin



$m/z = 1553.3$

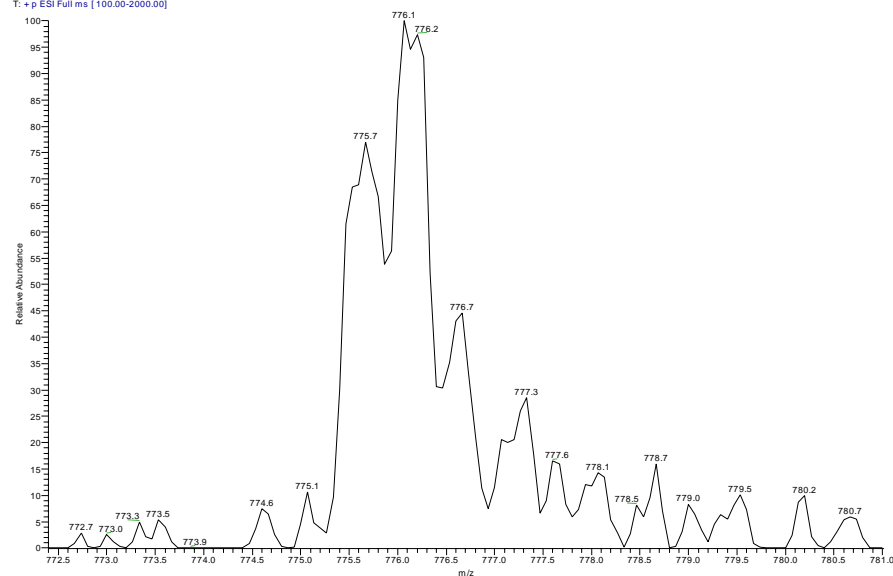


HYNIC-nanogastrin

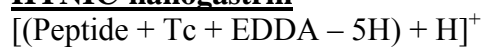


$m/z = 775.7$

09030720 #538-542 RT: 25.88-26.08 AV: 5 NL: 4.40E3
T: + p ESI Full ms [100.00-2000.00]

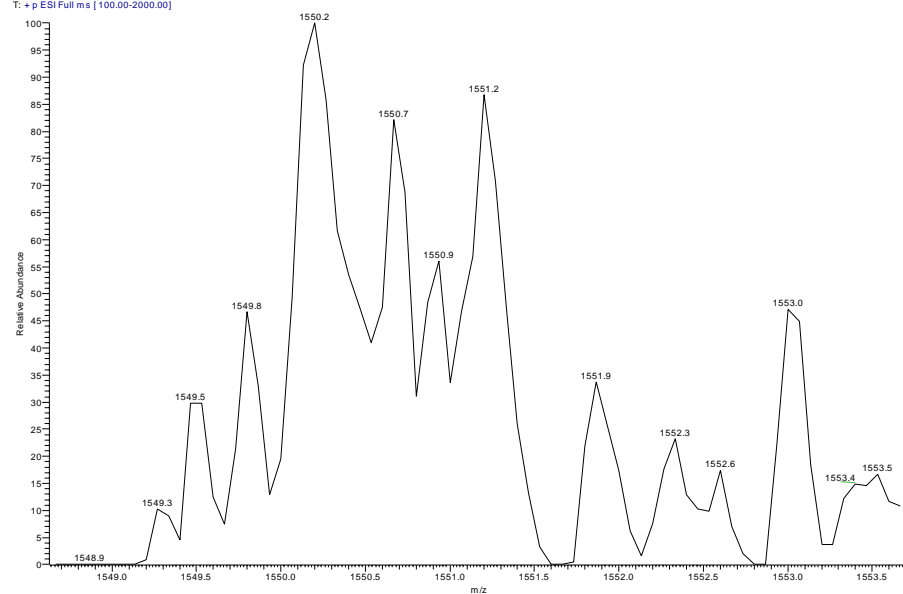


HYNIC-nanogastrin



$m/z = 1550.2$

09030720 #538-542 RT: 25.88-26.08 AV: 5 NL: 1.50E3
T: + p ESI Full ms [100.00-2000.00]

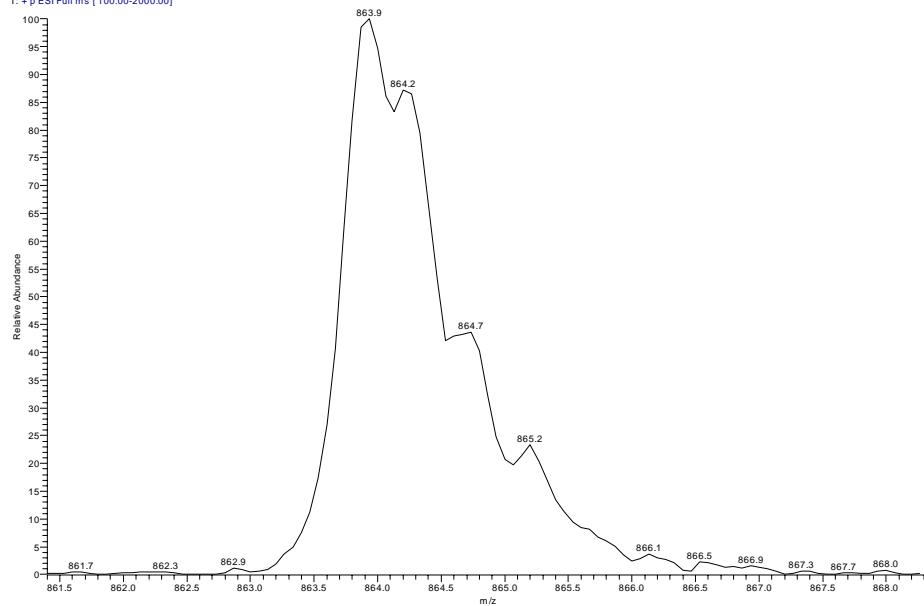


HYNIC-nanogastrin

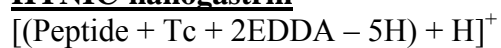


$m/z = 863.9$

09030720 #560-566 RT: 26.98-27.25 AV: 6 NL: 9.21E4
T: + p ESI Full ms [100.00-2000.00]

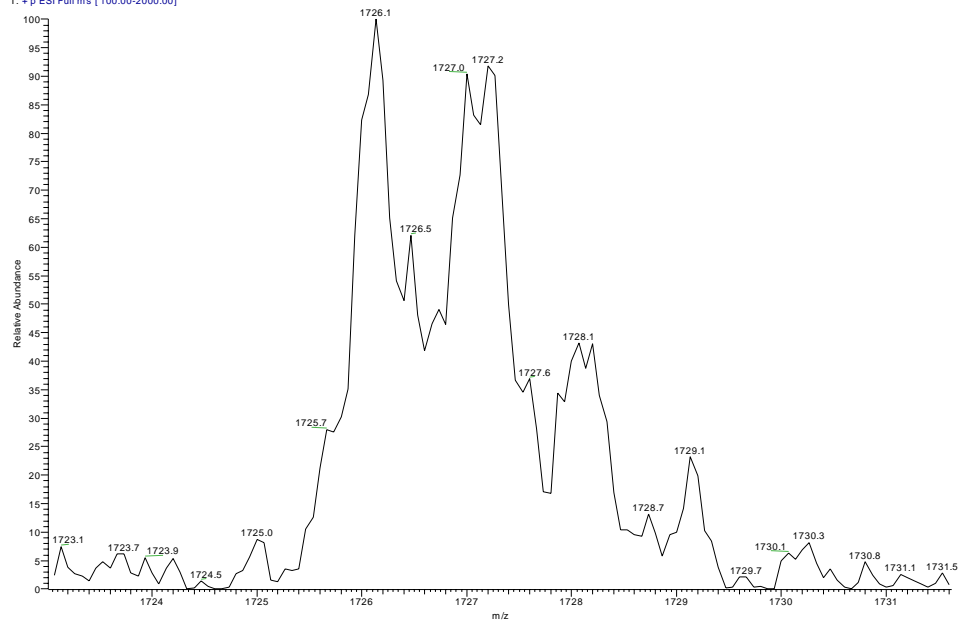


HYNIC-nanogastrin



$m/z = 1726.1$

09030720 #566-571 RT: 27.25-27.45 AV: 4 NL: 1.04E4
T: + p ESI Full ms [100.00-2000.00]

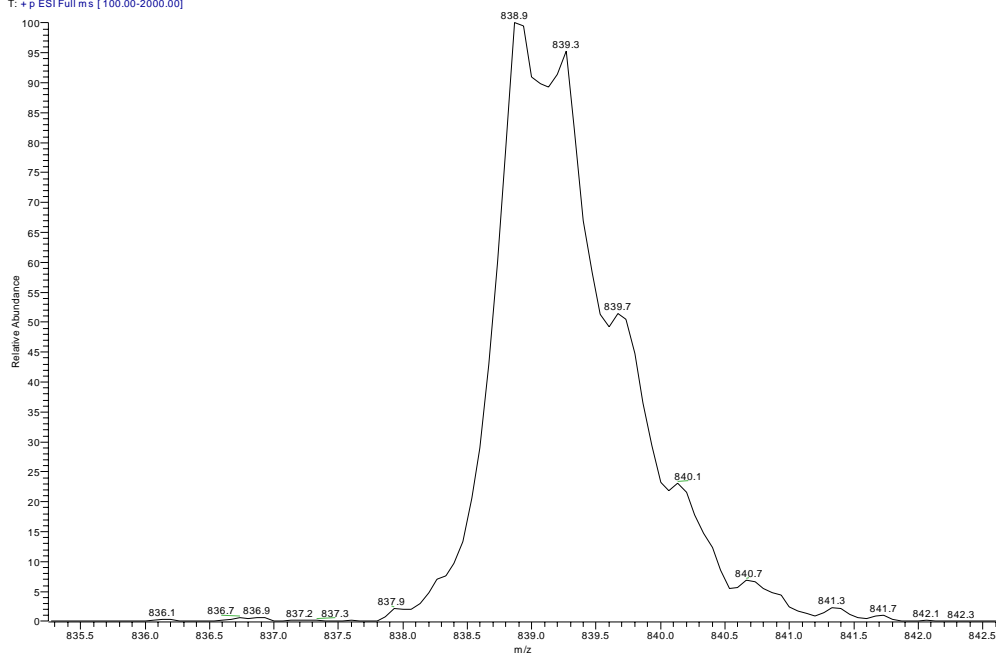


HYNIC-nanogastrin

$[(\text{Peptide} + \text{Tc} + \text{tricine} + \text{nic} - 5\text{H}) + 2\text{H}]^{2+}$

$m/z = 838.9$

09030718 #578-584 RT: 27.47-27.67 AV: 4 NL: 1.54E5
T: + p ESI Full ms [100.00-2000.00]

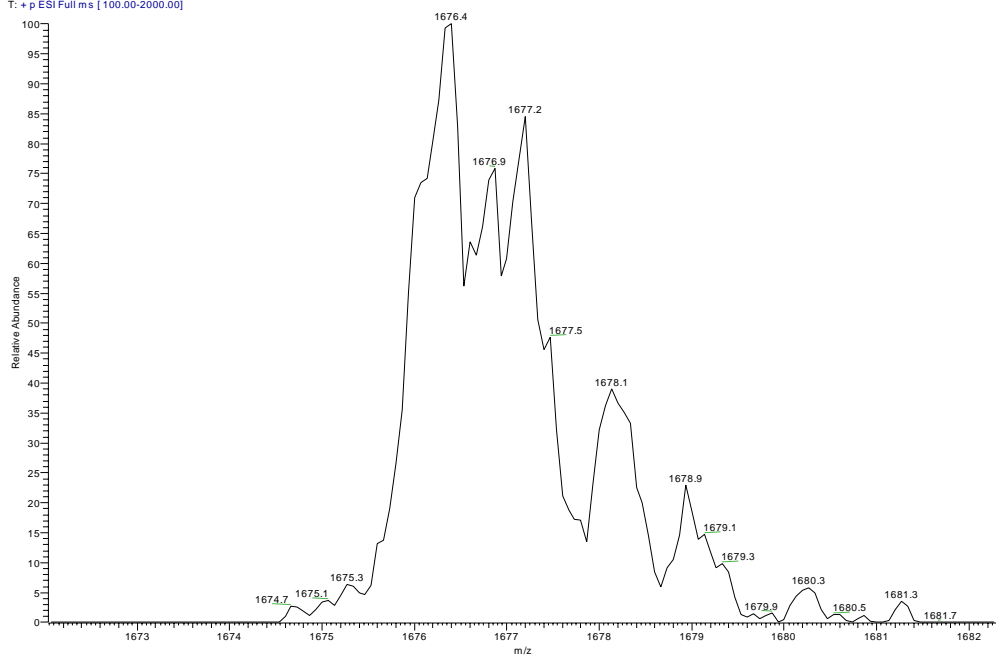


HYNIC-nanogastrin

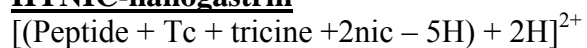
$[(\text{Peptide} + \text{Tc} + \text{tricine} + \text{nic} - 5\text{H}) + 2\text{H}]^{2+}$

$m/z = 1676.4$

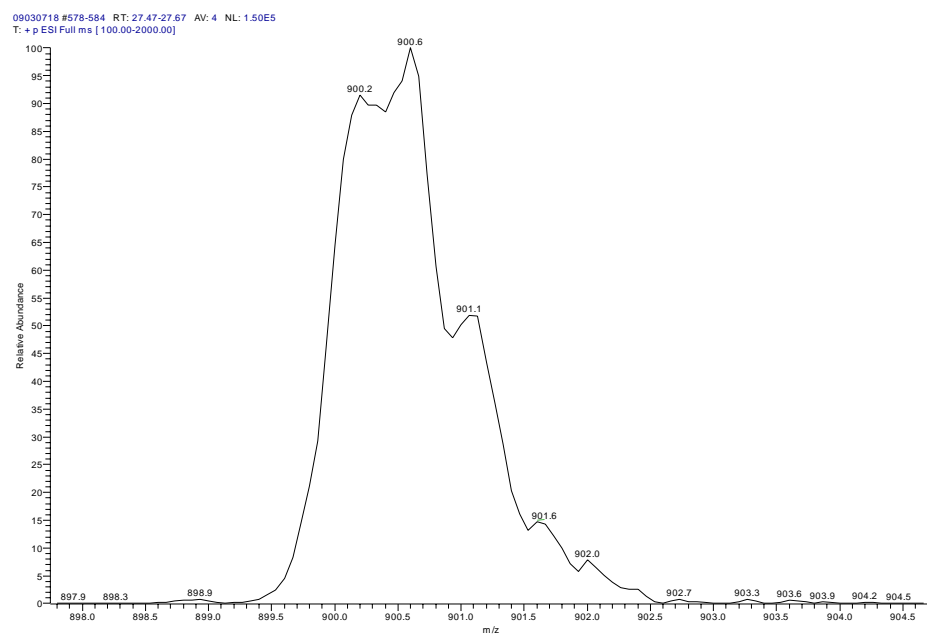
09030718 #578-584 RT: 27.47-27.67 AV: 4 NL: 2.30E4
T: + p ESI Full ms [100.00-2000.00]



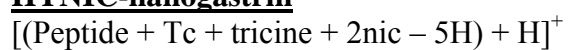
HYNIC-nanogastrin



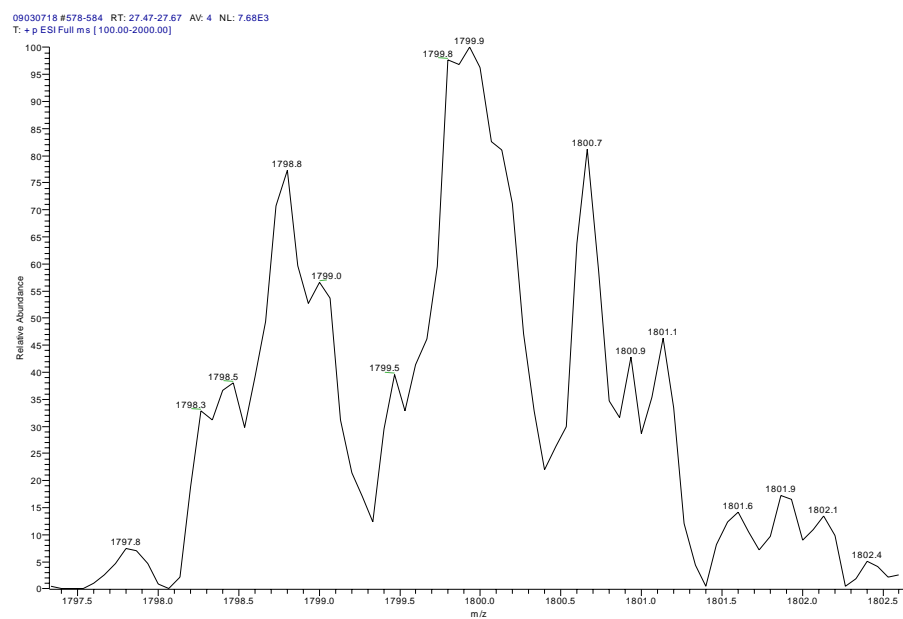
$m/z = 900.2$



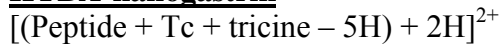
HYNIC-nanogastrin



$m/z = 1798.8$

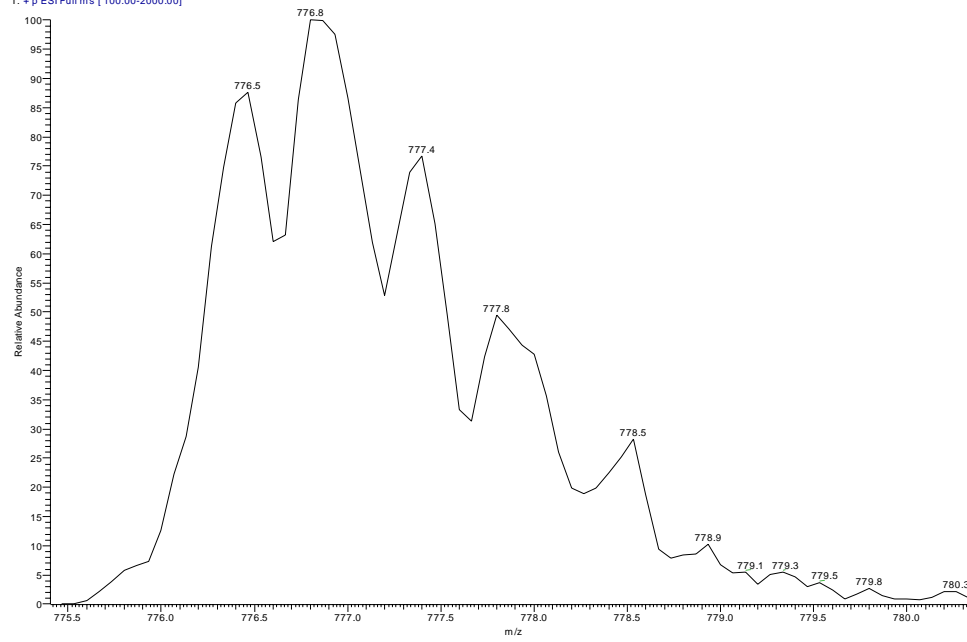


HYBA-nanogastrin

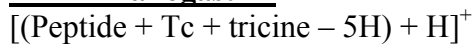


m/z = 776.8

26030706 #653-660 RT: 26.81-27.16 AV: 8 NL: 1.55E4
T: +p ESI Full ms [100.00-2000.00]

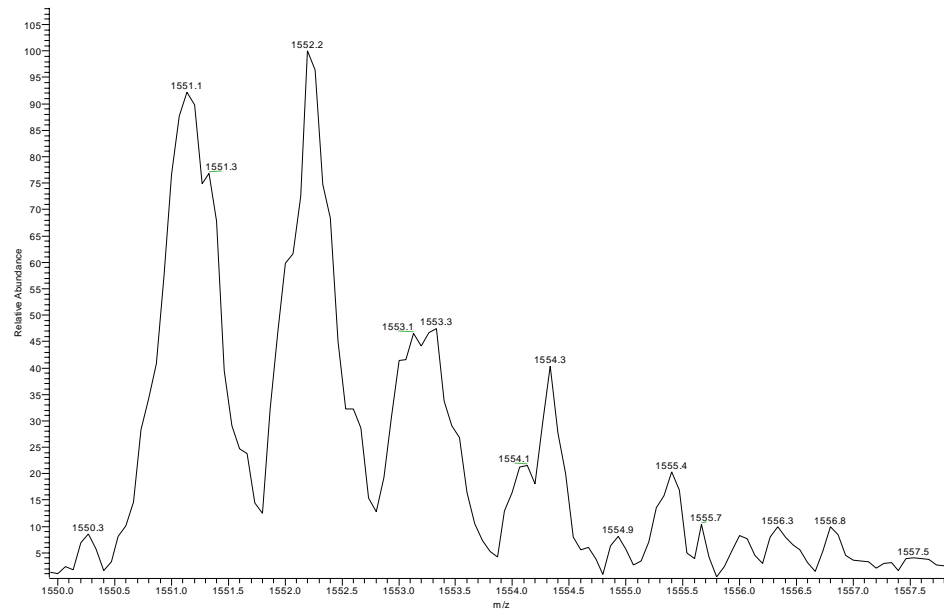


HYBA-nanogastrin

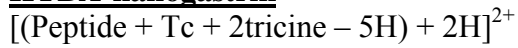


m/z = 1552.2

26030706 #653-660 RT: 26.81-27.16 AV: 8 NL: 5.76E3
T: +p ESI Full ms [100.00-2000.00]

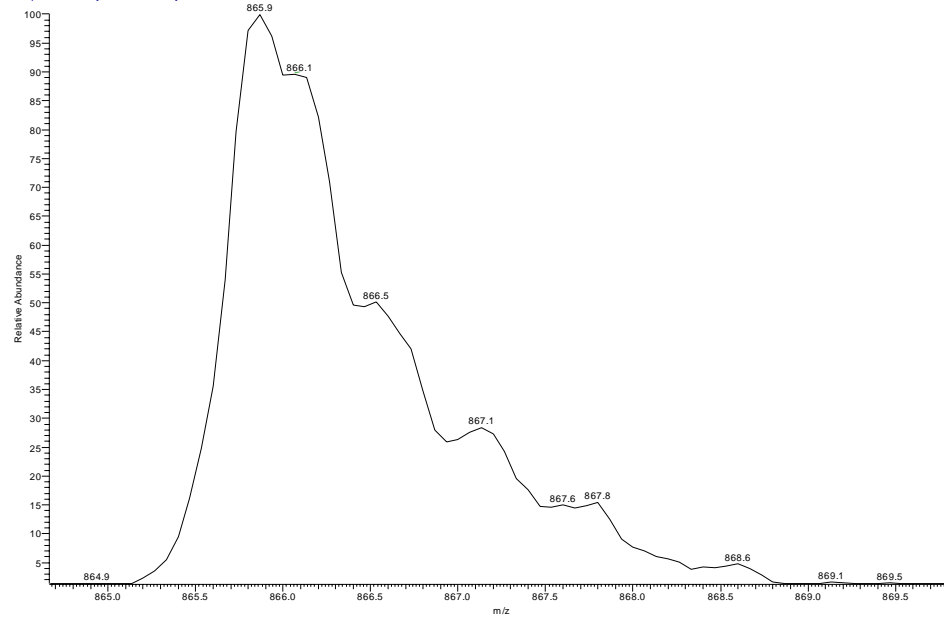


HYBA-nanogastrin

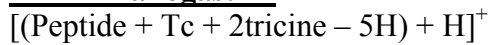


m/z = 865.9

26030706 #636-645 RT: 26.01-26.42 AV: 9 NL: 7.78E4
T: +P ESI Full ms [100.00-2000.00]

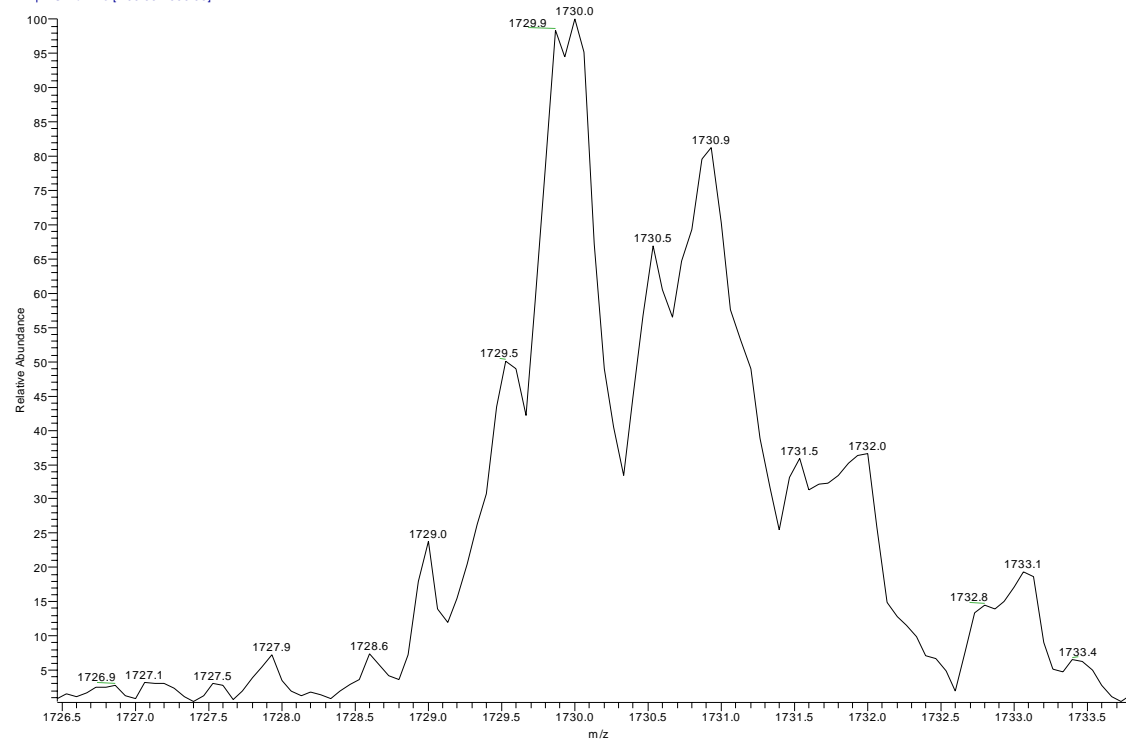


HYBA-nanogastrin



m/z = 1729.9

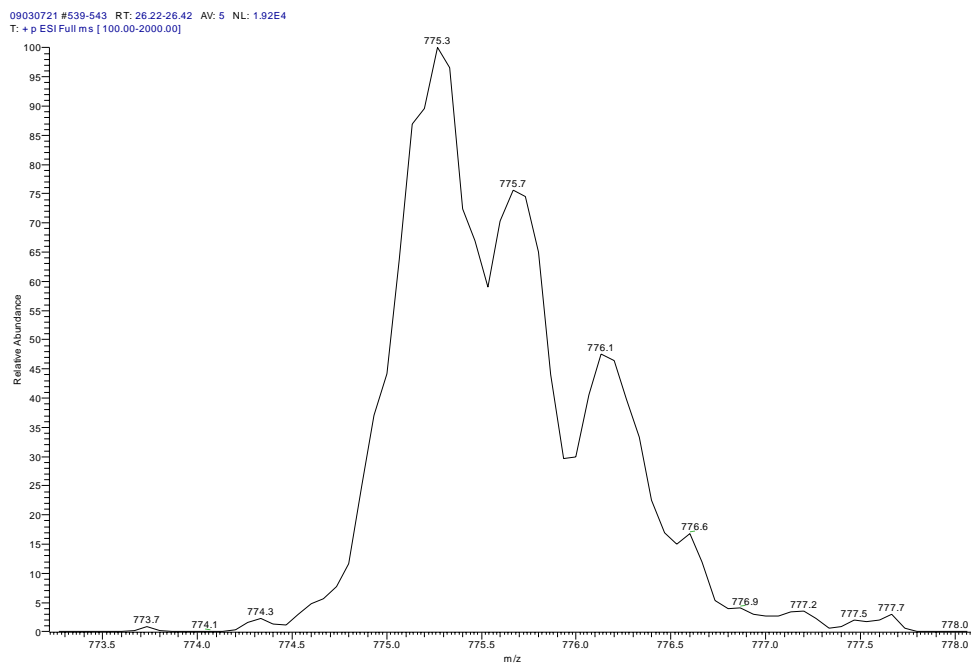
26030706 #636-645 RT: 26.01-26.42 AV: 9 NL: 1.01E4
T: +P ESI Full ms [100.00-2000.00]



HYBA-nanogastrin

$[(\text{Peptide} + \text{Tc} + \text{EDDA} - 5\text{H}) + 2\text{H}]^{2+}$

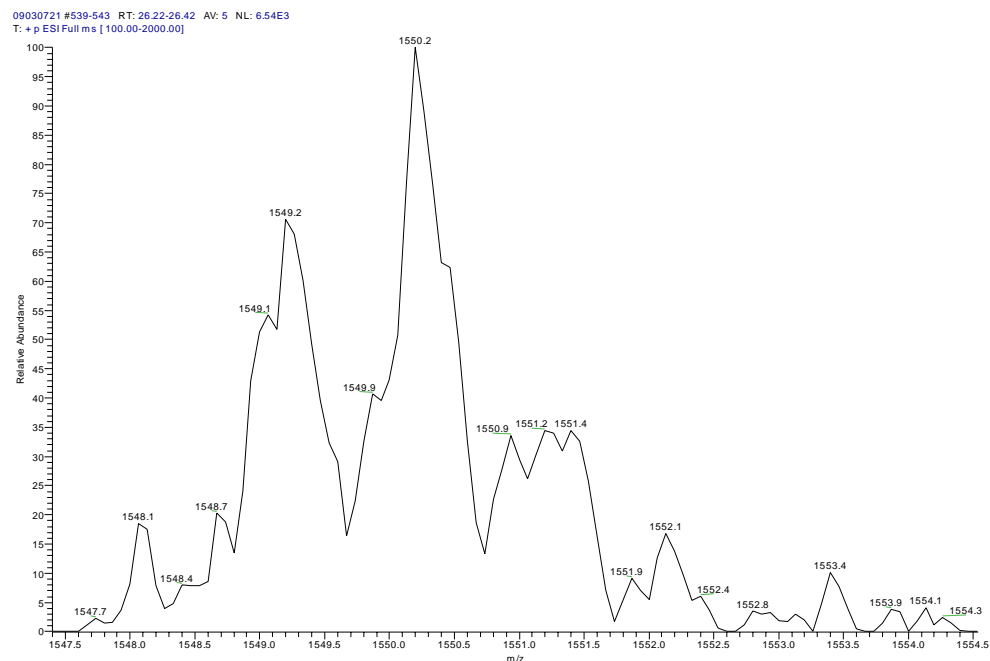
$m/z = 775.3$



HYBA-nanogastrin

$[(\text{Peptide} + \text{Tc} + \text{EDDA} - 5\text{H}) + \text{H}]^+$

$m/z = 1549.1$

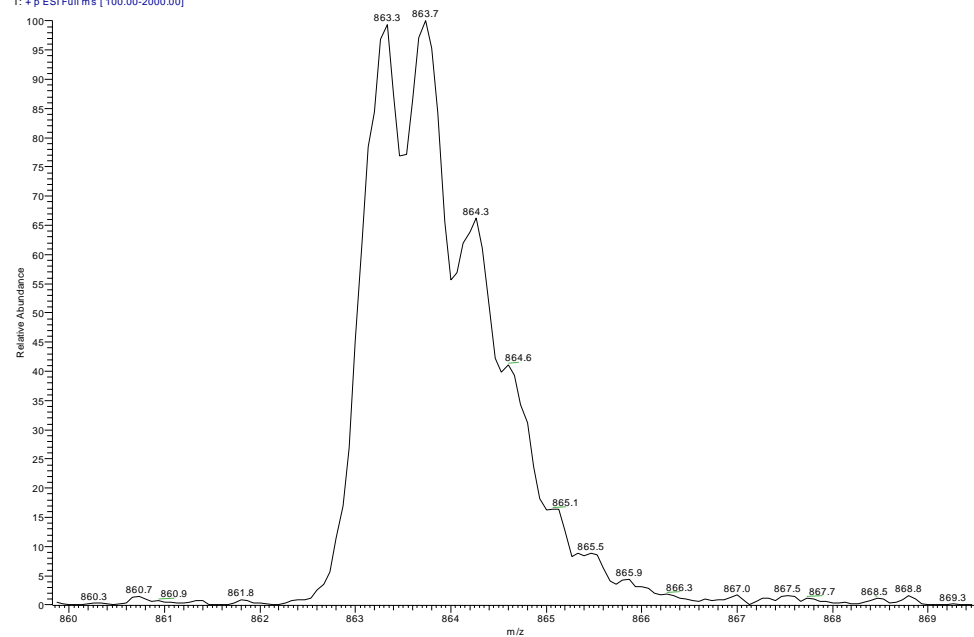


HYBA-nanogastrin

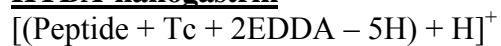


$m/z = 863.3$

09030721 #555-565 RT: 27.02-27.51 AV: 11 NL: 3.17E4
T: + p ESI Full ms [100.00-2000.00]

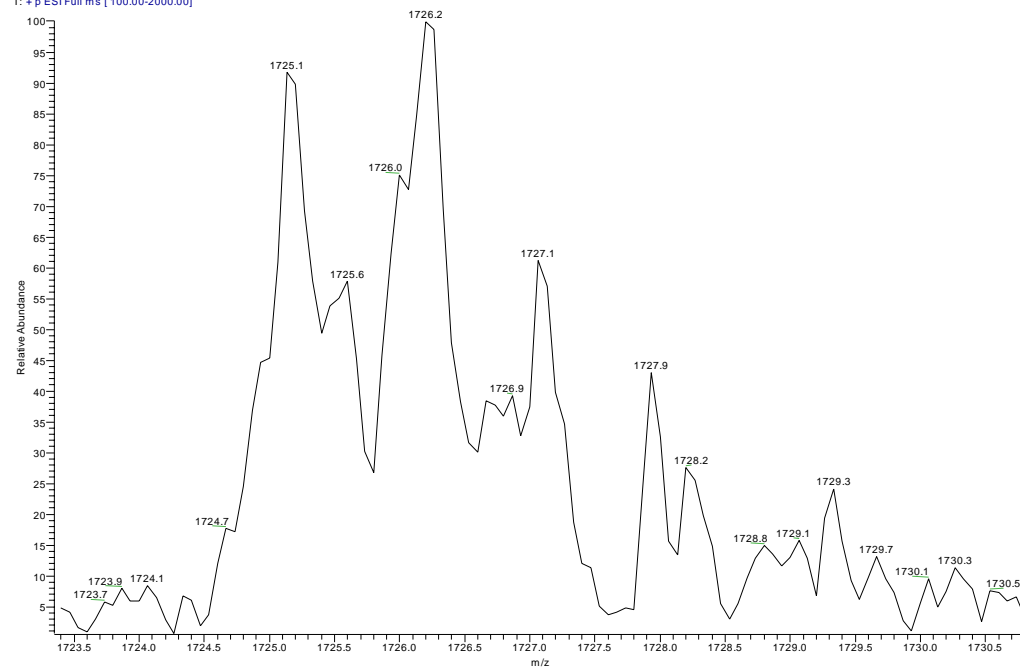


HYBA-nanogastrin

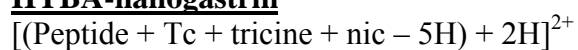


$m/z = 1725.1$

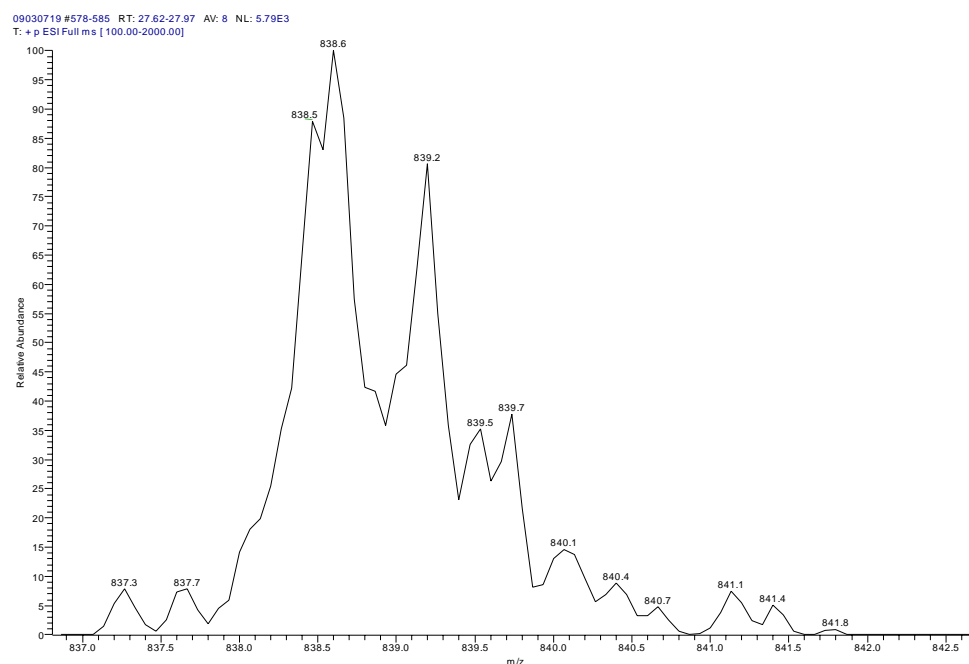
09030721 #555-565 RT: 27.02-27.51 AV: 11 NL: 3.28E3
T: + p ESI Full ms [100.00-2000.00]



HYBA-nanogastrin

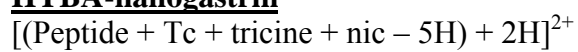


$m/z = 838.5$

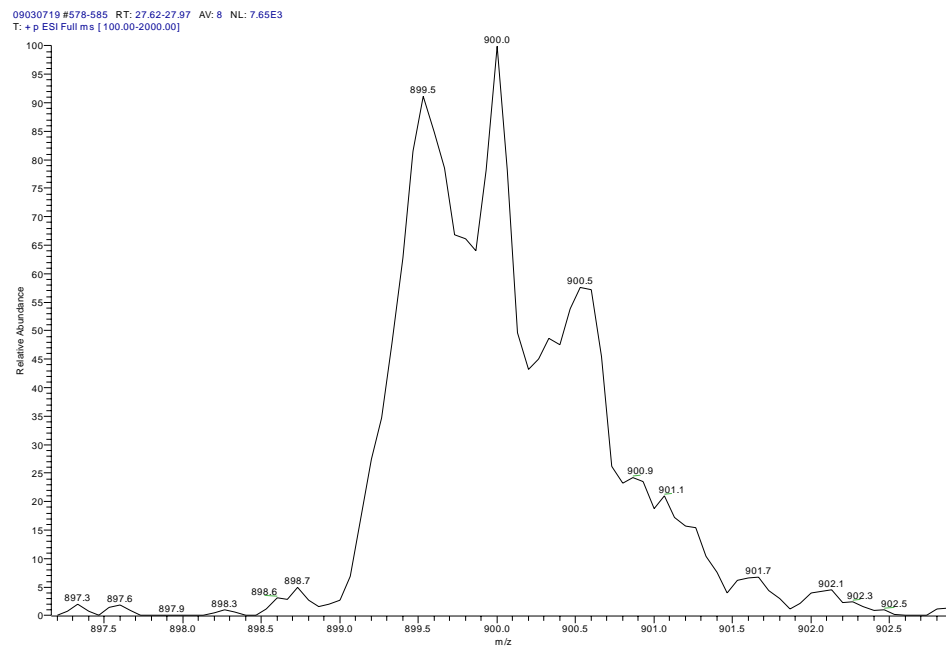


(did not detect $[(\text{Peptide} + \text{Tc} + \text{tricine} + \text{nic} - 5\text{H}) + \text{H}]^+$ due to weak sample)

HYBA-nanogastrin

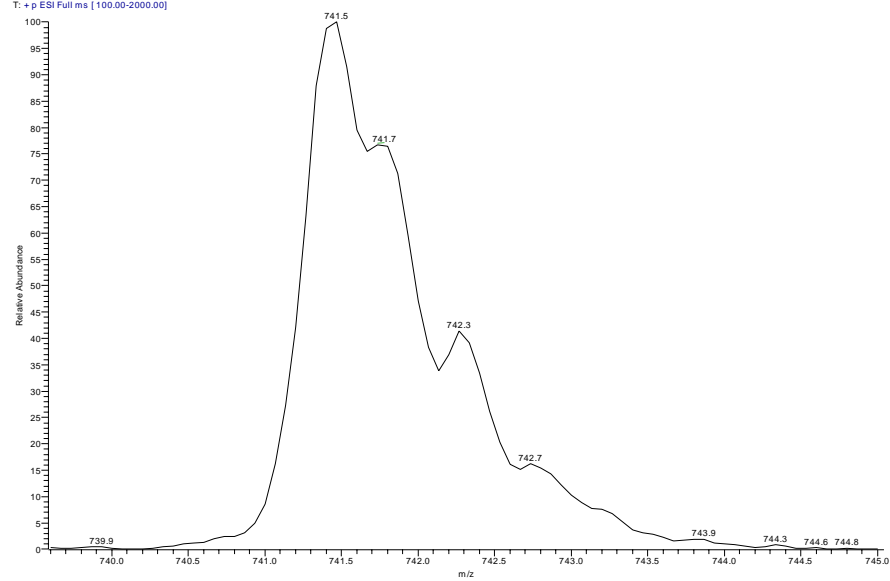


$m/z = 899.5$



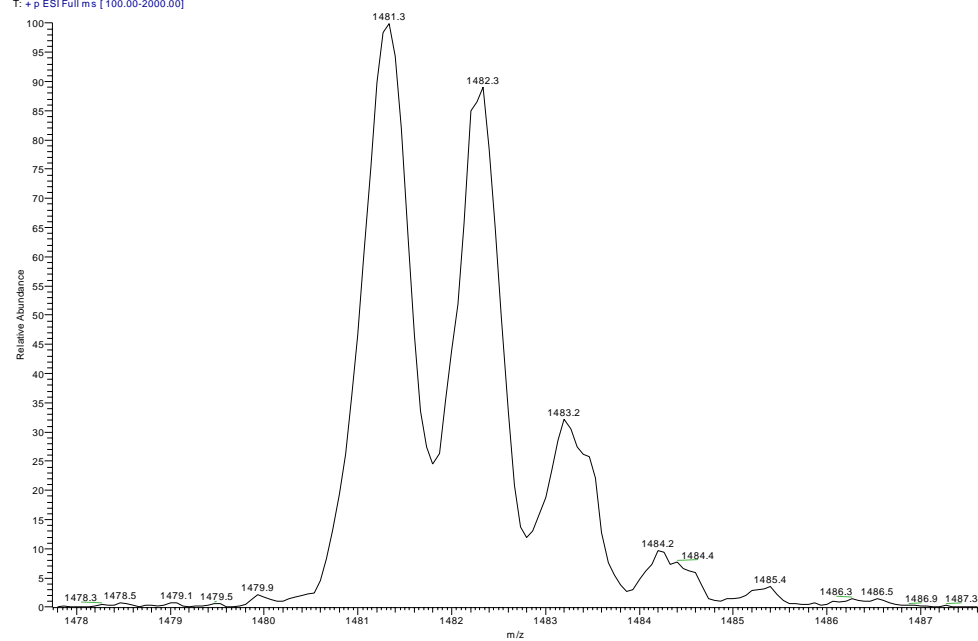
HYNIC-[Gly⁸]-nanogastrin
[(Peptide + Tc + tricine - 5H) + 2H]²⁺
m/z = 741.5

26030703 #535-545 RT: 25.62-26.04 AV: 9 NL: 1.38E5
T: + p ESI Full ms [100.00-2000.00]

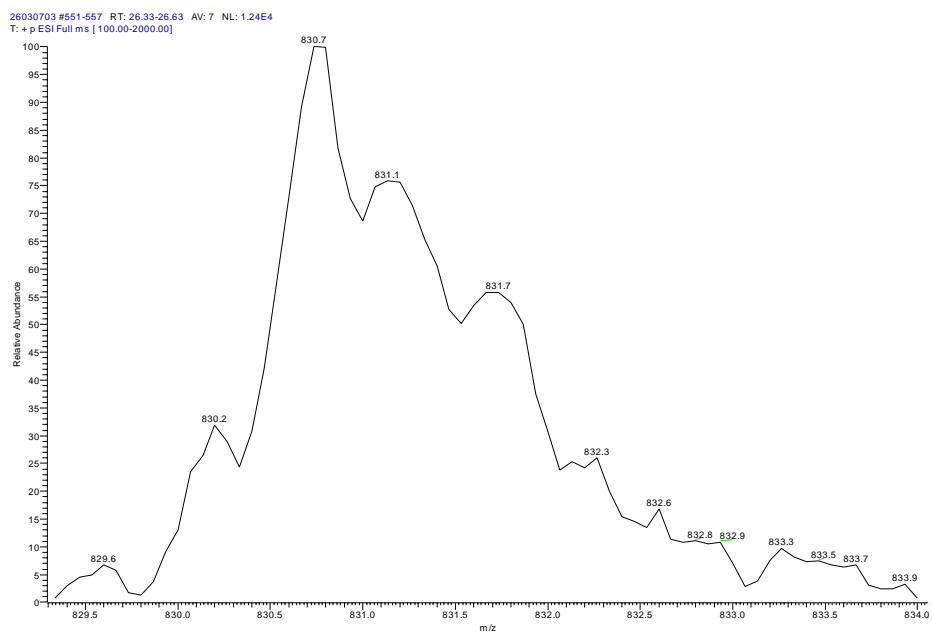


HYNIC-[Gly⁸]-nanogastrin
[(Peptide + Tc + tricine - 5H) + H]⁺
m/z = 1481.3

26030703 #535-545 RT: 25.62-26.04 AV: 9 NL: 4.85E4
T: + p ESI Full ms [100.00-2000.00]



HYNIC-[Gly⁸]-nanogastrin
[(Peptide + Tc + 2tricine - 5H) + 2H]²⁺
m/z = 830.7



HYNIC-[Gly⁸]-nanogastrin
[(Peptide + Tc + 2tricine - 5H) + H]⁺
m/z = 1660.1

