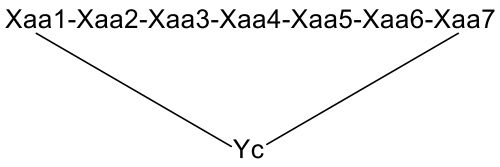
Claims

1. A compound, or a pharmaceutically acceptable salt thereof, said compound comprising a cyclic peptide

of formula (I)



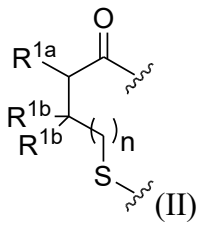
(I)

and an N-terminal modification group A attached to Xaa1,

wherein

the peptide sequence is drawn from left to right in N to C-terminal direction,

Xaa1 is a residue of an amino acid of formula (II)



(II)

wherein

R^{1a} is –NH-

R^{1b} is H or CH_3,

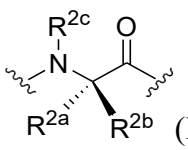
n = 0 or 1,

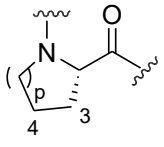
the N-terminal modification group A is covalently attached to the nitrogen atom of Xaa1,

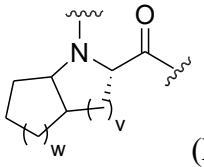
the carbonyl group of Xaa1 is covalently attached to the nitrogen of Xaa2,

and the sulfur atom of Xaa1 is covalently attached as thioether to Yc;

Xaa2 is a residue of an amino acid of formula (III), (IV) or (XX)



(III)


(IV)


(XX)

wherein

R^{2a}, R^{2b}, R^{2c} are each and independently selected from the group consisting of (C_1-C_2)alkyl and H, wherein said (C_1-C_2)alkyl may be substituted by a substituent selected from the group consisting of OH, NH_2, halogen, (C_5-C_7)cycloalkyl,

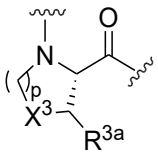
p = 0, 1 or 2

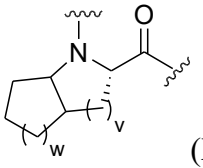
v = 1 or 2

w = 1, 2 or 3 and

the amino acid of formula (IV) may be substituted by one or two substituents selected from the group consisting of methyl, OH, NH_2 and F at indicated ring positions 3 and 4;

Xaa3 is a residue of an amino acid of formula (V) or (XX)



(V)


(XX)

wherein

X^3 is selected from the group consisting of CH_2, CF_2, CH-R^{3b}, S, O and NH,

p = 1 or 2

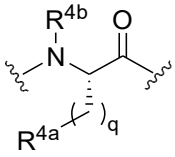
v = 1 or 2

w = 1, 2 or 3,

R^{3a} is H, methyl, OH, NH_2 or F,

R^{3b} is methyl, OH, NH_2 or F;

Xaa4 is a residue of an amino acid of formula (VI)



(VI)

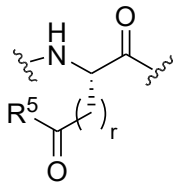
wherein

R^{4a} is selected from the group consisting of H, OH, COOH, $CONH_2$, X^4 and –NH-CO-X^4, wherein X^4 is selected from the group consisting of (C_1-C_6)alkyl, (C_5-C_6)aryl and (C_5-C_6)heteroaryl, and X^4 may be substituted by one or two substituents selected from the group consisting of methyl, $CONH_2$, halogen, NH_2 and OH;

q = 1, 2 or 3, wherein optionally one or two hydrogens of said one, two or three CH_2-groups are each and individually substituted by methyl, ethyl, (C_5-C_6)aryl or (C_5-C_6)heteroaryl,

R^{4b} is methyl or H;

Xaa5 is a residue of an amino acid of structure (VII)



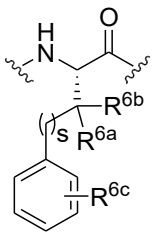
(VII)

wherein

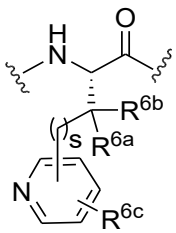
R^5 is selected from the group of OH and NH_2, and

r = 1, 2 or 3;

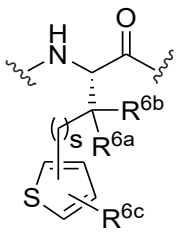
Xaa6 is an amino acid residue of any one of formulae (VIIIa), (VIIIb), (VIIIc) and (VIIId):



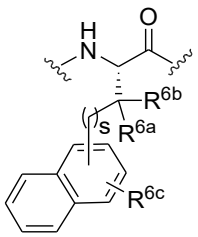
(VIIIa)



(VIIIb)



(VIIIc)



(VIIId)

wherein

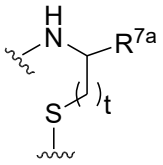
R^{6a} and R^{6b} are each and independently selected from the group consisting of H, methyl, ethyl, propyl and isopropyl,

R^{6c} represents from 0 to 3 substituents, each such substituent being each and independently selected from the group consisting of Cl, F, Br, NO_2, NH_2, CN, CF_3, OH, OR^{6d} and C_1-C_4 alkyl,

R^{6d} is selected from the group consisting of methyl, ethyl, propyl, and isopropyl, and

s is 0 or 1;

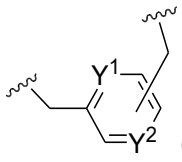
Xaa7 is a residue of an amino thiol or an amino acid of formula (IX),



(IX)

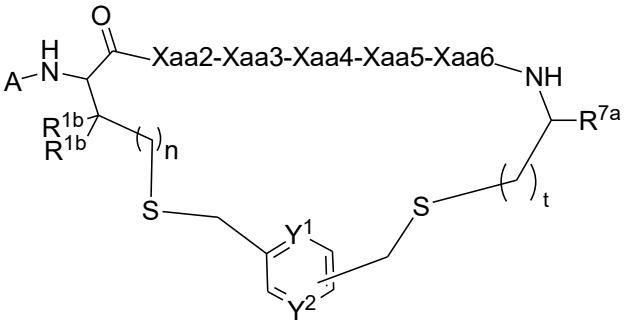
wherein
R^{7a} is –CO-, -COOH, -$CONH_2$, -CH_2-OH, -(CO)-NH-R^{7b}, -(CO)-(NR^{7c})-R^{7b} or H, wherein R^{7b} and R^{7c} are each and independently (C_1-C_4)alkyl and
t is 1 or 2;

Yc is a structure of formula (X)



(X)

linking the S atom of Xaa1 and the S atom of Xaa7 under the formation of two thioether linkages thus forming a cyclic structure of formula (XXI)



(XXI)

wherein

the substitution pattern of the aromatic group in formula (X) is *ortho*, *meta* or *para*,

n = 0 or 1,

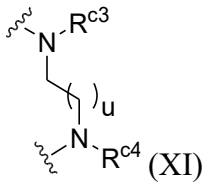
t = 1 or 2,

Y^1 is C-H or N,

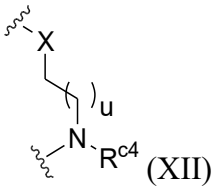
Y^2 is N or C-R^{c1},

R^{c1} is H or CH_2-R^{c2} and

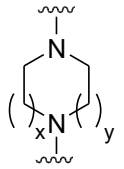
R^{c2} is a structure of formula (XI), (XII) or (XXII)



(XI)



(XII)



(XXII)

wherein

R^{c3} and R^{c4} are each and independently selected from the group consisting of H and (C_1-C_4)alkyl and

u = 1, 2, 3, 4, 5 or 6,

x and y are each and independently 1, 2 or 3, and

X = O or S,

wherein in formulae (XI) and (XXII) one of the nitrogen atoms is attached to –CH_2- of R^{c1} and in formula (XII) -X- is attached to –CH_2- of R^{c1}; and

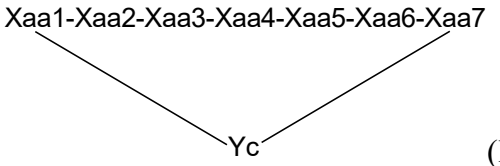
wherein the N-terminal modification group A is either a blocking group Abl or an amino acid Aaa;

wherein the blocking group Abl is selected from the group consisting of R^{a1}-C(O)-, R^{a1}-$S(O_2)$-, R^{a1}-NH-C(O)- and R^{a1}-O-C(O)-; wherein R^{a1} is (C_1-C_8)alkyl optionally substituted by up to two substituents each and independently selected from the group consisting of OH, F,

COOH, (C_3-C_8)cycloalkyl, aryl, heteroaryl and (C_3-C_8)heterocycle, and wherein in (C_1-C_8)alkyl one of the –CH_2-groups is optionally replaced by –S- or –O-.

2. A compound, or a pharmaceutically acceptable salt thereof, said compound comprising a cyclic peptide

of formula (I)



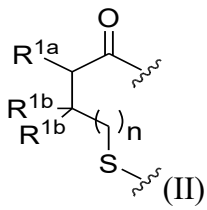
(I)

and an N-terminal modification group A attached to Xaa1,

wherein

the peptide sequence is drawn from left to right in N to C-terminal direction,

Xaa1 is a residue of an amino acid of formula (II)



(II)

wherein

R^{1a} is –NH-

R^{1b} is H or CH_3,

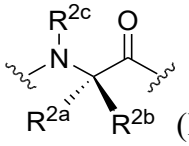
n = 0 or 1,

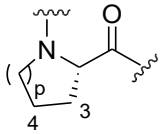
the N-terminal modification group A is covalently attached to the nitrogen atom of Xaa1,

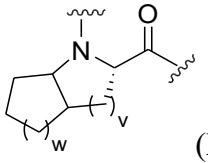
the carbonyl group of Xaa1 is covalently attached to the nitrogen of Xaa2,

and the sulfur atom of Xaa1 is covalently attached as thioether to Yc;

Xaa2 is a residue of an amino acid of formula (III), (IV) or (XX)



(III)


(IV)


(XX)

wherein

R^{2a}, R^{2b}, R^{2c} are each and independently selected from the group consisting of (C_1-C_2)alkyl and H, wherein said (C_1-C_2)alkyl may be substituted by a substituent selected from the group consisting of OH, NH_2, halogen, (C_5-C_7)cycloalkyl,

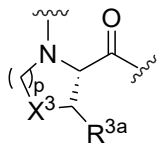
p = 0, 1 or 2

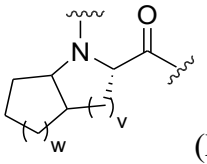
v = 1 or 2

w = 1, 2 or 3 and

the amino acid of formula (IV) may be substituted by one or two substituents selected from the group consisting of methyl, OH, NH_2 and F at indicated ring positions 3 and 4;

Xaa3 is a residue of an amino acid of formula (V) or (XX)



(V)


(XX)

wherein

X^3 is selected from the group consisting of CH_2, CF_2, CH-R^{3b}, S, O and NH,

p = 1 or 2

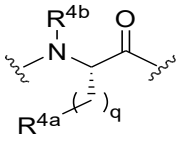
v = 1 or 2

w = 1, 2 or 3,

R^{3a} is H, methyl, OH, NH_2 or F,

R^{3b} is methyl, OH, NH_2 or F;

Xaa4 is a residue of an amino acid of formula (VI)



(VI)

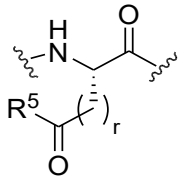
wherein

R^{4a} is selected from the group consisting of H, OH, COOH, $CONH_2$, X^4 and –NH-CO-X^4, wherein X^4 is selected from the group consisting of (C_1-C_6)alkyl, (C_5-C_6)aryl and (C_5-C_6)heteroaryl, and X^4 may be substituted by one or two substituents selected from the group consisting of methyl, $CONH_2$, halogen, NH_2 and OH;

q = 1, 2 or 3, wherein optionally one or two hydrogens of said one, two or three CH_2-groups are each and individually substituted by methyl, ethyl, (C_5-C_6)aryl or (C_5-C_6)heteroaryl,

R^{4b} is methyl or H;

Xaa5 is a residue of an amino acid of structure (VII)



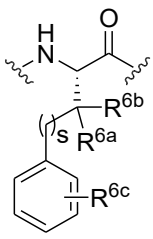
(VII)

wherein

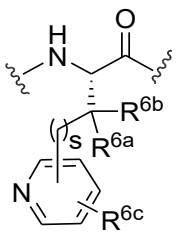
R^5 is selected from the group of OH and NH_2, and

r = 1, 2 or 3;

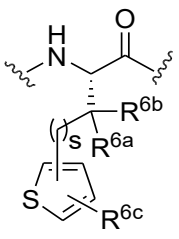
Xaa6 is an amino acid residue of any one of formulae (VIIIa), (VIIIb), (VIIIc) and (VIIId):



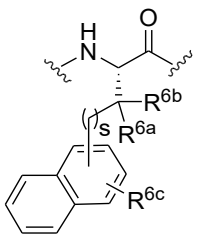
(VIIIa)



(VIIIb)



(VIIIc)



(VIIId)

wherein

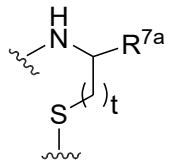
R^{6a} and R^{6b} are each and independently selected from the group consisting of H, methyl, ethyl, propyl and isopropyl,

R^{6c} represents from 0 to 3 substituents, each such substituent being each and independently selected from the group consisting of Cl, F, Br, NO_2, NH_2, CN, CF_3, OH, OR^{6d} and C_1-C_4 alkyl,

R^{6d} is selected from the group consisting of methyl, ethyl, propyl, and isopropyl, and

s is 0 or 1;

Xaa7 is a residue of an amino thiol or an amino acid of formula (IX),



(IX)

wherein

R^{7a} is –CO-XXX, -COOH, -$CONH_2$, -CH_2-OH, -(CO)-NH-R^{7b}, -(CO)-(NR^{7c})-R^{7b} or H,

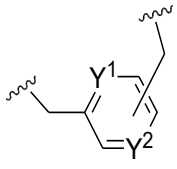
wherein XXX is an amino acid or a peptide which forms an amide bond to the carbonyl carbon atom,

wherein R^{7b} and R^{7c} are each and independently (C_1-C_4)alkyl,

wherein the amino acid or the peptide is optionally substituted by a Z group, and

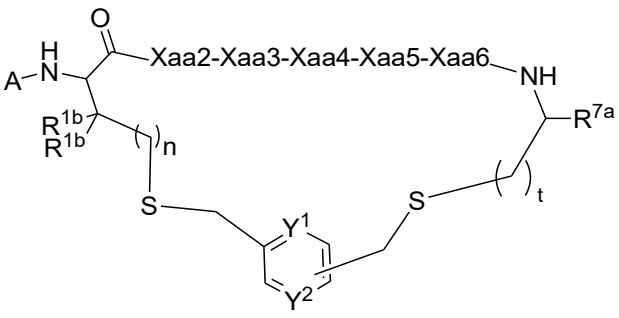
t is 1 or 2;

Yc is a structure of formula (X)



(X)

linking the S atom of Xaa1 and the S atom of Xaa7 under the formation of two thioether linkages thus forming a cyclic structure of formula (XXI)



(XXI)

wherein

the substitution pattern of the aromatic group in formula (X) is *ortho*, *meta* or *para*,

n = 0 or 1,

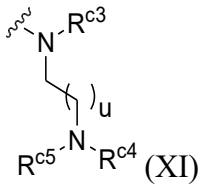
t = 1 or 2,

Y^1 is C-H or N,

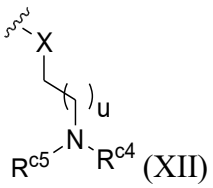
Y^2 is N or C-R^{c1},

R^{c1} is H or CH_2-R^{c2} and

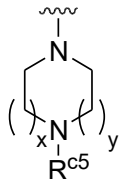
R^{c2} is a structure of formula (XI), (XII) or (XXII)



(XI)



(XII)



(XXII)

wherein

R^{c3} and R^{c4} are each and independently selected from the group consisting of H and (C_1-C_4)alkyl,

R^{c5} is H or a Z group, and

u = 1, 2, 3, 4, 5 or 6,

x and y are each and independently 1, 2 or 3, and

X = O or S

wherein in formulae (XI) and (XXII) one of the nitrogen atoms is attached to –CH_2- of R^{c1} and in formula (XII) -X- is attached to –CH_2- of R^{c1};

and

wherein the N-terminal modification group A is either a blocking group Abl or an amino acid Aaa,

wherein the blocking group Abl is selected from the group consisting of R^{a1}-C(O)-, R^{a1}-S(O_2)-, R^{a1}-NH-C(O)- and R^{a1}-O-C(O)-; wherein R^{a1} is (C_1-C_8)alkyl optionally substituted by up to two substituents each and independently selected from the group consisting of OH, F, COOH, (C_3-C_8)cycloalkyl, aryl, heteroaryl and (C_3-C_8)heterocycle, and wherein in (C_1-C_8)alkyl one of the –CH_2-groups is optionally replaced by –S- or –O-;

wherein the amino acid Aaa can optionally be substituted by a Z group; and

wherein each Z group comprises a chelator and optionally a linker.

3. The compound or salt of claim 2, wherein

R^{c5} is a Z group comprising a chelator and optionally a linker,

R^{7a} is -CO-XXX, -COOH, -$CONH_2$, -CH_2-OH, -(CO)-NH-R^{7b}, -(CO)-(NR^{7c})-R^{7b} or H, wherein R^{7b} and R^{7c} are each and independently (C_1-C_4)alkyl, XXX is an amino acid or a peptide which forms an amide bond to the carbonyl carbon atom, wherein the amino acid or the peptide is not substituted by a Z group; and

if the N-terminal modification group A is an amino acid Aaa, the amino acid Aaa is not substituted by a Z group comprising a chelator and optionally a linker.

4. The compound or salt of any one of claims 2 and 3, wherein

R^{7a} is different from –CO-XXX, wherein XXX is an amino acid or a peptide which forms an amide bond to the carbonyl carbon atom and

if the N-terminal modification group A is an amino acid Aaa, the amino acid Aaa is not substituted by a Z group comprising a chelator and optionally a linker.

5. The compound or salt of claim 2, wherein

R^{7a} is –CO-XXX, wherein XXX is an amino acid or a peptide which forms an amide bond to the carbonyl carbon atom, wherein the amino acid or the peptide is substituted by a Z group comprising a chelator and optionally a linker,

R^{c1} or R^{c5} is H, and

if the N-terminal modification group A is an amino acid Aaa, the amino acid Aaa is not substituted by a Z group comprising a chelator and optionally a linker.

6. The compound or salt of claim 2, wherein

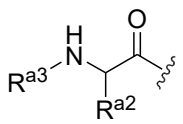
the N-terminal modification group A is amino acid Aaa substituted by a Z group comprising a chelator and optionally a linker,

R^{c1} or R^{c5} is H, and

R^{7a} is -CO-XXX-COOH, $-CONH_2$, $-CH_2$-OH, -(CO)-NH-R^{7b}, -(CO)-(NR^{7c})-R^{7b} or H, wherein R^{7b} and R^{7c} are each and independently (C_1-C_4)alkyl, XXX is an amino acid or a peptide which forms an amide bond to the carbonyl carbon atom, wherein the amino acid or the peptide is not substituted by a Z group comprising a chelator and optionally a linker;

preferably R^{7a} is different from –CO-XXX, wherein XXX is an amino acid or a peptide which forms an amide bond to the carbonyl carbon atom.

7. The compound or salt of any one of claims 2 and 6, wherein the amino acid Aaa is a D-amino acid residue or an L- amino acid residue each of structure (XIV):

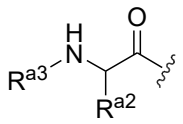


(XIV)

wherein
R^{a2} is selected from the group consisting of (C_1-C_6)alkyl, modified (C_1-C_6)alkyl, (C_1-C_3)alkyl, modified (C_1-C_3), (C_3-C_8)carbocycle, aryl, heteroaryl and (C_3-C_8)heterocycle, wherein in modified (C_1-C_6)alkyl one -CH_2- group is replaced by -S- or -O-, and in modified (C_1-C_3)alkyl one of the H is substituted by OH, F or COOH, or two of the H are substituted by F, and wherein R^{a3} is a Z group.

8. The compound or salt of any one of claims 1 to 5, wherein the blocking group Abl is hexanoyl or pentyl sulfonyl, preferably the blocking group Abl is hexanoyl.

9. The compound or salt of any one of claims 1 to 5, wherein the amino acid Aaa is a D-amino acid residue or an L- amino acid residue each of structure (XIV):



(XIV)

wherein
R^{a2} is selected from the group consisting of (C_1-C_6)alkyl, modified (C_1-C_6)alkyl, (C_1-C_3)alkyl, modified (C_1-C_3), (C_3-C_8)carbocycle, aryl, heteroaryl and (C_3-C_8)heterocycle, wherein in modified (C_1-C_6)alkyl one -CH_2- group is replaced by -S- or -O-, and in modified (C_1-C_3)alkyl one of the H is substituted by OH, F or COOH, or two of the H are substituted by F, and wherein R^{a3} is H or acetyl.

10. The compound or salt of any one of claims 1 to 9, wherein the amino acid Aaa is selected from the group consisting of the amino acid residues of Nle ((S)-Norleucine), nle ((R)-Norleucine), Met and met, and their derivatives.

11. The compound or salt of any one of claims 1 to 10 wherein Xaa1 is a D-amino acid residue selected from the group consisting of cys, hcy ((R)-Homocysteine) and pen ((S)-Penicillamine), or Xaa1 is an L-amino acid residue selected from the group consisting of Cys, Hcy ((S)-Homocysteine) and Pen ((R)-Penicillamine).

12. The compound or salt of claim 11, wherein Xaa1 is Cys.

13. The compound or salt of any one of claims 1 to 12, wherein Xaa2 is an amino acid residue selected from the group consisting of Pro, Gly, and Nmg (N-Methyl-glycine).

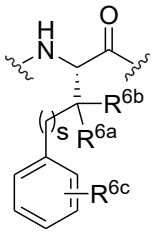
14. The compound or salt of any one of claims 1-13, wherein Xaa3 is an amino acid residue selected from the group consisting of Pro, Hyp ((2S,4R)-4-Hydroxy-pyrrolidine-2-carboxylic acid), Tfp ((2S,4R)-4-Fluoro-pyrrolidine-2-carboxylic acid), Cfp (4-cis-Fluoro proline), Dmp ((S)-5,5-Dimethyl-proline), Aze ((S)-Azetidine-2-carboxylic acid) and Pip ((S)-Piperidine-2-carboxylic acid).

15. The compound or salt of any one of claims 1-14, wherein Xaa4 is an amino acid residue selected from the group consisting of Thr, Hse ((S)-Homoserine), Asn, Gln and Ser.

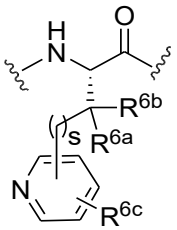
16. The compound or salt of any one of claims 1-15, wherein Xaa5 is an amino acid residue selected from the group consisting of Gln and Glu.

17. The compound or salt of any one of claims 1 to 12, wherein Xaa2 is an amino acid residue selected from the group consisting of Pro, Gly, Nmg (N-Methyl-glycine) and their derivatives, wherein Xaa3 is an amino acid residue selected from the group consisting of Pro, Hyp ((2S,4R)-4-Hydroxy-pyrrolidine-2-carboxylic acid), Tfp ((2S,4R)-4-Fluoro-pyrrolidine-2-carboxylic acid), Cfp (4-cis-Fluoro proline), Dmp ((S)-5,5-Dimethyl-proline), Aze ((S)-Azetidine-2-carboxylic acid) and Pip ((S)-Piperidine-2-carboxylic acid), and their derivatives, wherein Xaa4 is an amino acid residue selected from the group consisting of Thr, Hse ((S)-Homoserine), Asn, Gln and Ser, and their derivatives, wherein Xaa5 is an amino acid residue selected from the group consisting of Gln and Glu, and their derivatives.

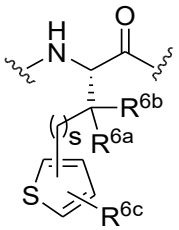
18. The compound or salt of any one of claims 1-17, wherein Xaa6 is an amino acid residue of any one of formulae (VIIIa), (VIIIb), (VIIIc) and (VIIId):



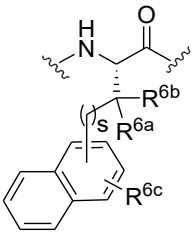
(VIIIa)



(VIIIb)



(VIIIc)



(VIIId)

wherein

R^{6a} and R^{6b} are each H;

R^{6c} represents from 0 to 2 substituents, each such substituent being each and independently selected from the group consisting of Cl, F, Br, NO_2, NH_2, CN, CF_3, OH, OR^{6d} and methyl,

R^{6d} is selected from the group consisting of methyl, ethyl, propyl, and isopropyl, and

s is 0;

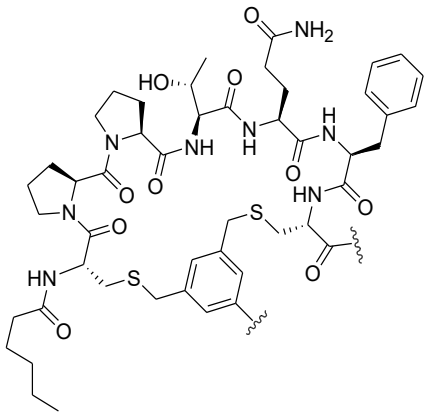
preferably wherein Xaa6 is an amino acid residue selected from the group consisting of Phe, Ocf ((S)-2-Chloro-phenylalanine), Ppa ((S)-4-Pyridyl-alanine), Thi ((S)-β-(2-Thienyl)-alanine), 1Ni (3-(1-naphthyl)alanine), Otf ((S)-2-Trifluoromethyl-phenylalanine) and Mpa (3-Pyridyl-alanine).

19. The compound or salt of any one of claims 1-18, wherein Xaa7 is an amino thiol residue selected from the group consisting of Cys, Cysol ((R)-Cysteinol), AET (2-Aminoethanethiol), Hcy ((S)-Homocysteine), cys and hcy ((R)-Homocysteine).

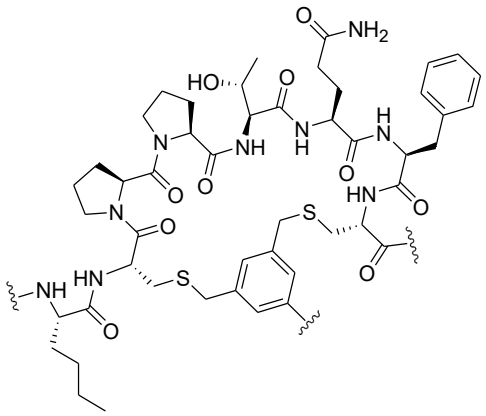
20. The compound or salt of any one of claims 1 to 19, wherein Xaa2 is an amino acid residue selected from the group consisting of Pro, Gly, and Nmg (N-Methyl-glycine), wherein Xaa3 is an amino acid residue selected from the group consisting of Pro and Hyp ((2S,4R)-4-Hydroxy-pyrrolidine-2-carboxylic acid), wherein Xaa4 is the amino acid residue Thr, wherein Xaa5 is an amino acid residue selected from the group consisting of Gln and Glu, Xaa6 is an amino acid residue selected from the group consisting of Phe, 1Ni (3-(1-naphthyl)alanine), Mpa (3-Pyridyl-alanine), Otf ((S)-2-Trifluoromethyl-phenylalanine), and Thi ((S)-β-(2-Thienyl)-alanine), and

wherein Xaa7 is an amino thiol residue selected from the group consisting of Cys, Cysol ((R)-Cysteinol), and AET (2-Aminoethanethiol).

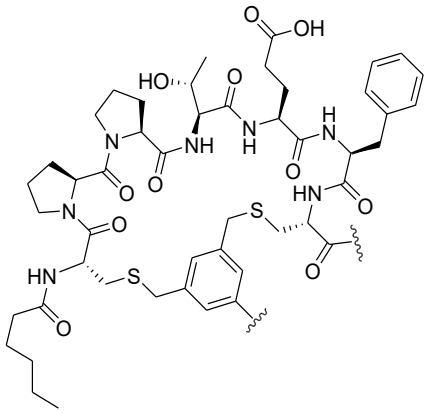
21. The compound or salt of any one of claims 1 to 20, preferably of any one of claims 2 to 20, wherein the compound comprises a structure of formula (LI), (LII), (LIII) or (LIV):



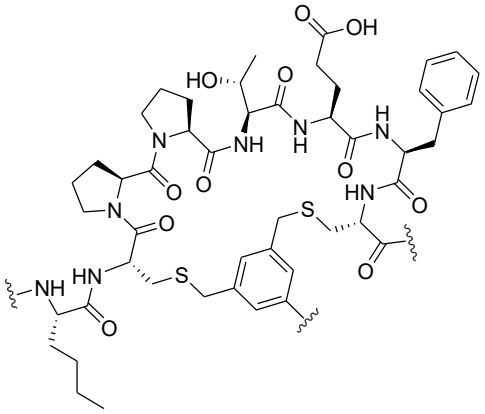
(LI),



(LII),

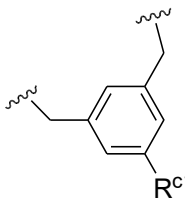


(LIII), and



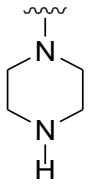
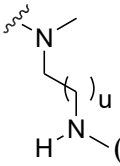
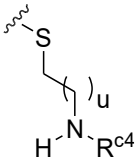
(LIV).

22. The compound or salt of any one of claims 1 and 8 to 21, wherein Yc is a structure of formula (XIII):



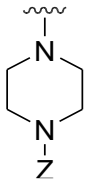
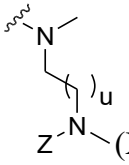
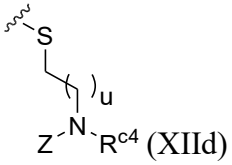
(XIII)

preferably Yc comprises a NH group, preferably a reactive NH group, wherein the NH group allows conjugation of a moiety to Yc, preferably the NH group is provided by the structure R^{c1} wherein R^{c1} is CH_2-R^{c2}, wherein R^{c2} is selected from the group consisting of a structure of any one of formulae (XXIb), (XIc) and (XIIb):


(XXIIb)

(XIc)

(XIIb)

wherein R^{c4} is H or methyl and
u = 1, 2, 3, 4 or 5.

23. The compound or salt of any one of claims 1 and 8 to 22, wherein the compound comprises a Z group, wherein the Z group is covalently attached to Yc, preferably to the structure of formula (X), wherein the Z group comprises a chelator and optionally a linker, preferably the Z group is covalently attached to R^{c2}, forming a structure of any one of formulae (XXIIc), (XId) and (XIId):


(XXIIc)

(XId)

(XIId)

wherein R^{c4} is H or methyl and
u = 1, 2, 3, 4 or 5.

24. The compound or salt of any one of claims 1 and 8 to 23, wherein the N-terminal modification group A is the amino acid Aaa and wherein the compound comprises a Z group covalently attached to the amino acid Aaa, wherein the Z group comprises a chelator and optionally a linker, wherein, if the linker is present, the linker covalently links the chelator to the amino acid Aaa, preferably to the α-nitrogen of the amino acid Aaa, preferably the covalent linkage between the linker and the α-nitrogen of the amino acid Aaa is an amide.

25. The compound or salt of any one of claims 2 to 24, wherein the linker is selected from the group comprising Ttds (1,13-Diamino-4,7,10-trioxatridecan-succinamic acid), O2Oc (3,6-Dioxaoctanoic acid), APAc (2-(4-(Amino)piperidin-1-yl)acetic acid), Gly, Bal (β-Alanine), Gab (γ-Aminobutyric acid), Mamb (3-Aminomethyl-benzoic acid), Pamb (4-Aminomethyl-benzoic acid), PPAc (4-Carboxymethyl piperazine), 4Amc (4-trans-Aminomethylcyclohexane carboxylic acid / Tranexamic acid), Inp (Isonipecotic acid), Sni ((S)-Nipecotic acid), Rni ((R)-Nipecotic acid), Nmg (N-methyl-glycine), Cmp (4-Carboxymethyl-piperidine), PEG6, PEG12 and other PEG-amino acids, and most preferably Ttds, O2Oc, APAc, 4Amc, PEG6 and PEG12, preferably the linker is selected from the group consisting of Ttds, O2Oc and PEG6.

26. The compound or salt of any one of claims 2 to 25, wherein an amino acid or a peptide is attached to Xaa7, wherein the amino acid is selected from the group consisting of Asp, asp, Bal (β-Alanine), Gly, Gab (γ-Aminobutyric acid), Ser, Nmg (N-methyl-glycine), Bhf ((S)-β-Homophenylalanine), and Bhk ((S)-β-Homolysine), and

wherein in the peptide a majority of the amino acids of the peptide are charged or polar and the net charge of the peptide is -2, -1, 0, +1 or +2, preferably the peptide is selected from the group consisting of peptides of formula (XXXa-f)

Xaa10-Xaa11-Xaa12-Xaa13-Xaa14 -Xaa15-Xaa16 (XXXa)
Xaa10-Xaa11-Xaa12-Xaa13-Xaa14 -Xaa15 (XXXb)
Xaa10-Xaa11-Xaa12-Xaa13-Xaa14 (XXXc)
Xaa10-Xaa11-Xaa12-Xaa13 (XXXd)
Xaa10-Xaa11-Xaa12 (XXXe)
Xaa10-Xaa11 (XXXf)

wherein

Xaa10 is Asp, asp, Bal, Gly, Gab, Ser, Nmg, Bhf, Lys, Ttds (1,13-Diamino-4,7,10-trioxatridecan-succinamic acid) or Bhk
Xaa11 is His, his, Lys, Ttds, Arg, Ape (1,5-Diaminopentane) or Ala,

Xaa12 is Phe, Nmf ((S)-N-Methyl-phenylalanine), Tic (S)-1,2,3,4-Tetrahydroisoquinoline-3-carboxylic acid), Aic (2-Aminoindane-2-carboxylic acid), Ppa ((S)-4-Pyridyl-alanine), Mpa (3-Pyridyl-alanine), Amf ((S)-α-Methyl-phenylalanine), phe, Lys, Ape, and Ttds
Xaa13 is Arg, Lys, Ape, Ttds or arg,
Xaa14 is Asp, Ala, asp, Lys, Ape or Ttds,
Xaa15 is Ttds, Ape or Lys, and
Xaa16 is Lys or Ape,

wherein, optionally,
Xaa11 and Xaa12 together form a single amino acid selected from the group consisting of Gab, Pamb (4-Aminomethyl-benzoic acid), Cmp (4-Carboxymethyl-piperidine), Mamb (3-Aminomethyl-benzoic acid), and, optionally,
Xaa10, Xaa11 and Xaa12 form together a single amino acid selected from the group consisting of Gab, Pamb, Cmp, and Mamb,

under the proviso that in the peptides of formulae (XXXa-f) Ape, if present, is the C-terminal building block.

27. The compound of claim 26, wherein the Z-group is covalently attached to the peptide, wherein the Z group comprises a chelator and optionally a linker;

preferably the chelator is covalently linked to the amino acid attached to Xaa7 or the chelator is covalently linked to the C-terminal amino acid of the peptide, preferably the C-terminal amino acid of any one of peptide of formulae (LI), (LII), (LIII) and (LIV).

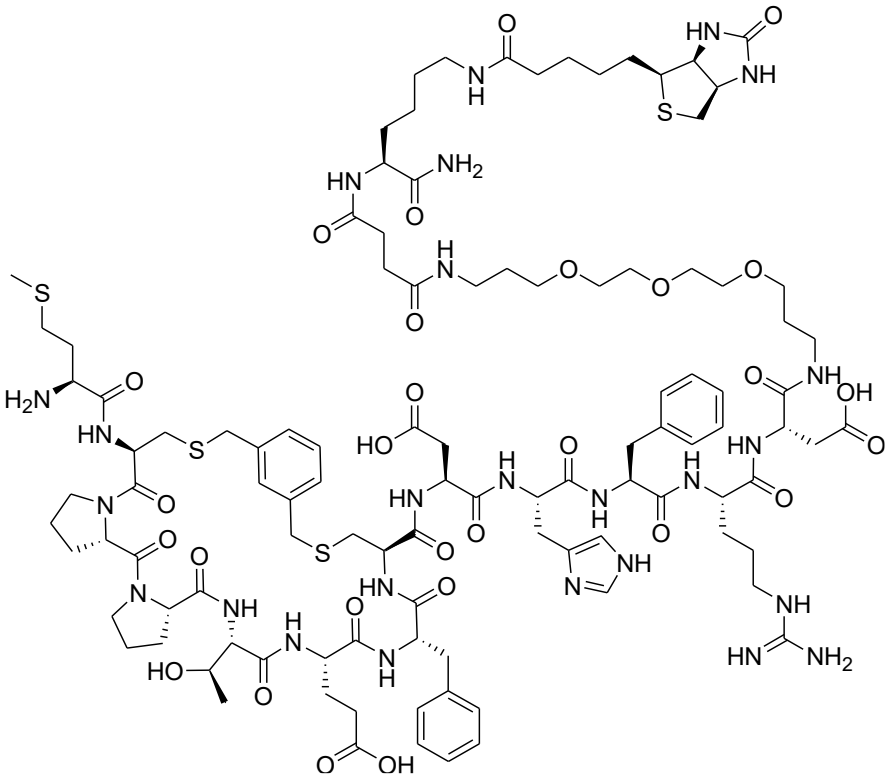
28. The compound or salt of any one of claims 2, 5 to 8, and 10 to 26, wherein the Z-group is covalently attached to the amino acid, wherein the Z group comprises a chelator and optionally a linker, preferably the amino acid is the amino acid attached to Xaa7 or the amino acid Aaa of the N-terminal modification group A.

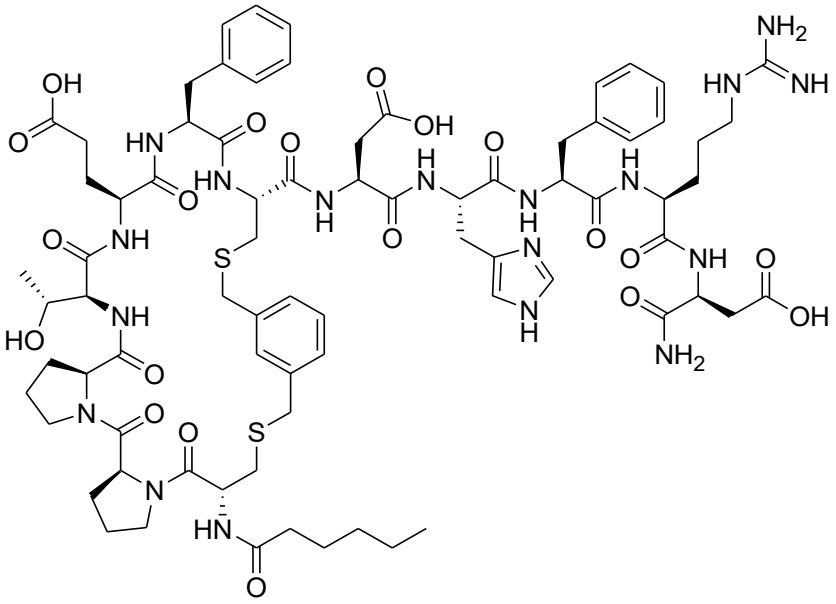
29. The compound or salt of any one of claims 2 to 28, wherein the chelator is selected from the group consisting of DOTA, DOTAGA, NOTA, NODAGA, NODA-MPAA, HBED, TETA,

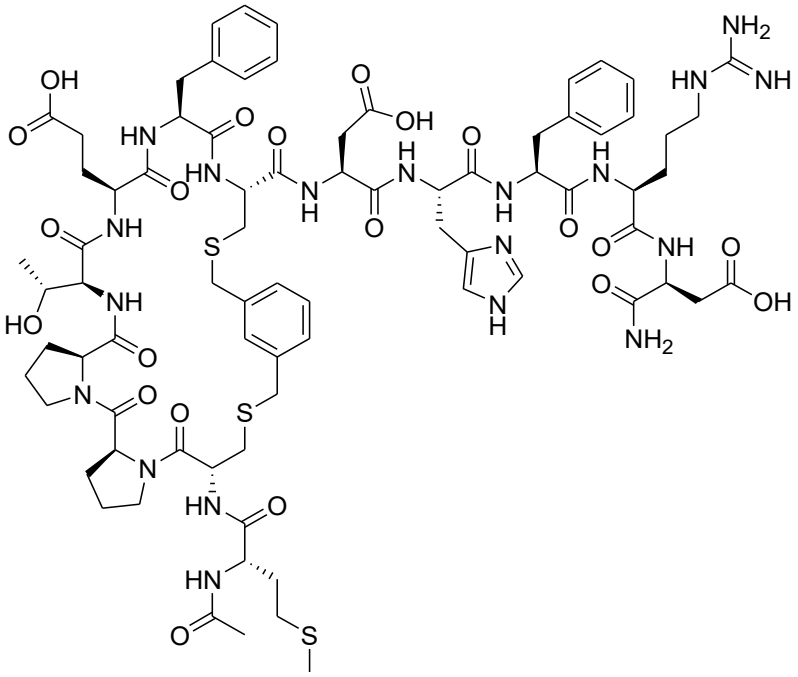
CB-TE2A, DTPA, DFO, Macropa, HOPO, TRAP, THP, DATA, NOTP, sarcophagine, FSC, NETA, H4octapa, Pycup, N_xS_{4-x} (N4, N2S2, N3S), Hynic, $^{99m}Tc(CO)_3$-Chelators, more preferably DOTA, DOTAGA, NOTA, NODAGA, NODA-MPAA, HBED, CB-TE2A, DFO, THP, N4 and most preferred DOTA, DOTAGA, NOTA, NODAGA and N4;

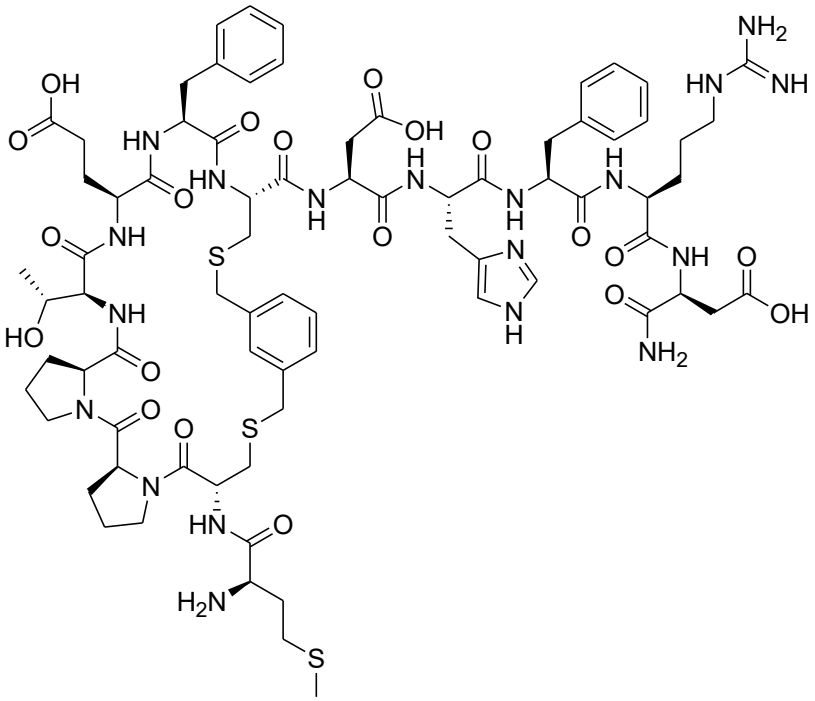
preferably the chelator is N4Ac.

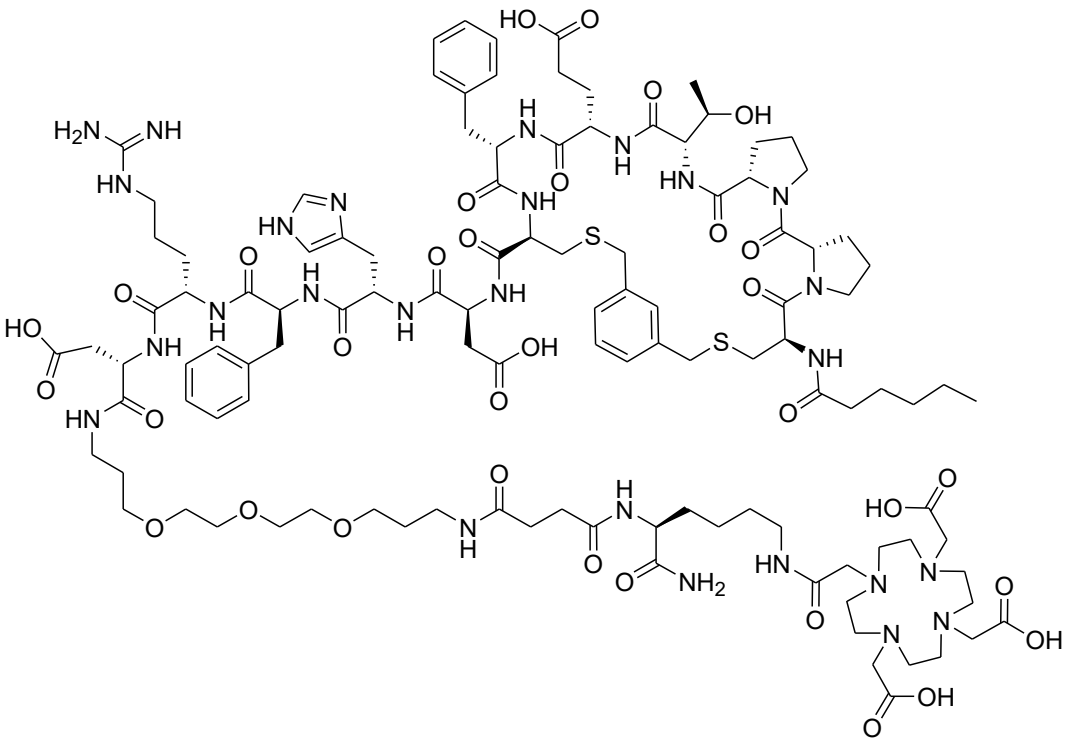
30. The compound or salt of any one of claims 1 to 29, wherein the compound is selected from the group consisting of

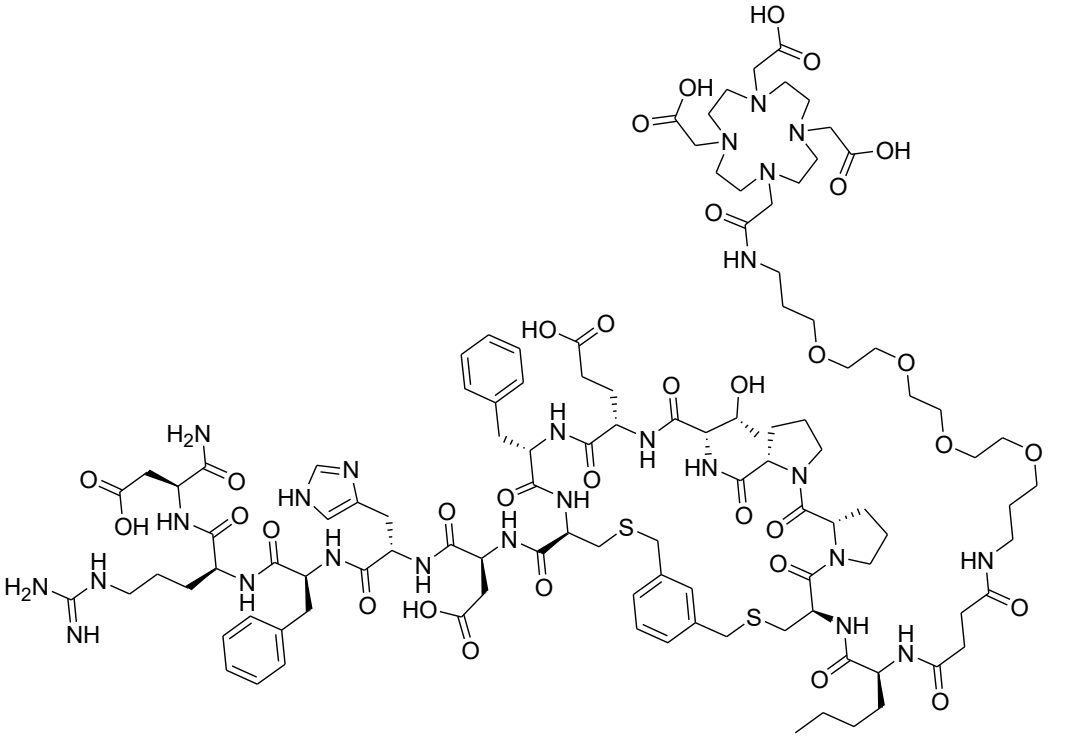


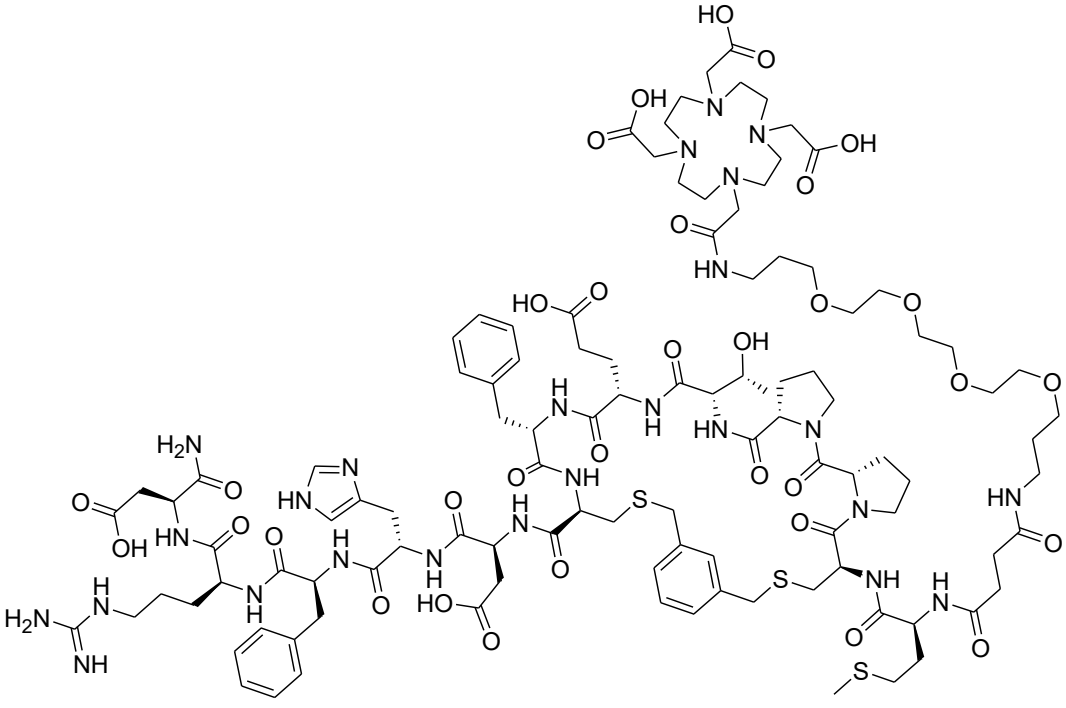


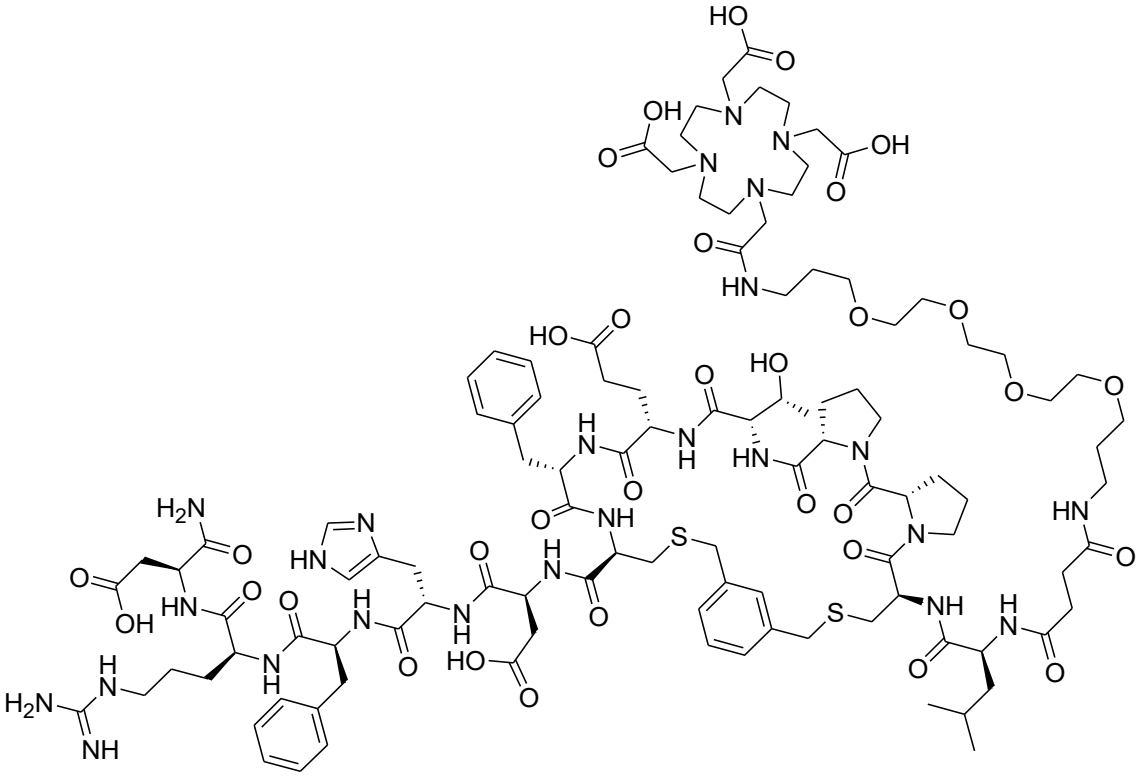


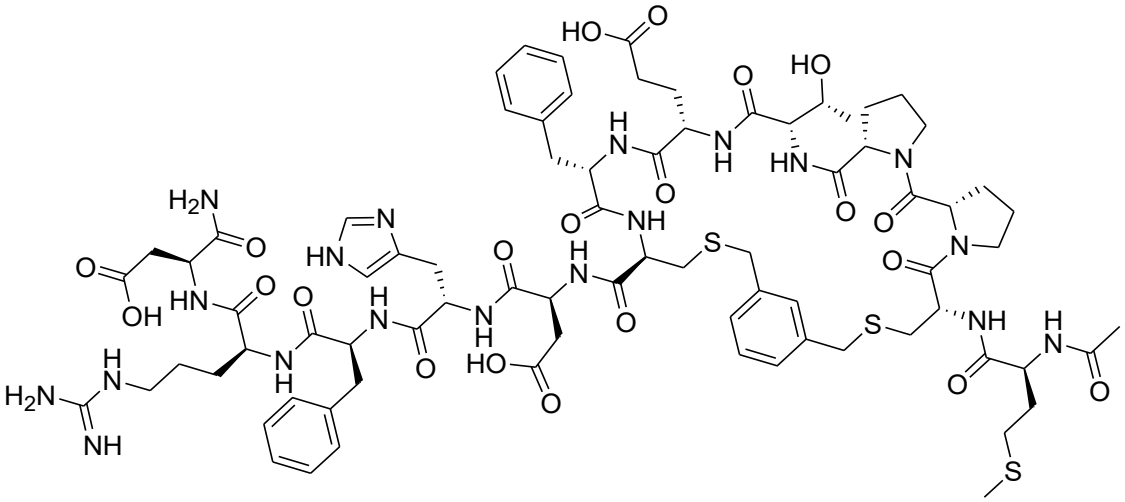


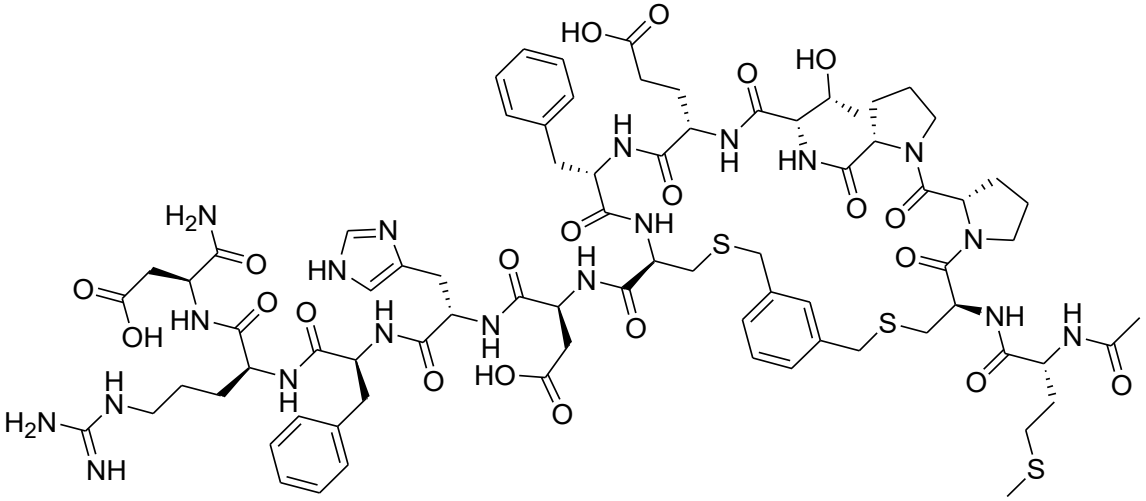


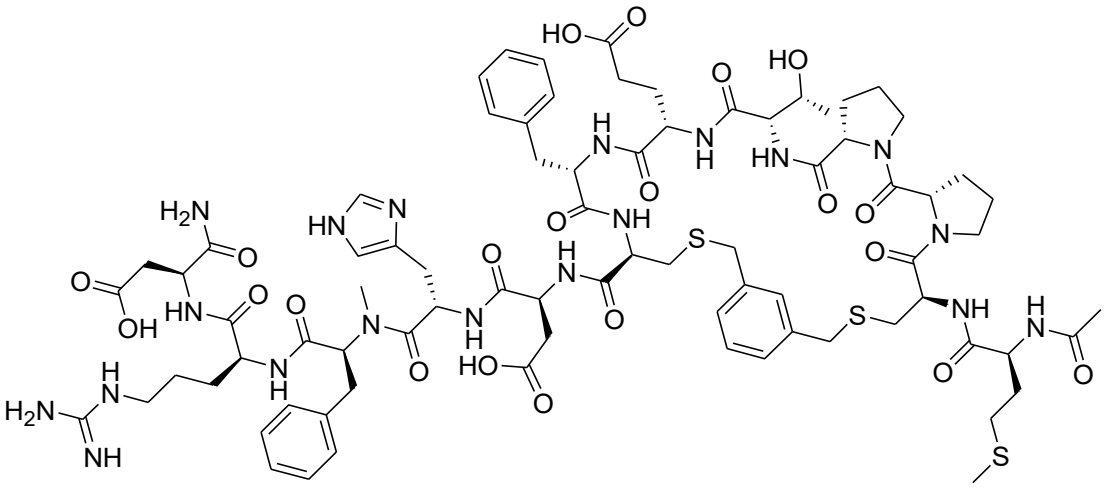


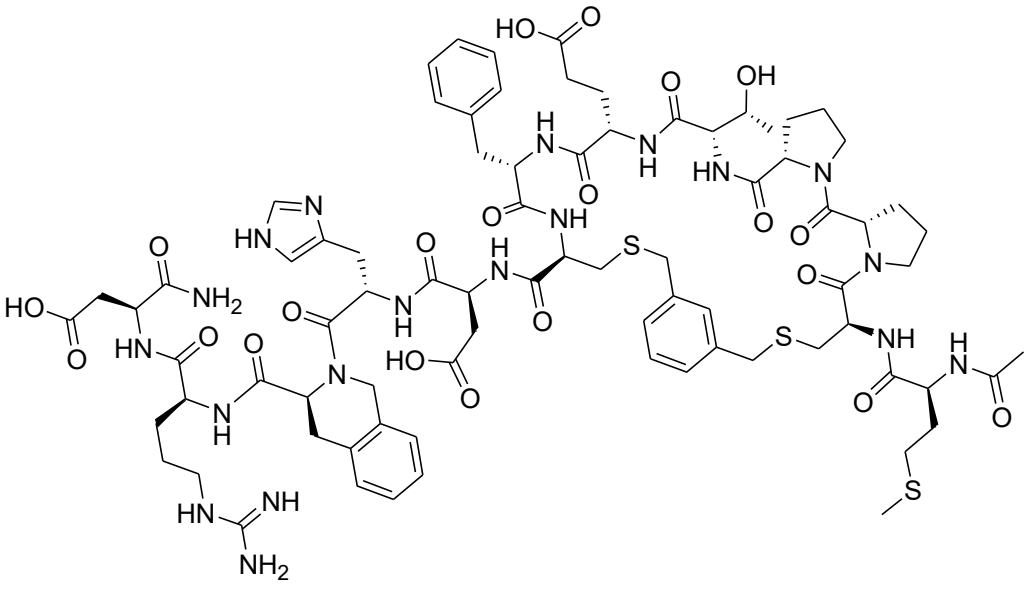


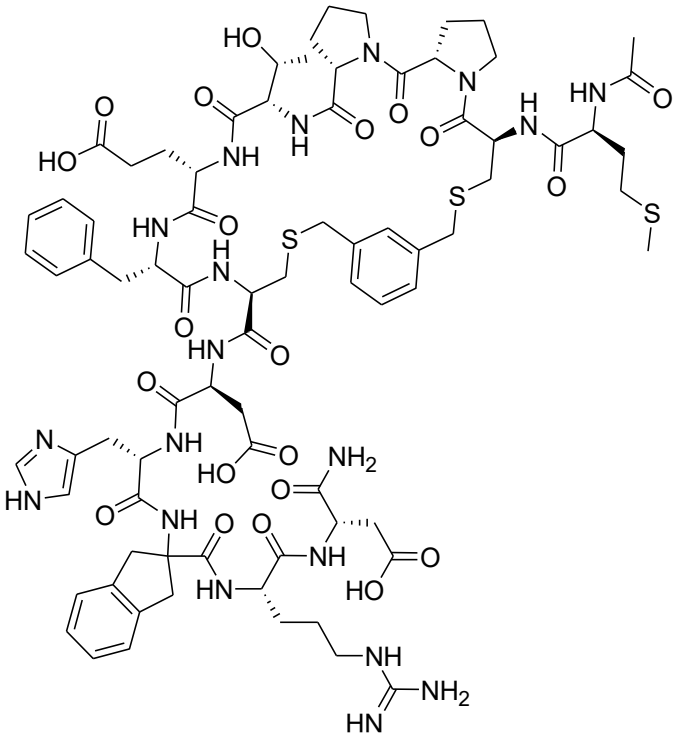


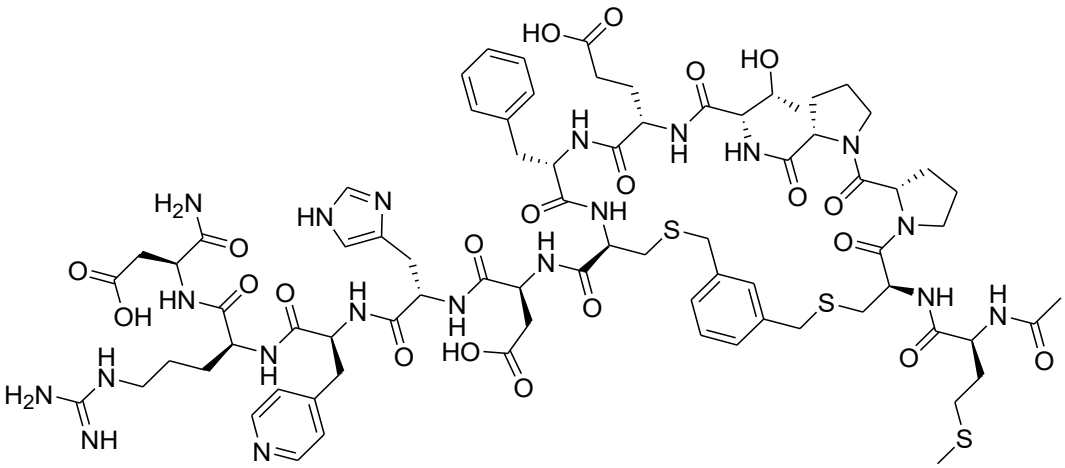


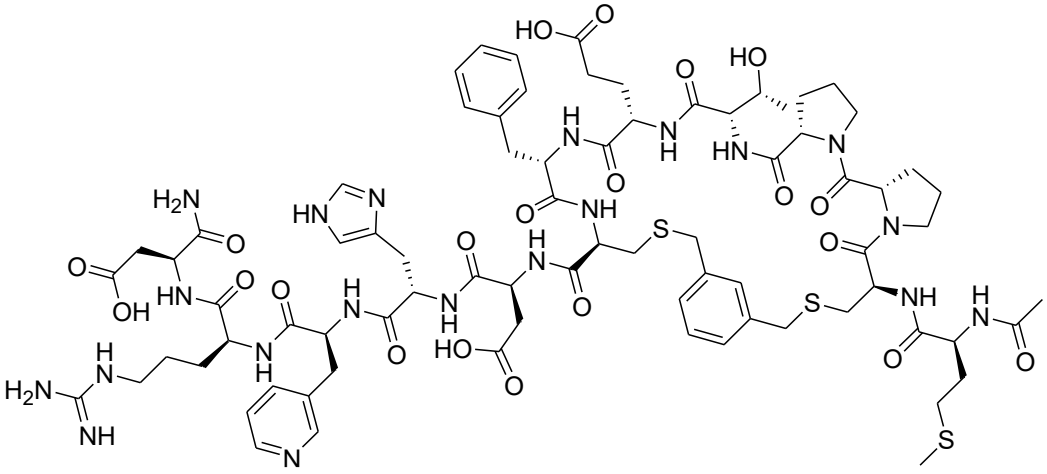


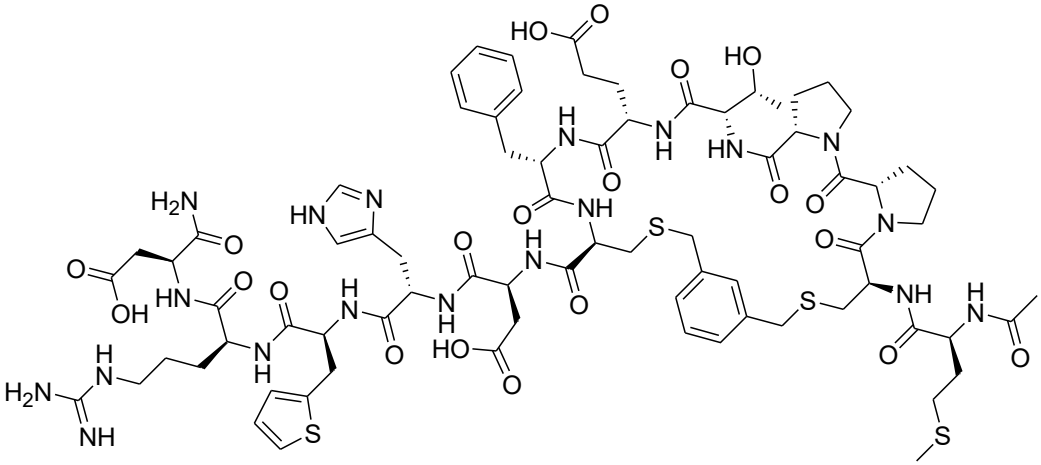


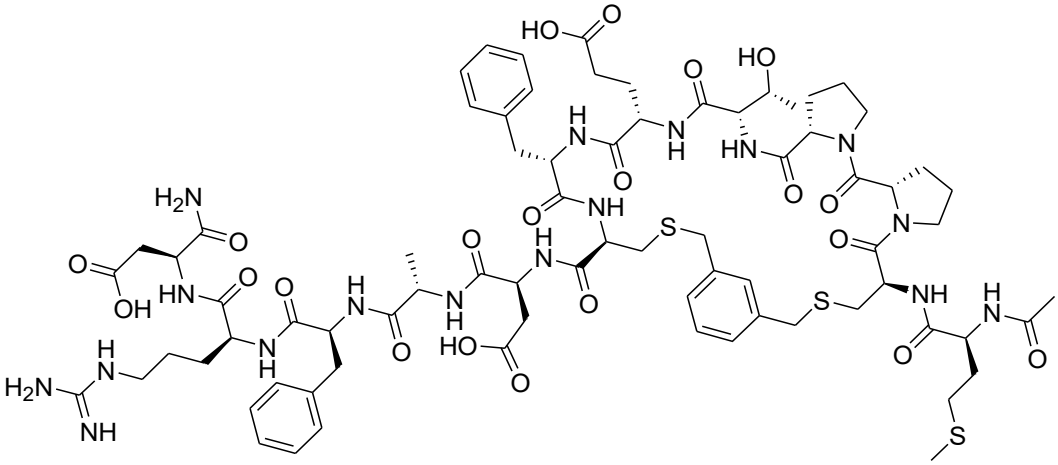


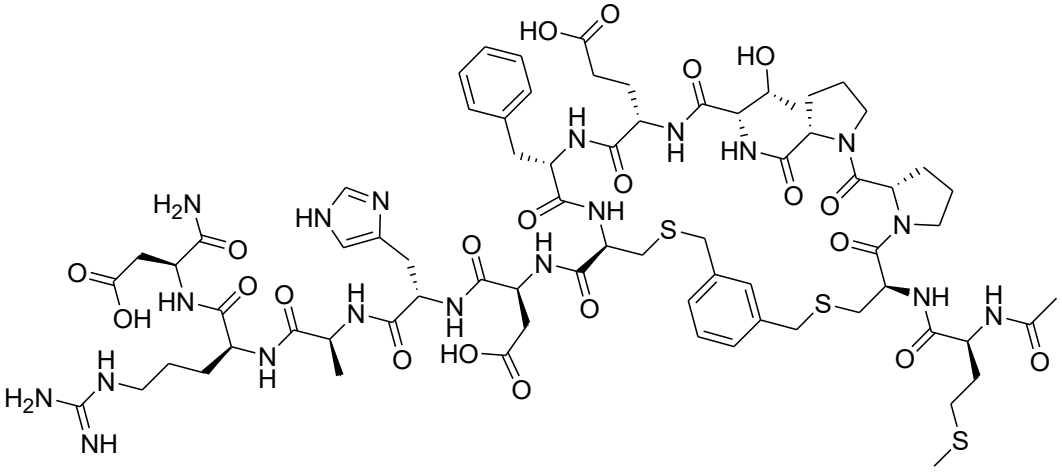


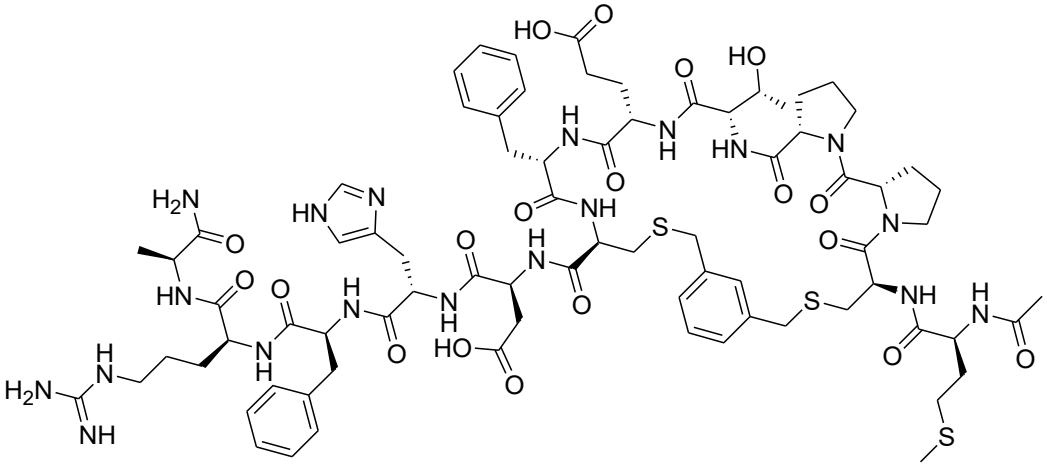


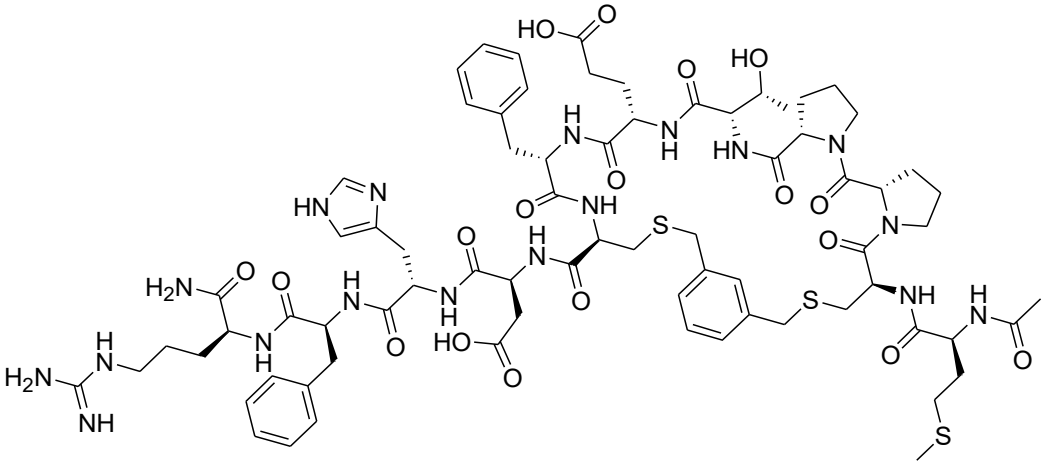


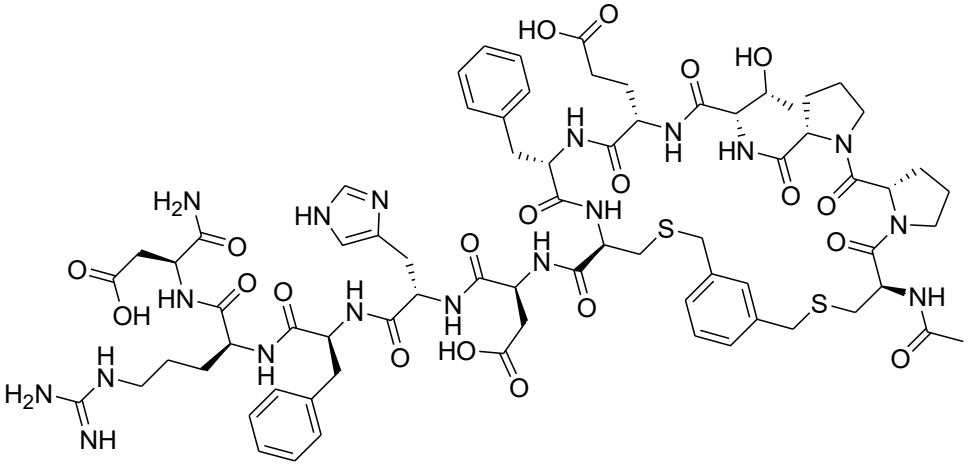


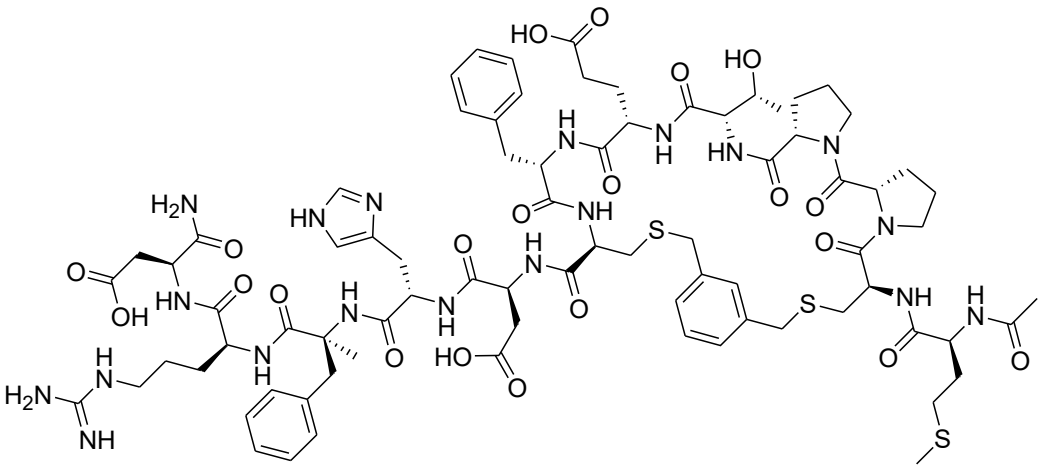


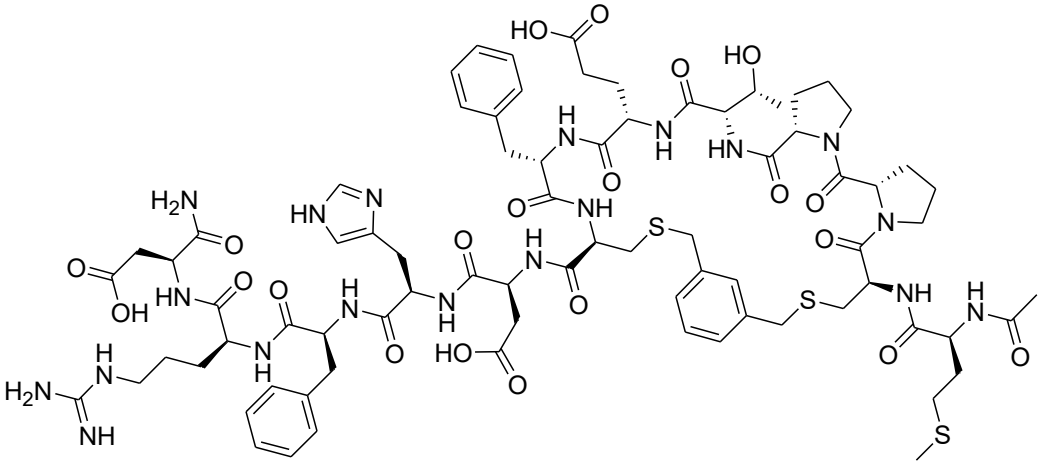


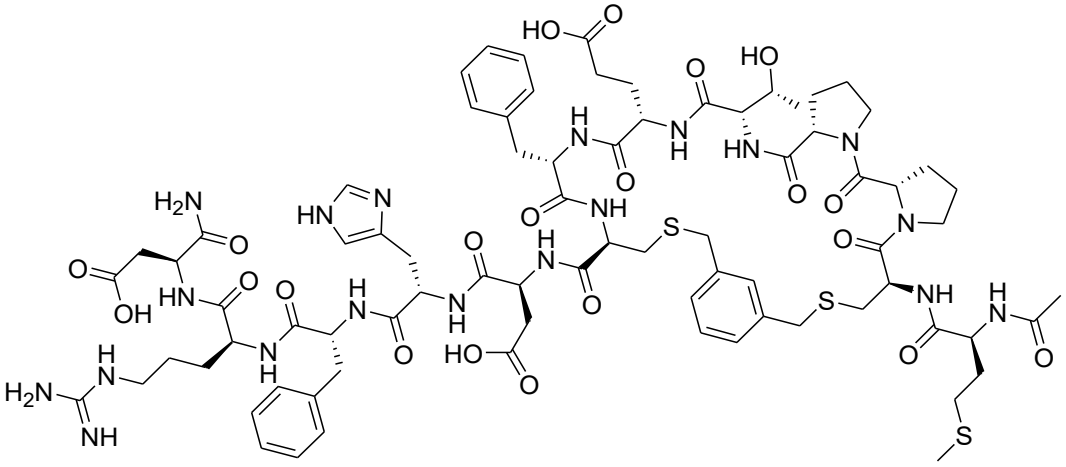


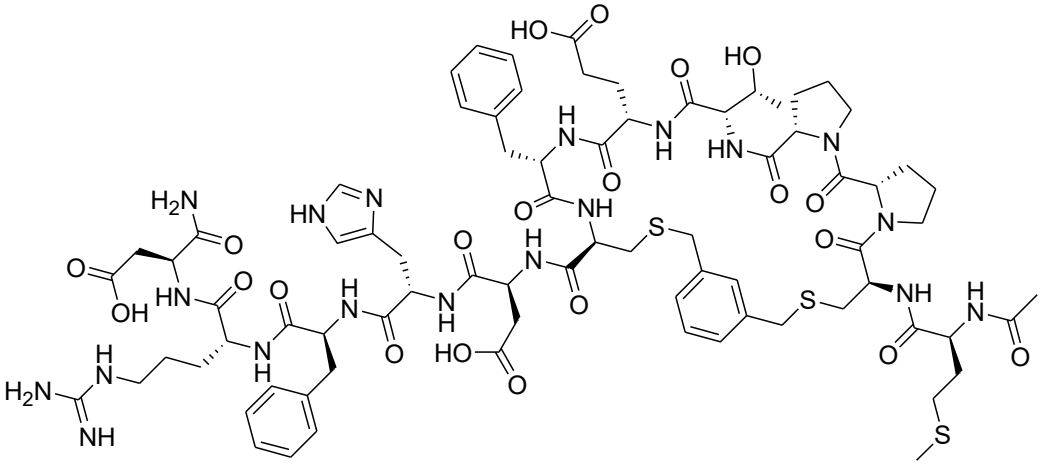


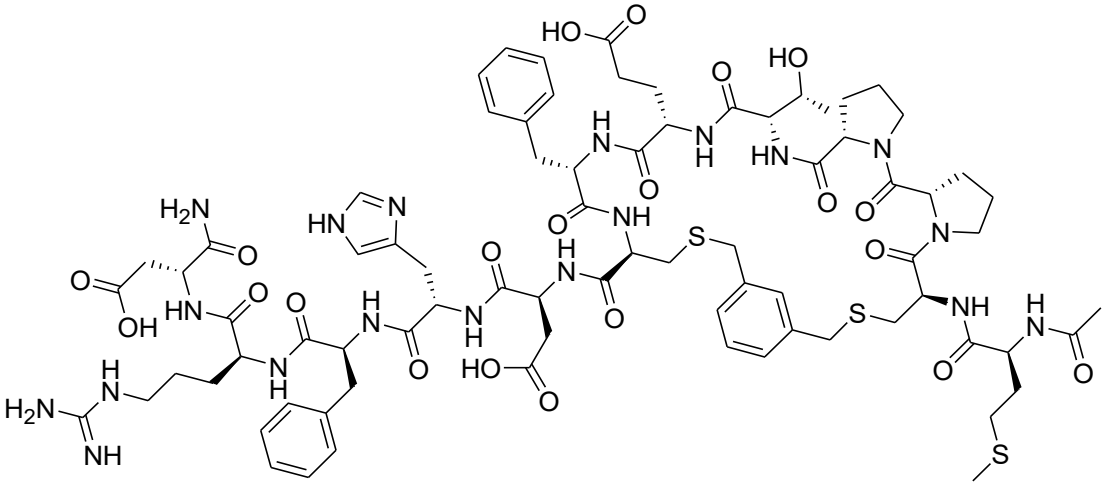


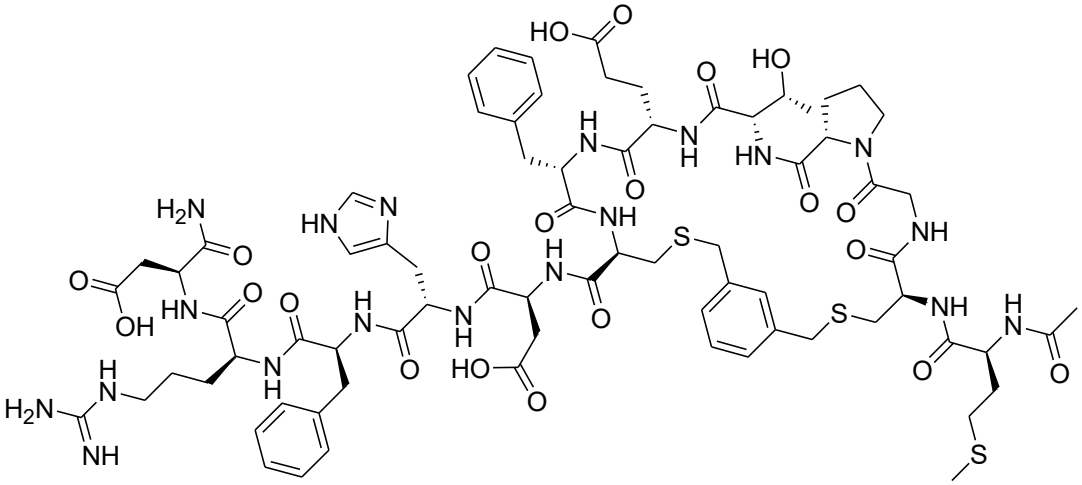


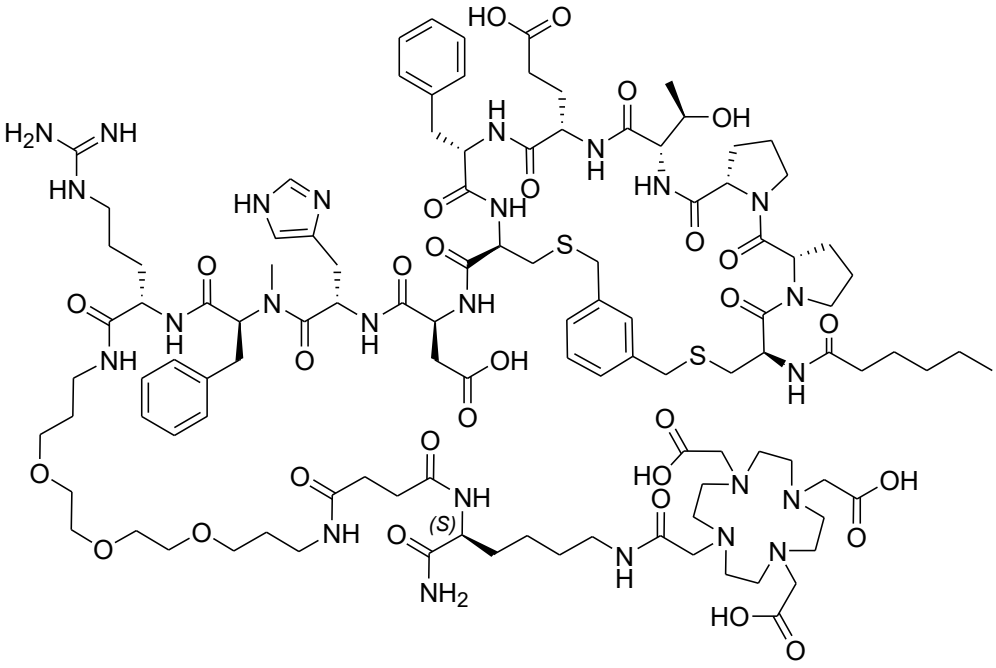


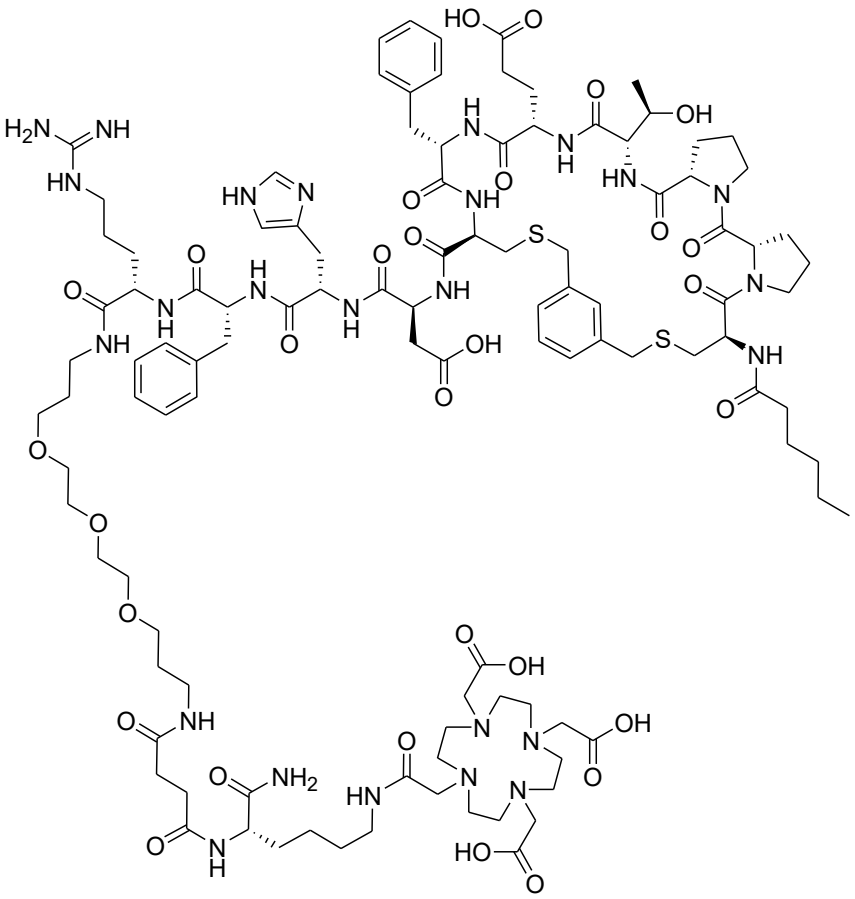


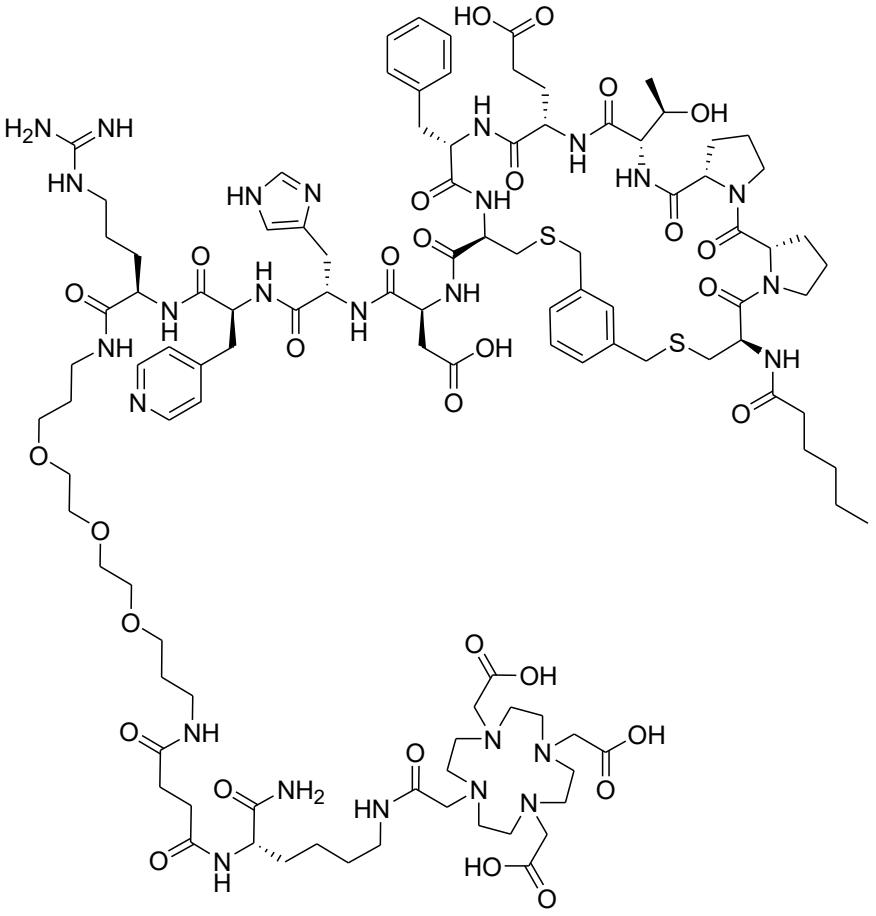


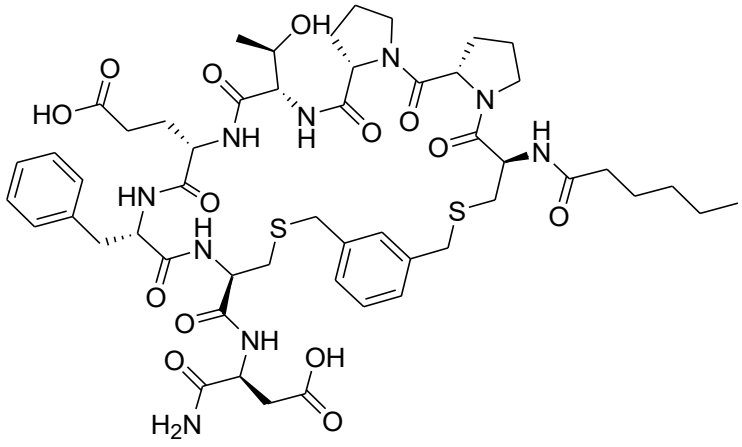


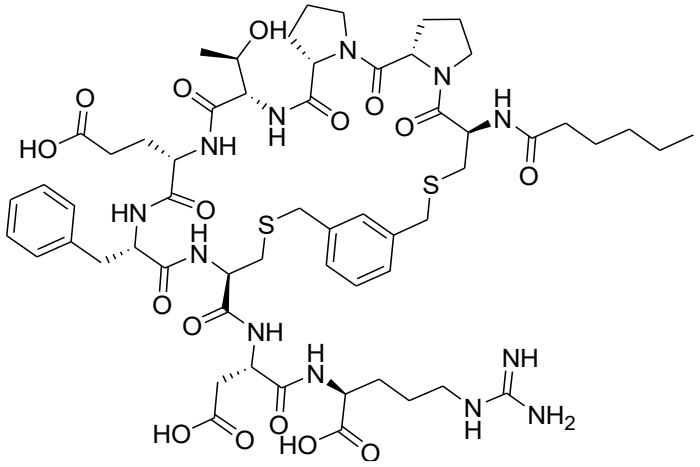


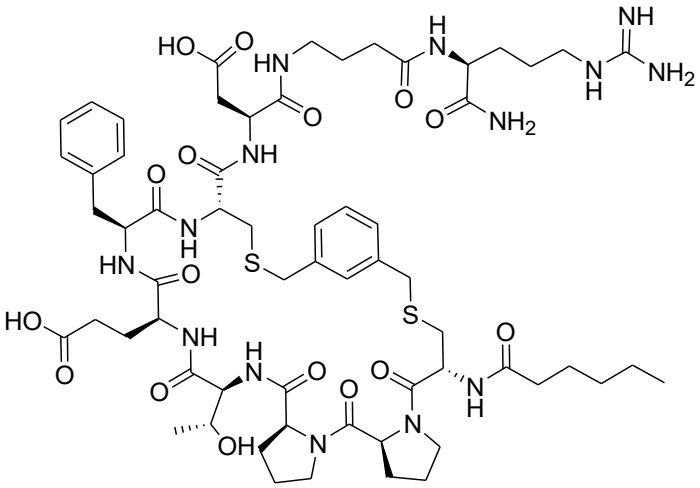


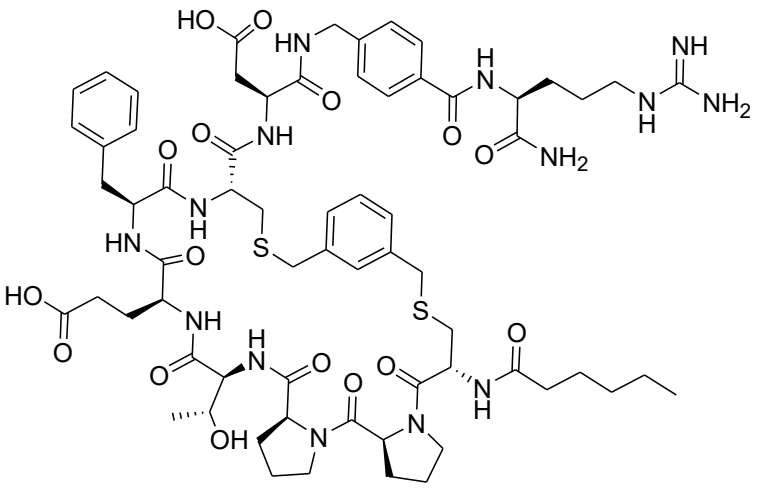


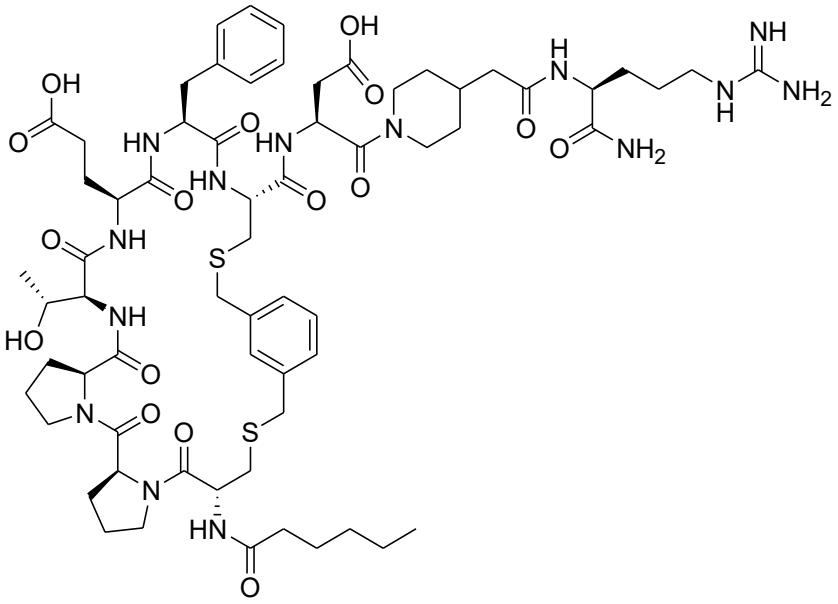


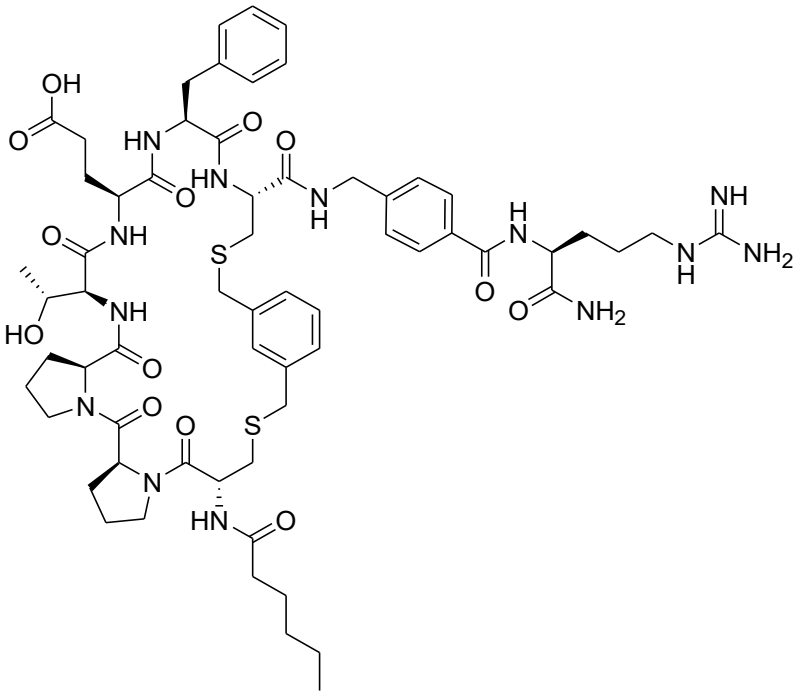


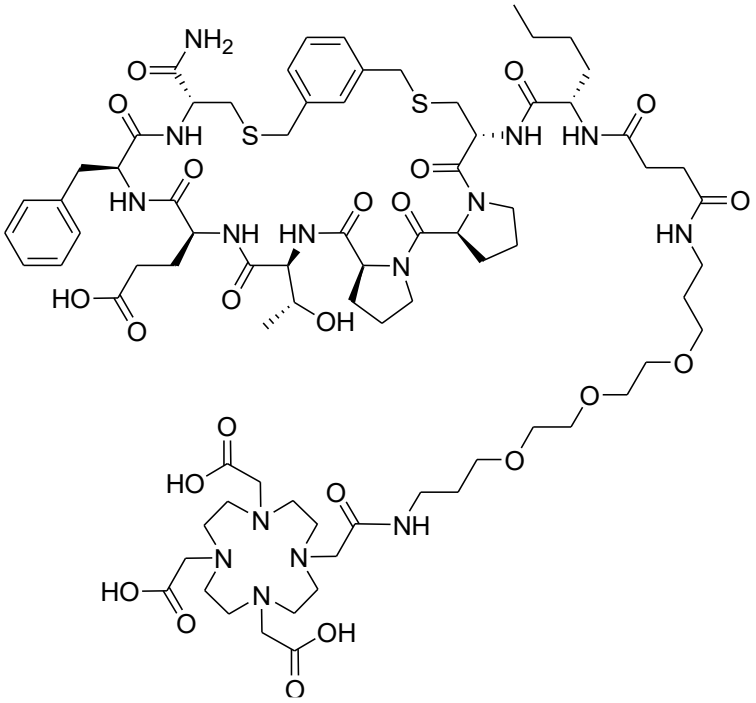


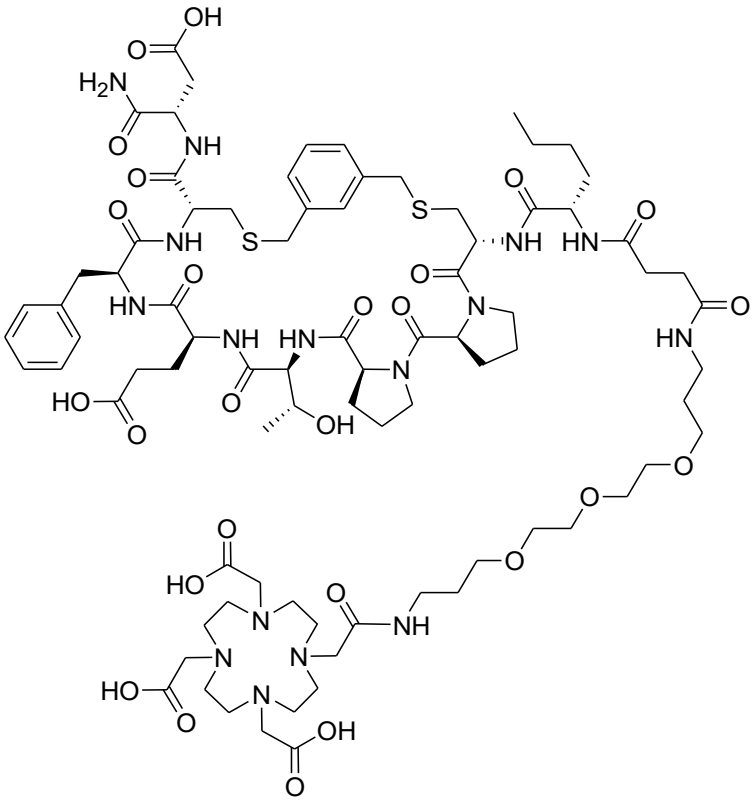


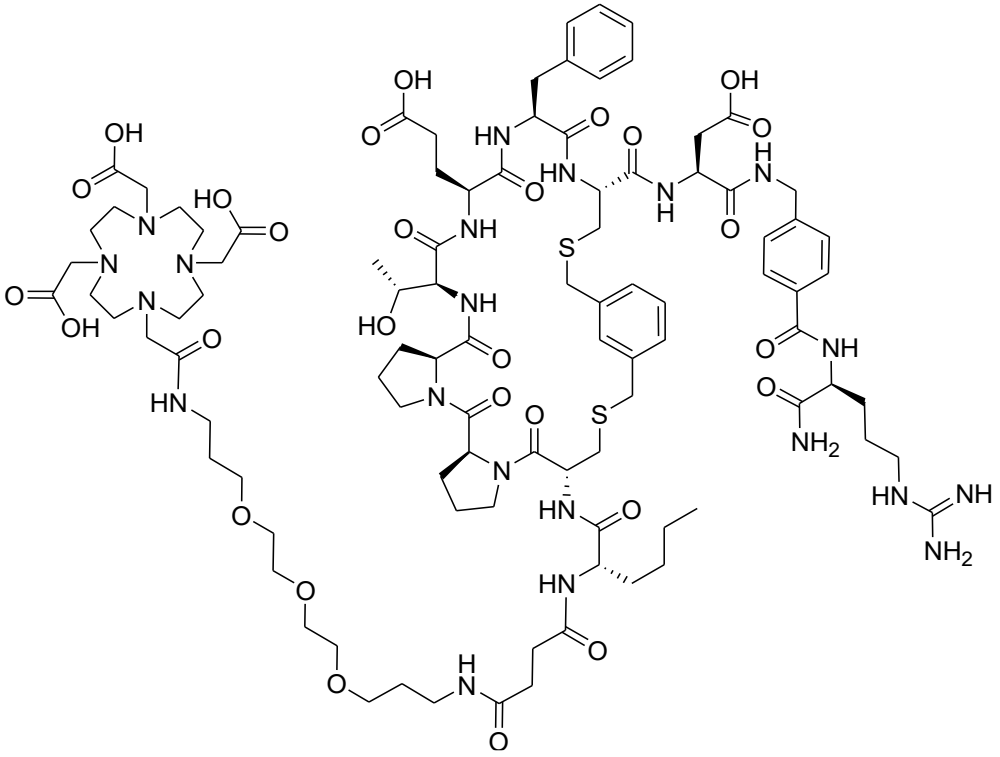


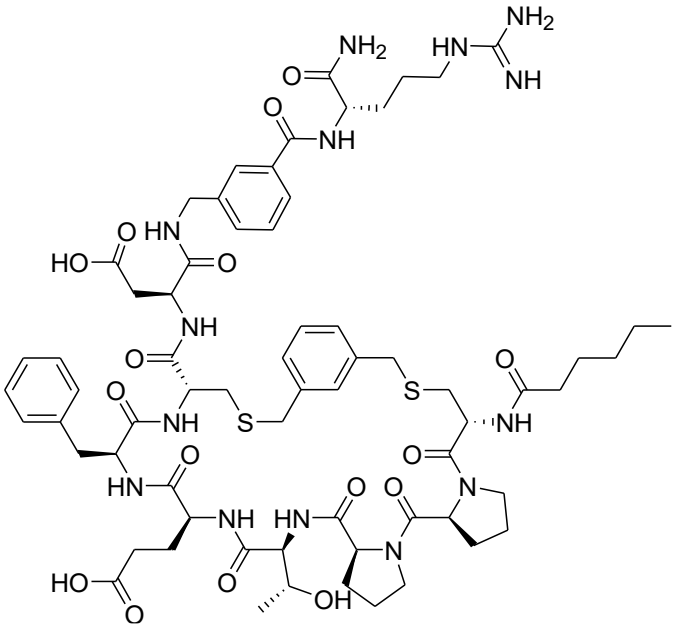


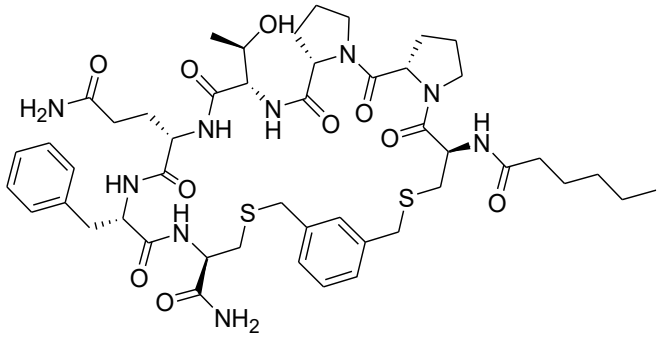


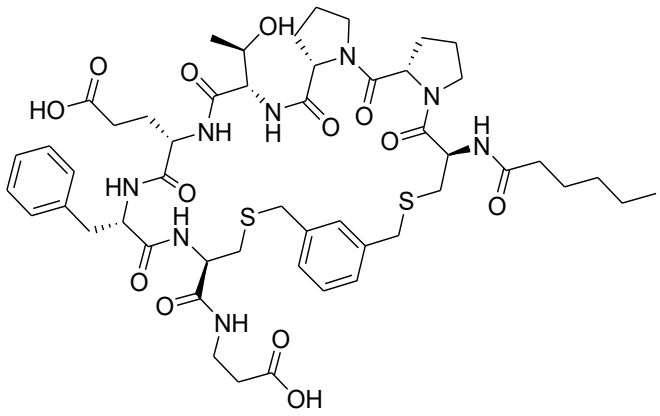


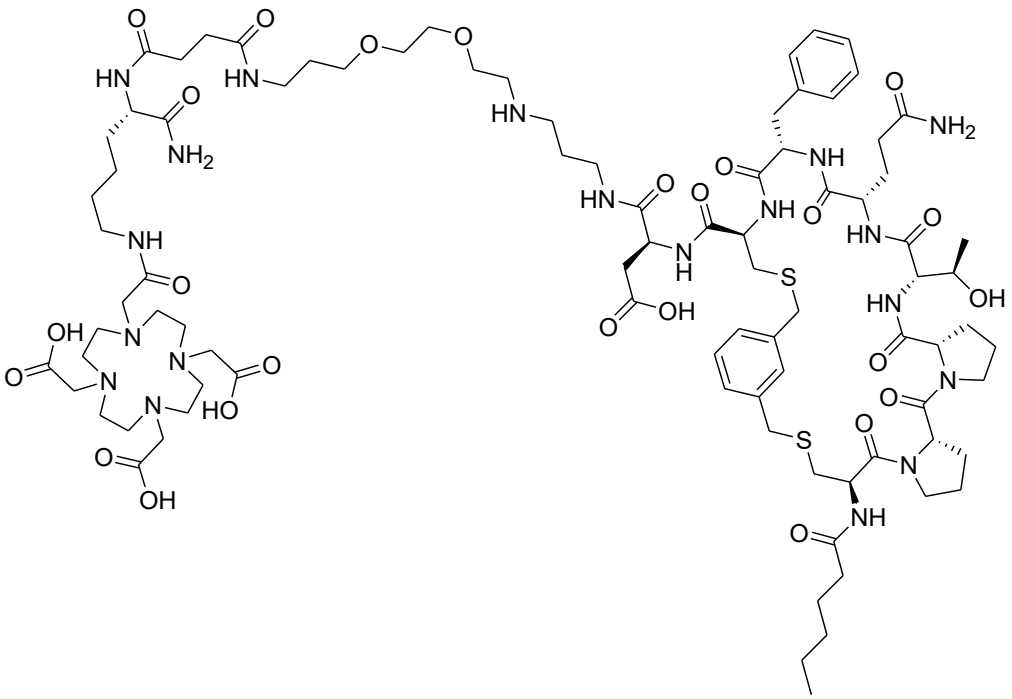


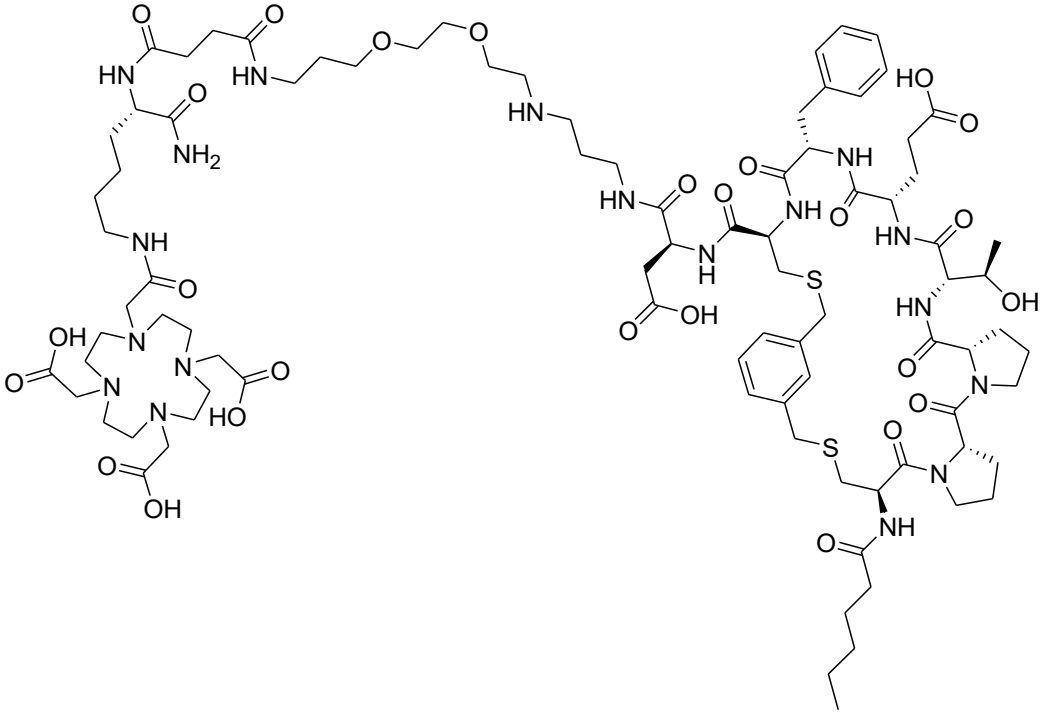


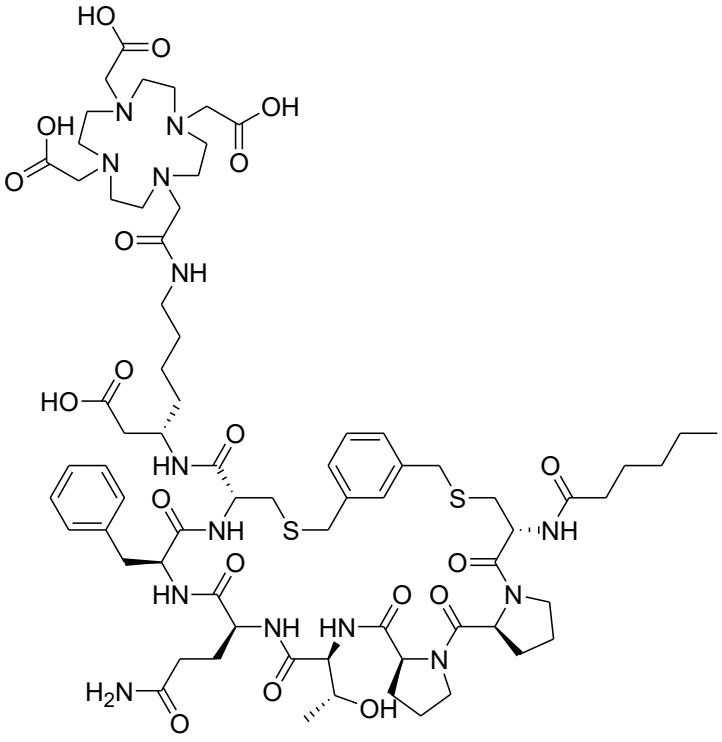


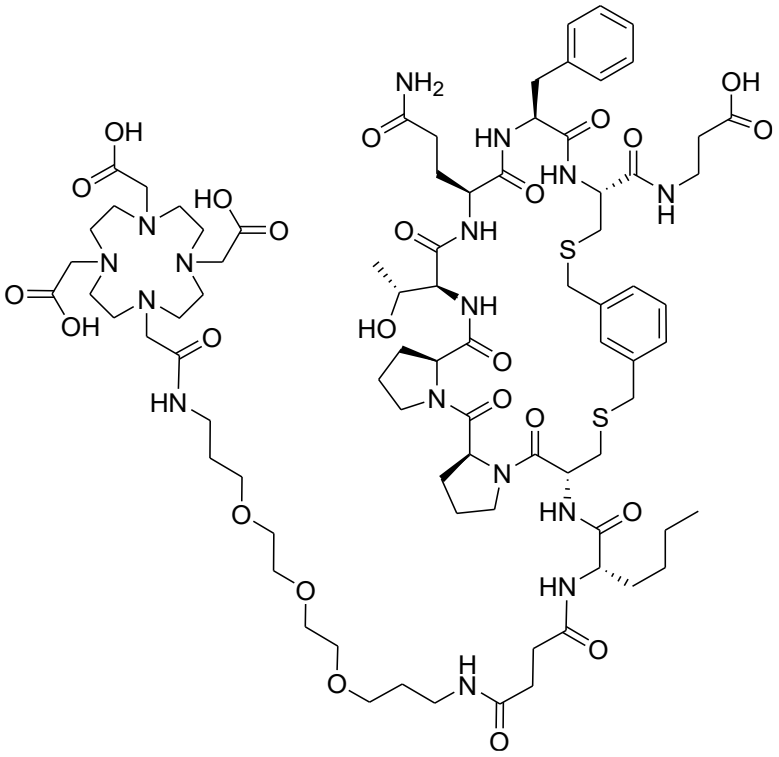


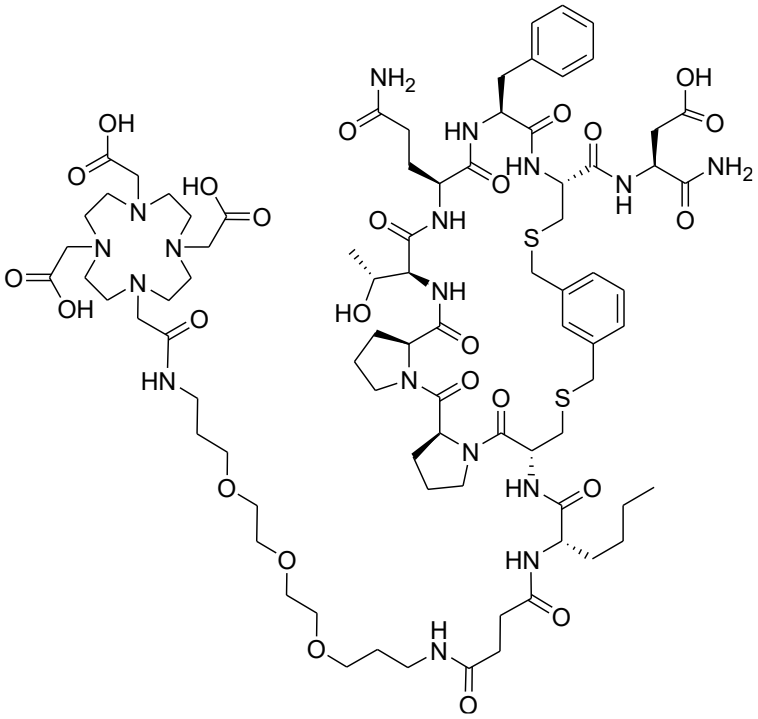


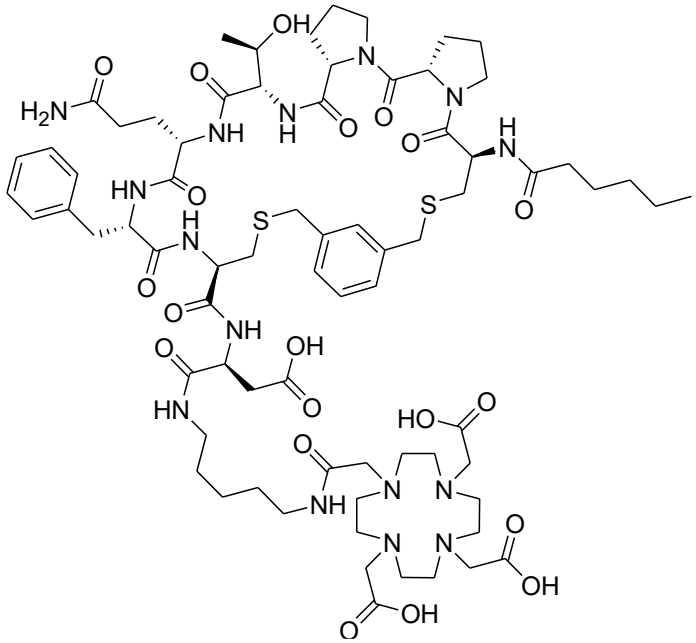


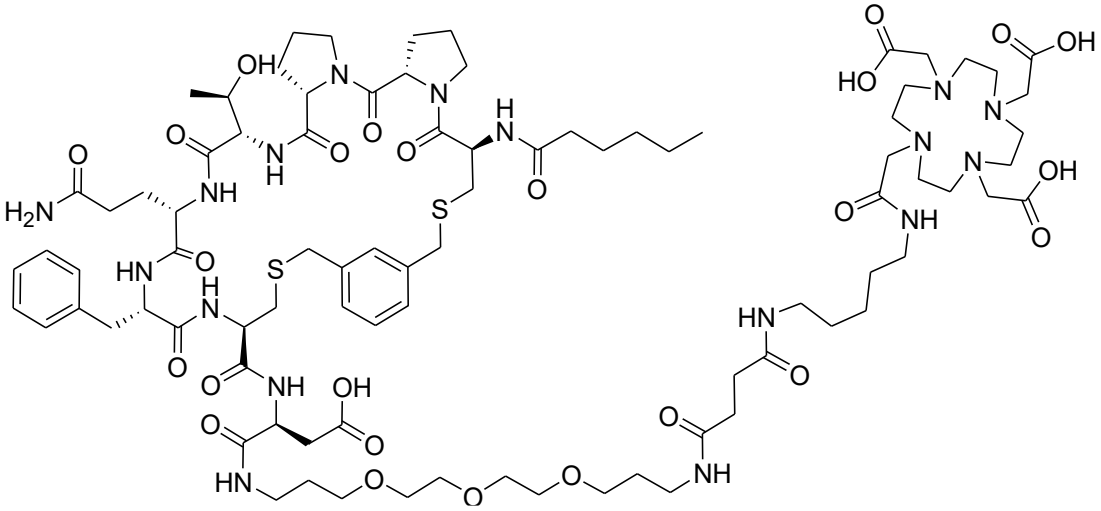


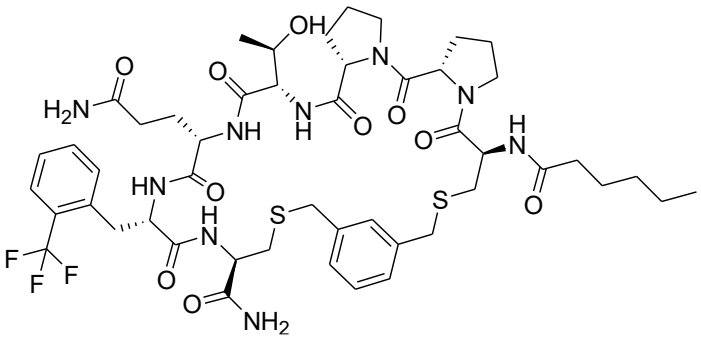


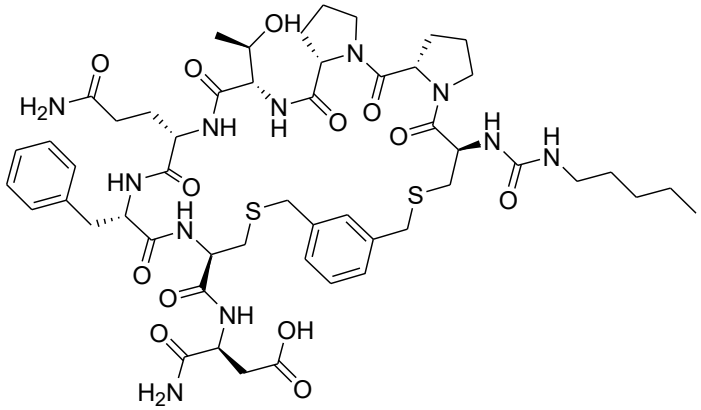


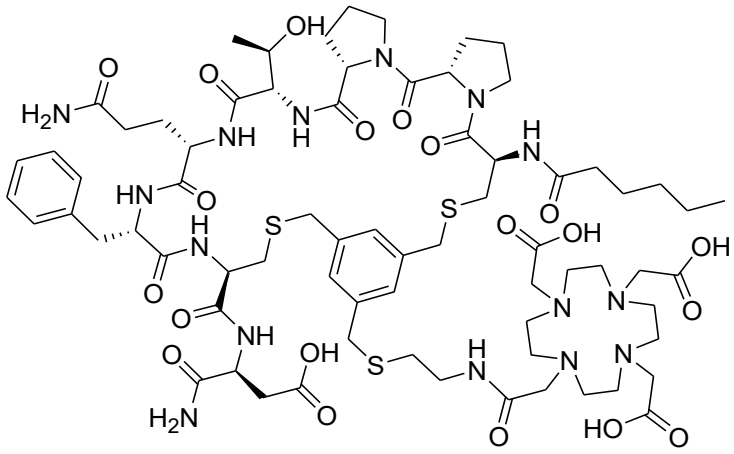


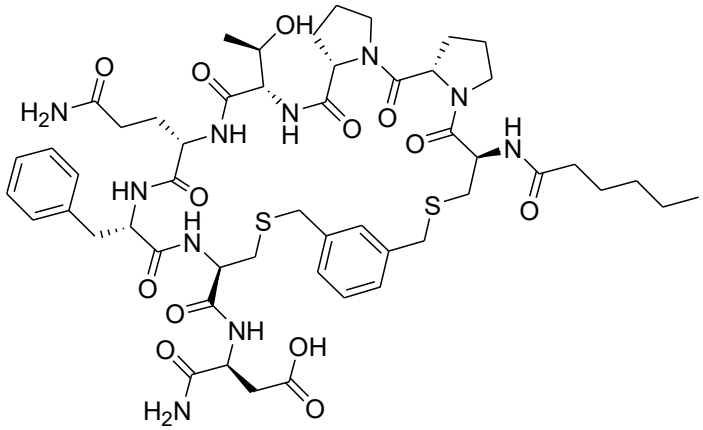


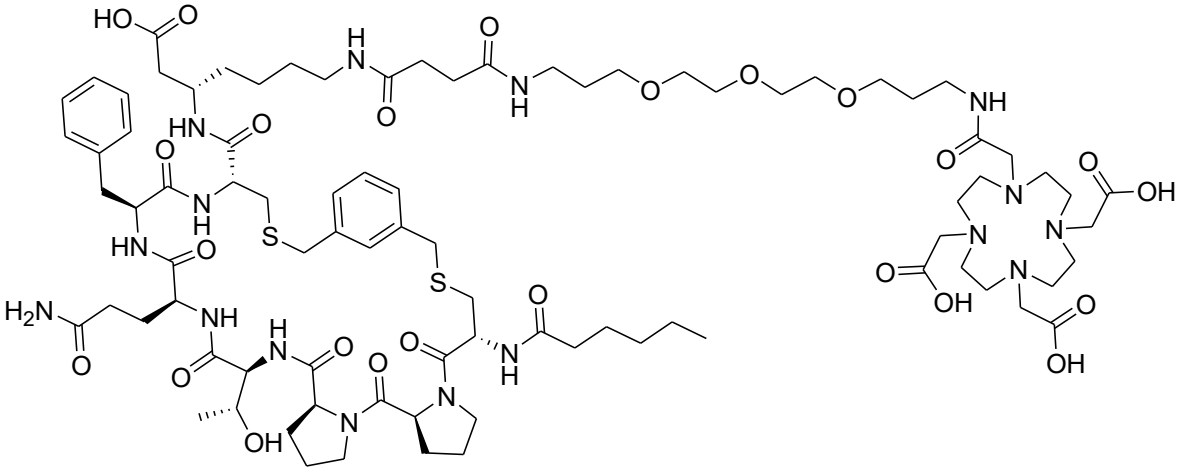


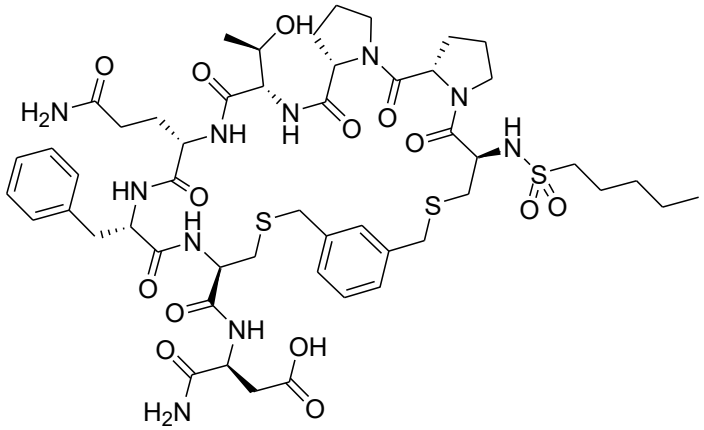


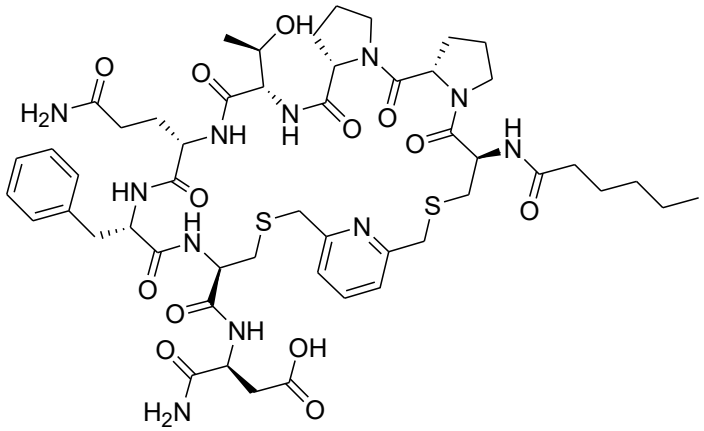


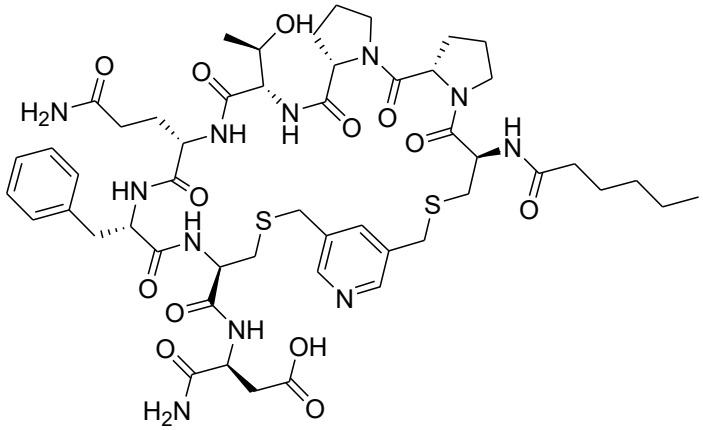


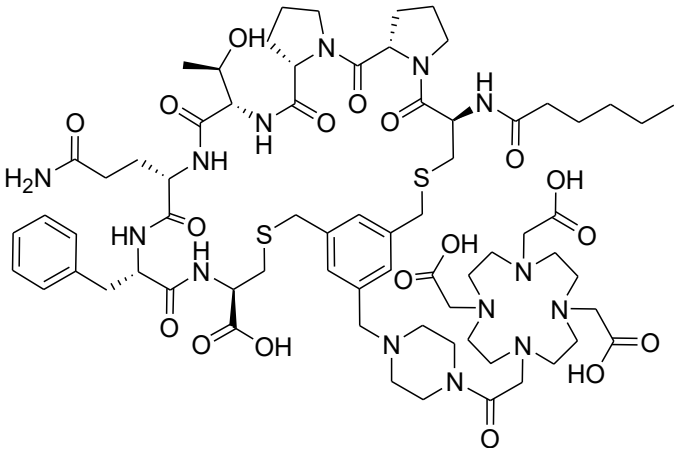


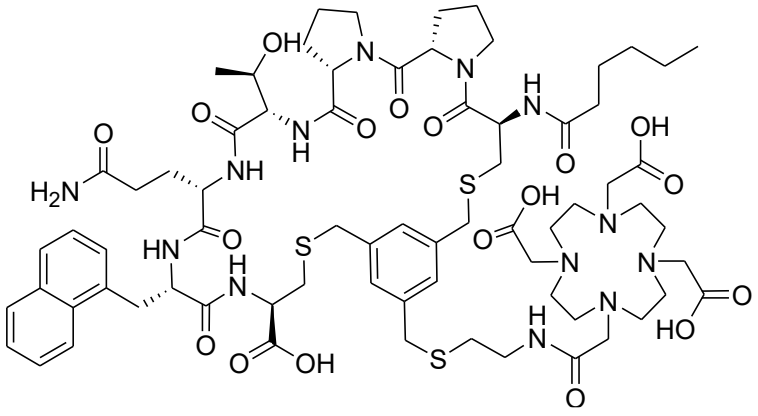


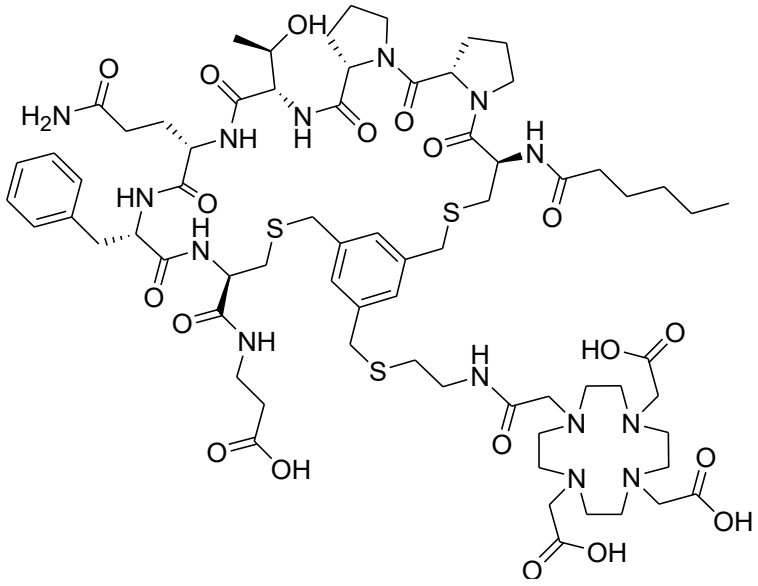


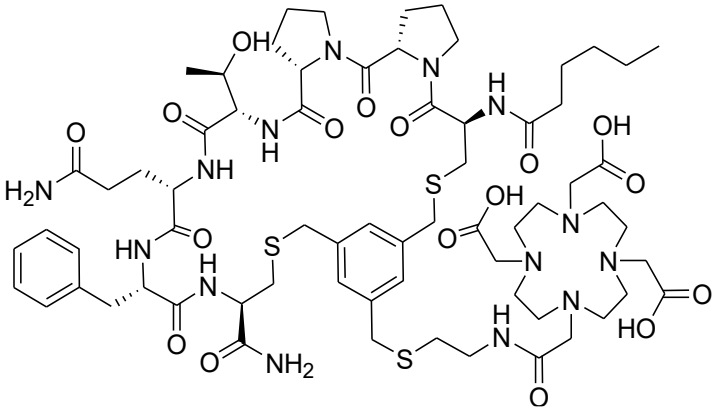


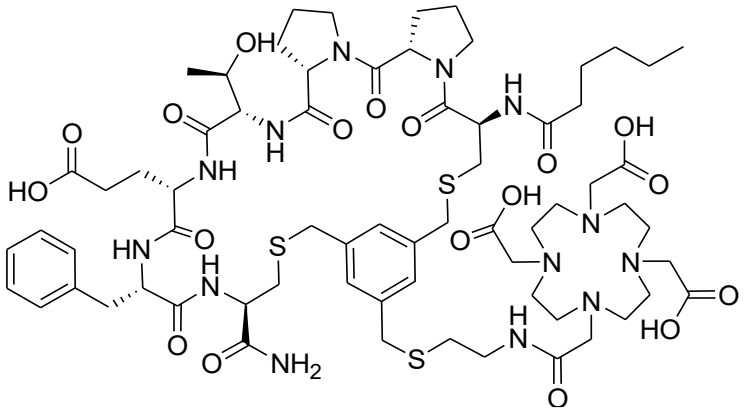


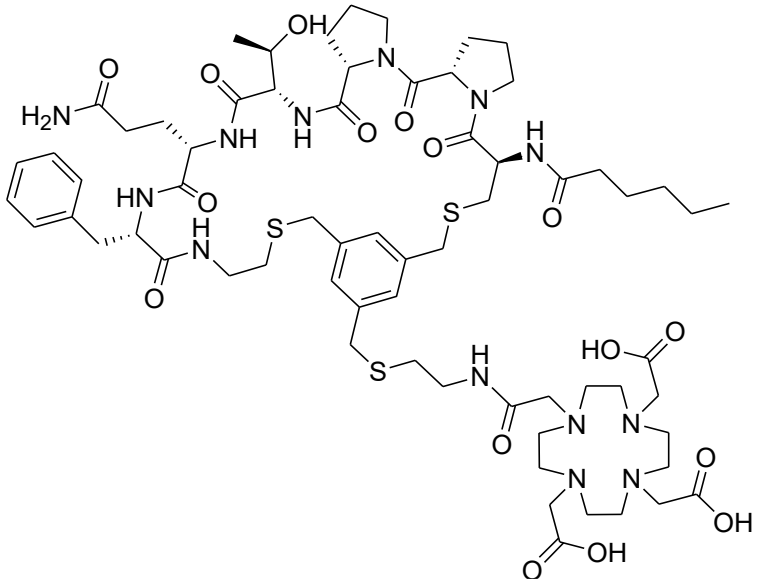


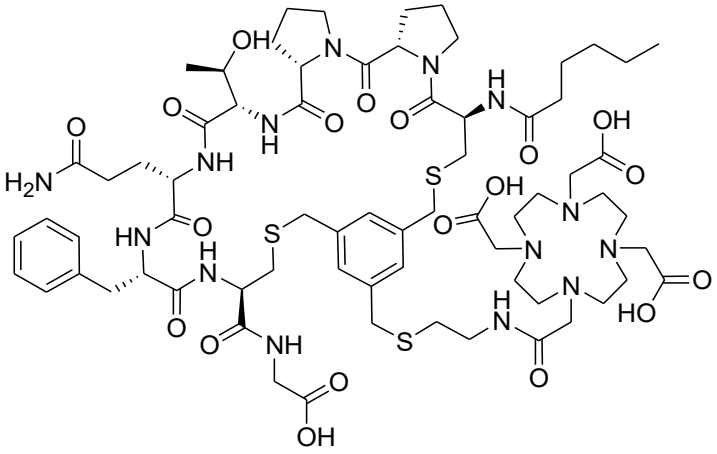


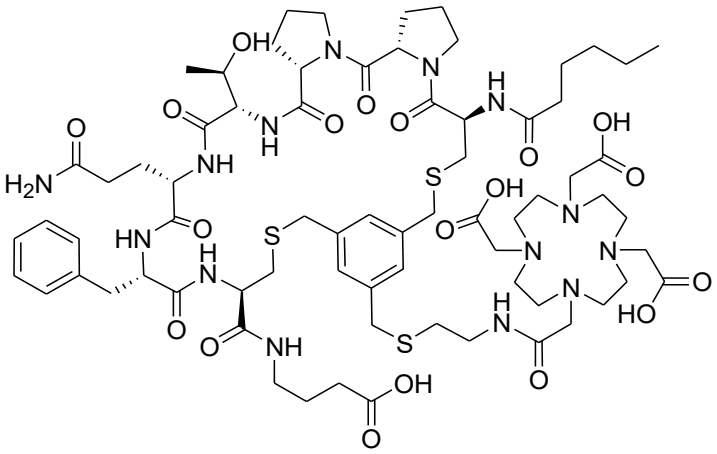


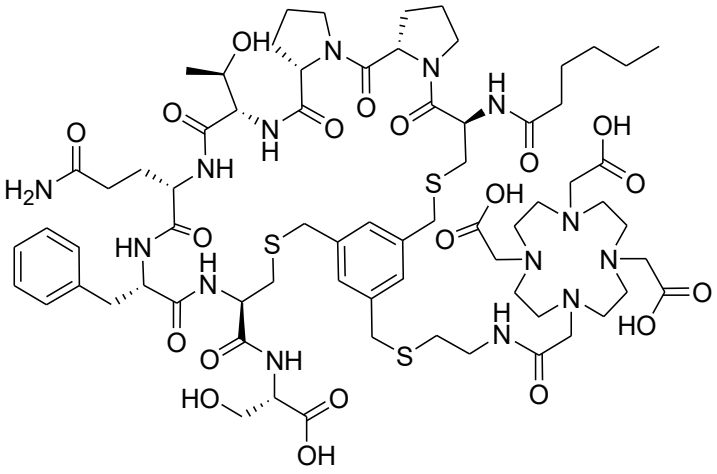


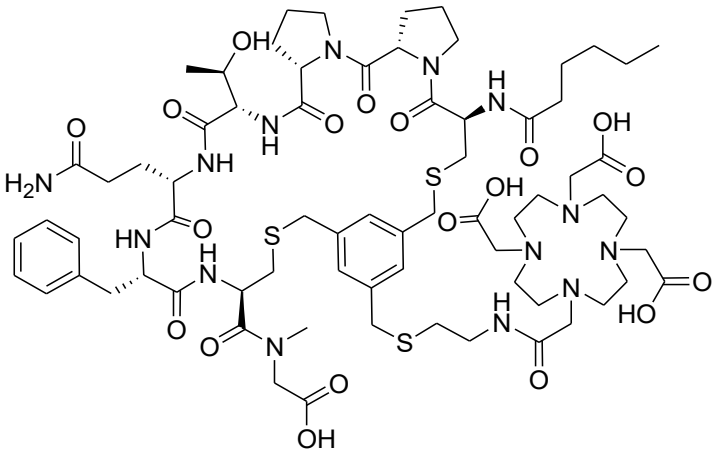


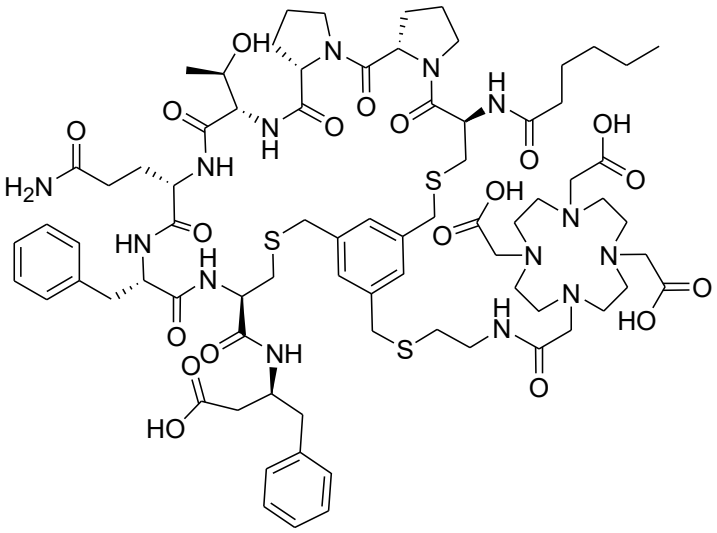


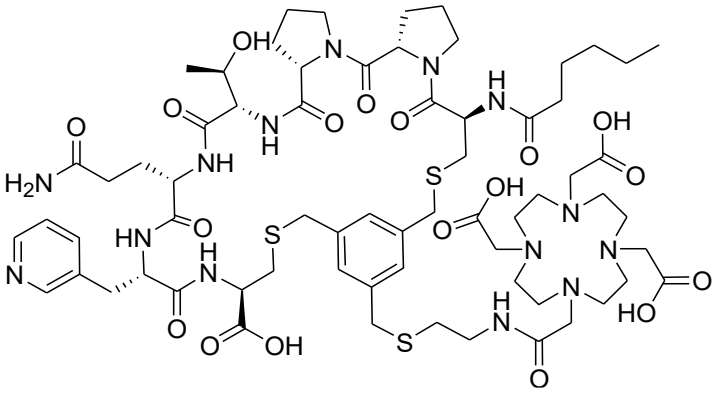


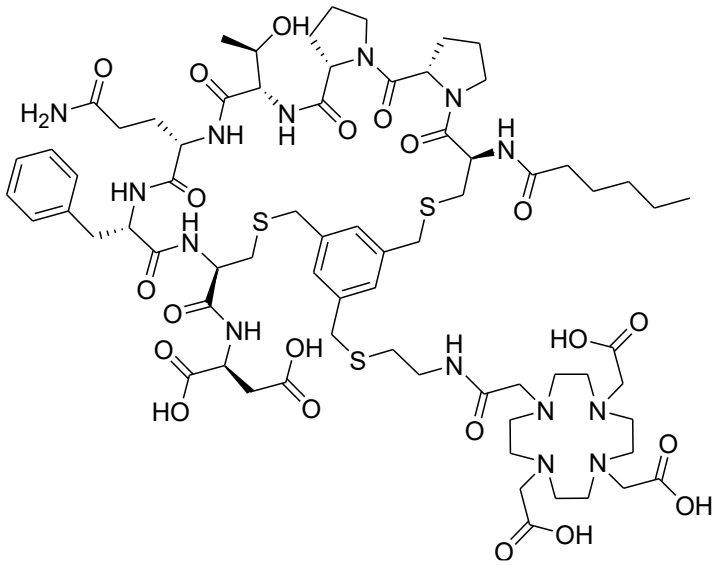


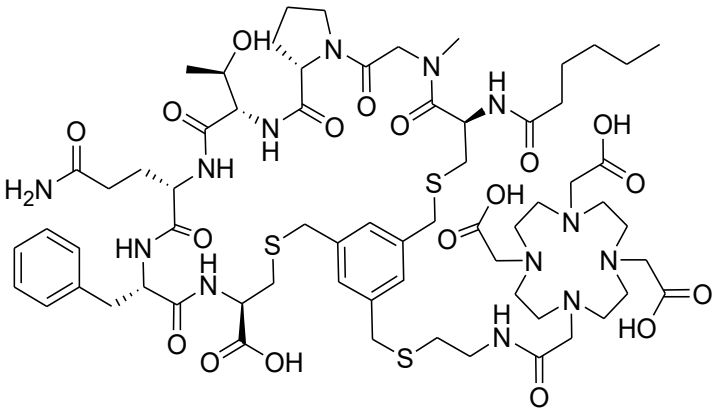


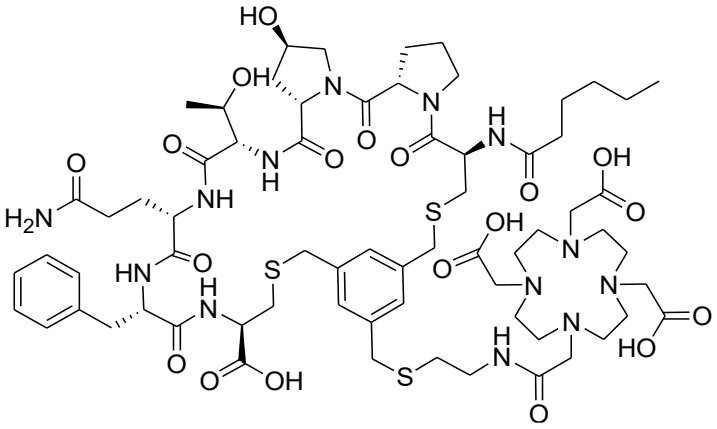


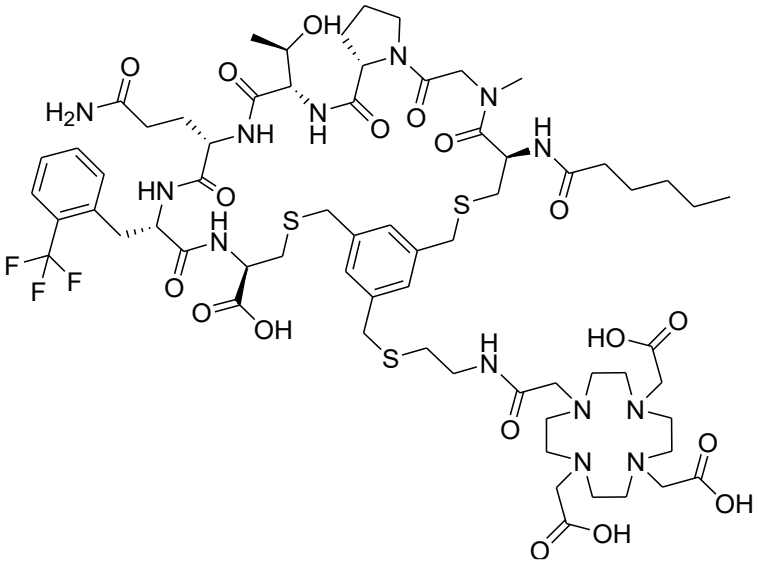


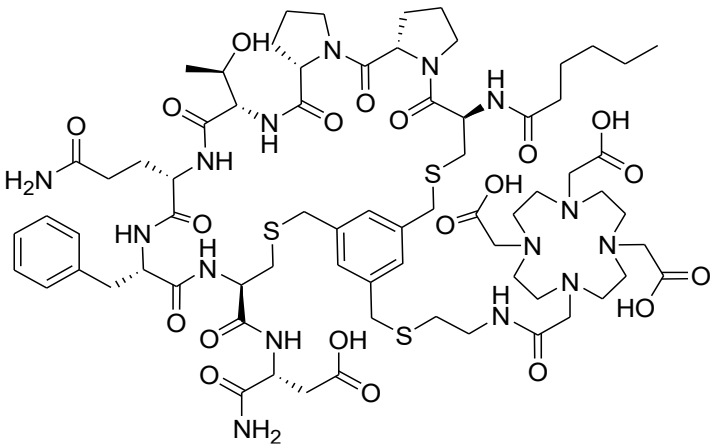


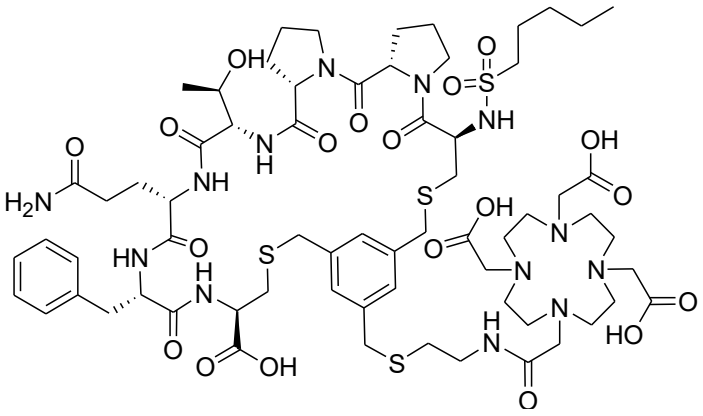


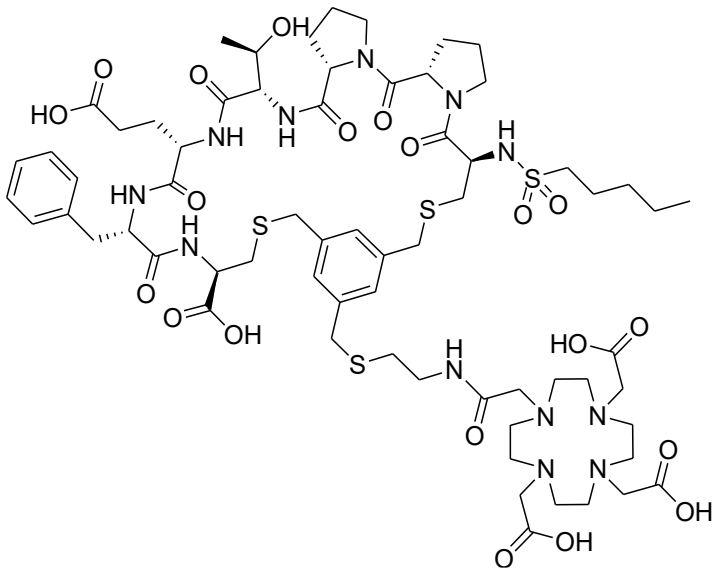


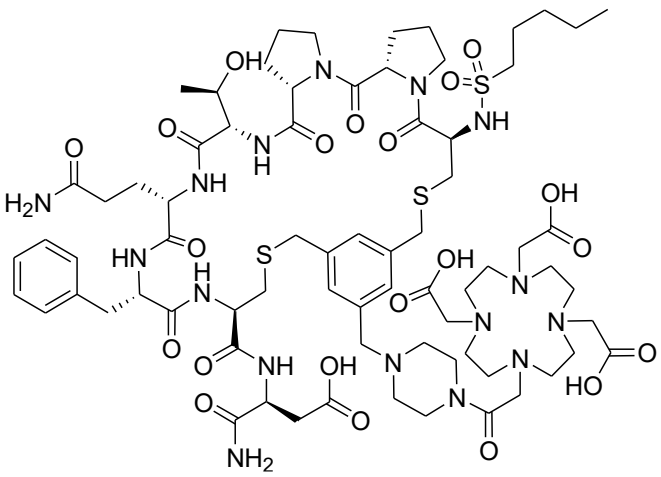


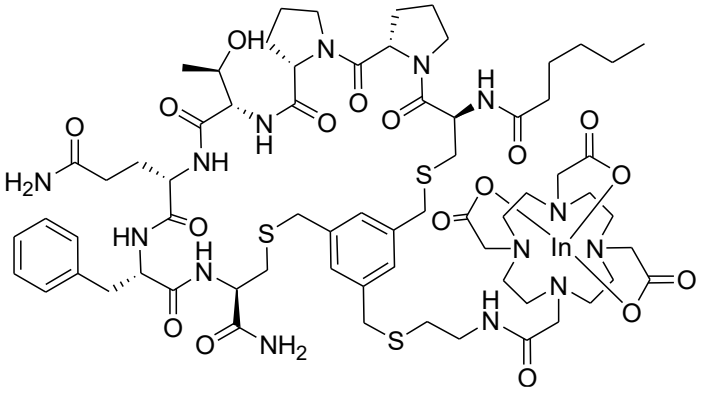


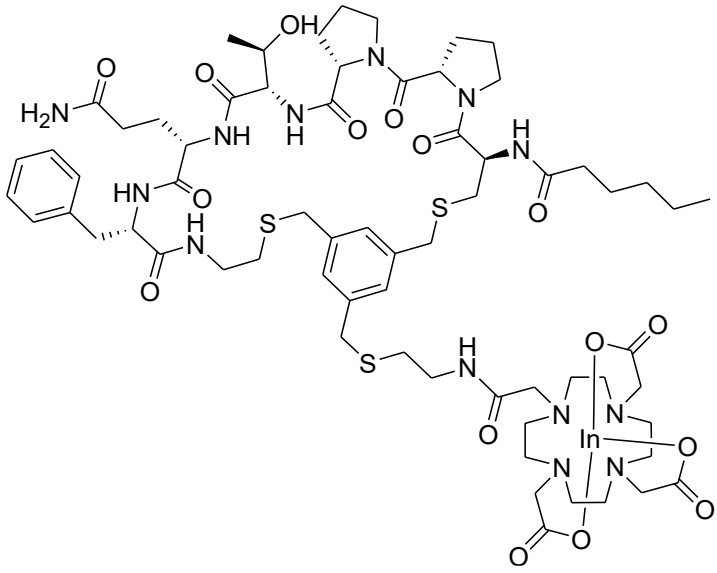


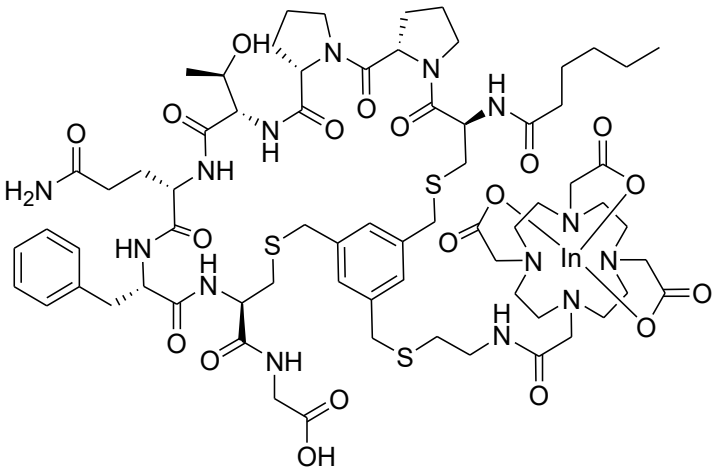


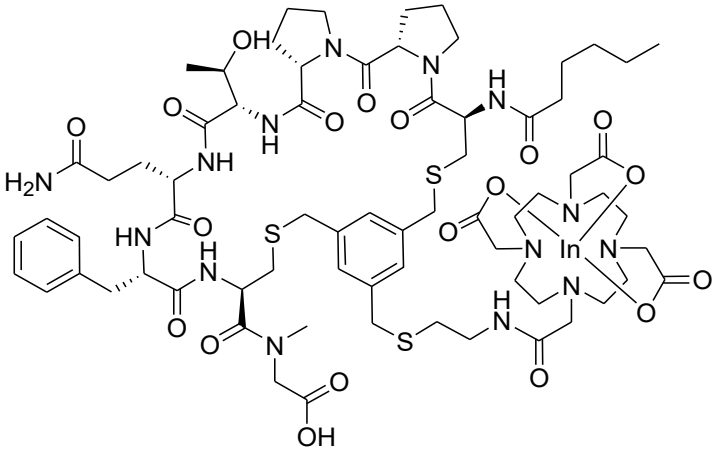


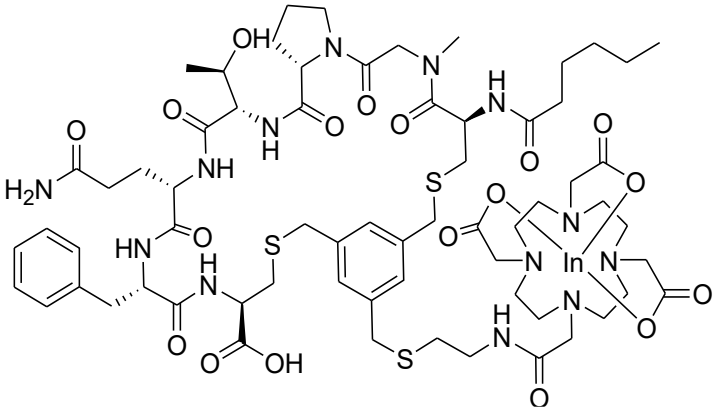


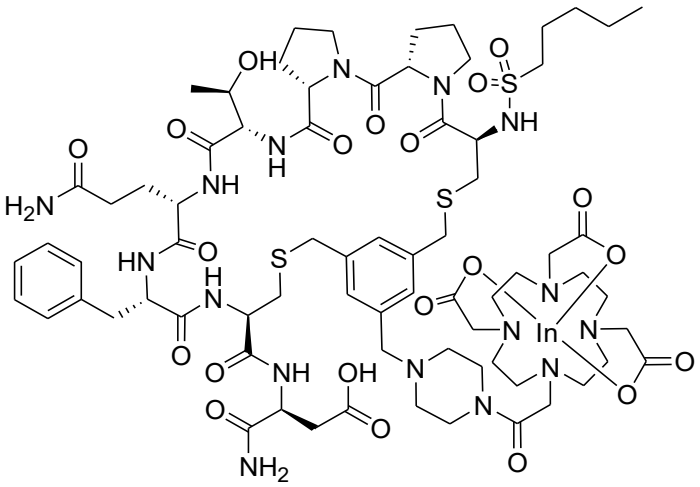


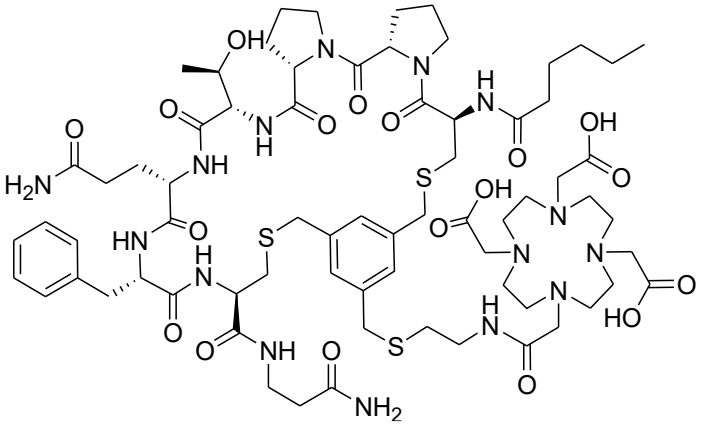


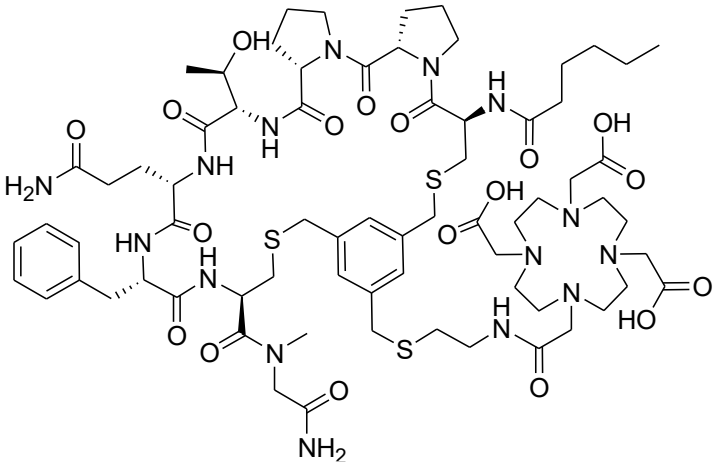


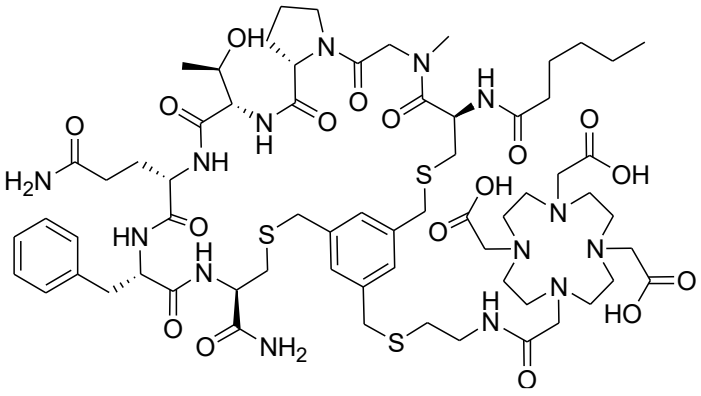


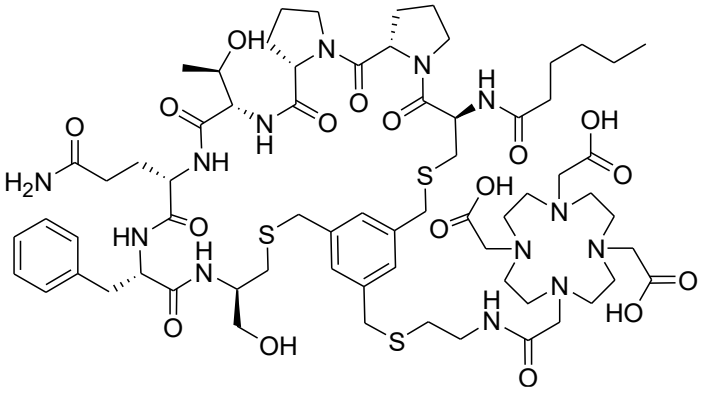


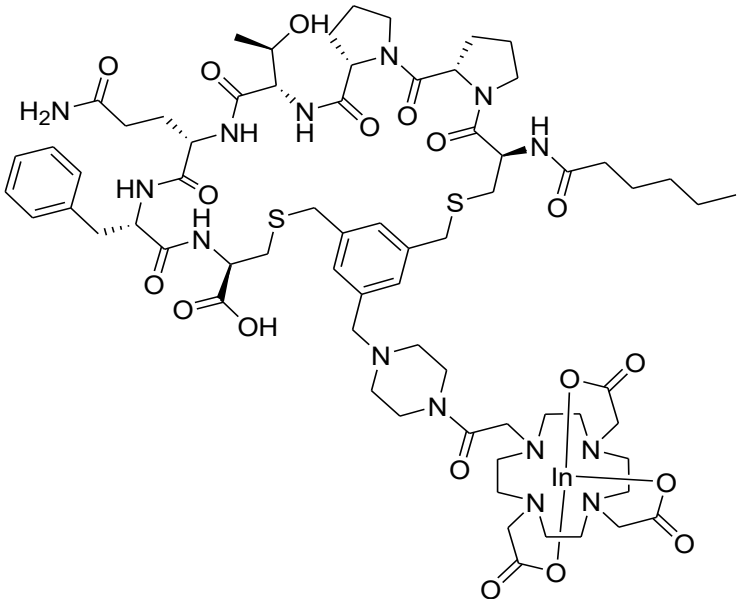


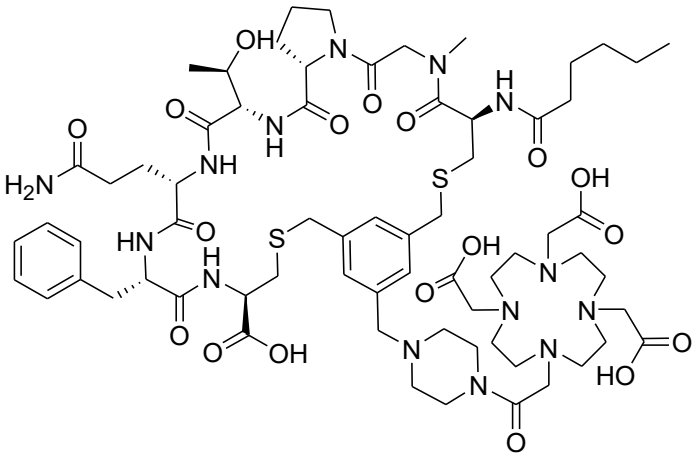


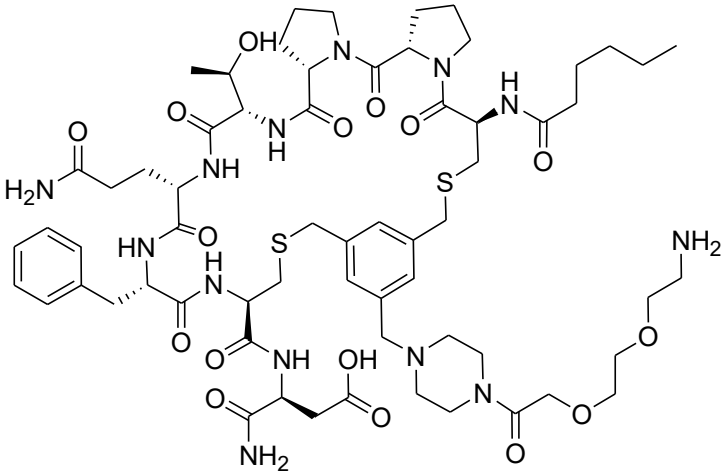


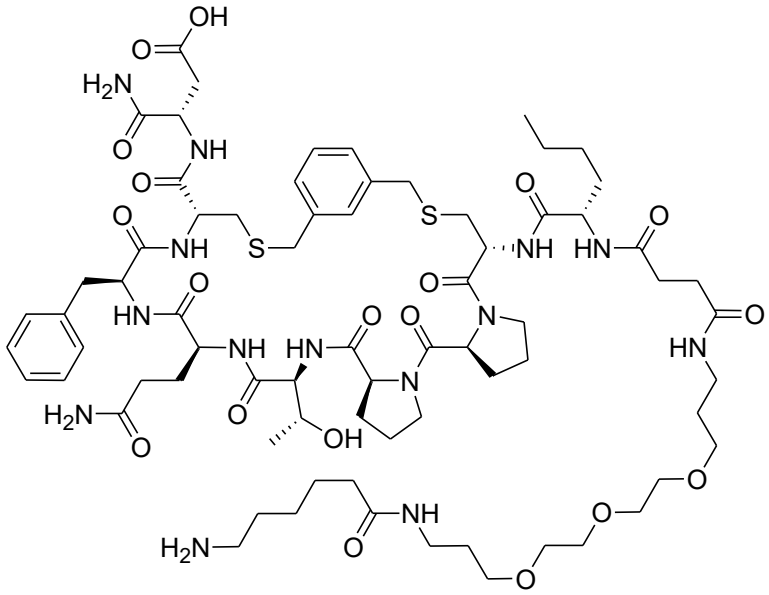


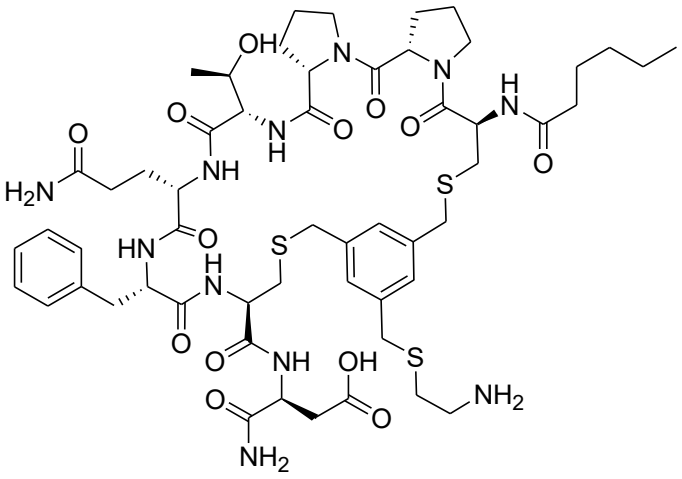


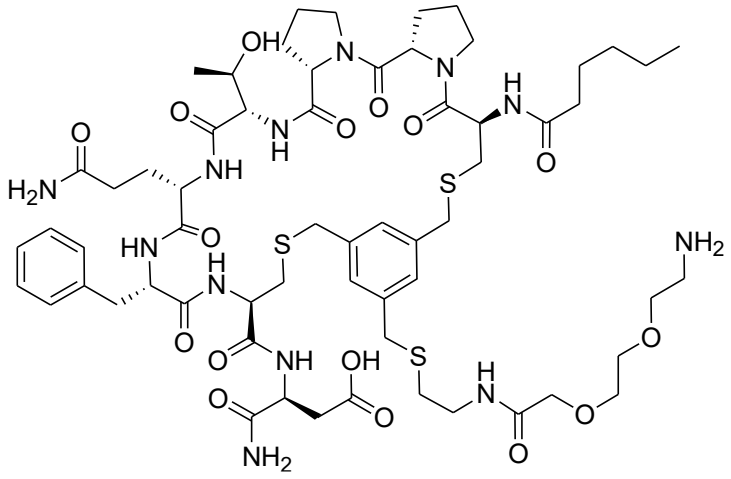


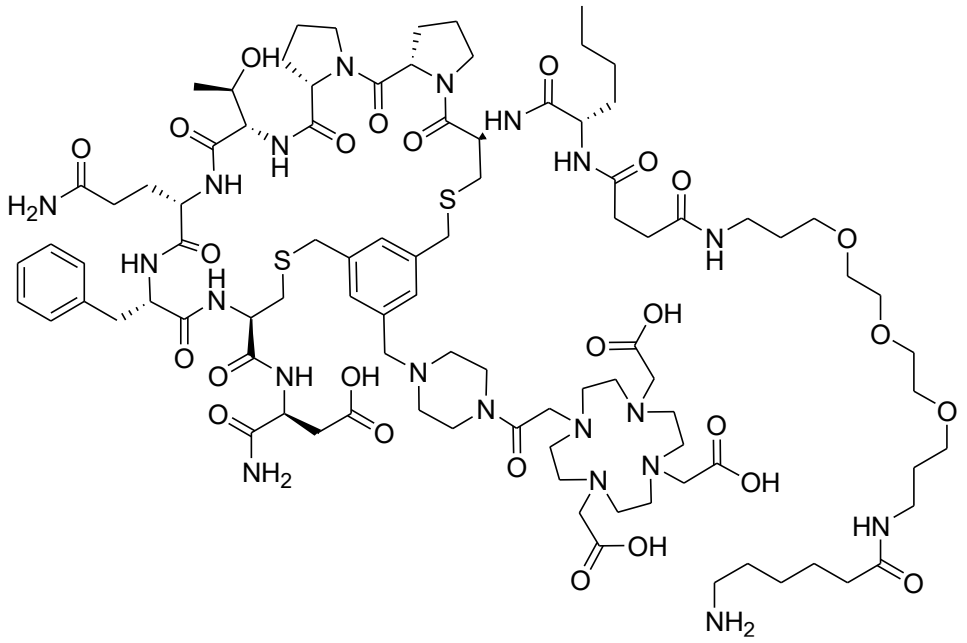


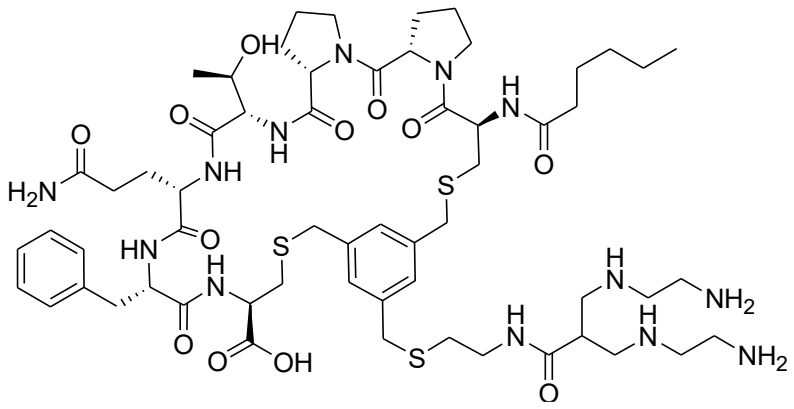


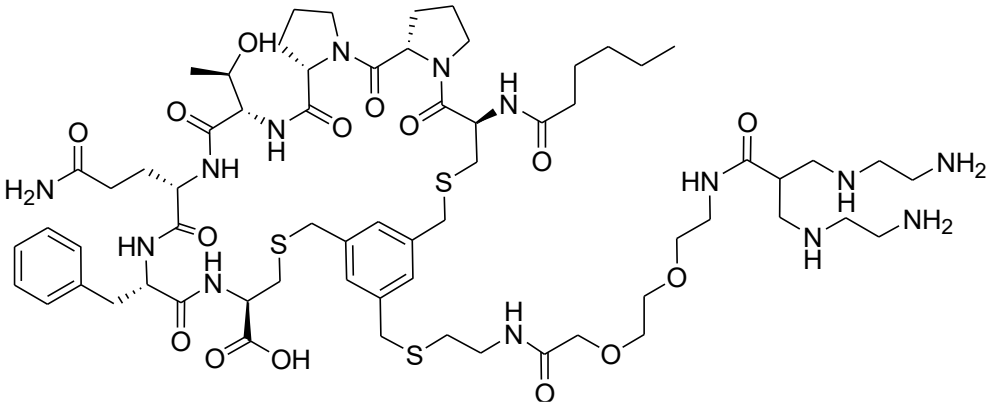


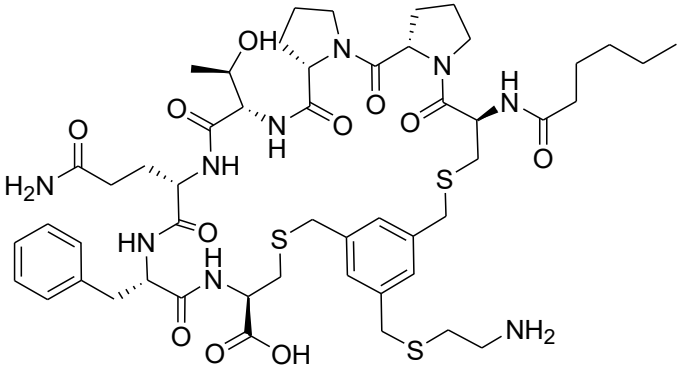


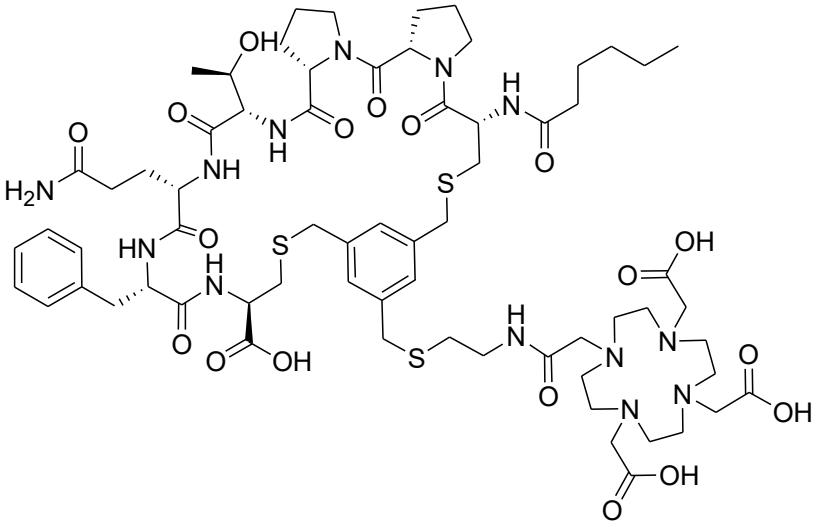


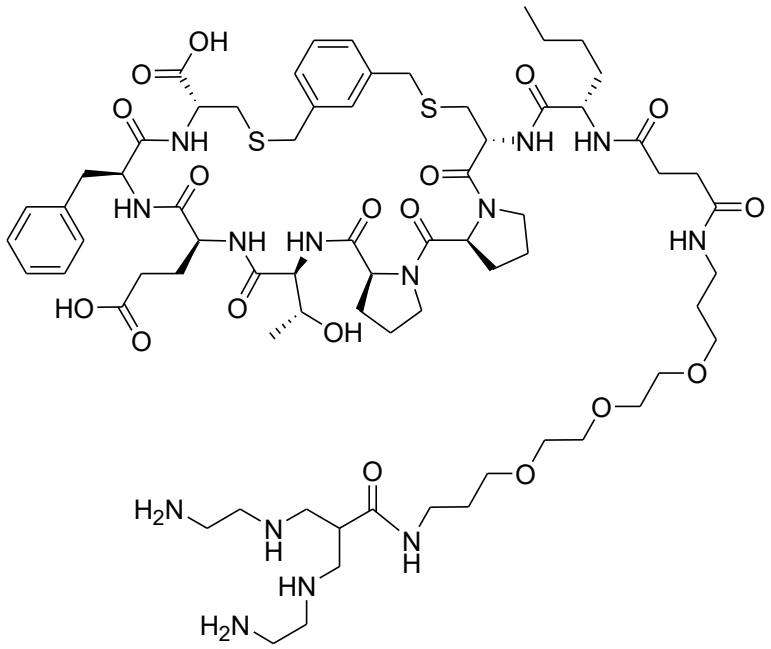


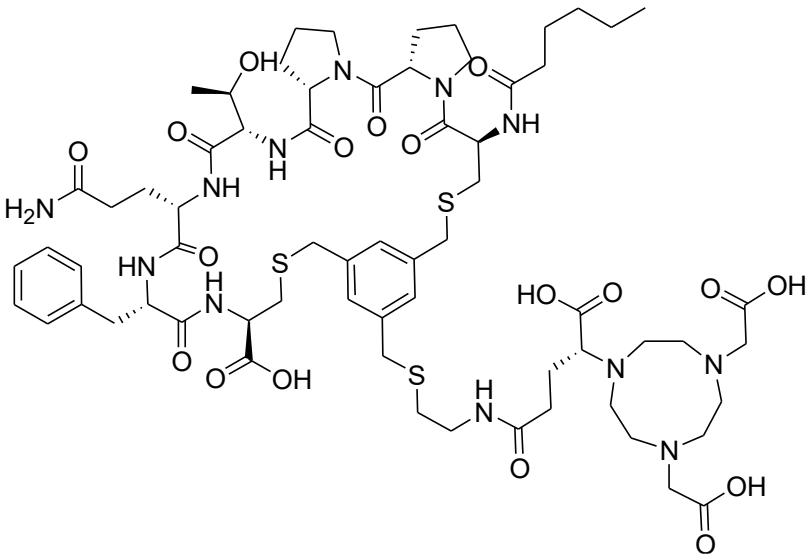


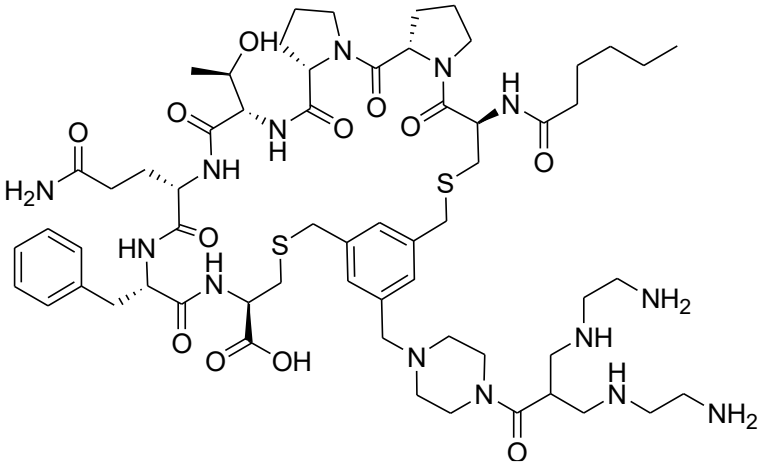


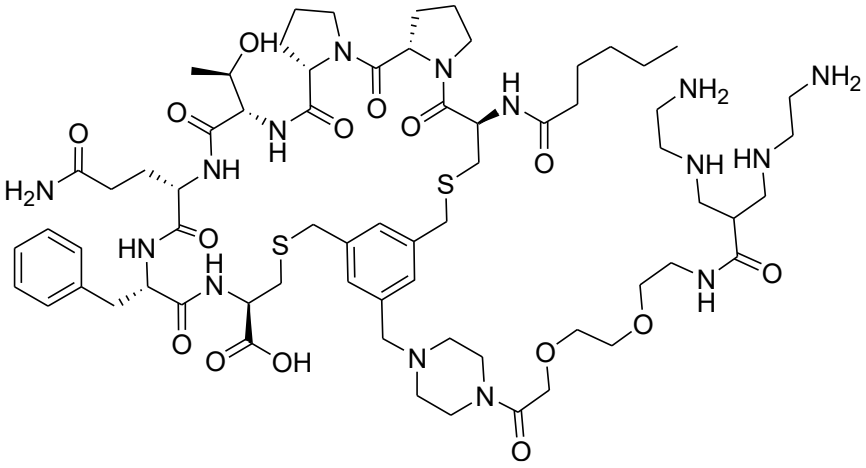


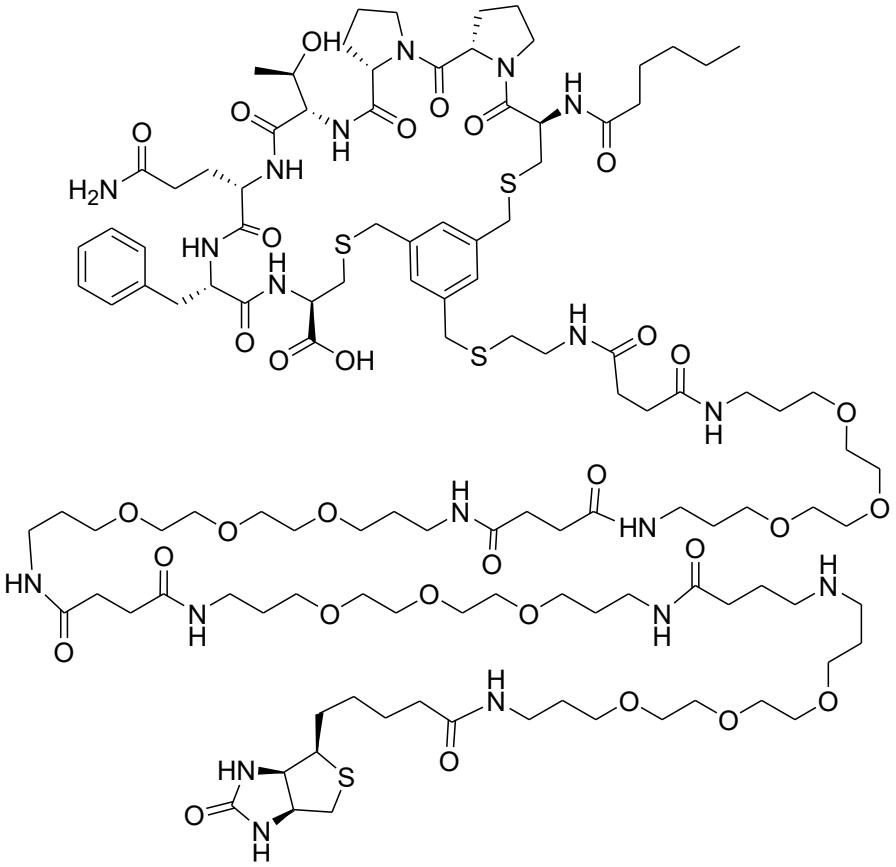


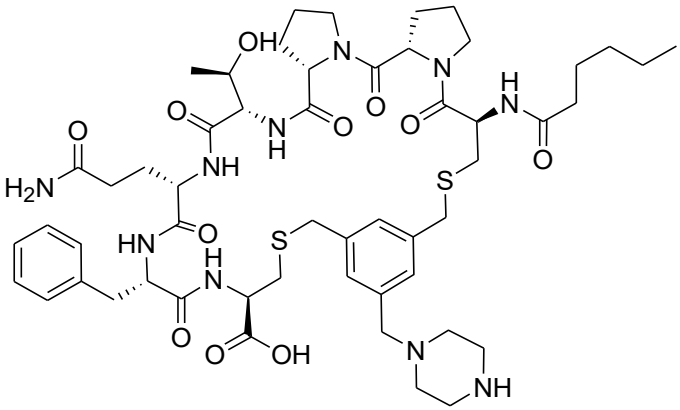


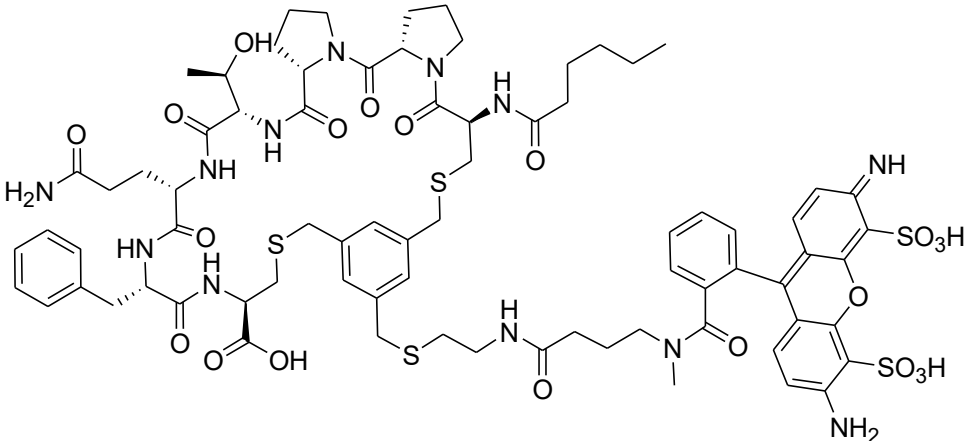


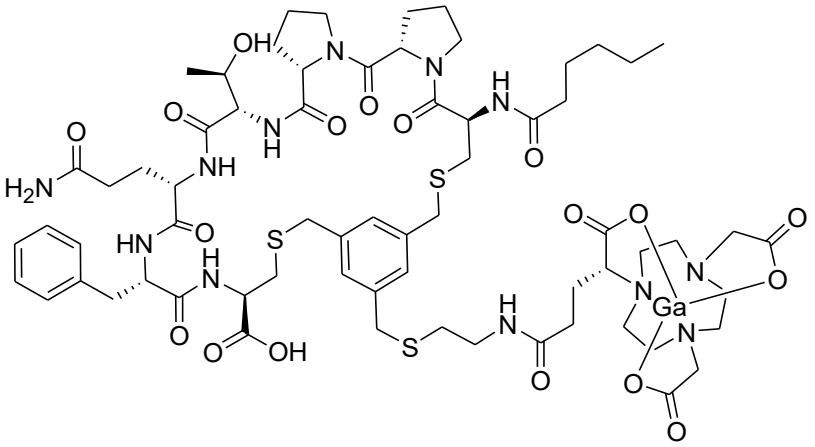


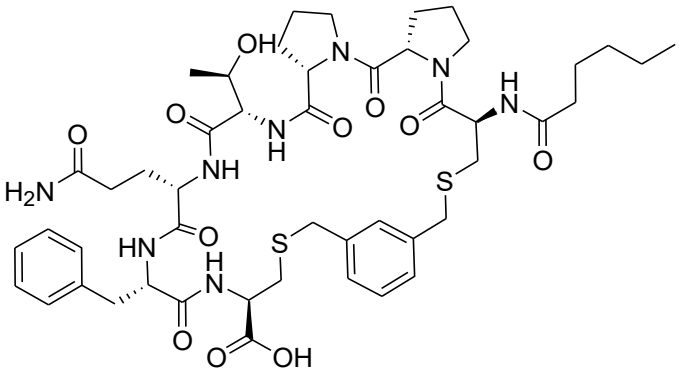


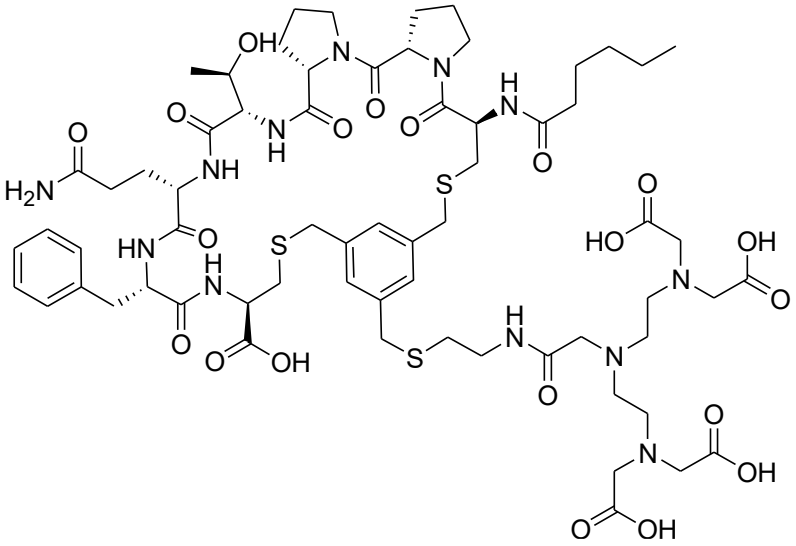


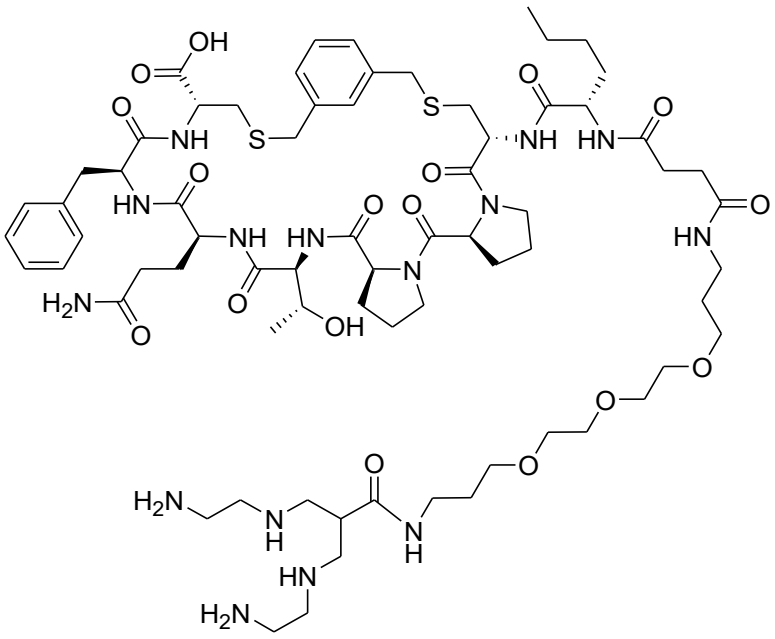


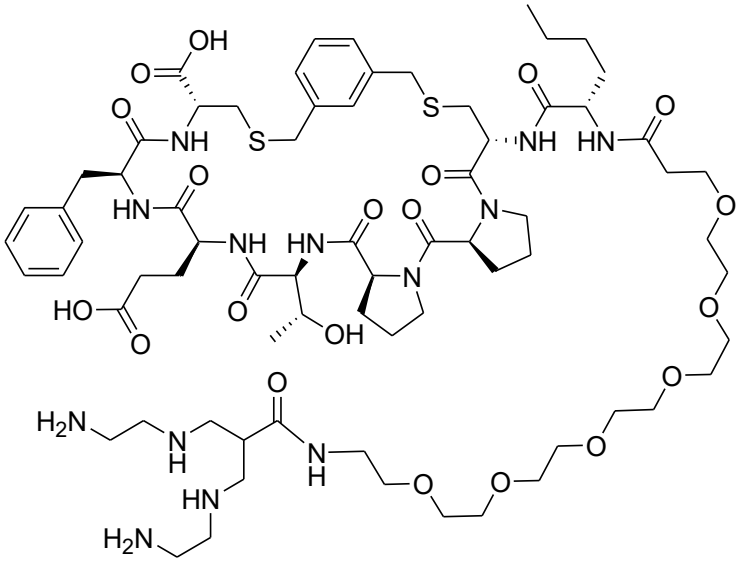


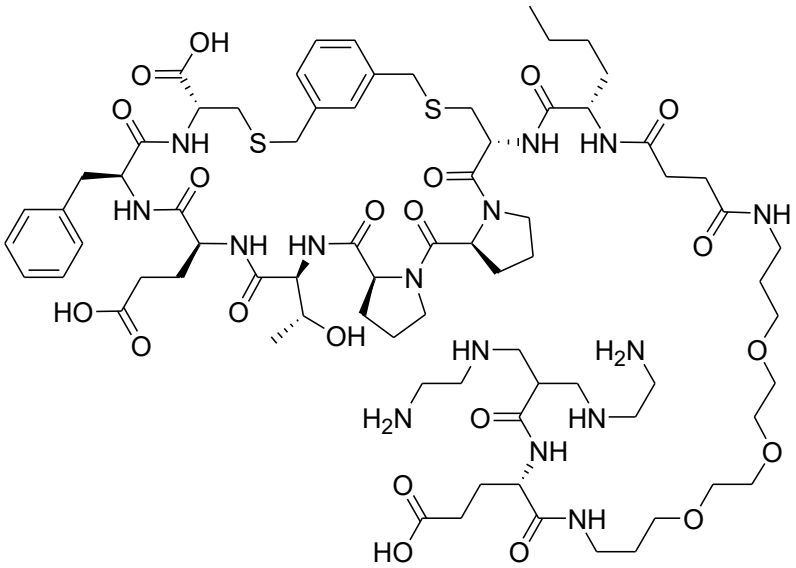


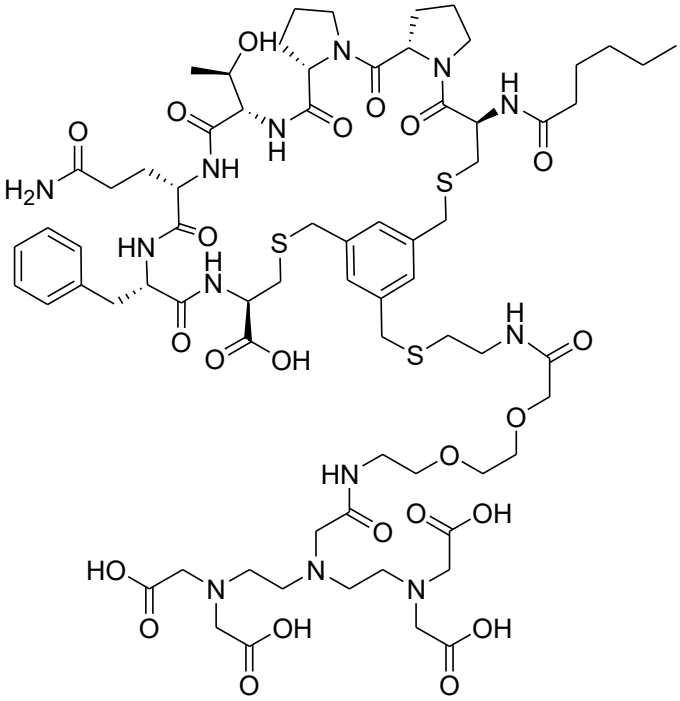


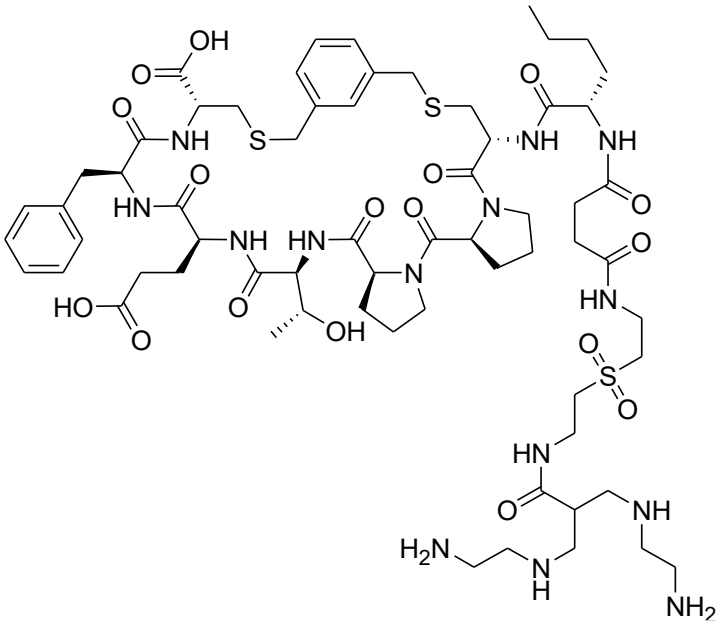


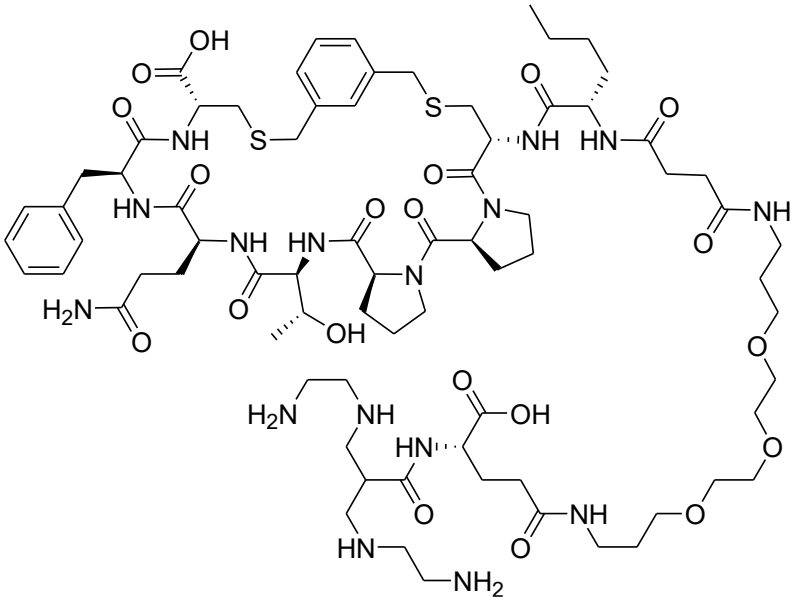


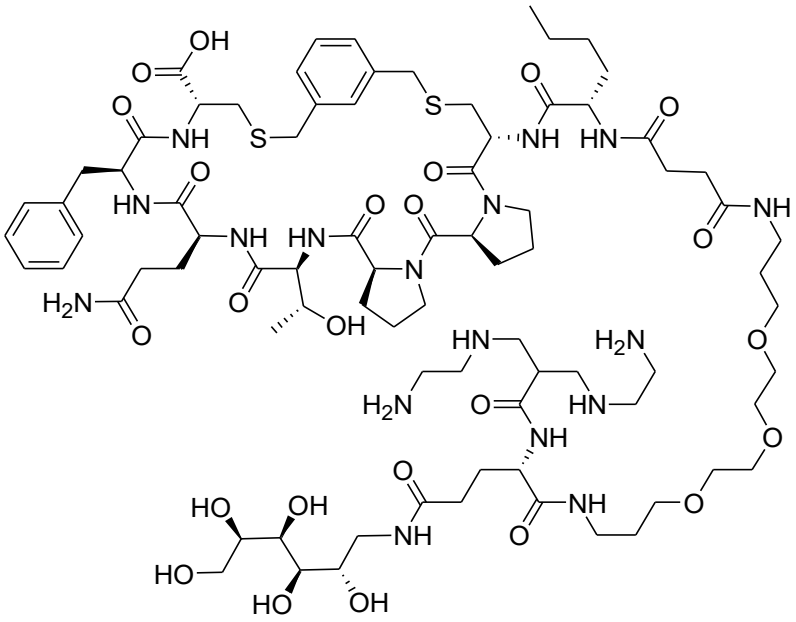


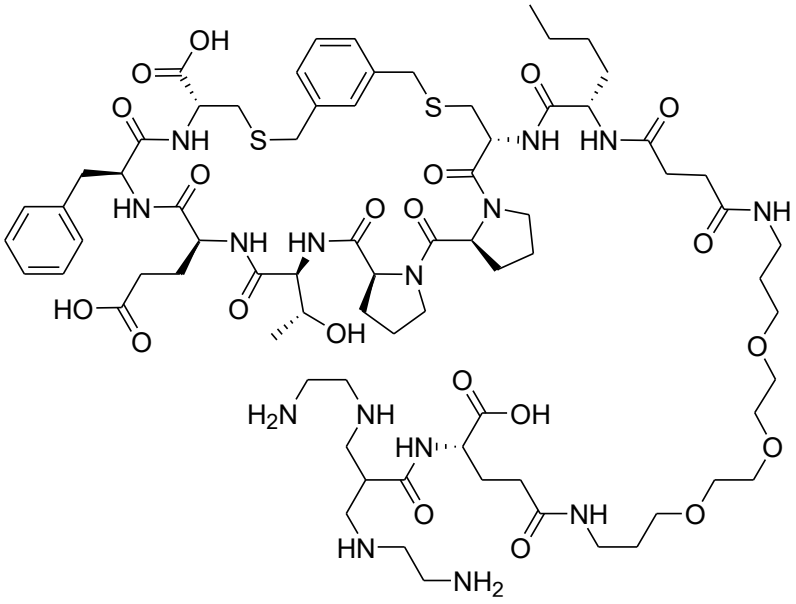


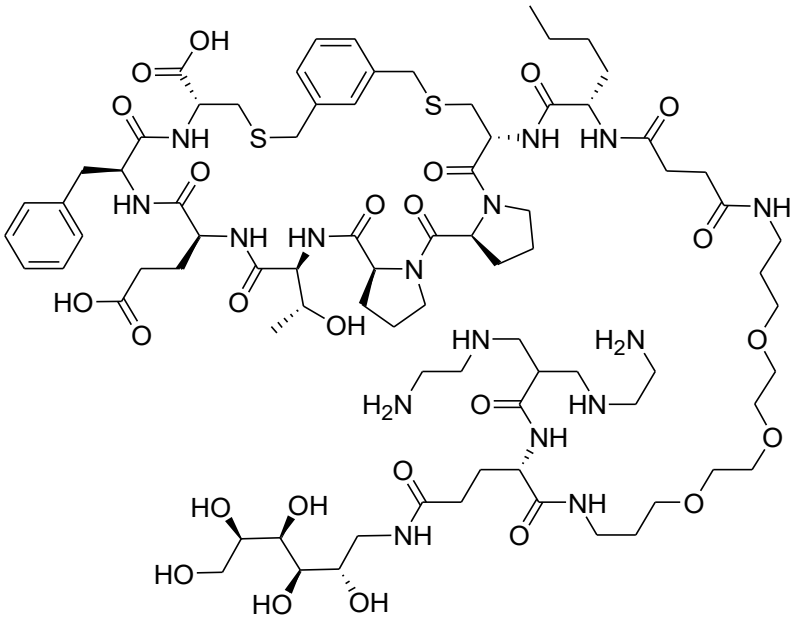


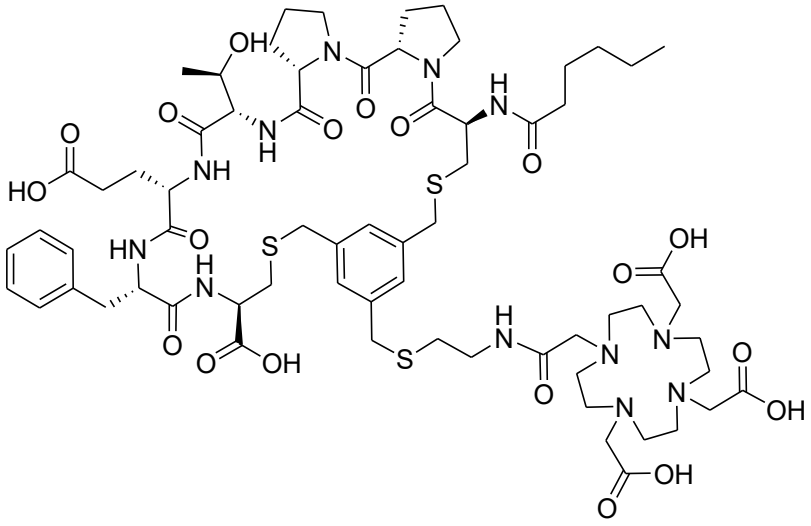


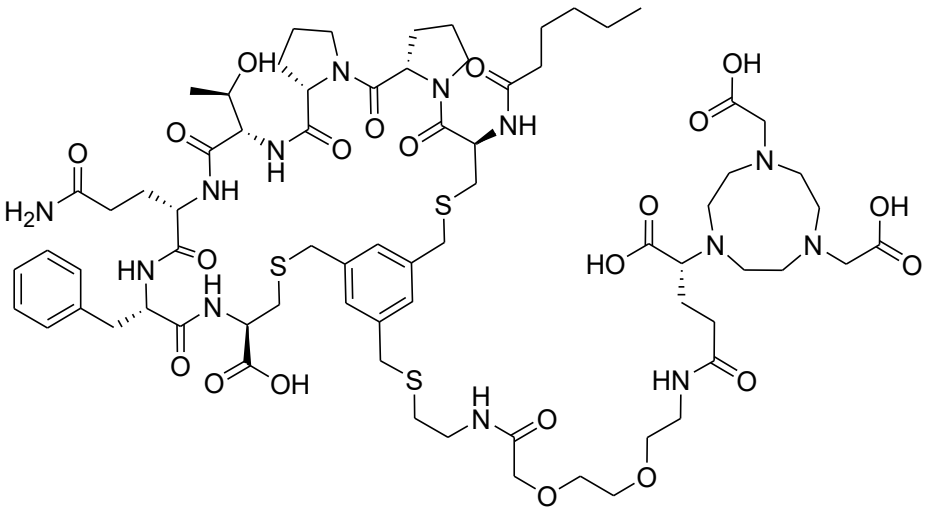


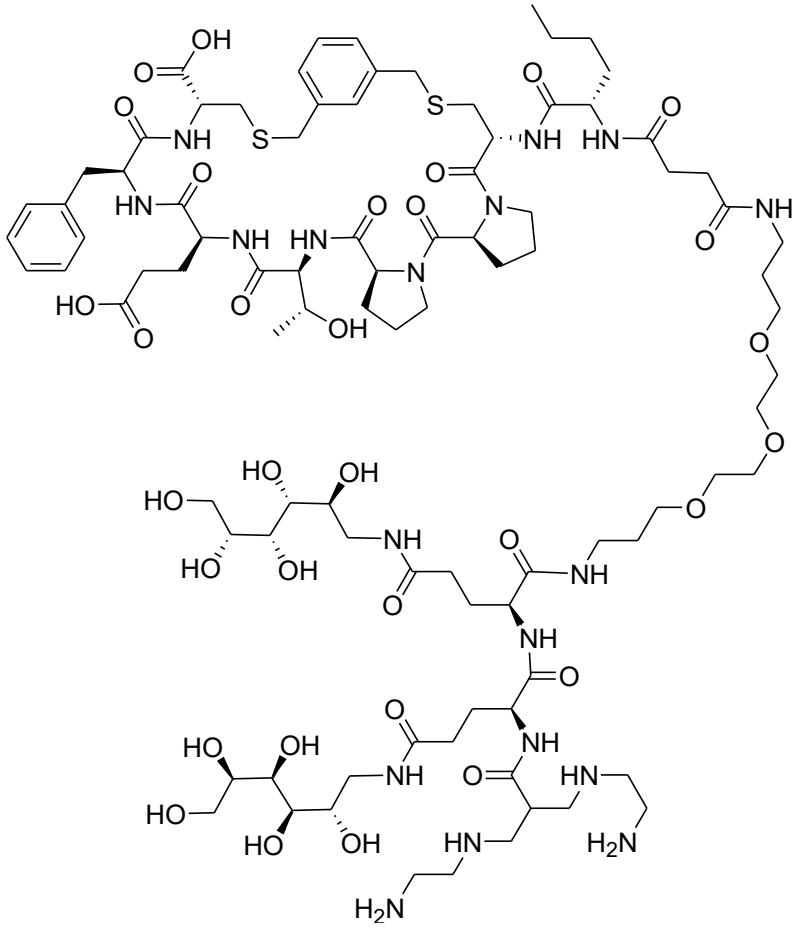


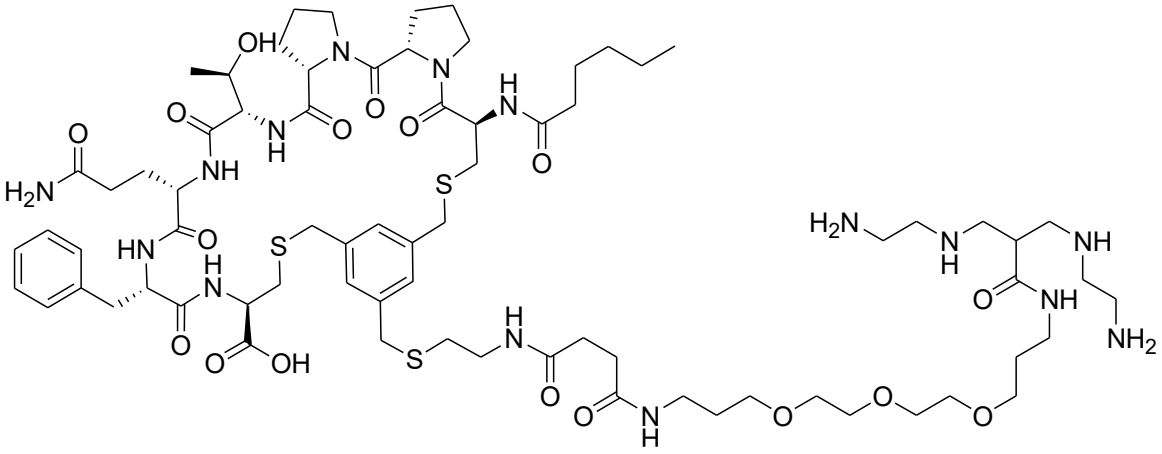


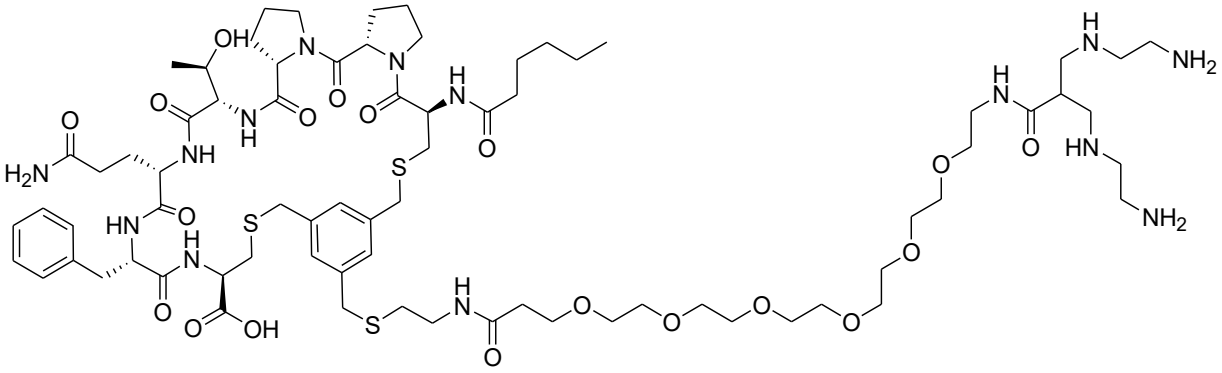


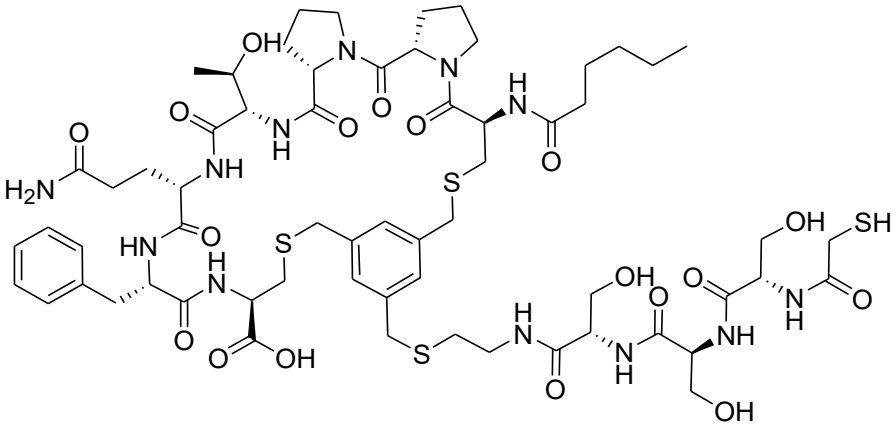


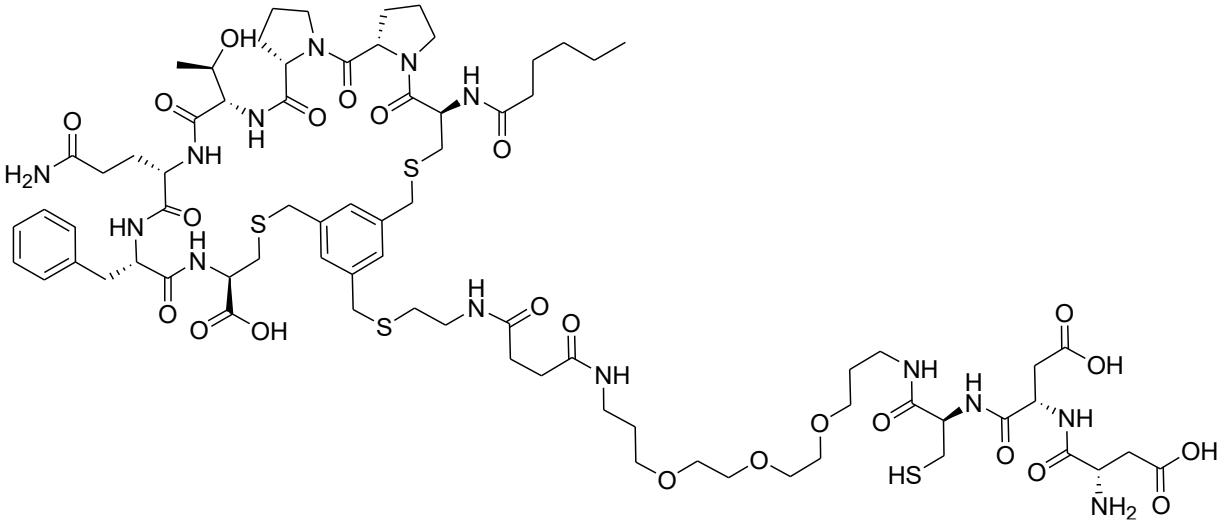


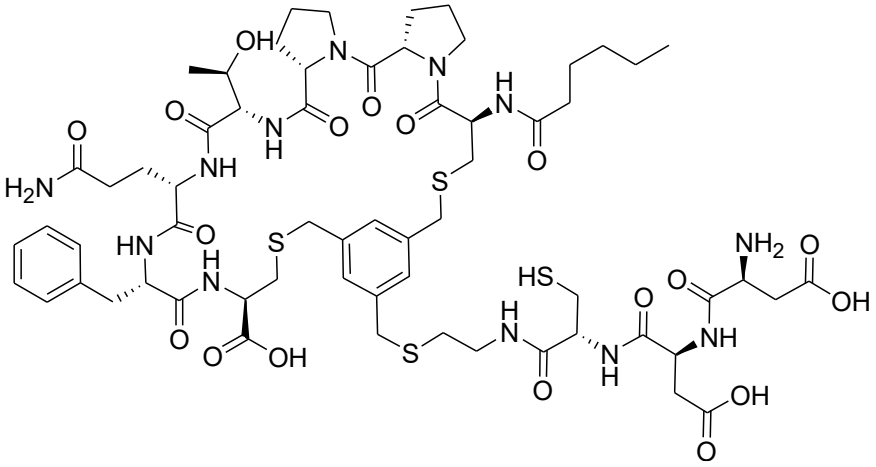


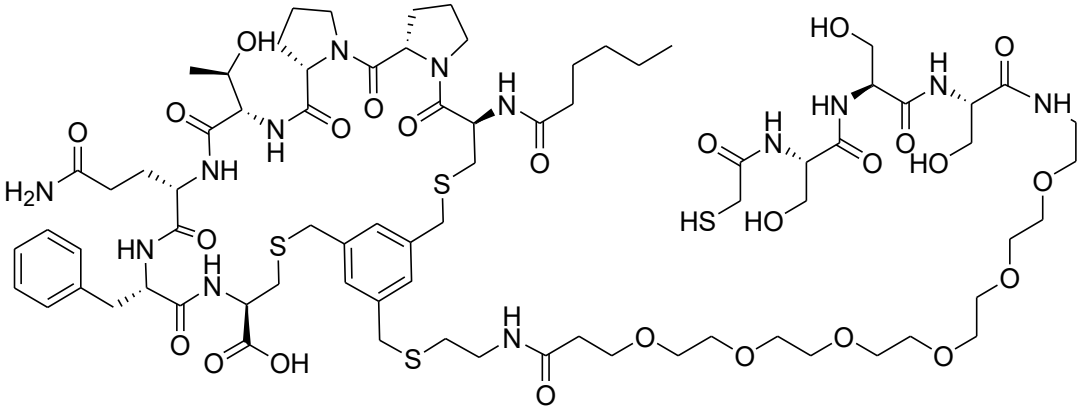


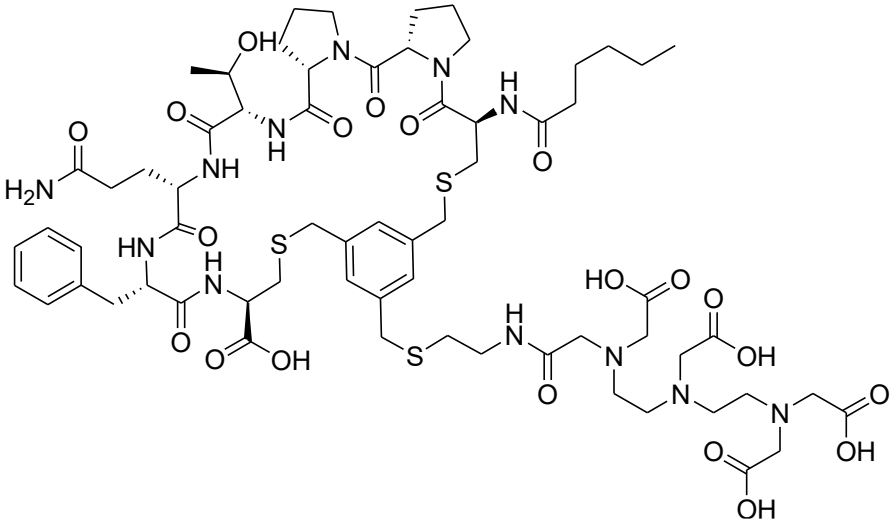


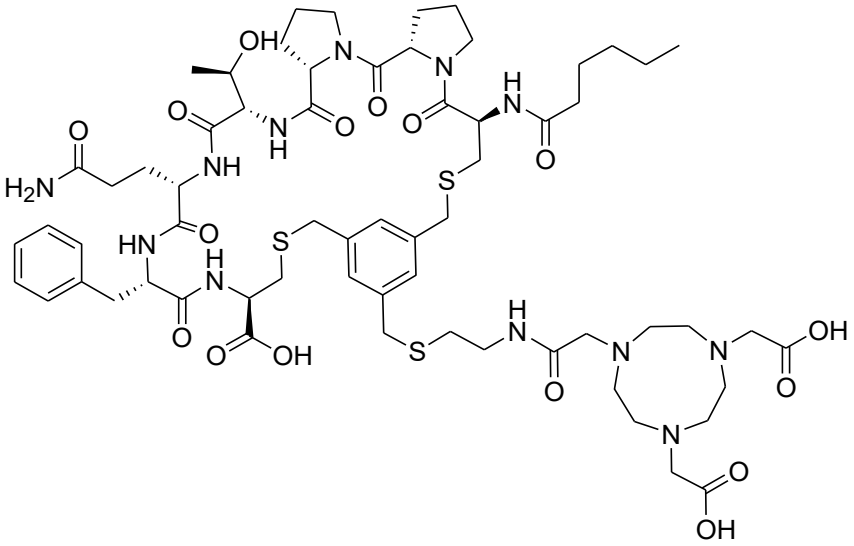


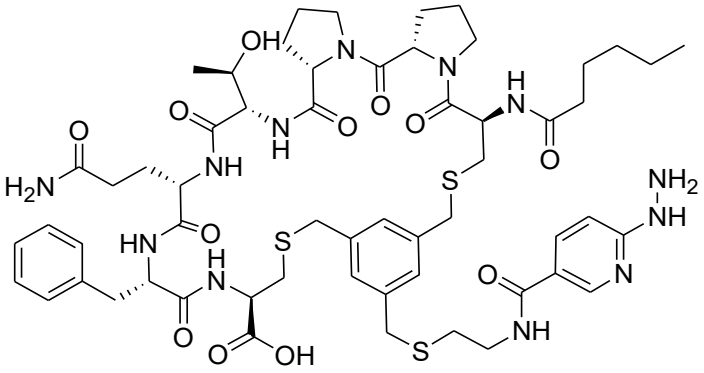


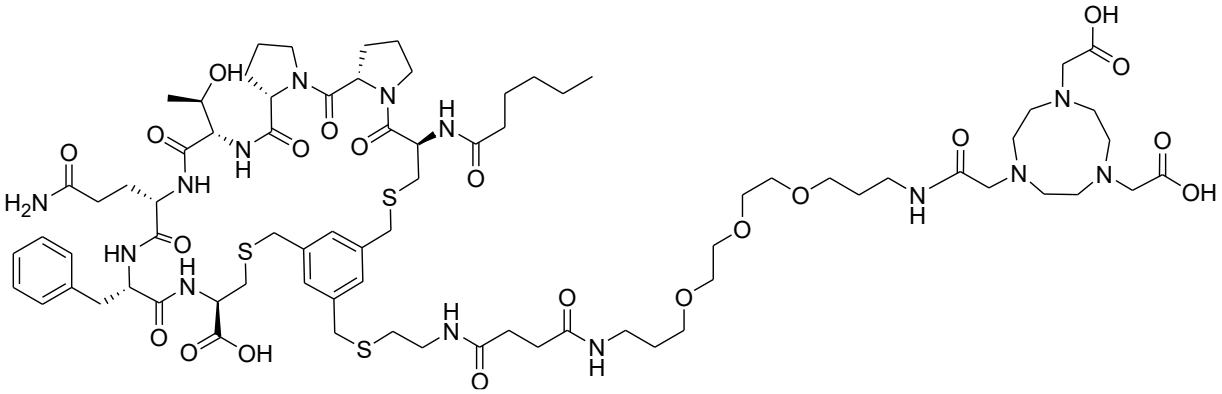


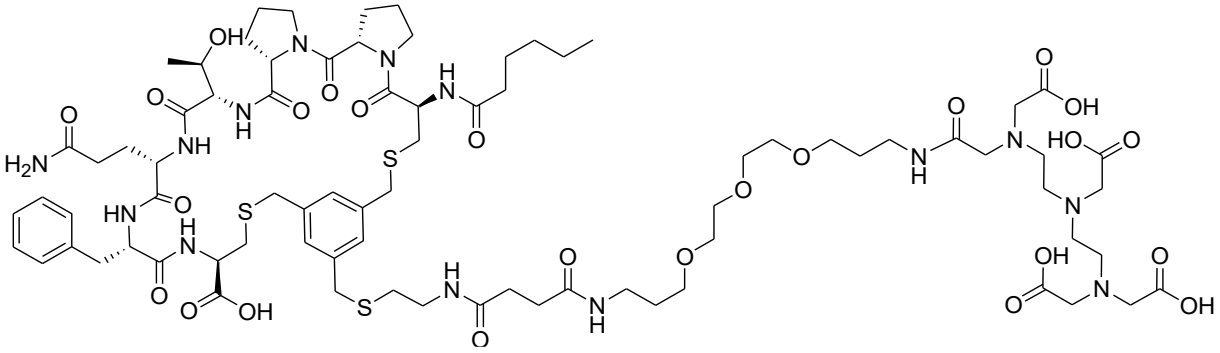


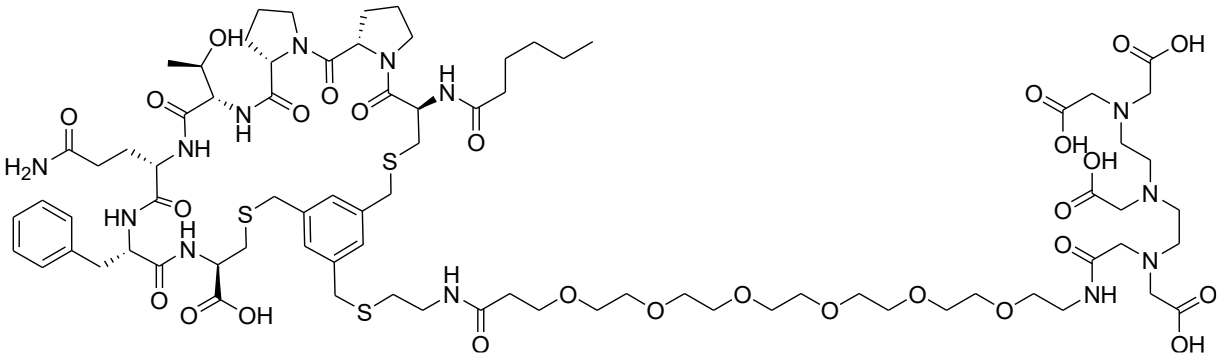


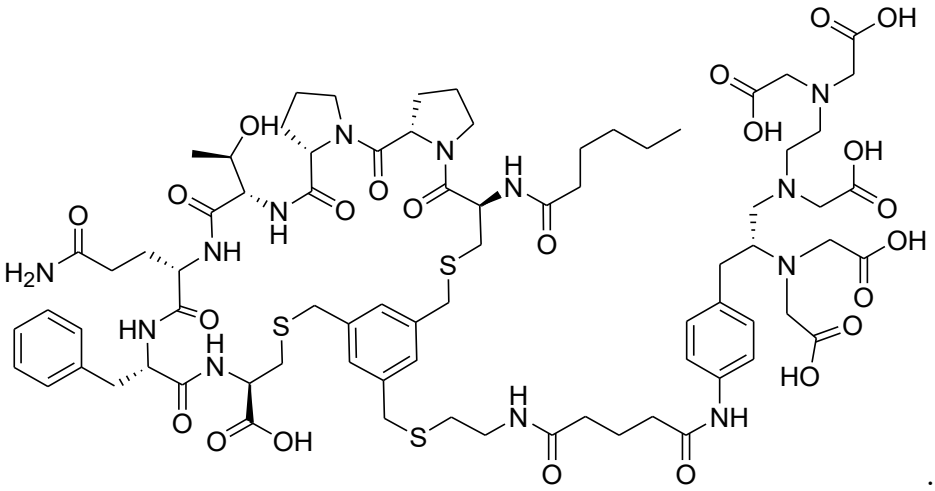


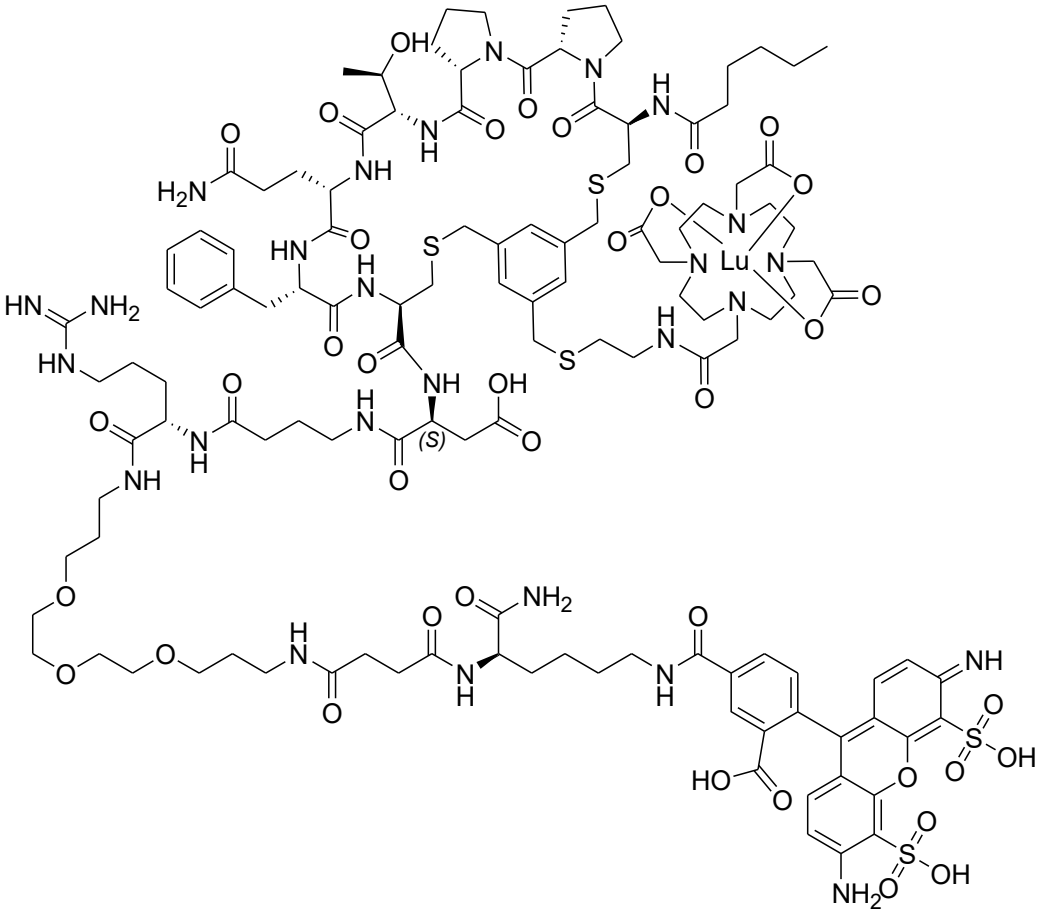


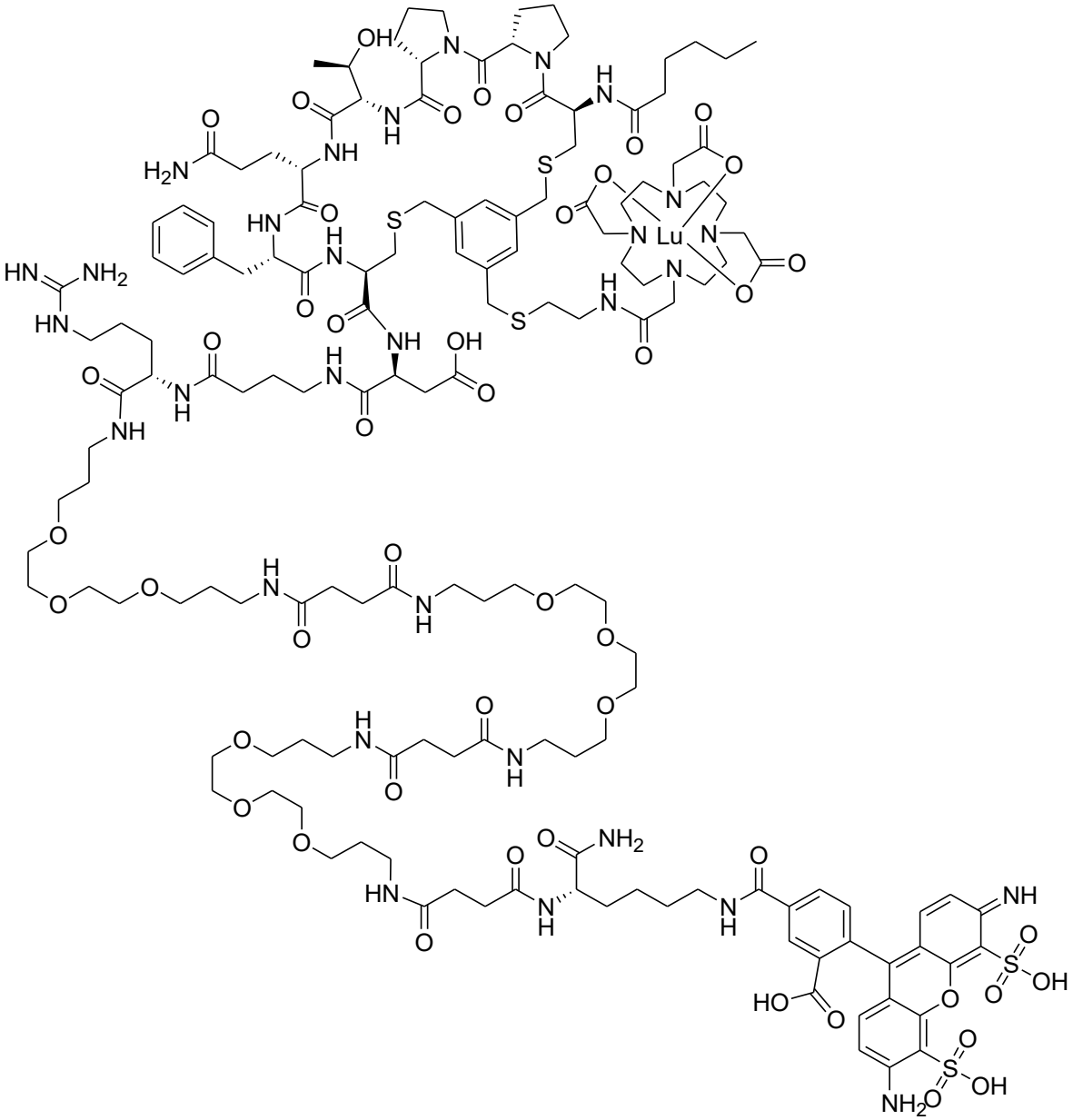


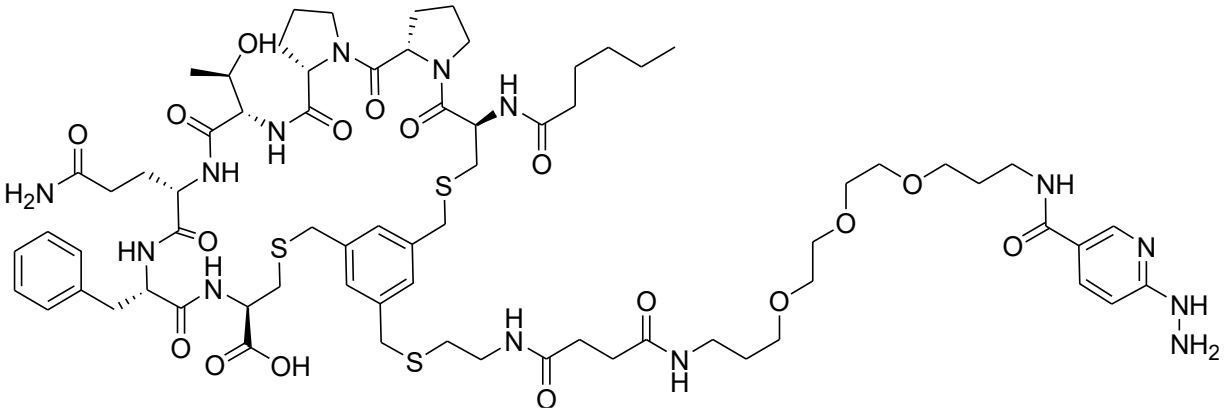


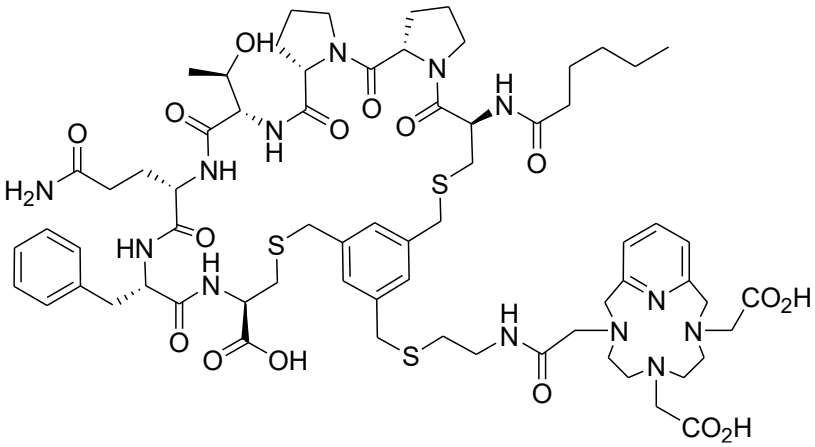


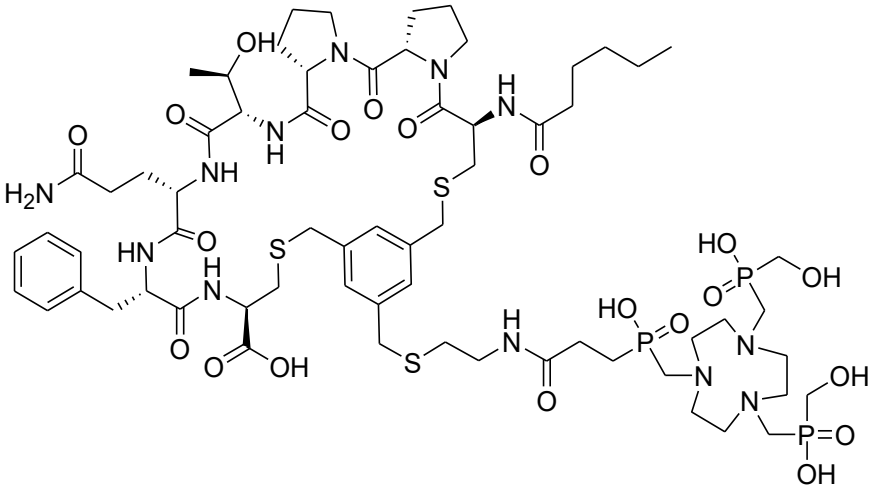


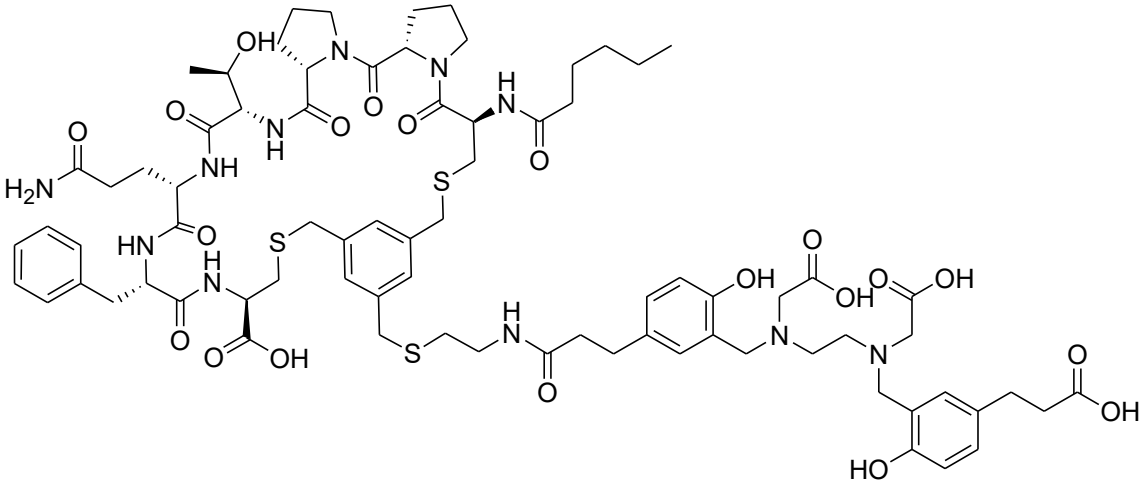

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(S)
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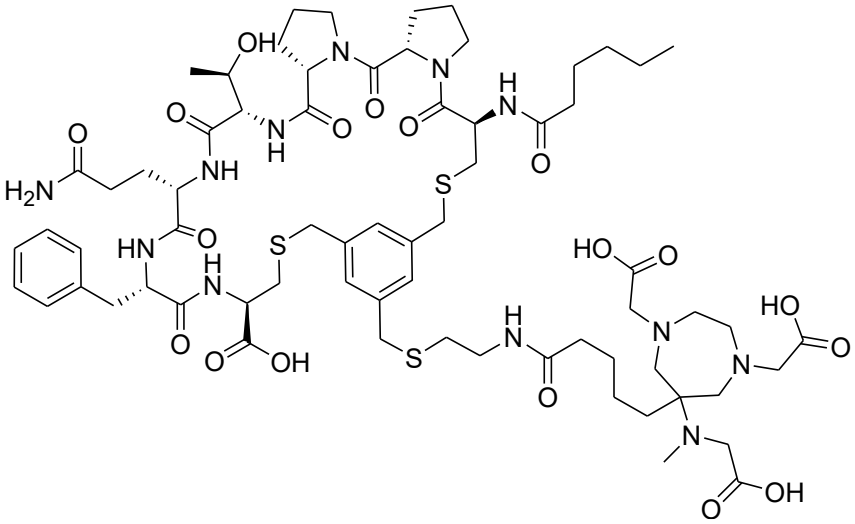


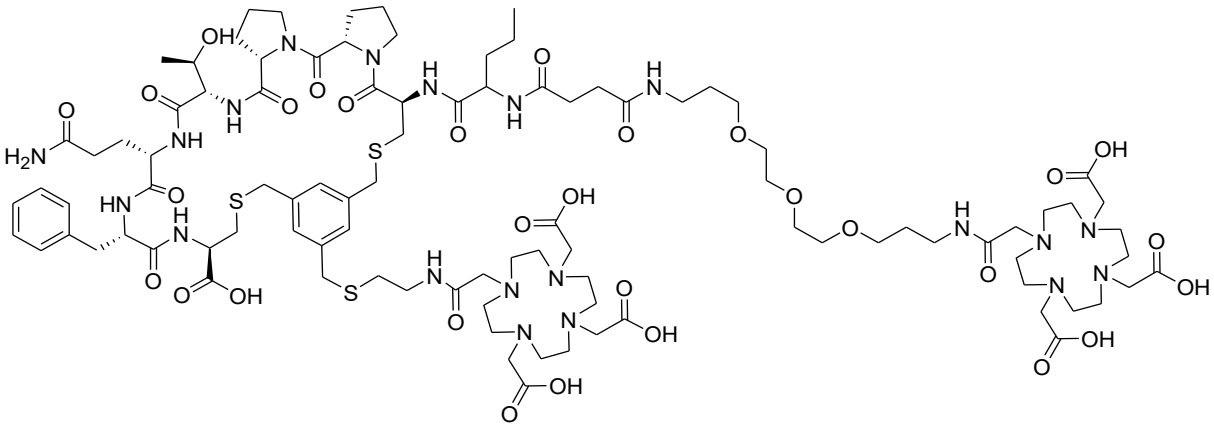


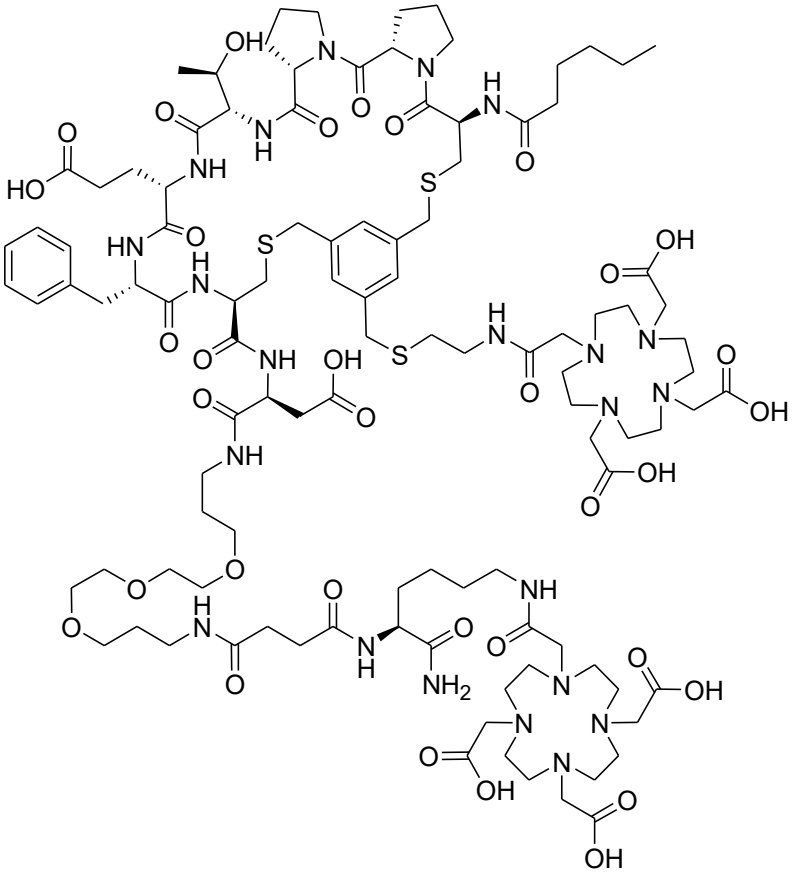


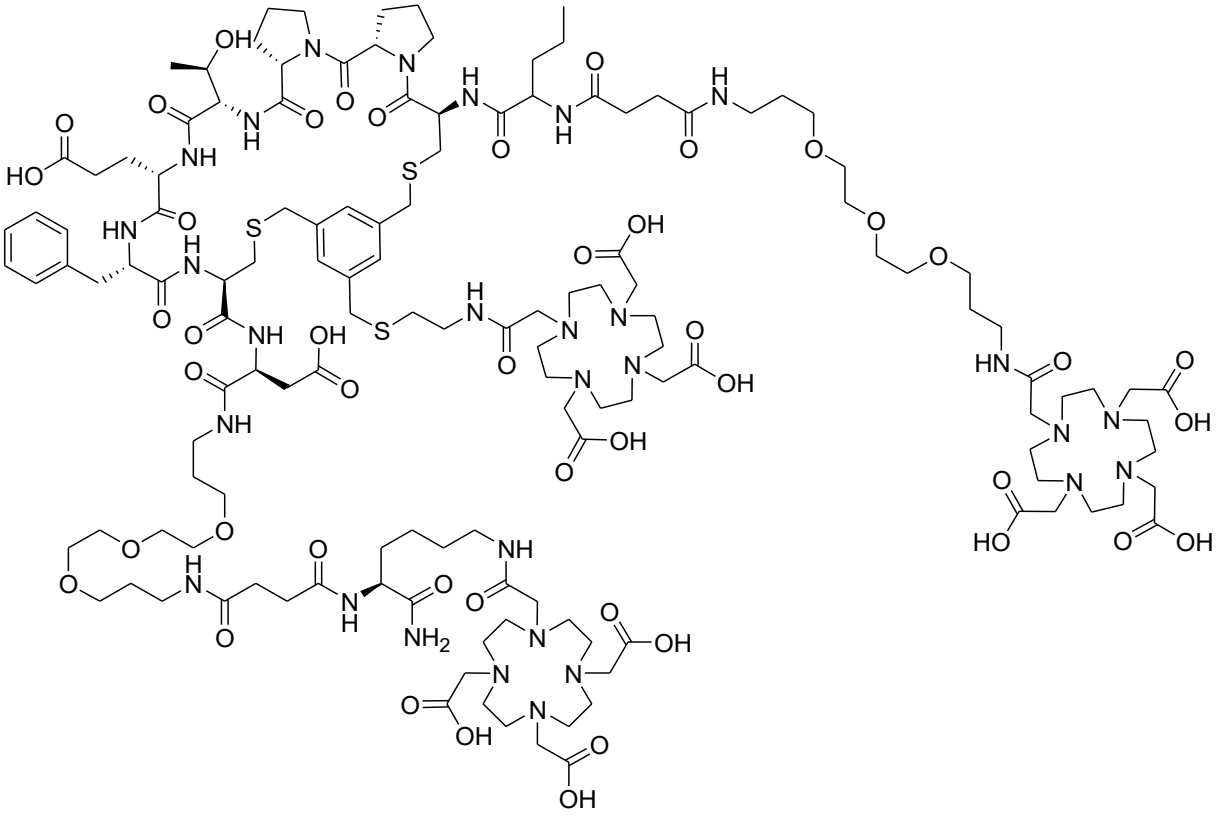




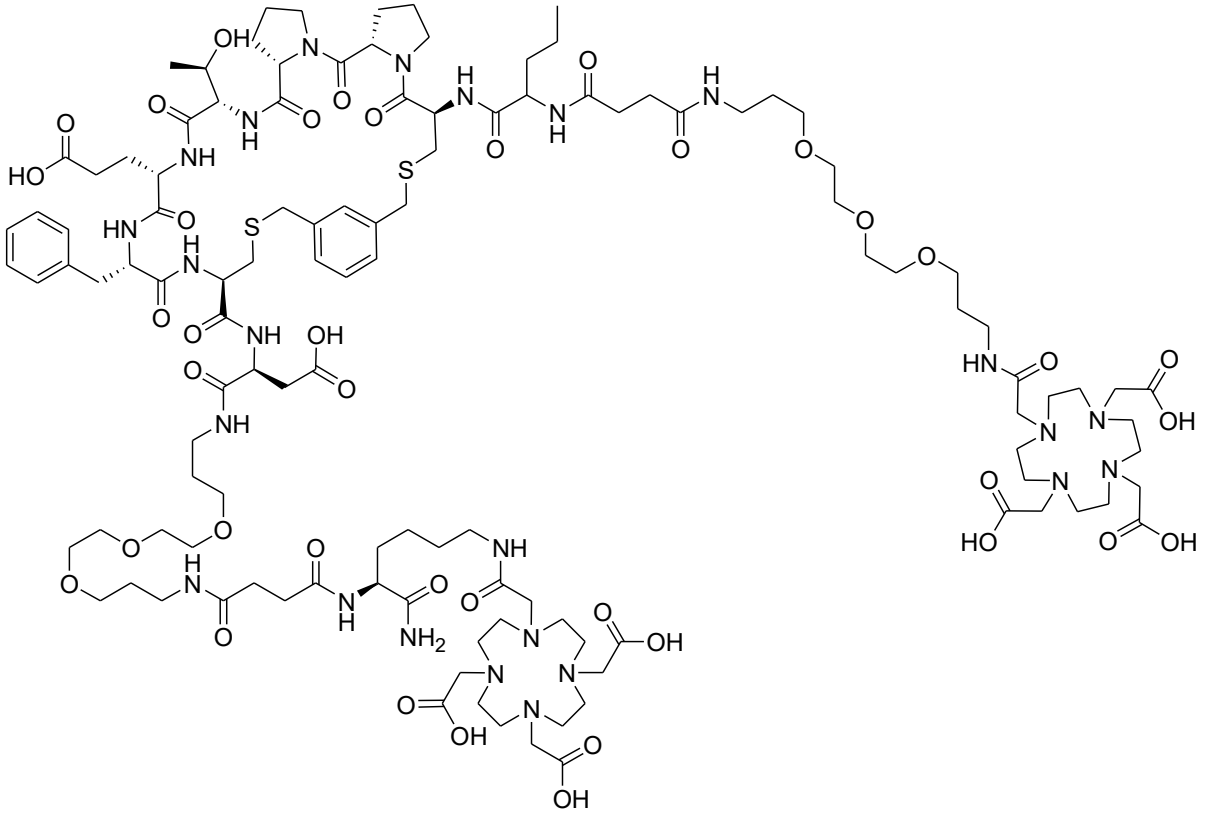








and



31. The compound or salt of any one of claims 1 to 30, wherein the compound comprises a diagnostically active nuclide or a therapeutically active nuclide, wherein, preferably, the diagnostically active nuclide is a diagnostically active radionuclide, more preferably selected from the group consisting of ^{43}Sc, ^{44}Sc, ^{51}Mn, ^{52}Mn, ^{64}Cu, ^{67}Ga, ^{68}Ga, ^{86}Y,^{89}Zr, ^{94m}Tc, ^{99m}Tc, ^{111}In, ^{152}Tb, ^{155}Tb, ^{201}Tl, ^{203}Pb, ^{18}F, ^{76}Br, ^{77}Br, ^{123}I, ^{124}I, ^{125}I, preferably ^{43}Sc, ^{44}Sc, ^{64}Cu, ^{67}Ga, ^{68}Ga, ^{86}Y,^{89}Zr, ^{99m}Tc, ^{111}In, ^{152}Tb, ^{155}Tb, ^{203}Pb, ^{18}F, ^{76}Br, ^{77}Br, ^{123}I, ^{124}I, ^{125}I and most preferably ^{64}Cu, ^{68}Ga, ^{89}Zr, ^{99m}Tc, ^{111}In, ^{18}F, ^{123}I, and ^{124}I and wherein the therapeutically active nuclide is a therapeutically active radionuclide, more preferably selected from the group consisting of ^{47}Sc, ^{67}Cu, ^{89}Sr, ^{90}Y, ^{153}Sm, ^{149}Tb, ^{161}Tb, ^{177}Lu, ^{186}Re, ^{188}Re, ^{212}Pb, ^{213}Bi, ^{223}Ra, ^{225}Ac, ^{226}Th, ^{227}Th, ^{131}I, ^{211}At**,** preferably ^{47}Sc, ^{67}Cu, ^{90}Y, ^{177}Lu, ^{188}Re, ^{212}Pb, ^{213}Bi, ^{225}Ac, ^{227}Th, ^{131}I, ^{211}At and most preferably ^{90}Y, ^{177}Lu, ^{225}Ac, ^{227}Th, ^{131}I and ^{211}At.

32. The compound or salt of any one of claims 1 to 31, for use in a method for the diagnosis of a disease, for use in a method for the treatment of a disease, for use in a method for the identification of a subject, wherein the subject is likely to respond or likely not to respond to a treatment of a disease, wherein the method for the identification of a subject comprises carrying out a method of diagnosis using the compound or salt of any one of claims 1 to 31, or for use in a method for the selection of a subject from a group of subjects, wherein the subject is likely to respond or likely not to respond to a treatment of a disease, wherein the method for the selection of a subject from a group of subjects comprises carrying out a method of diagnosis using the compound or salt of any one of claims 1 to 31, or for use in a method for the stratification of a group of subjects into subjects which are likely to respond to a treatment of a disease, and into subjects which are not likely to respond to a treatment of a disease, wherein the method for the stratification of a group of subjects comprises carrying out a method of diagnosis using the compound or salt of any one of claims 1 to 31, wherein the disease is a disease involving fibroblast activation protein (FAP).

33. A composition, preferably a pharmaceutical composition, wherein the composition comprises a compound or salt according to any one of claims 1 to 31 and a pharmaceutically acceptable excipient.

34. A kit comprising a compound or salt according to any one of claims 1 to 31, one or more optional excipient(s) and optionally one or more device(s), whereby the device(s) is/are selected from the group comprising a labeling device, a purification device, a handling device, a radioprotection device, an analytical device or an administration device.

35. The compound or salt of any one of claims 1 to 31 for use in therapy.