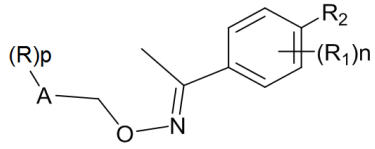
Claims

1. Use of a compound of formula I, or an optical isomer or a pharmaceutically acceptable salt thereof in the preparation of a medicament for treating or preventing myopathy:



I

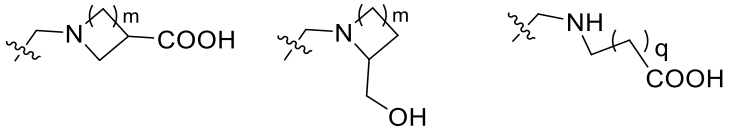
A is selected from: a substituted or unsubstituted C_5-C_8 aromatic ring (such as phenyl) or C_8-C_{14} fused aromatic ring (such as naphthyl), substituted or unsubstituted five-membered or six-membered heterocyclic groups containing 1-3 heteroatoms selected from N or O;

R is independently selected from the group consisting of a hydrogen, halogen, cyano, substituted or unsubstituted C_1-C_{10} alkyl (for example, a methyl, trifluoromethyl, trifluoroethyl), substituted or unsubstituted C_3-C_8 cycloalkyl or cycloalkenyl, substituted or unsubstituted C_1-C_5 alkoxy, substituted or unsubstituted C_5-C_8 aryl (for example, phenyl), substituted or unsubstituted five-membered or six-membered heterocyclic group or heteroaryl containing 1-2 heteroatoms selected from N, O or S, substituted or unsubstituted C_1-C_{10} alkyl formyl, substituted or unsubstituted C_5-C_8 aryl formyl; p is an integer from 1 to 3;

R^1 is selected from the group consisting of a hydrogen, halogen, cyano, substituted or unsubstituted C_1-C_5 alkoxy, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted C_2-C_6 alkenyl, substituted or unsubstituted C_3-C_6 cycloalkenyl, substituted or unsubstituted C_3-C_8 lactone group, substituted or unsubstituted C_1-C_{10} amide group, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group containing 1-2 heteroatoms selected from N, O or S, substituted or unsubstituted C_5-C_8 aromatic heterocyclic group;

n is an integer selected from 1-3;

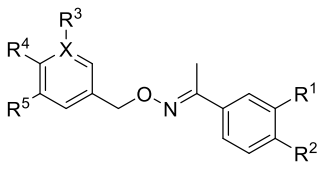
R^2 is selected from the following group:



m is an integer selected from 1-4;

q is an integer selected from 1-2.

2. The use of claim 1, wherein the compound is represented by the following formula II:

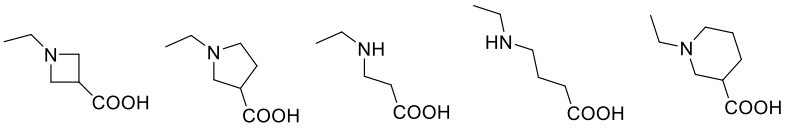


II

wherein,

R^1 is selected from the group consisting of a hydrogen, halogen (preferably F, Cl or Br), cyano, substituted or unsubstituted C_1-C_5 alkoxy (preferably methoxy), substituted or unsubstituted C_1-C_{10} alkyl (preferably a substituted or unsubstituted C_1-C_6 alkyl, such as a methyl, ethyl, trifluoromethyl), substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted C_2-C_6 alkenyl, substituted or unsubstituted C_3-C_6 cycloalkenyl, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group containing 1-2 heteroatoms selected from N, O or S, and substituted or unsubstituted C_5-C_8 aromatic heterocyclic group;

R^2 is selected from the following group:



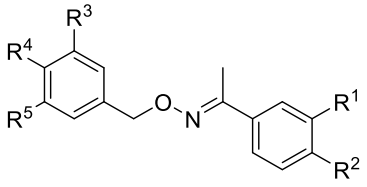
X is selected from C or N;

R^3 is not present or is a substituent selected from the following group: a hydrogen, cyano, halogen, substituted or unsubstituted C_1-C_{10} alkyl (for example, a methyl, trifluoromethyl, trifluoroethyl), substituted or unsubstituted C_3-C_8 cycloalkyl, cyano, substituted or unsubstituted C_1-C_5 alkoxy, substituted or unsubstituted C_1-C_{10} alkyl formyl, substituted or unsubstituted C_5-C_8 aryl formyl, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group containing 1-2 heteroatoms selected from N, O or S;

R^5 is selected from the group consisting of a hydrogen, cyano, halogen, substituted or unsubstituted C_1-C_{10} alkyl (for example, a methyl, trifluoromethyl, trifluoroethyl), substituted or unsubstituted C_3-C_8 cycloalkyl, cyano, substituted or unsubstituted C_1-C_5 alkoxy, substituted or unsubstituted C_1-C_{10} alkyl formyl, substituted or unsubstituted C_5-C_8 aryl formyl, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group containing 1-2 heteroatoms selected from N, O or S;

R^4 is selected from the group consisting of a hydrogen, halogen, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_3-C_8 cycloalkyl or cycloalkenyl, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group or heteroaryl groups containing 1-2 heteroatoms selected from N, O or S, substituted or unsubstituted C_1-C_{10} alkyl formyl, and substituted or unsubstituted aryl formyl.

3. The use of claim 1, wherein the compound is represented by the following formula III:

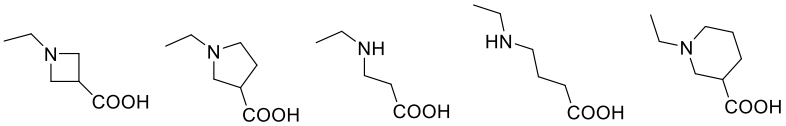


III

wherein,

R^1 is selected from the following group: a hydrogen, halogen (preferably F, Cl, or Br), cyano, substituted or unsubstituted C_1-C_5 alkoxy (preferably a methoxy), substituted or unsubstituted C_1-C_{10} alkyl (preferably a substituted or unsubstituted C_1-C_6 alkyl, such as a methyl, ethyl, trifluoromethyl), substituted or unsubstituted C_3-C_8 cycloalkyl, substituted or unsubstituted C_2-C_6 alkenyl, substituted or unsubstituted C_3-C_6 cycloalkenyl, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group containing 1-2 heteroatoms selected from N, O, or S, substituted or unsubstituted C_5-C_8 aromatic heterocyclic group;

R^2 is selected from the following group:

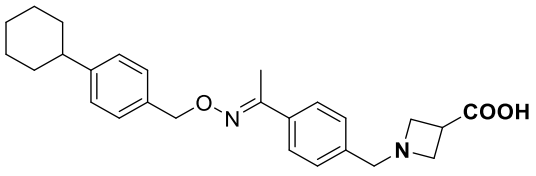


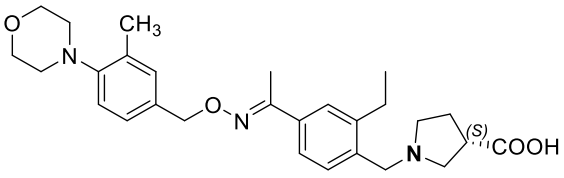
R^3 is selected from the group consisting of a hydrogen, cyano, halogen, substituted or unsubstituted C_1-C_{10} alkyl (for example, a methyl, trifluoromethyl, trifluoroethyl), substituted or unsubstituted C_3-C_8 cycloalkyl, cyano, substituted or unsubstituted C_1-C_5 alkoxy, substituted or unsubstituted C_1-C_{10} alkyl formyl, substituted or unsubstituted C_5-C_8 aryl formyl, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group containing 1-2 heteroatoms selected from N, O or S;

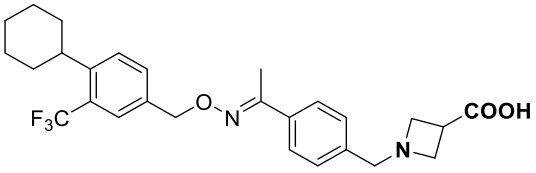
R^5 is selected from the following group: a hydrogen, cyano, halogen, substituted or unsubstituted C_1-C_{10} alkyl (for example, a methyl, trifluoromethyl, trifluoroethyl), substituted or unsubstituted C_3-C_8 cycloalkyl, cyano, substituted or unsubstituted C_1-C_5 alkoxy, substituted or unsubstituted C_1-C_{10} alkyl formyl, substituted or unsubstituted C_5-C_8 aryl formyl, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group containing 1-2 heteroatoms selected from N, O or S;

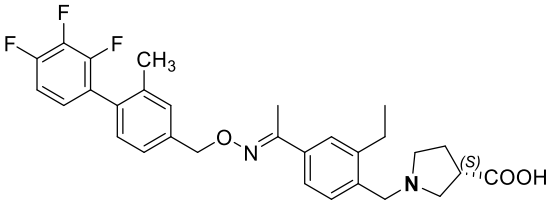
R^4 is selected from the group consisting of a hydrogen, halogen, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_3-C_8 cycloalkyl or cycloalkenyl, substituted or unsubstituted C_5-C_8 aryl, substituted or unsubstituted five-membered or six-membered heterocyclic group or heteroaryl containing 1-2 heteroatoms selected from N, O or S, substituted or unsubstituted C_1-C_{10} alkyl formyl, and substituted or unsubstituted aryl formyl.

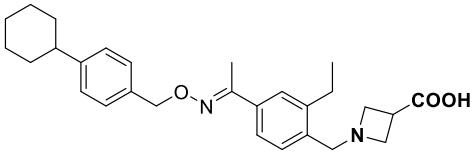
4. The use of claim 1, wherein the compound is selected from the following group, or an optical isomer or a pharmaceutically acceptable salt thereof:

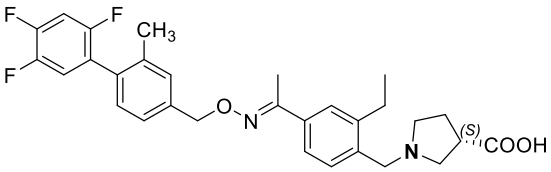


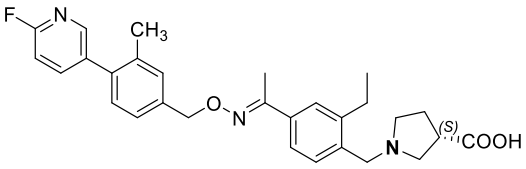


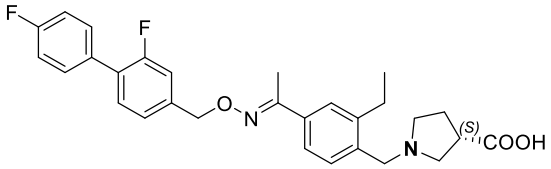


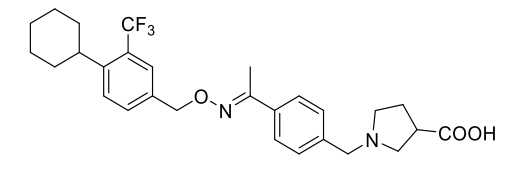


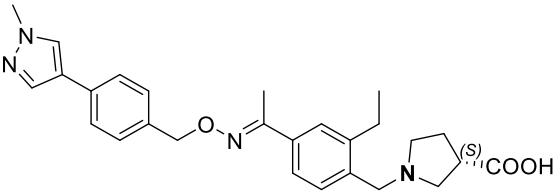


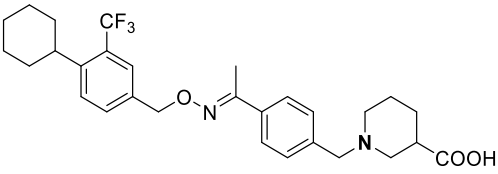


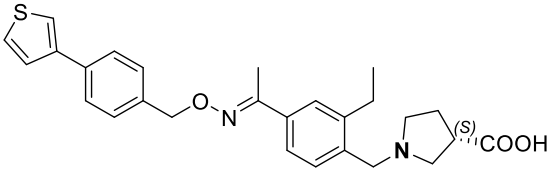


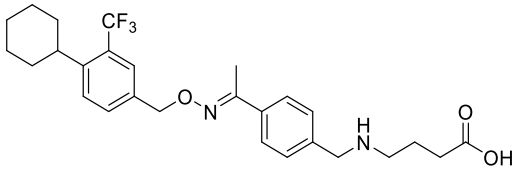


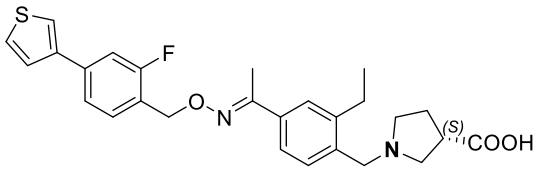


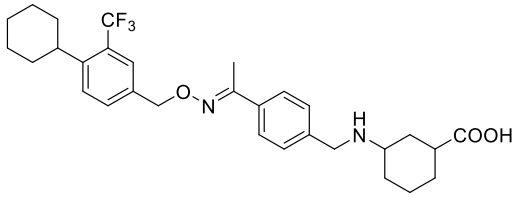


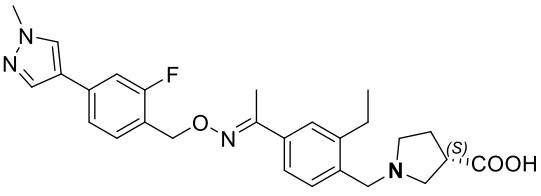


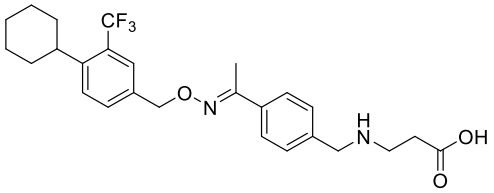


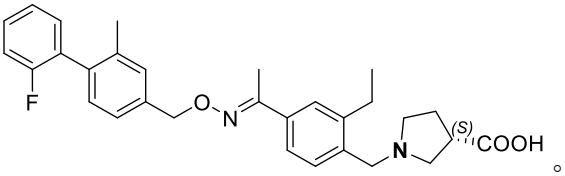


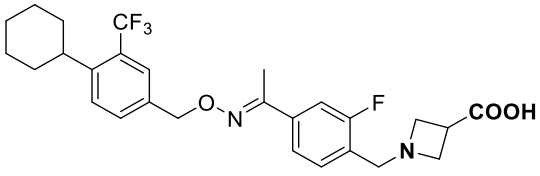


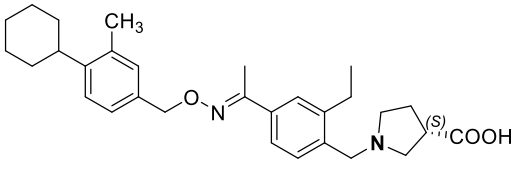


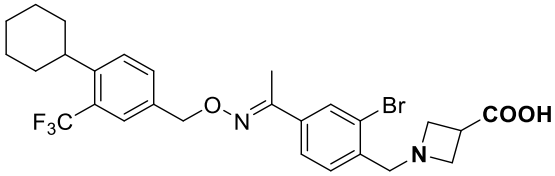


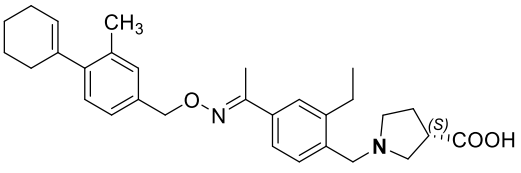


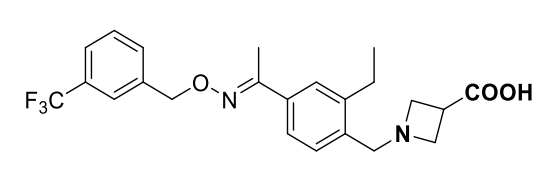


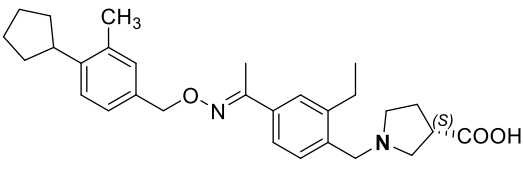


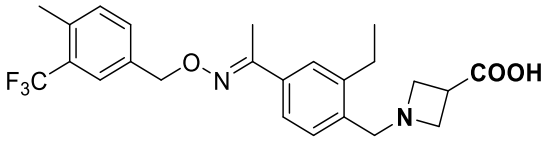


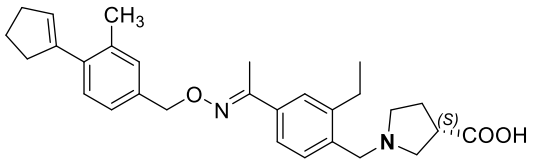


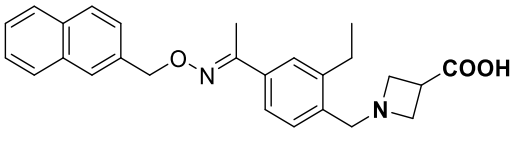


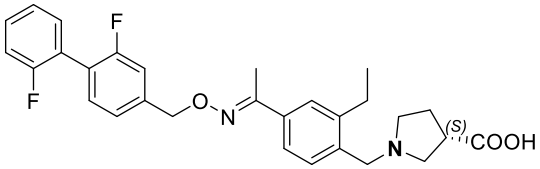


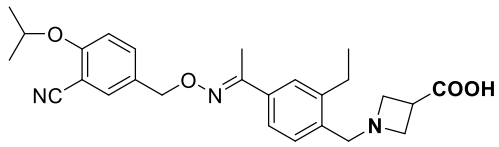


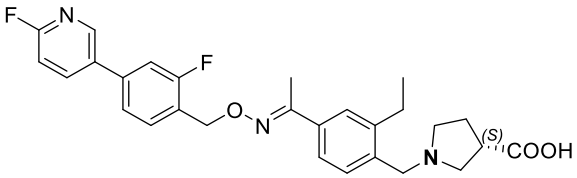


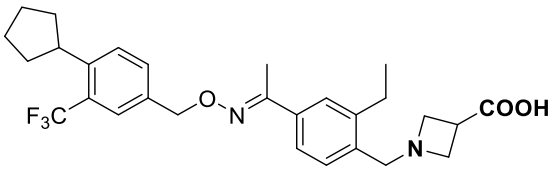


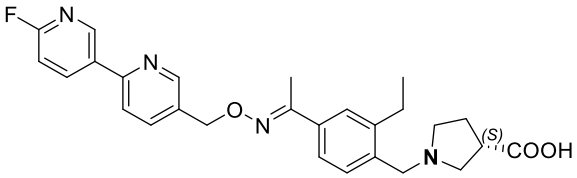


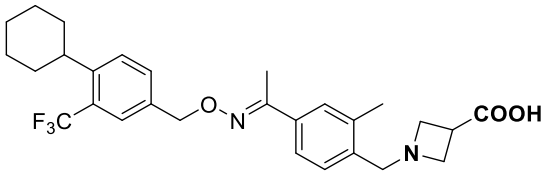


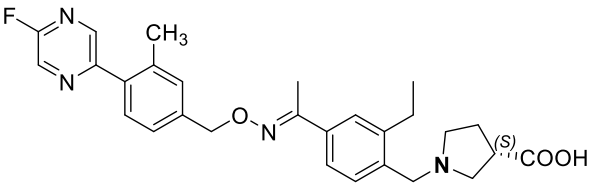


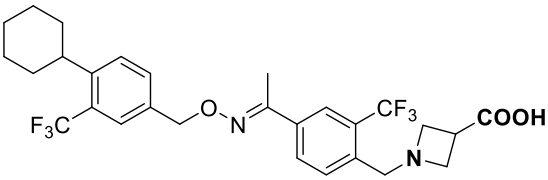


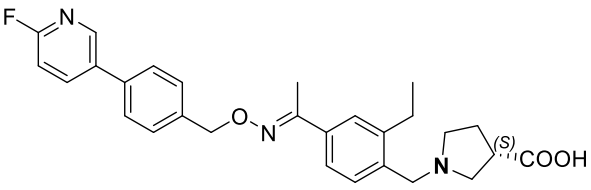


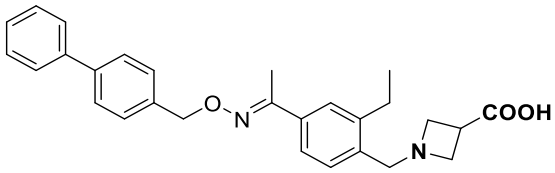


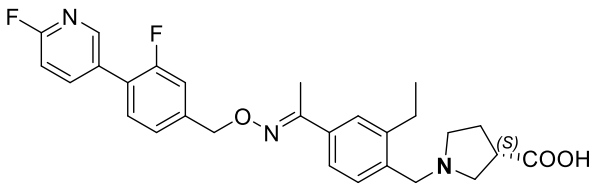


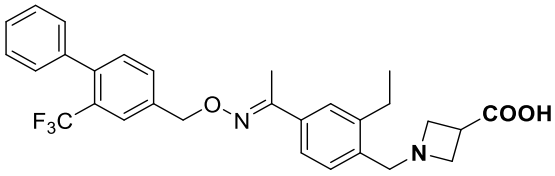


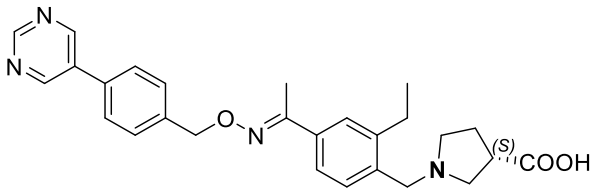


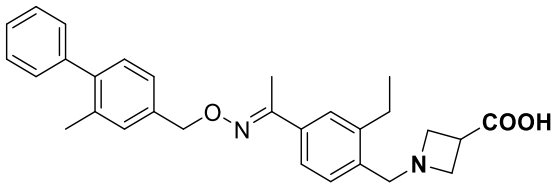


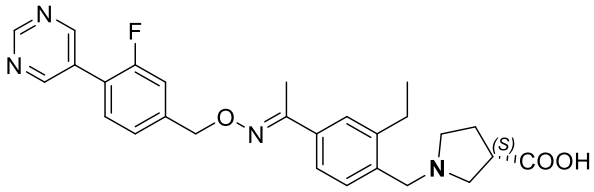


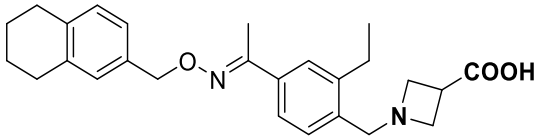


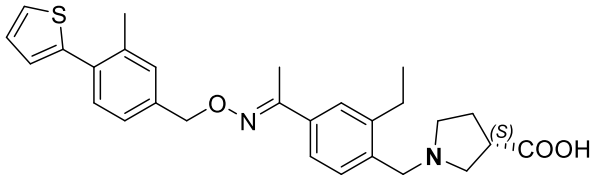


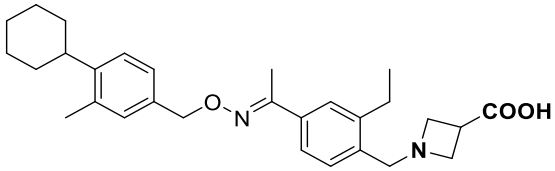


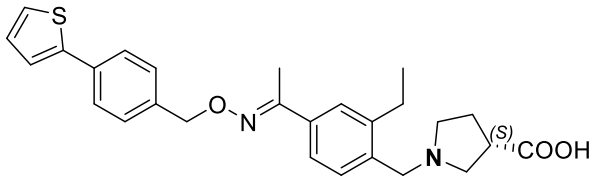


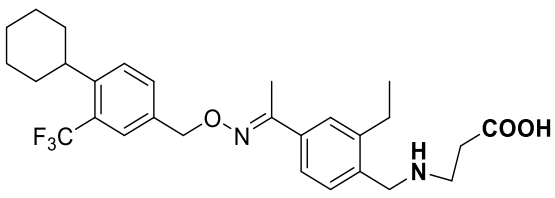


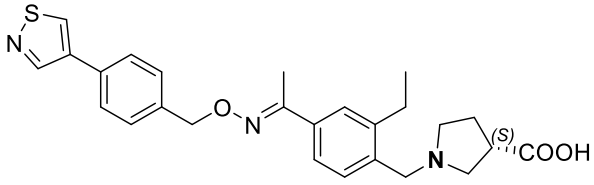


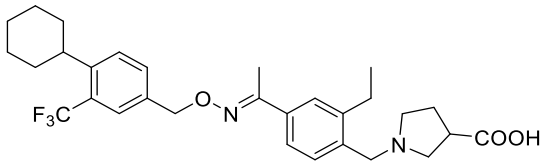


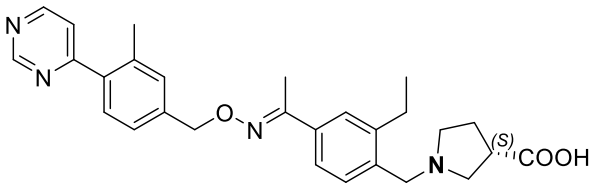


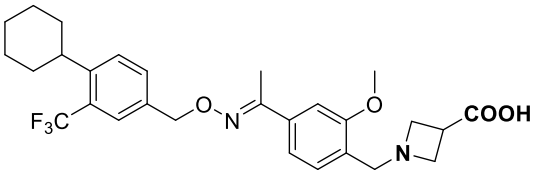


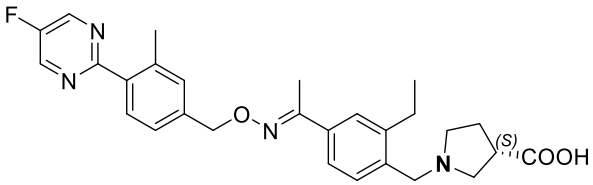


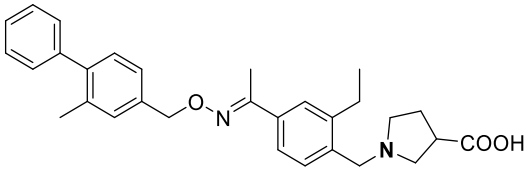


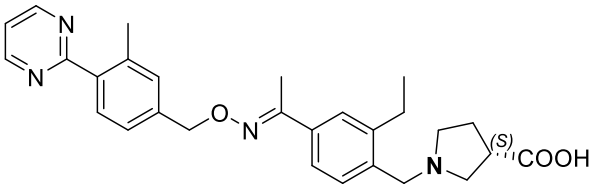


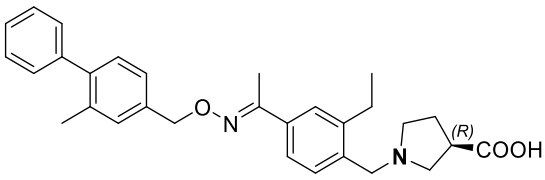


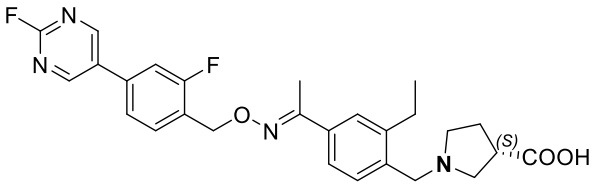


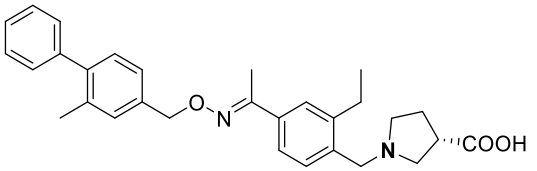


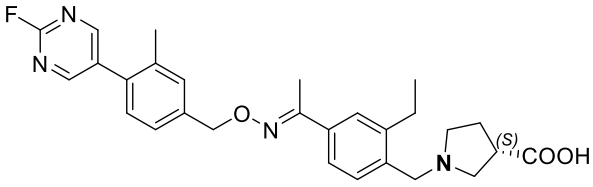


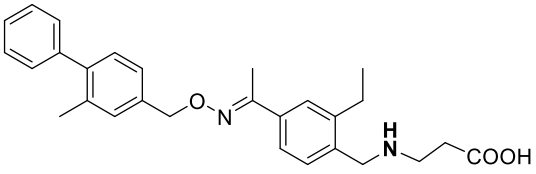


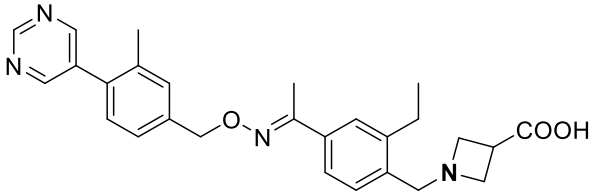


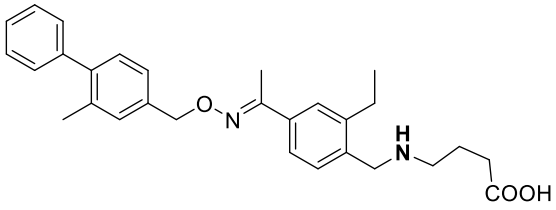


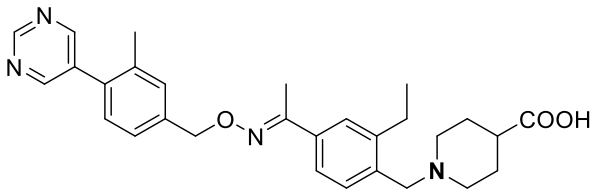


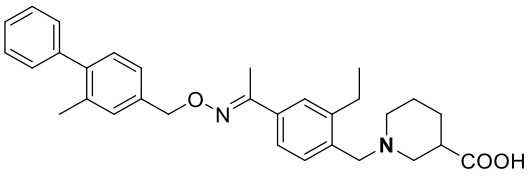


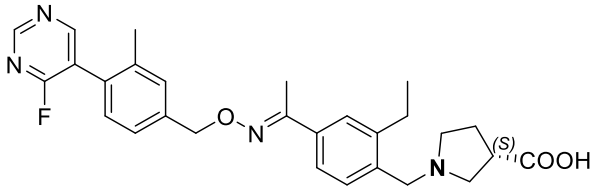


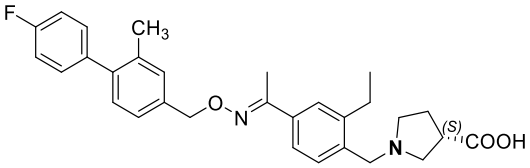


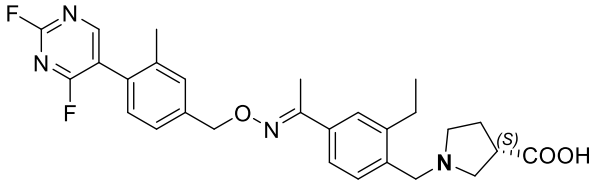


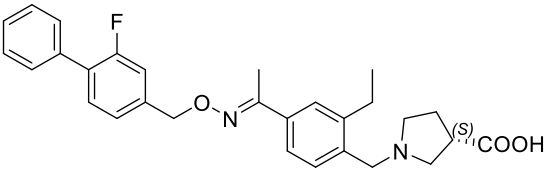


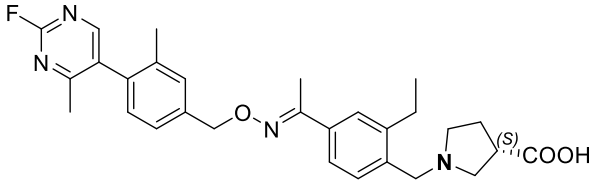


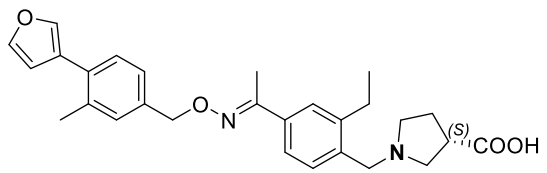


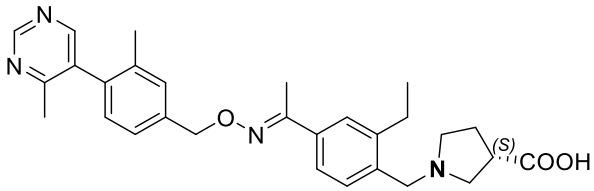


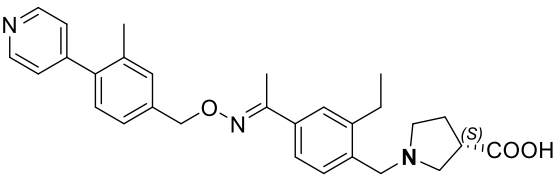


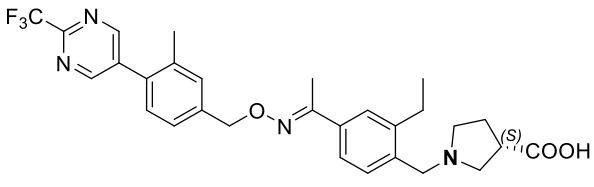




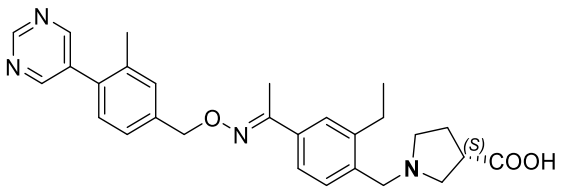


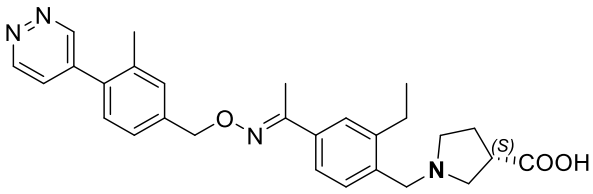


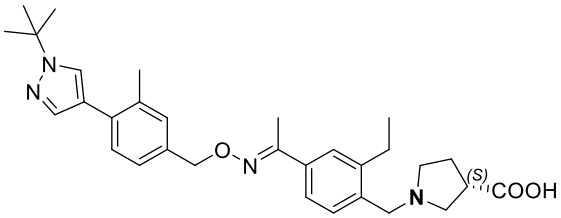


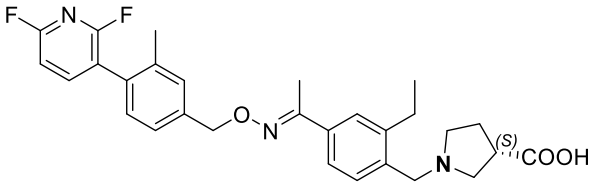


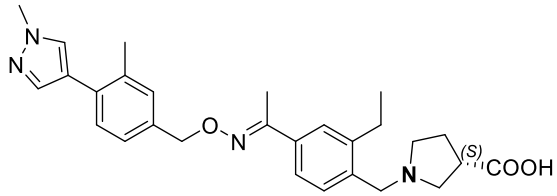


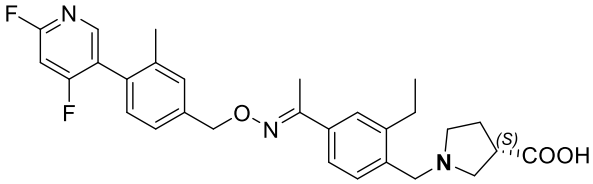


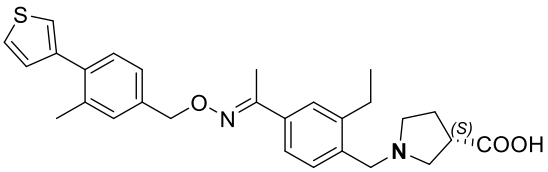


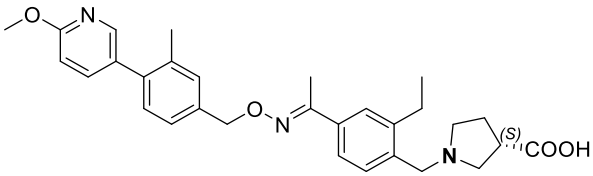


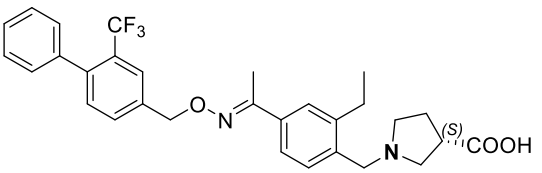


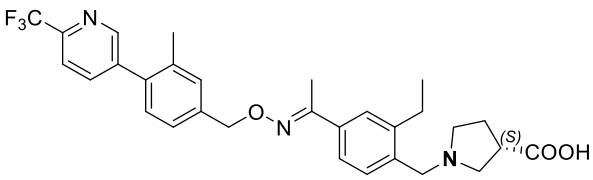


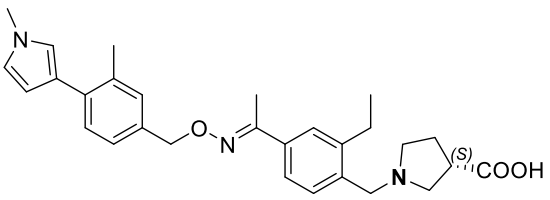


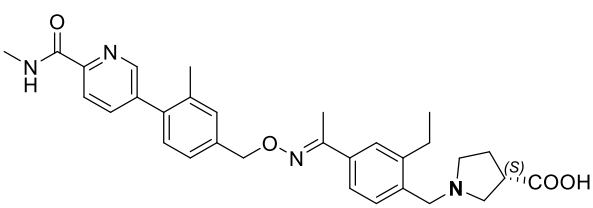


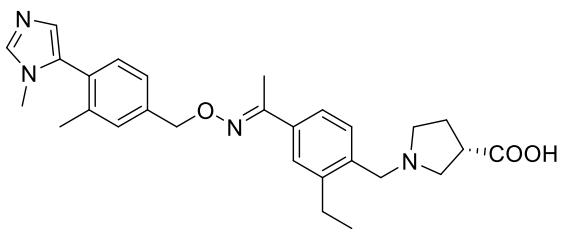


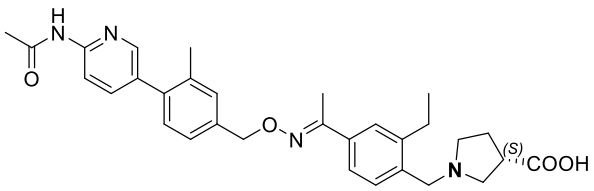


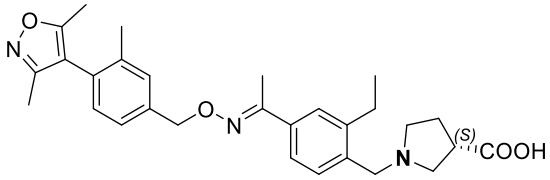


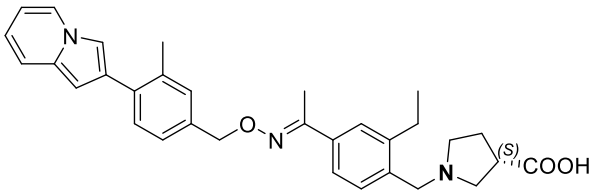


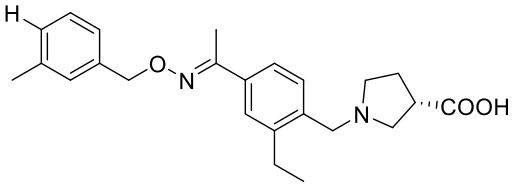


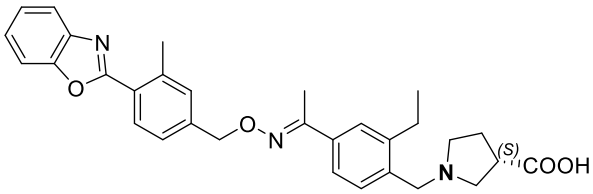


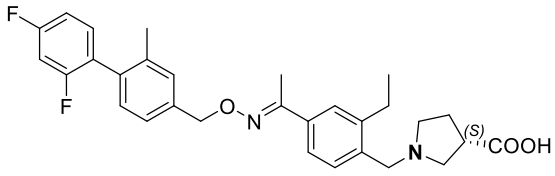


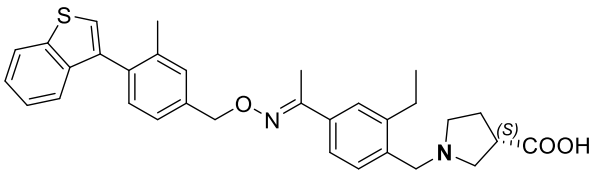


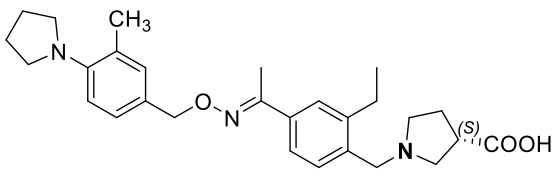


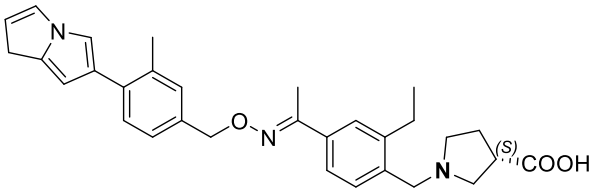


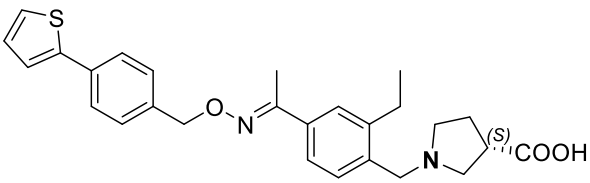


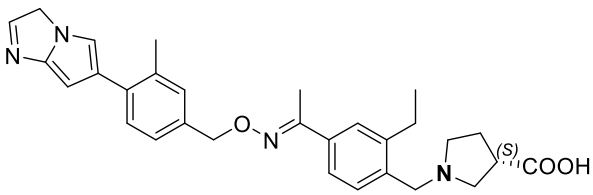


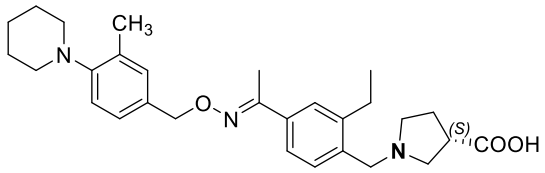


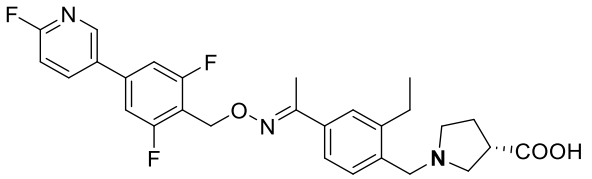


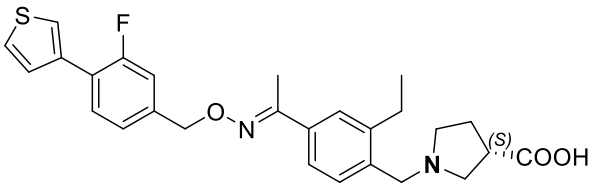


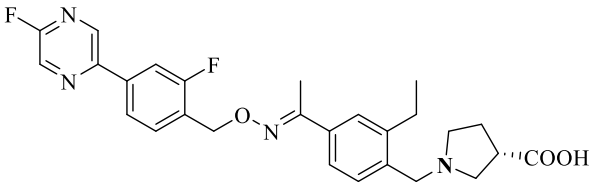


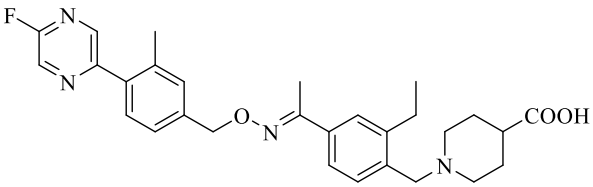


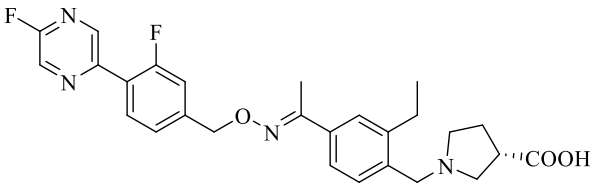


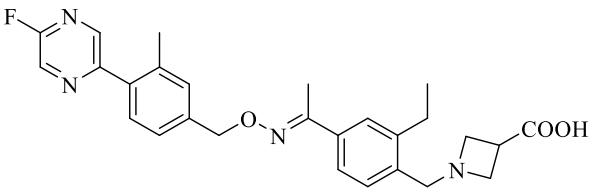


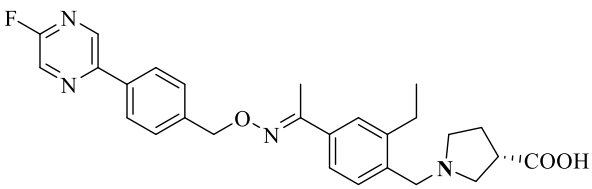


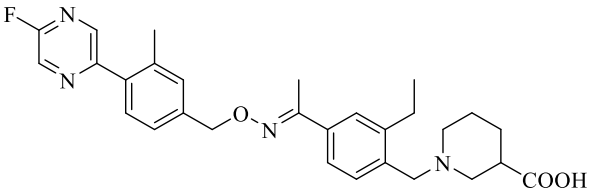


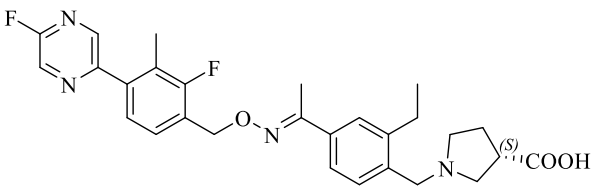


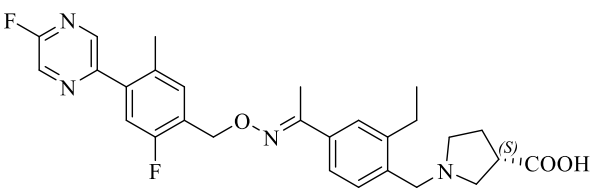


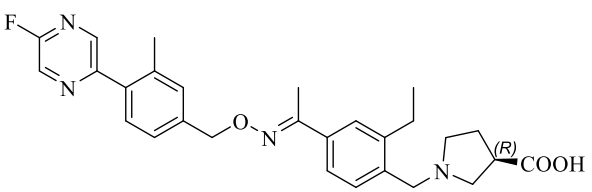


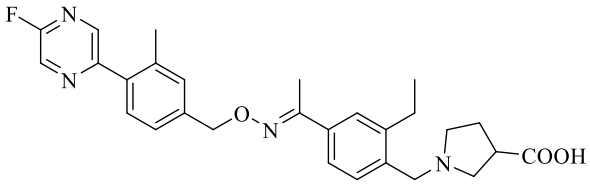
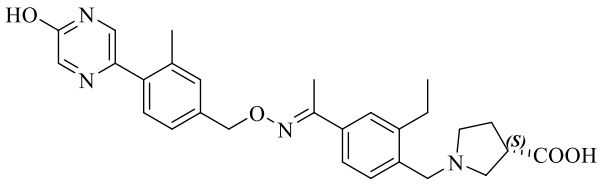








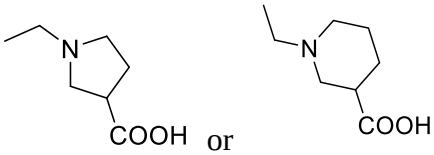


5. The use of claim 3, wherein in Formula III,

R^1 is selected from the group consisting of: a hydrogen, halogen (preferably F, Cl, or Br), cyano, substituted or unsubstituted C_1-C_5 alkoxy (preferably a methoxy), substituted or unsubstituted C_1-C_6 alkyl (preferably a methyl, ethyl, propyl);

R^2 is:

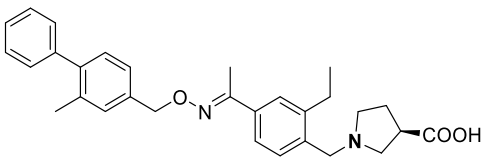


;

R^3 and R^5 are independently selected from the group consisting of a hydrogen, substituted or unsubstituted C_1-C_6 alkyl (preferably a methyl, ethyl or propyl), and halogen (preferably F);

R^4 is selected from the group consisting of a substituted or unsubstituted C_5-C_8 aryl (preferably a phenyl or F-substituted phenyl), substituted or unsubstituted five-membered or six-membered heterocyclic group or heteroaryl containing 1-2 heteroatoms selected from N, O or S.

6. The use of claim 5, wherein the compound is selected from the following group, or an optical isomer or a pharmaceutically acceptable salt thereof: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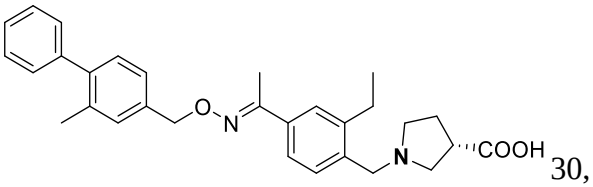
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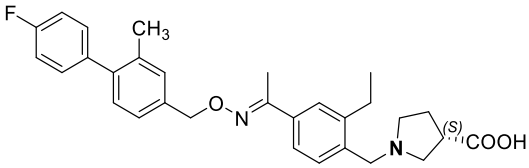
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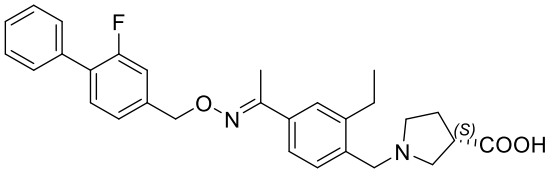
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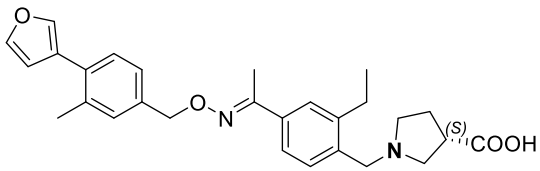
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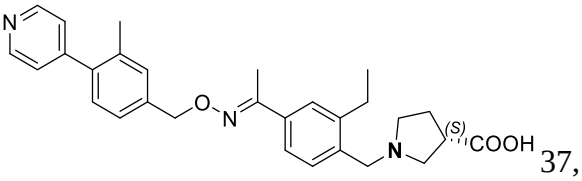
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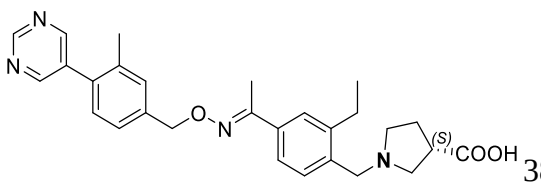
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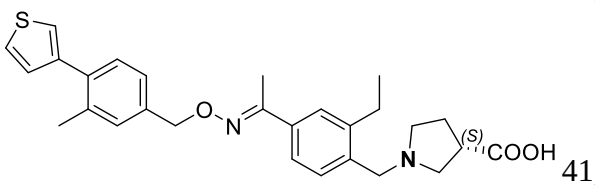
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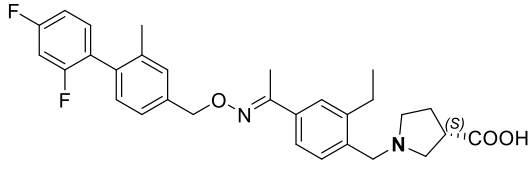
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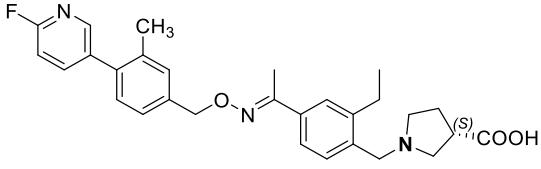
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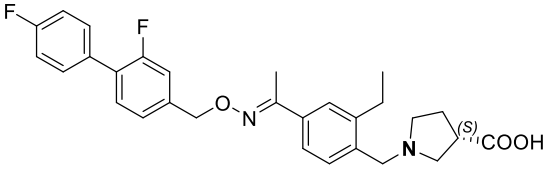
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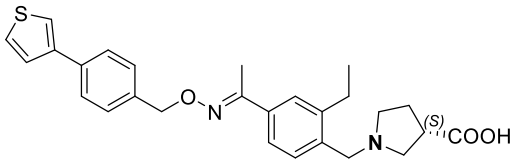
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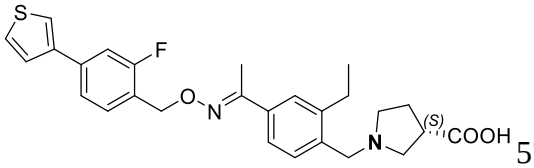
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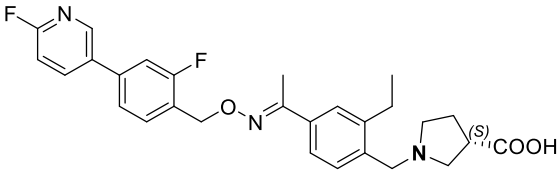
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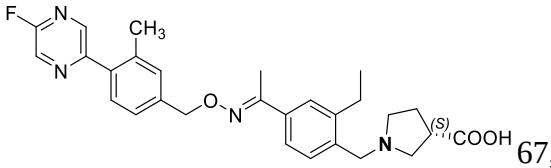
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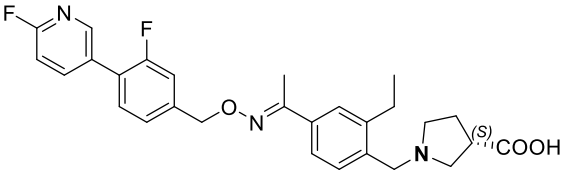
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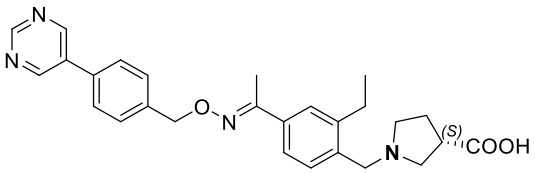
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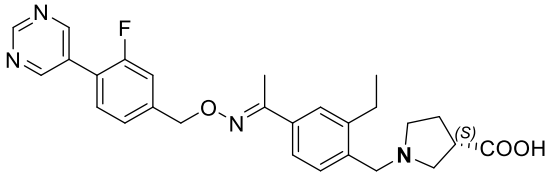
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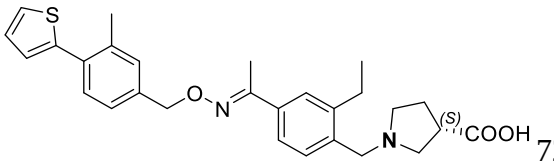
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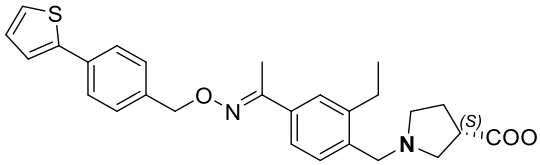
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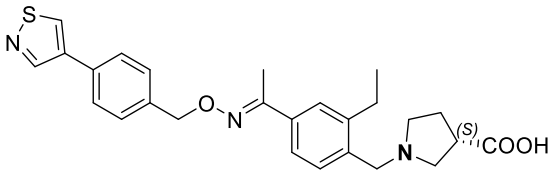
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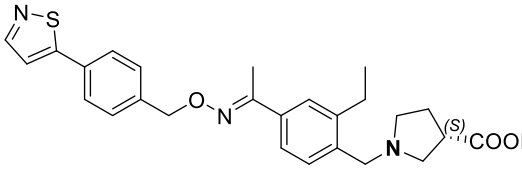
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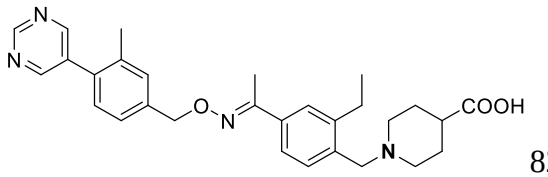
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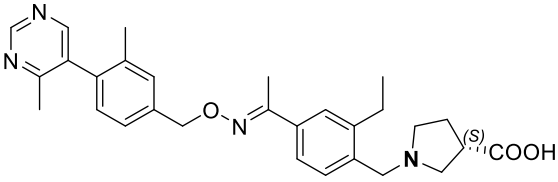
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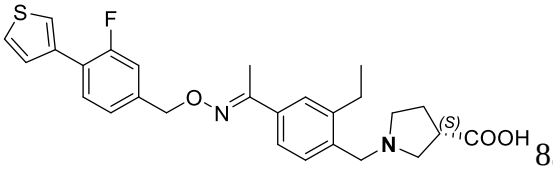
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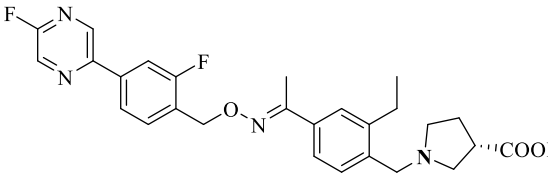
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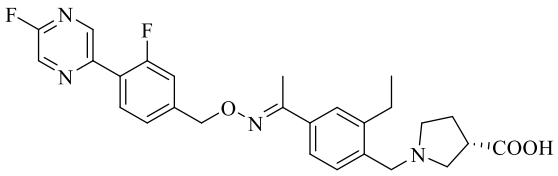
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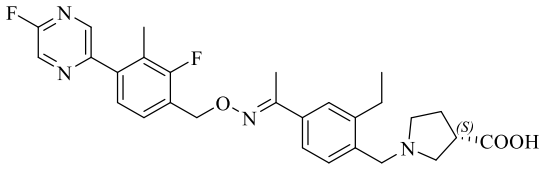
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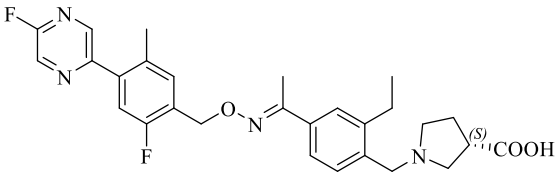
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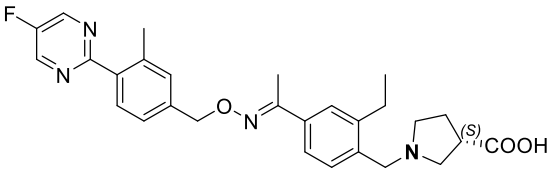
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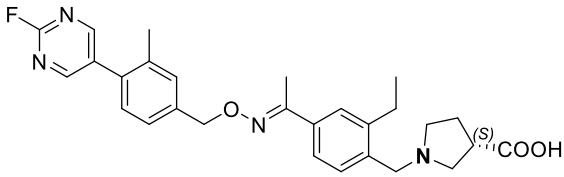
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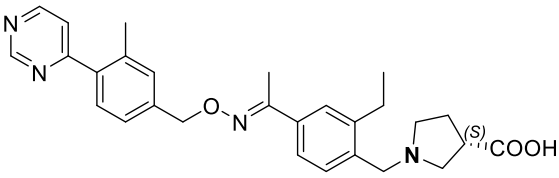
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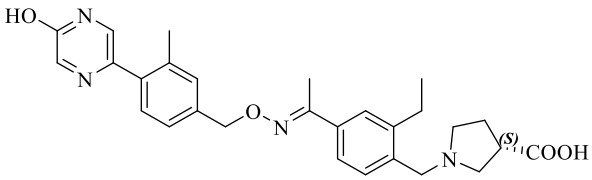
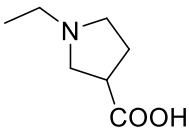

5.

7. The use of claim 3, wherein in Formula III,

R^1 is selected from the group consisting of: a cyano, substituted or unsubstituted C_1-C_5 alkoxy (preferably a methoxy), substituted or unsubstituted C_1-C_6 alkyl (preferably a methyl, ethyl, propyl);

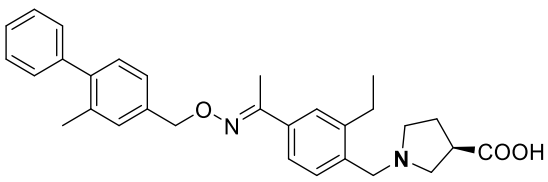
R^2 is:


;

R^3 and R^5 are independently selected from the group consisting of a hydrogen, substituted or unsubstituted C_1-C_3 alkyl (preferably a methyl, ethyl or propyl), and halogen (preferably F);

R^4 is selected from the group consisting of a substituted or unsubstituted C_5-C_8 aryl (preferably a phenyl or F-substituted phenyl), and substituted or unsubstituted five-membered or six-membered heteroaryl containing 1-2 heteroatoms selected from N, O or S.

8. The use of claim 7, wherein the compound is selected from the following group, or an optical isomer or a pharmaceutically acceptable salt thereof: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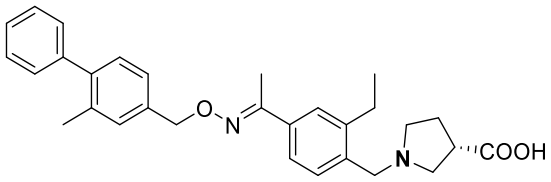
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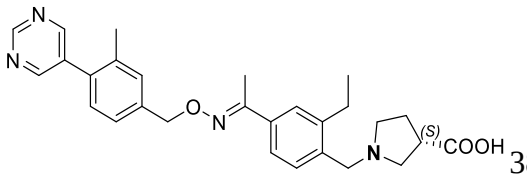
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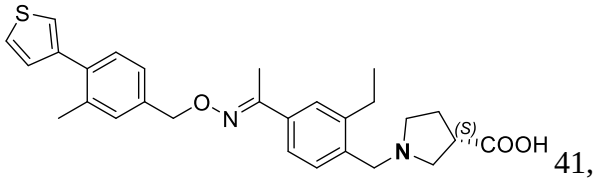
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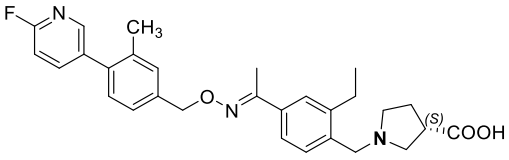
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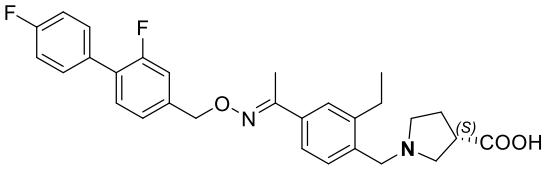
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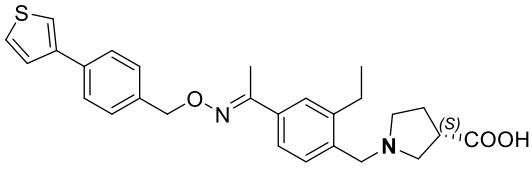
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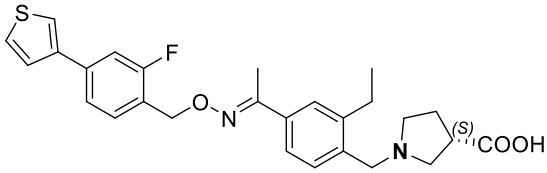
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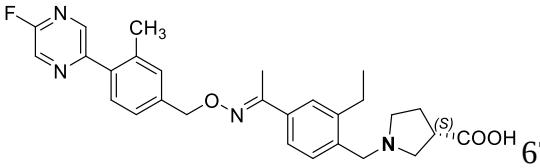
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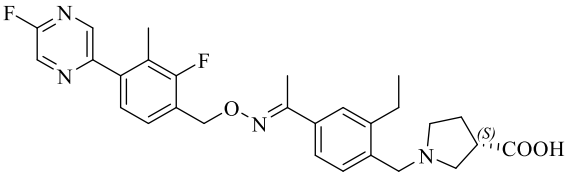
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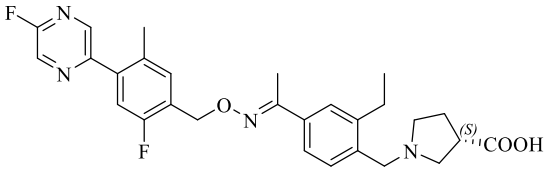
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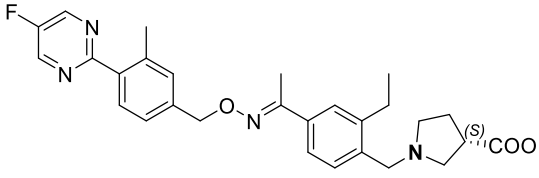
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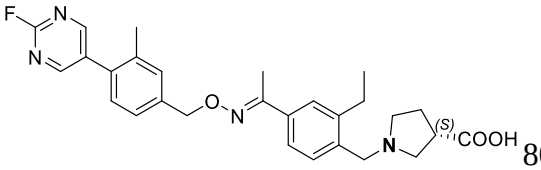
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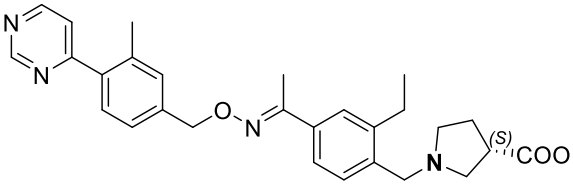
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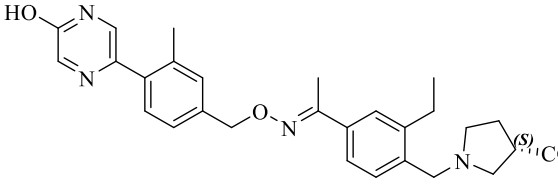
5.

9. The use of claim 1, wherein the myopathy includes but is not limited to: idiopathic inflammatory myopathy, infectious myopathy, drug-induced myopathy, toxic myopathy, hereditary myopathy, etc.

10. The use of claim 9, wherein the myopathy includes but is not limited to: Duchenne muscular dystrophy, pseudohypertrophic muscular dystrophy, limb-girdle muscular dystrophy, facioscapulohumeral muscular dystrophy, distal muscular dystrophy, myotonic dystrophy, congenital muscular dystrophy, Emery-Dreifuss muscular dystrophy, oculopharyngeal muscular dystrophy, amyotrophic lateral sclerosis, etc.