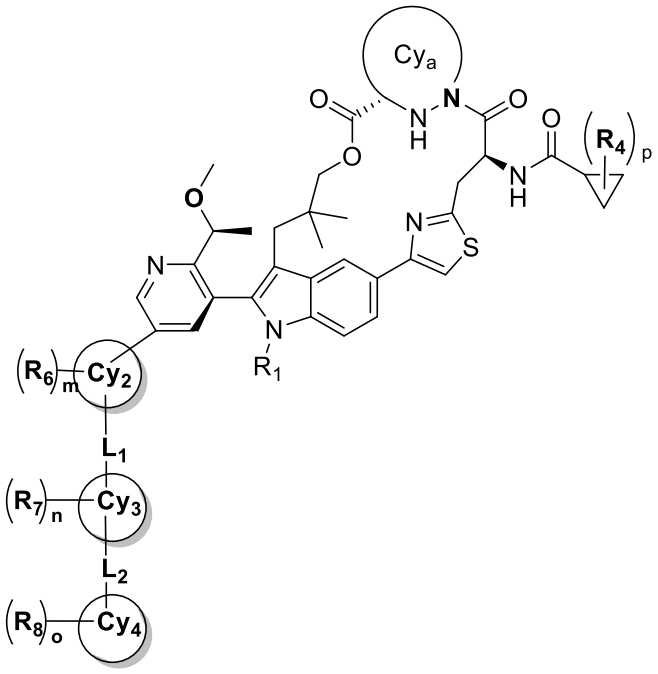
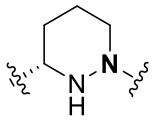
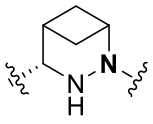
Claims

1. A compound or an isotopic derivative, stereoisomer, or a pharmaceutically acceptable salt thereof, wherein the compound have the structure represented by Formula (IV'):



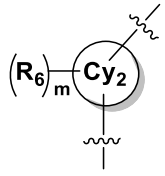
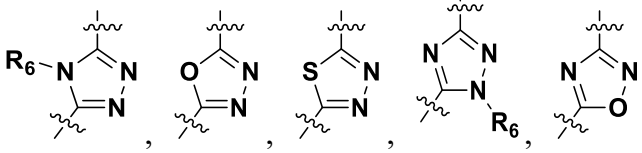
Formula (IV′)

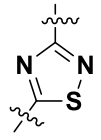
wherein:

Cya represents  or ;

R_1 represents ethyl or -CH_2CF_3;

R_4 each independently represents hydrogen, halogen, or C_1-C_3 alkyl;

 is selected from 

or ;

Cy_3 is selected from 4- to 8-membered heterocycloalkyl;

Cy_4 is selected from C_3-C_4 cycloalkyl or 4-membered heterocycloalkyl;

R_6 is each independently selected from hydrogen and methyl;

R_7 is each independently selected from hydrogen, halogen, oxo, or C_1-C_6 alkyl;

R_8 is each independently selected from hydrogen, halogen, or C_1-C_6 alkyl;

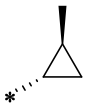
L_1 represents a single bond, -CH_2-, or -O-;

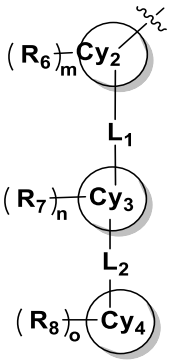
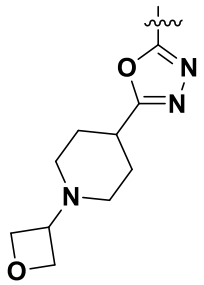
L_2 represents a single bond, -CH_2-, or -O-;

wherein n, o, and p are each independently 0, 1, or 2;

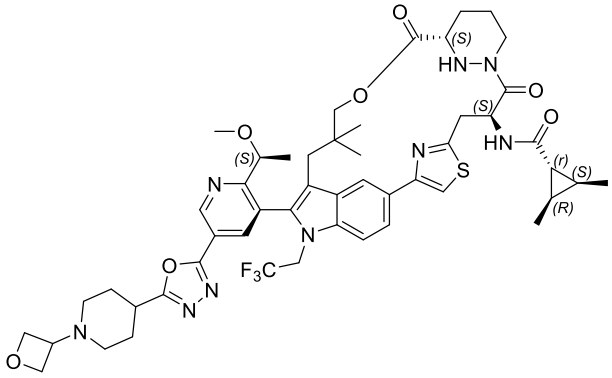
Ra, Ra′ are each independently hydrogen or C_1-C_3 alkyl;

the alkyl, cycloalkyl, heterocycloalkyl, and alkylene may each independently be substituted with 0, 1, 2, 3, 4, 5, or 6 halogen atoms.

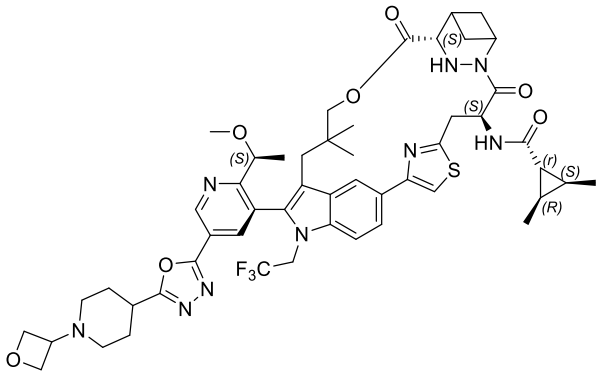
2. The compound according to claim 1, or an isotopic derivative, stereoisomer, or a pharmaceutically acceptable salt thereof, wherein  represents  or , wherein, * represents the site where Cy_1 is attached to the corresponding position in the formula.

3. The compound according to claim 2, or an isotopic derivative, stereoisomer, or a pharmaceutically acceptable salt thereof, wherein  represents .

4. The compound according to claim 1, or an isotopic derivative, stereoisomer, or a pharmaceutically acceptable salt thereof, wherein the compound has the following structure:



,



.

5. A pharmaceutical composition comprising a compound according to any one of claims 1 to 4, or an isotopic derivative, stereoisomer, or a pharmaceutically acceptable salt thereof, and at least one pharmaceutically acceptable carrier.

6. A method for the prevention and/or treatment of cancer, tumor, inflammatory disease, autoimmune disease, or immune-mediated disease, comprising administering to a subject in need thereof a therapeutically effective amount of a compound according to any one of claims 1 to 4, or an isotopic derivative, stereoisomer, or a pharmaceutically acceptable salt thereof, or the pharmaceutical composition according to claim 5.

7. The method according to claim 6, wherein the cancer, tumor, inflammatory disease, autoimmune disease, or immune-mediated disease is a RAS protein-associated disease.

8. The method according to claim 7, wherein the RAS protein is one or more selected from KRAS protein, NRAS protein, or HRAS protein.

9. The method according to claim 8, wherein the cancer, tumor, inflammatory disease, autoimmune disease or immune-mediated disease includes a RAS mutation.

10. The method according to claim 9, wherein the RAS mutation comprises one or more selected from KRAS mutation, NRAS mutation, or HRAS mutation.

11. The method according to claim 10, wherein the RAS mutation is located at

position 12, 13, and/or 61.

12. The method according to claim 11, wherein the RAS mutation includes one or more selected from KRAS G12C, KRAS G12D, KRAS G12V, KRAS G12R, KRAS G13D, or NRAS Q61L.