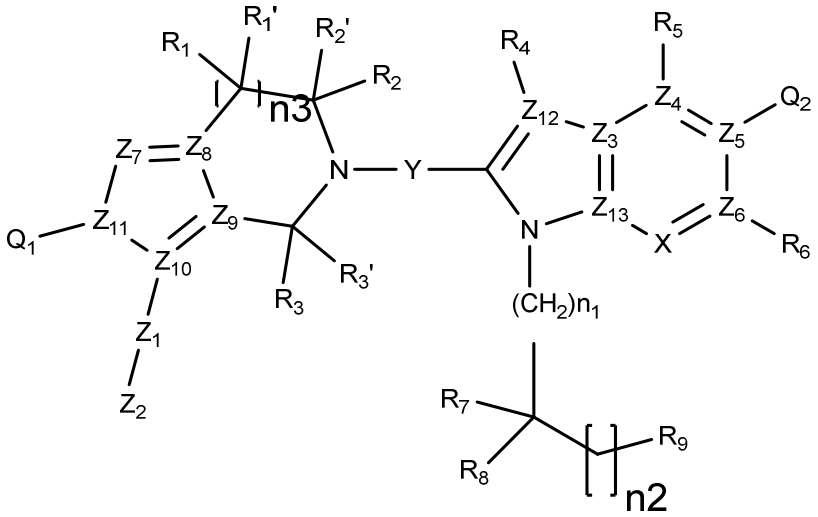
WHAT IS CLAIMED IS:

1. A compound of Formula (I), a stereoisomer, a tautomer, a pharmaceutically acceptable salt, or a deuterated compound thereof:



Formula (I)

wherein,

X is selected from the group consisting of N and -CR^a; and R^a is selected from the group consisting of hydrogen, halogen, and C_{1-6} alkyl;

Y is -C(=O)-;

each of Z_3, Z_4, Z_5, Z_6, Z_7, Z_8, Z_9, Z_{10}, Z_{11}, Z_{12} and Z_{13} is independently selected from the group consisting of N and C;

wherein Q_1 is selected from the group consisting of C_{6-10} aryl and 5- to 10-membered heteroaryl, wherein C_{6-10} aryl or 5- to 10- membered heteroaryl is optionally substituted with one to five substituents independently selected from the group consisting of halogen and C_{3-8} cycloalkyl;

wherein Q_2 is selected from the group consisting of 3- to 12-membered heterocyclic, and 5- to 10-membered heteroaryl, wherein 3- to 12-membered heterocyclic or 5- to 10-membered heteroaryl is optionally substituted by 1-3 substituents independently selected from the group consisting of halogen, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, and -$NR^{Qa}R^{Qb}$, wherein two C_{1-6} alkyl groups optionally together with the carbon atoms to which they are attached form C_{3-8} carbocyclic ring ; wherein R^{Qa} and R^{Qb} are independently selected from the group consisting of hydrogen, C_{1-6} alkyl, C_{1-6} haloalkyl and (C_{1-6} alkyl) carbonyl;

wherein each of R_1, R_2, R_3, R_1', R_2' and R_3' is independently selected from the group consisting of hydrogen, halogen, C_{1-6} alkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, cycloalkyl and

heterocycloalkyl; wherein C_{1-6} alkyl, cycloalkyl or heterocycloalkyl is optionally substituted by one or more substituents independently selected from the group consisting of halogen, C_{1-6} alkoxy and hydroxyl; or

wherein R_2 and R_3 together with the carbon atom to which they are attached form 4- to 8-membered heterocycloalkyl;

each of R_4, R_5 and R_6 is independently selected from the group consisting of hydrogen, halogen and C_{1-6} alkyl;

each of R_7 and R_8 is independently selected from the group consisting of hydrogen and C_{1-6} alkyl, wherein C_{1-6} alkyl is optionally substituted with one or more substituents independently selected from the group consisting of halogen and C_{3-15} cycloalkyl;

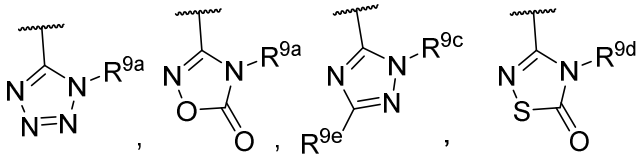
or R_7 and R_8 together with the carbon atom to which they are attached form C_{3-15} carbocyclic ring, wherein the C_{3-15} carbocyclic ring is optionally substituted by one to three C_{1-6} alkyl, wherein C_{1-6} alkyl is optionally substituted with one or more substituents independently selected from the group consisting of halogen, hydroxyl, $-NR^{7a}R^{7b}$, C_{1-6} alkoxy and 3- to 12-membered heterocyclic, and R^{7a} and R^{7b} are independently selected from the group consisting of hydrogen, C_{1-6} alkyl and (C_{1-6} alkyl) carbonyl; and any two C_{1-6} alkyl optionally together with the carbon atom to which they are attached form C_{3-15} carbocyclic ring;

n1 is 0, 1, 2 or 3;

n2 is 0, 1, 2, 3, 4 or 5;

n3 is 0 or 1;

R_9 is selected from the group consisting of:



, $-CO_2R^{9f}$ and $-C(=O)-NR^{9g}R^{9h}$; and

each of R^{9a}, R^{9b}, R^{9c}, R^{9d} and R^{9g} is independently selected from the group consisting of hydrogen, C_{1-6} alkyl and (C_{1-6} alkyl) carbonyl, wherein C_{1-6} alkyl is optionally substituted with one or more substituents independently selected from the group consisting of halogen and C_{1-6} alkoxy;

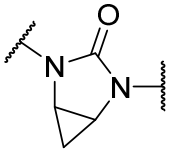
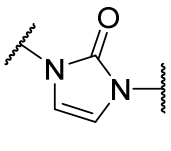
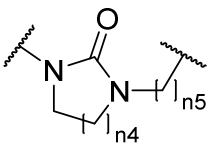
R^{9e} is selected from the group consisting of hydrogen and C_{1-6} alkyl optionally substituted with one or more halogen;

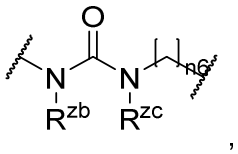
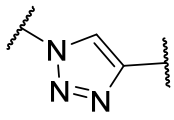
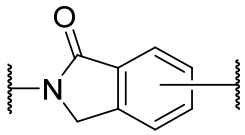
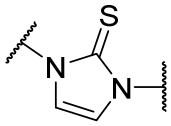
R^{9f} is selected from the group consisting of hydrogen and C_{1-6} alkyl;

R^{9h} is selected from the group consisting of hydrogen, C_{1-6} alkyl, (C_{1-6} alkyl) carbonyl, cyano and -S(=O)$_{n9}$-R^{9i}; n9 is 0, 1 or 2;

R^{9i} is C_{1-6} alkyl;

Z_1 is selected from the group consisting of:


,

,

,

,

,

,

and

,

R^{za} is selected from the group consisting of hydrogen, C_{1-6} alkyl and (C_{1-6} alkyl) carbonyl, and each of R^{zb} and R^{zc} is independently selected from the group consisting of hydrogen and C_{1-6} alkyl;

n4 is 1, 2 or 3;

each of n5 and n6 is independently an integer selected from 0 to 10;

Z_2 is 5- to 10- membered heteroaryl, and Z_2 is substituted with one halogen and one of C_3-C_{15} cycloalkyl and C_1-C_6 alkyl-C_3-C_{15} cycloalkyl; wherein the cycloalkyl or alkyl is optionally substituted with one or more substituents independently selected from the group consisting of halogen, oxo, C_{1-6} alkyl, C_{1-6} alkoxy and (C_{1-6} alkyl) carbonyl, wherein each of alkyl and alkoxy is optionally substituted with halogen.

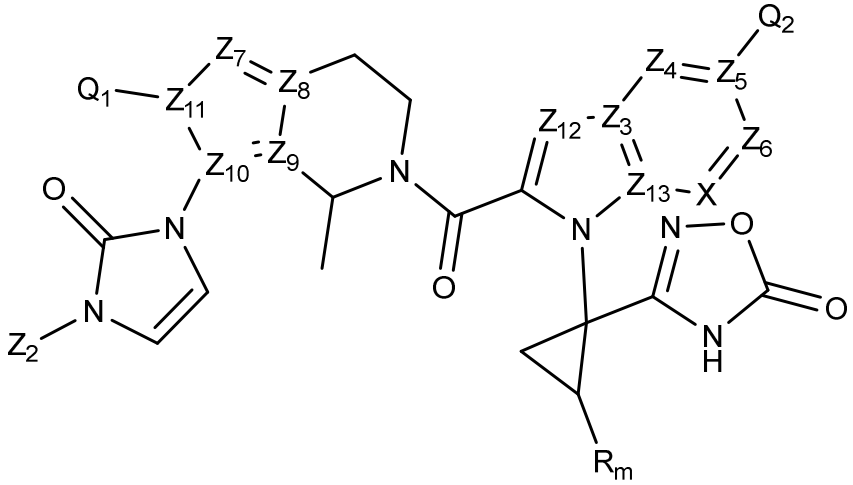
2. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of claim 1, wherein Q_1 is optionally substituted with two C_{1-6} alkyl, wherein the C_{1-6} alkyl together with the carbon atoms, to which they are attached, form C_{3-8} carbocyclic ring or 4- to 10- membered heterocyclyl.

3. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of clam 1, wherein Q_1 is selected from the group consisting of C_{6-10} aryl and 5- to 10-membered heteroaryl, wherein C_{6-10} aryl or 5- to 10- membered heteroaryl is substituted with at least one C_{3-8} cycloalkyl and optionally with one to four halogens.

4. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of claim 3, wherein the C_{3-8} cycloalkyl is selected from the

group consisting of optionally substituted cyclopropyl, cyclobutyl, and cyclopentyl.

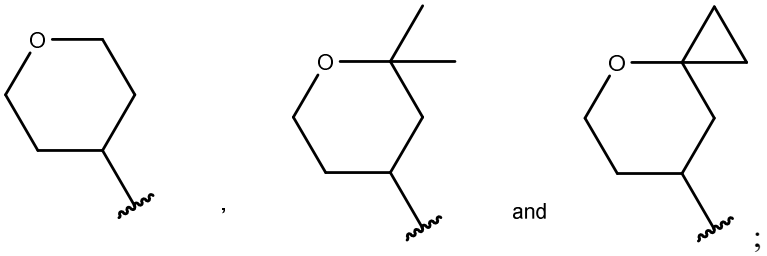
5. A compound of Formula (II), a stereoisomer, a tautomer, a pharmaceutically acceptable salt, or a deuterated compound thereof:



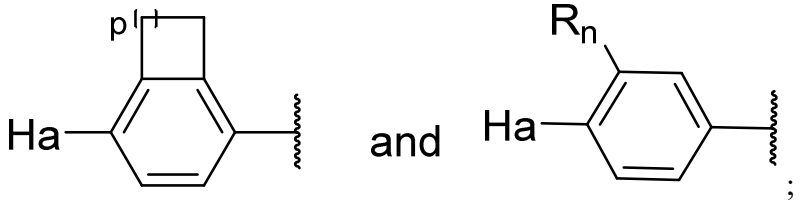
Formula (II)

wherein:

Q_2 is selected from the group consisting of



Q_1 is selected from the group consisting of



p is 0, 1, 2 or 3;

R_n is C_{3-8} cycloalkyl;

Ha is selected from the group consisting of F, Cl, Br and I;

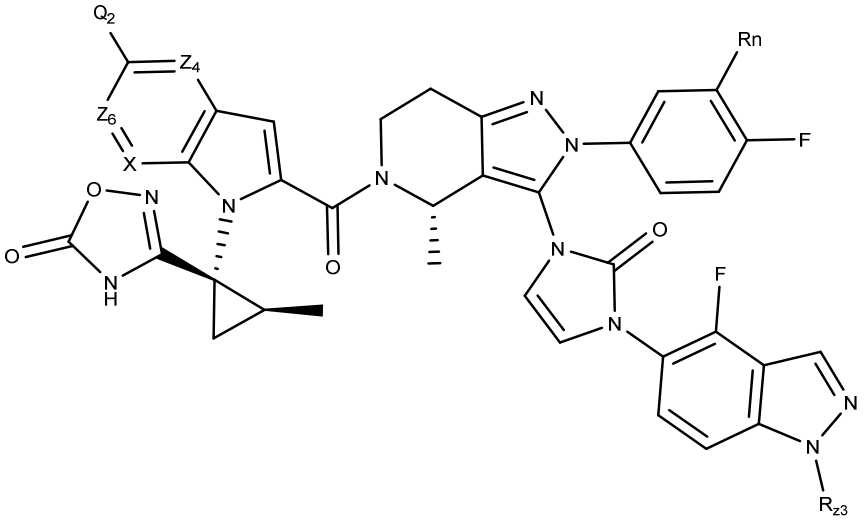
each of Z_3, Z_4, Z_5, Z_6, Z_7, Z_8, Z_9, Z_{10}, Z_{11}, Z_{12} and Z_{13} is independently selected from the group consisting of N and C;

X is selected from the group consisting of N and $-CR^a$; wherein R^a is selected from the group consisting of hydrogen, halogen and C_{1-6} alkyl;

R_m is C_{1-6} alkyl;

Z_2 is 5- to 10- membered heteroaryl, and Z_2 is substituted with one halogen and one of C_3-C_{15} cycloalkyl and C_1-C_6 alkyl-C_3-C_{15} cycloalkyl, wherein the cycloalkyl or alkyl is optionally substituted with one or more substituents independently selected from the group consisting of halogen, oxo, C_{1-6} alkyl, C_{1-6} alkoxy and (C_{1-6} alkyl) carbonyl, wherein each of alkyl and alkoxy is optionally substituted with halogen.

6. A compound of Formula (III), a stereoisomer, a tautomer, a pharmaceutically acceptable salt, or a deuterated compound thereof:



Formula (III)

wherein:

each of X, Z_4 and Z_6 is independently selected from the group consisting of N and CH;

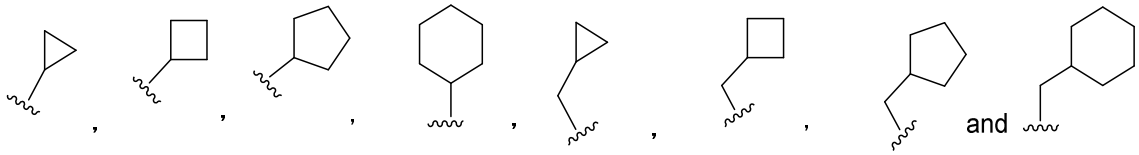
R_n is C_{3-8} cycloalkyl;

Q_2 is selected from the group consisting of 3- to 12-membered heterocyclic, and 5- to 10-membered heteroaryl, wherein 3- to 12-membered heterocyclic, or 5- to 10-membered heteroaryl is optionally substituted by 1-3 substituents independently selected from the group consisting of halogen, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, and -$NR^{Qa}R^{Qb}$, wherein two C_{1-6} alkyl groups optionally together with the carbon atoms to which they are attached form C_{3-8} carbocyclic ring ; wherein R^{Qa} and R^{Qb} are independently selected from the group consisting of hydrogen, C_{1-6} alkyl, C_{1-6} haloalkyl and (C_{1-6} alkyl) carbonyl;

R_{z3} is selected from the group consisting of C_3-C_8 cycloalkyl and C_1-C_6 alkyl-C_3-C_8 cycloalkyl.

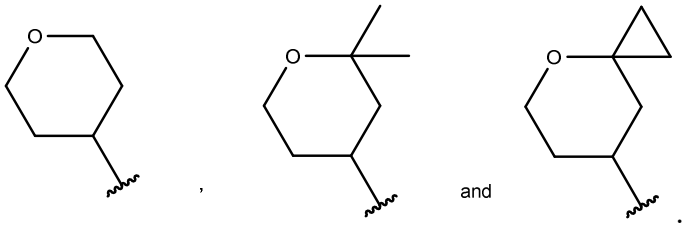
7. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of claim 6, wherein,

R_{z3} is selected from the group consisting of:

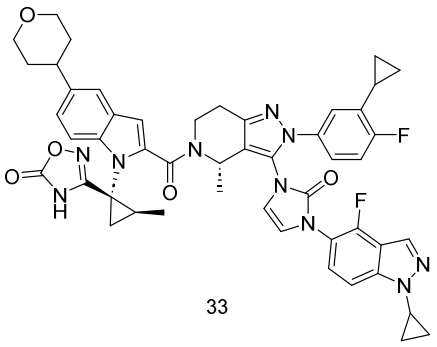


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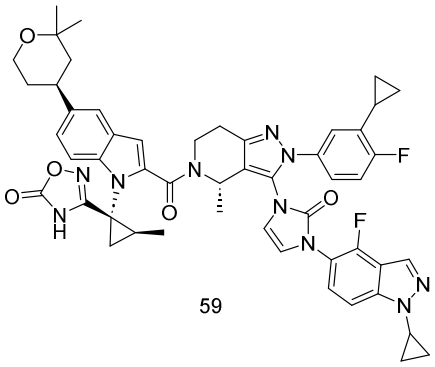
Q_2 is selected from the group consisting of



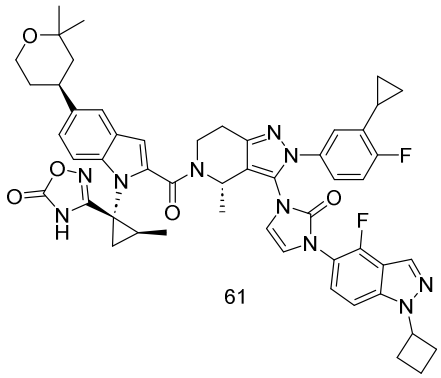
8. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of claim 6, wherein the compound is selected from the group consisting of:



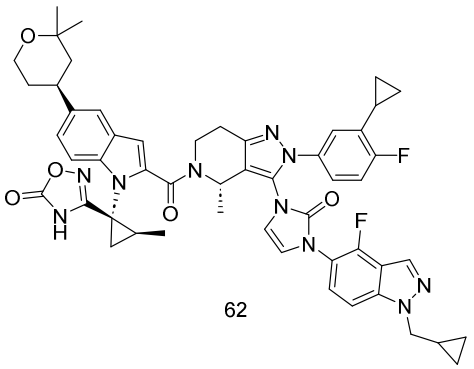
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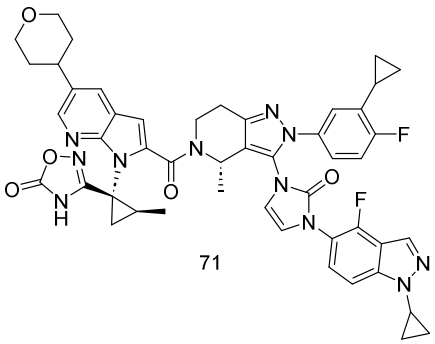
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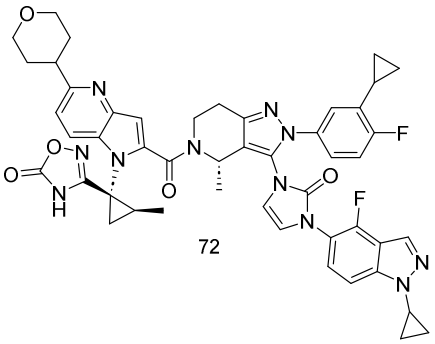
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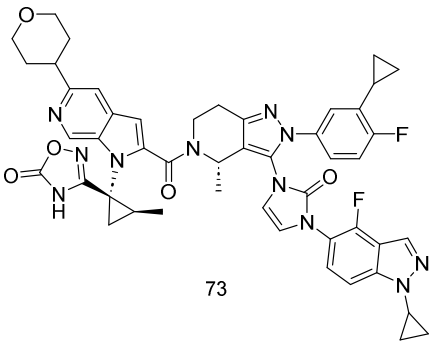


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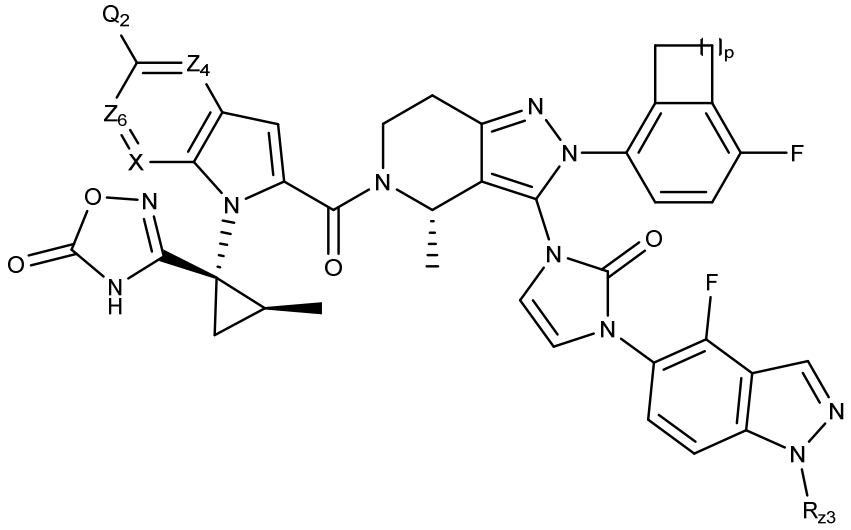
and



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9. A compound of Formula (IV), a stereoisomer, a tautomer, a pharmaceutically acceptable salt, or a deuterated compound thereof:



Formula (IV)

wherein:

each of X, Z_4 and Z_6 is independently selected from the group consisting of N and CH;

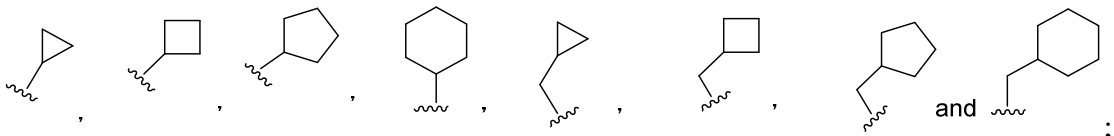
p is 0, 1, 2, or 3;

R_{z3} is selected from the group consisting of C_{1-6} alkyl, C_3-C_8 cycloalkyl and C_1-C_6 alkyl-C_3-C_8 cycloalkyl; R_{z3} is optionally substituted with substituents independently selected from the group consisting of halogen, hydroxyl, C_{1-6} alkyl and C_{1-6} alkoxy;

Q_2 is selected from the group consisting of 3- to 12-membered heterocyclic, and 5- to 10-membered heteroaryl, wherein 3- to 12-membered heterocyclic, or 5- to 10-membered heteroaryl is optionally substituted by 1-3 substituents independently selected from the group consisting of halogen, C_{1-6} alkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy, and $-NR^{Qa}R^{Qb}$, wherein two C_{1-6} alkyl groups optionally together with the carbon atoms to which they are attached form C_{3-8} carbocyclic ring ; wherein R^{Qa} and R^{Qb} are independently selected from the group consisting of hydrogen, C_{1-6} alkyl, C_{1-6} haloalkyl and (C_{1-6} alkyl) carbonyl.

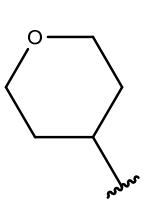
10. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of claim 9, wherein,

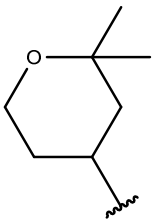
R_{z3} is selected from the group consisting of:

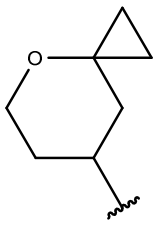


;

Q_2 is selected from the group consisting of

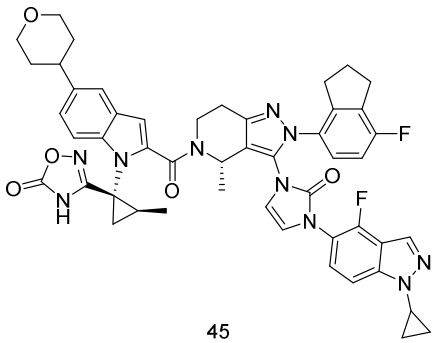


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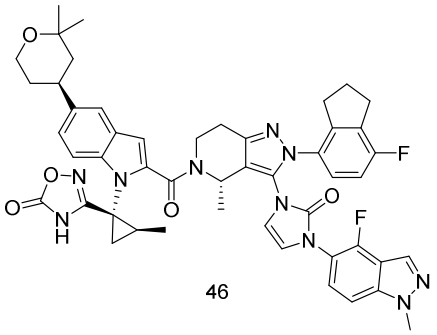
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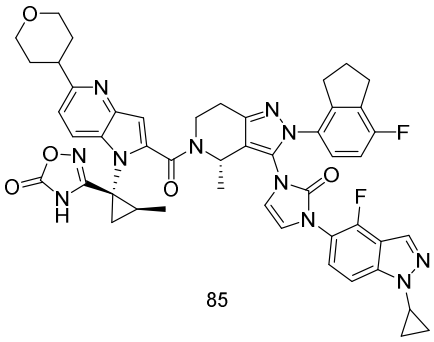
11. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of claim 9, wherein the compound is selected from the group consisting of:



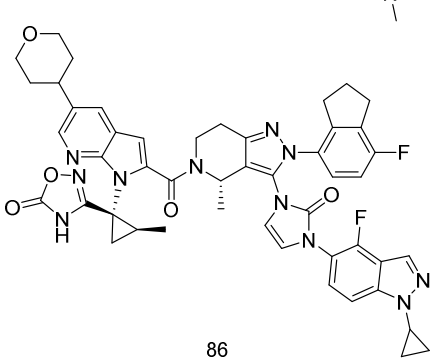
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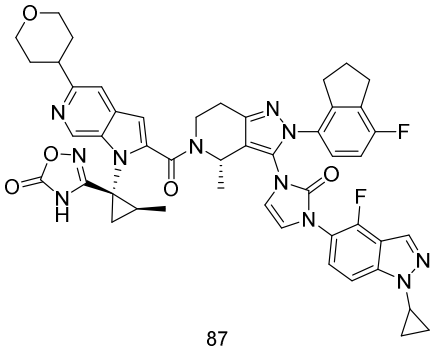
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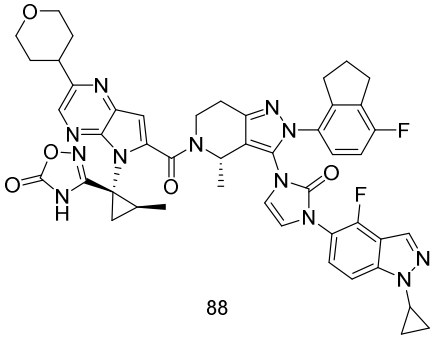
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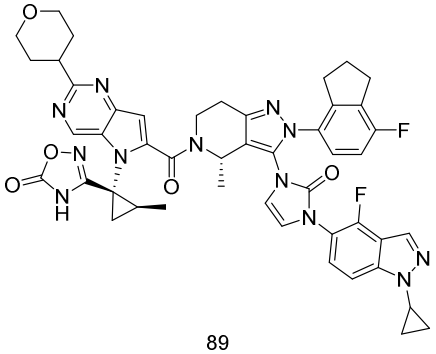
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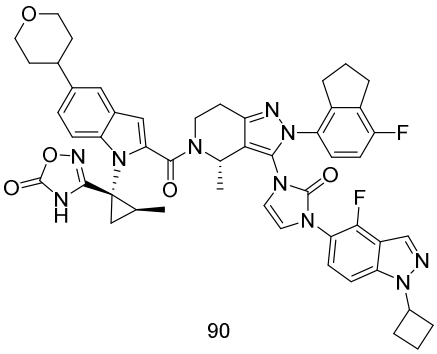
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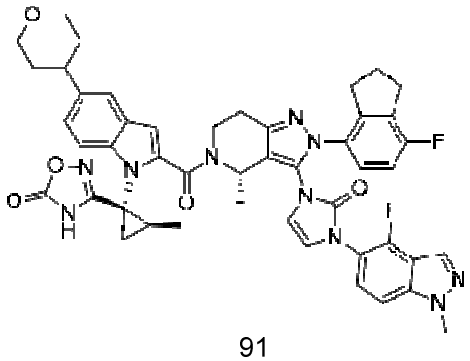
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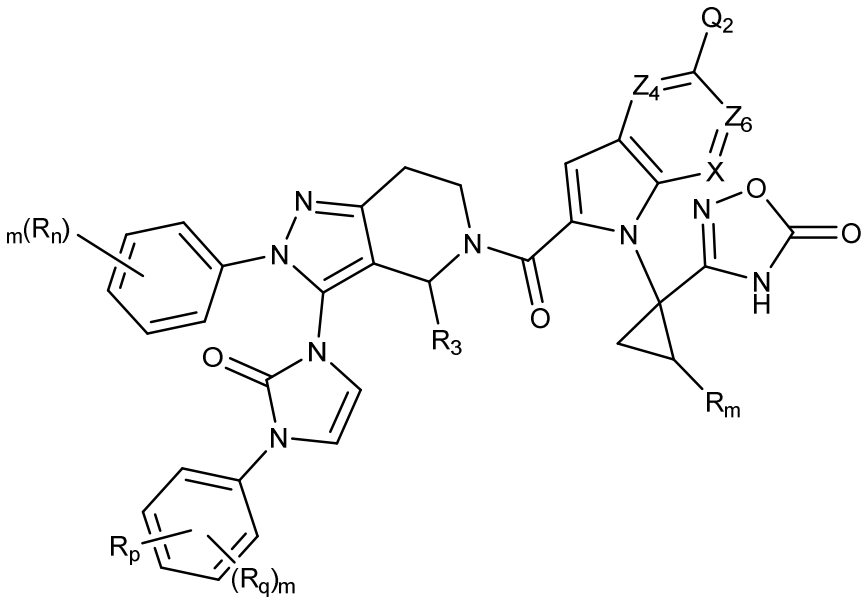


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and 91 .

12. A compound of Formula (V), a stereoisomer, a tautomer, a pharmaceutically acceptable salt, or a deuterated compound thereof:



Formula (V)

wherein:

each of X, Z_4 and Z_6 is independently selected from the group consisting of N and CH;

m is 0, 1, 2 or 3;

R_p is selected from the group consisting of $-CH_2-P(=O)R^{zm}R^{zn}$ and $-P(=O)OR^{zm}OR^{zn}$;

R_q is selected from the group consisting of halogen, -NH-C_{1-6} alkyl, C_{1-6} alkyl, -O- C_{1-6} alkyl, 3- to 12-membered heterocyclyl, C_3-C_{15} cycloalkyl and C_1-C_6 alkyl-C_3-C_{15} cycloalkyl;

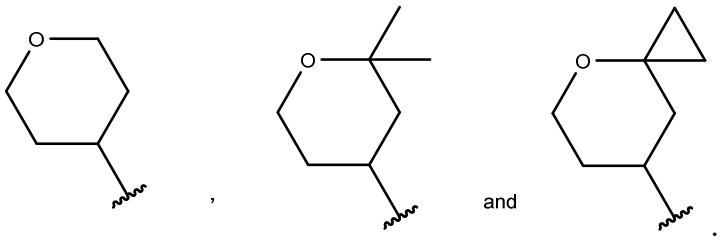
wherein each of R^{zm} and R^{zn} is independently selected from the group consisting of hydrogen, C_{1-6} alkyl and C_{6-10} aryl; or R^{zm} and R^{zn} together with the phosphorous atom to which they are attached form 5- to 8- membered heterocycloalkyl, wherein the heterocycloalkyl is optionally substituted with 1-3 C_{1-6} alkly;

R_m is selected from the group consisting of H and C_{1-6} alkyl, the C_{1-6} alkyl is optionally substituted with halogen;

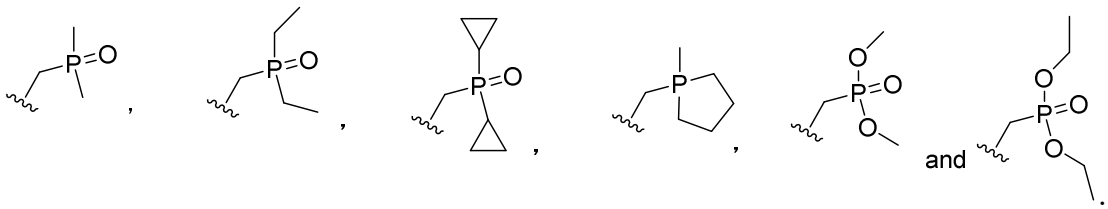
R_n is selected from the group consisting of halogen and C_{3-8} cycloalkyl;

R_3 is selected from the group consisting of H, halogen, C_{1-6} alkyl, C_{1-6} haloalkyl and C_{1-6} alkoxy;

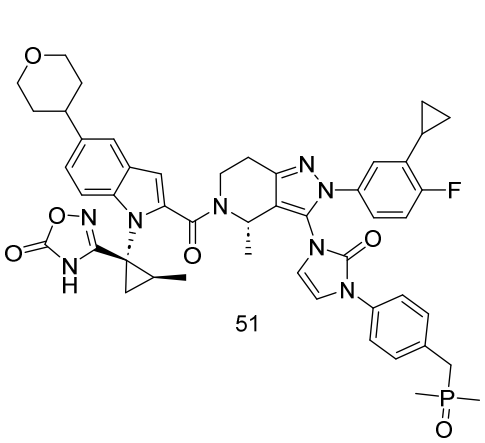
Q_2 is selected from the group consisting of



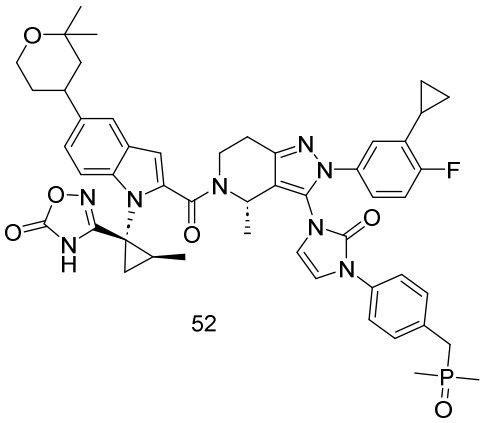
13. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of claim 12, wherein R_p is selected from the group consisting of



14. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of claim 12, wherein the compound is selected from the group consisting of

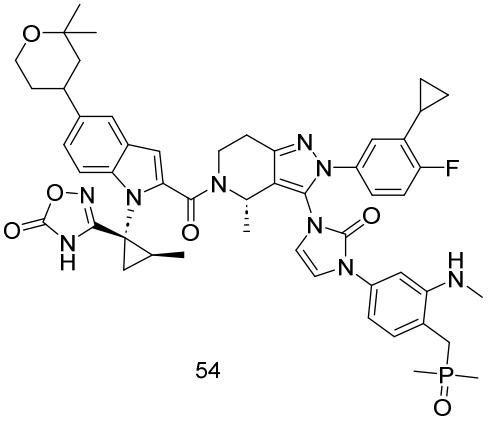


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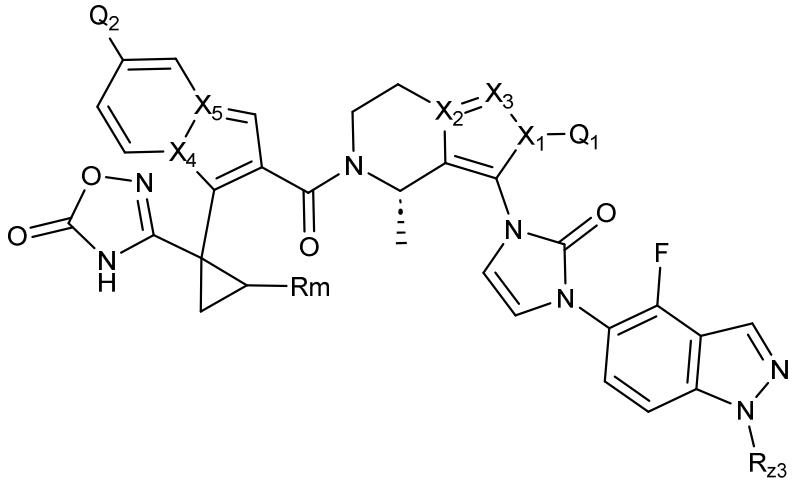
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15. A compound of Formula (VI), a stereoisomer, a tautomer, a pharmaceutically acceptable salt, or a deuterated compound thereof:



Formula (VI)

wherein:

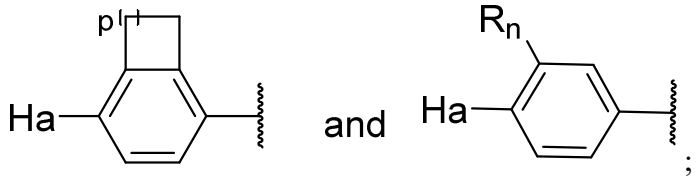
X_1, X_2, and X_3 are independently selected from the group consisting of N and C;

X_4, and X_5 are independently selected from the group consisting of N and C;

R_m is selected from the group consisting of H and C_{1-6} alkyl, wherein the C_{1-6} alkyl is

optionally substituted with halogen;

Q_1 is selected from the group consisting of



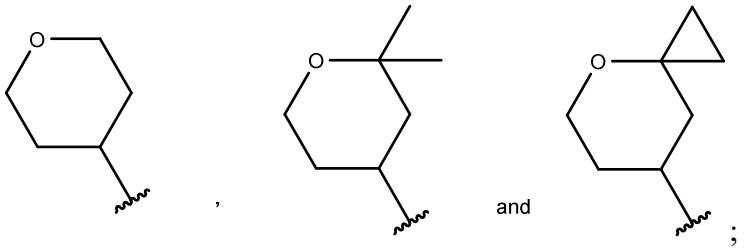
;

p is 0, 1, 2 and 3;

R_n is C_{3-8} cycloalkyl;

Ha is selected from the group consisting of F, Cl, Br and I;

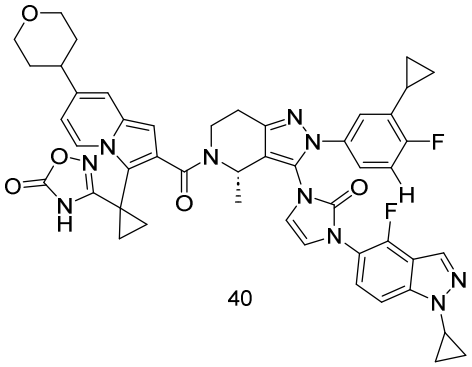
Q_2 is selected from the group consisting of



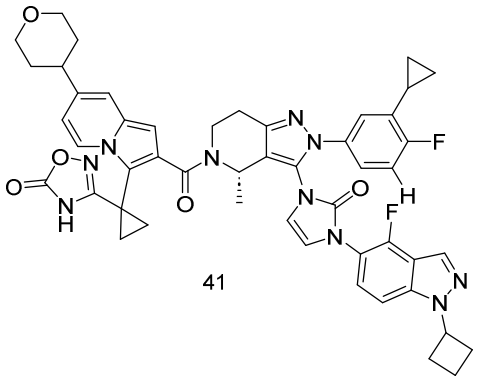
;

R_{z3} is selected from the group consisting of C_3-C_{15} cycloalkyl and C_1-C_6 alkyl-C_3-C_{15} cycloalkyl.

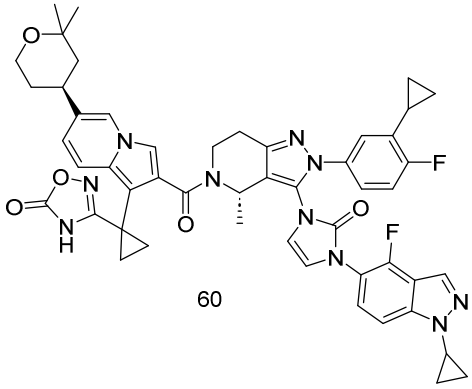
16. The compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of clam 15, wherein the compound is selected from the group consisting of



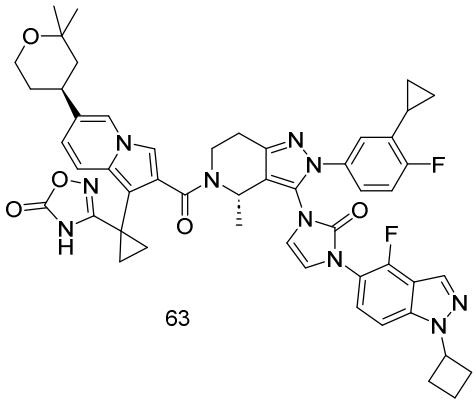
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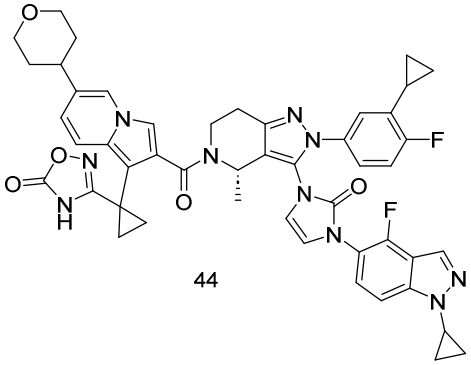


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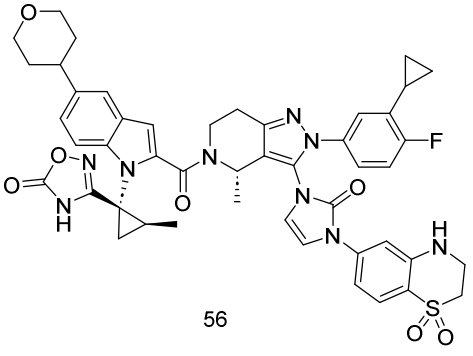
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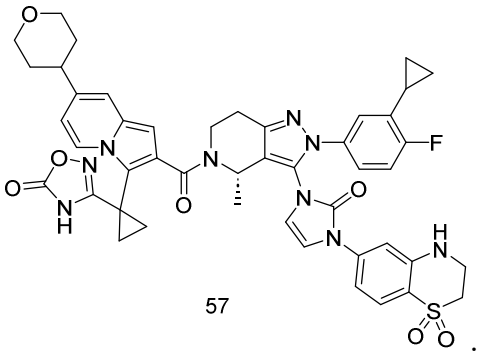
.

17. A compound, a stereoisomer, a tautomer, a pharmaceutically acceptable salt, or a deuterated compound thereof, wherein the compound is selected from the group consisting of



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and



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18. A pharmaceutical composition comprising the compound, the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of any one of claims1-17, and a pharmaceutically acceptable excipient.

19. A method for treating a GLP-1R-mediated disease or condition, comprising administering to a subject in need thereof a therapeutically effective amount of the compound, or the stereoisomer, the tautomer, the pharmaceutically acceptable salt, or the deuterated compound thereof of any one of claims 1-17, or the pharmaceutical composition of claim 18.

20. The method of claim 19, wherein the GLP-1R-mediated disease or condition is selected from the group consisting of T1D (type 1 diabetes), T2DM (type 2 diabetes mellitus), pre-diabetes, idiopathic T1D (idiopathic type 1 diabetes), LADA (latent autoimmune diabetes in adults), EOD (early onset diabetes), YOAD (young onset adult diabetes), MODY (maturity onset diabetes of the young), malnutrition-related diabetes, gestational diabetes, hyperglycemia, insulin resistance, hepatic insulin resistance, impaired glucose tolerance, diabetic neuropathy, diabetic nephropathy, kidney disease, diabetic retinopathy, adipocyte dysfunction, visceral adipose deposition, sleep apnea, obesity, overweight, eating disorders, weight gain from use of other agents, excessive sugar craving, dyslipidemia, hyperinsulinemia, NAFLD (non-alcoholic fatty liver disease), NASH, fibrosis, cirrhosis, hepatocellular carcinoma, cardiovascular disease, atherosclerosis, coronary artery disease, peripheral vascular disease, hypertension, endothelial dysfunction, impaired vascular compliance, congestive heart failure, myocardial infarction, stroke, hemorrhagic stroke, ischemic stroke, traumatic brain injury, pulmonary hypertension, restenosis after angioplasty, intermittent claudication, post-prandial lipemia, metabolic acidosis, ketosis, arthritis, osteoporosis, parkinson's disease, left ventricular hypertrophy, peripheral arterial disease, macular degeneration, cataract, glomerulosclerosis, chronic renal failure, metabolic syndrome, syndrome X, premenstrual syndrome, angina pectoris, thrombosis, atherosclerosis, transient ischemic attacks, vascular restenosis, impaired glucose metabolism, conditions of impaired fasting plasma glucose, hyperuricemia, gout, erectile dysfunction, skin and connective tissue disorders, psoriasis, foot ulcerations, ulcerative colitis, hyper apo B lipoproteinemia, alzheimer's disease, schizophrenia, impaired cognition, inflammatory bowel disease, short bowel syndrome, crohn's disease, colitis, irritable bowel syndrome, polycystic ovary syndrome and substance addiction.

21. The method of claim 19, wherein the GLP-1R-mediated disease or condition is selected from the group consisting of weight management, chronic weight management, chronic kidney disease, atherosclerotic cardiovascular disease, heart failure, heart failure with

reduced ejection fraction, heart failure with preserved ejection fraction, diabetes prevention, and obstructive sleep apnea.