[004] Due to its extensive pathogenic significance, MYC is an important anticancer target. Deregulated Myc gene is found in a wide range of human hematological malignancies and solid tumors, especially in breast cancer, ovarian carcinoma, acute myeloid leukemia, chronic myelogenous leukemia, Hodgkin's and Burkitt's lymphoma, diffuse large Bcell lymphoma, prostate cancer, colon cancer, gastric cancer, primary central nervous system lymphoma, glioblastoma, medulloblastoma, melanoma, non-small cell lung carcinoma, germinal center-derived lymphomas, esophageal squamous cell carcinoma, osteosarcoma, bladder cancer, pancreatic cancer and lung adenocarcinoma. Recent studies also indicate that deregulation of c-MYC is related to the occurrence of BRAF V600E thyroid cancers, choroid plexus carcinoma, and colitis-associated cancer. In addition, amplification of the MYC gene was found in a significant number of epithelial ovarian cancer cases. In TCGA datasets, the amplification of Myc occurs in several cancer types, including breast, colorectal, pancreatic, gastric, and uterine cancers.

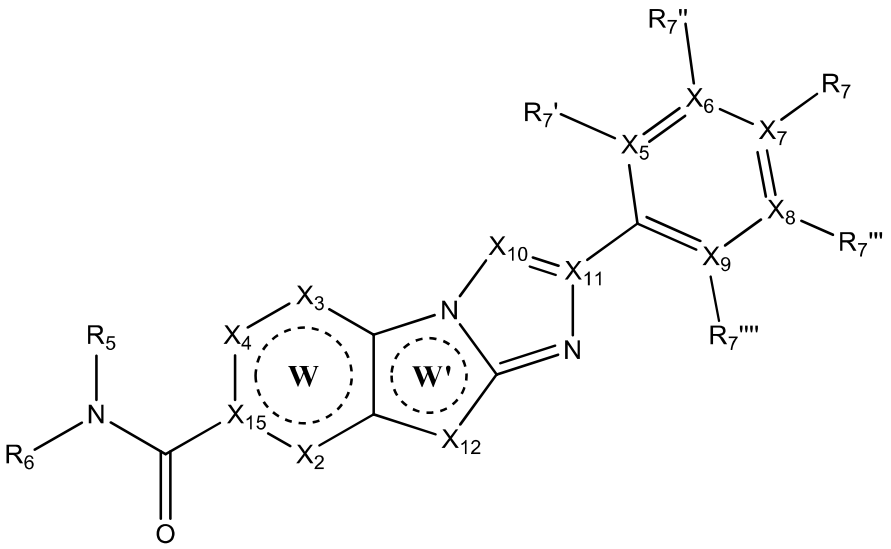
[005] Although Myc gene is a very important oncogene and considered as a driver in carcinogenesis and MYC protein is a key transcription factor broadly targeting various genes, rational designing a direct Myc inhibitor is still challenging. This is mainly because MYC protein lacks structural regions amenable to therapeutic inhibition by small molecules and is considered an undruggable target [BioDrugs (**2019**) 33:539–553].

[006] Designing and developing MYC modulators is challenging, primarily because the MYC protein has a disordered structure which lacks a pocket or groove that can act as a binding site for modulators. Interfering with the MYC transcription, blocking the protein–protein interaction (PPI) of MYC and its cofactors, and influencing on signaling pathways related to MYC were used in the past as potential modulatory targets, but failed to be developed as drug candidates. Myc PPI inhibitors failed to show sufficinet efficacy in cell-based assays and animal models due to the requirement of high target occupancy to drive efficacy. Modulators of signaling pathways upstream to myc, for example mTOR modulators, failed due lack of target specificity.

[007] Nevertheless, a therapeutic approach to target c-Myc has remained elusive. The absence of a clear ligand-binding domain establishes a formidable obstacle toward direct inhibition, which is a challenging feature shared among many compelling transcriptional targets in cancer. Thus, alternative modalities that target Myc are required, as outlined herein, namely compounds which regulate Myc mRNA translation.

SUMMARY

[007a] In an aspect, there is provided a compound represented by the structure of formula **I(k)**:



I(k)

wherein

Ring W may be either aromatic or non-aromatic ring,

wherein if **ring W** is aromatic then

X_2, **X_3**, and **X_4**, are each independently CH, C(R) or N (e.g., $C(CH_3)$, C(O-CH_2-cyclopropyl), C(O-CH_2-methylcyclobutyl), C(O-CH_2-3-methyloxetane), C(NH-CH_2-cyclopropyl), C(isopropoxy), C(O-$CH(CH_3)$-CH_2-O-CH_3), $C(CH_2CH_3)$, C-iPr, C-CH_2-cyclopropyl, $C(OCH_3)$, $C(OCH_2CH_3)$, C(O-$(CH_2)_2$-O-CH_3, $C(OCHF_2)$, C(Cl), $C(C(O)CH_3)$, C(O-CH_2CH_2-O-CH_3), C(OH));

X_{15} is C; and

wherein if **ring W** is non-aromatic then

X_2, **X_3**, and **X_4**, are each independently CH_2, CH(R), $C(R)_2$, NH, N(R), O, S, S=O or SO_2 (e.g., CH_2);

X_{15} is CH, C(R) or N (e.g., CH, N);

X_5, **X_6** , **X_7**, **X_8** and **X_9** are each independently nitrogen or carbon atoms;

wherein if either one of **X_5**, **X_6**, **X_7**, **X_8** and **X_9** is nitrogen, then the respective **R_7'**, **R_7''**, **R_7**, **R_7'''**, and **R_7''''** substitution is absent;

X_{10} is N, CH, C(R), or C=O; wherein if **X_{10}** is C=O then **X_{11}** is N (e.g., $C(CH_2$-OH), $C(CH_2$-CH_2-OH), C(NH-CH_2-cyclopropyl), C(COOH), $C(CH_3)$, C(cyclopropyl), C(isopropoxy));

X_{11} is N or C; wherein if **X_{11}** is N then **X_{10}** is C=O;

Ring W' may be either aromatic or non-aromatic ring,

wherein if **ring W'** is aromatic then

X_{12} is S, SO_2, O, NH, N(R), N-OH, CH=CH, CH=CH(R), C(R)=CH, N=CH, N=C(R), CH=N or C(R)=N (e.g., N-CH_2-COOH, N-CH_2-CH_2-OH, N-CH_3, N-CH_2CH_3, N-iPr, N-cyclopropyl, N-CH_2-cyclopropyl);

wherein if **ring W'** is non-aromatic then

X_{12} is CH=CH, CH=CH(R), C(R)=CH, OCH_2, SCH_2, CH=N, C(R)=N, N=CH, N=C(R);

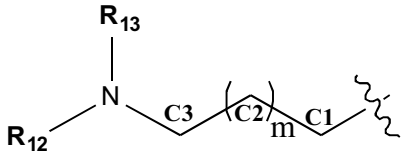
wherein if both **Ring W** and **Ring W'** are aromatic, then at least one of **X_2**, **X_3**, and **X_4** is C(R); **X_{11}** is N; or **X_{12}** is not S;

R_5 is H or C_1-C_5 linear or branched alkyl (e.g. methyl)**;**

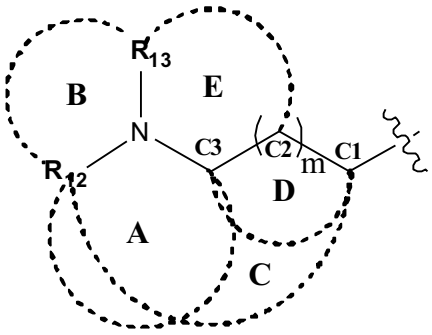
R_6 is H, F, Cl, Br, I, OH, SH, R_8-OH, R_8-SH, -R_8-O-R_{10} (e.g., CH_2-O-CH_3, $(CH_2)_2$-O-CH_3 $(CH_2)_3$-O-CH_3, $(CH_2)_2$-O-$CH(CH_3)_2$), R_8-S-R_{10} (e.g., $(CH_2)_3$-S-$(CH_2)_2CH_3$), R_8-NHC(O)-R_{10}, -O-R_8-R_{10}, R_8-(substituted or unsubstituted C_3-C_8 cycloalkyl) (e.g., CH_2-cyclopropyl, CH_2-cyclobutanol, CH_2-difluorocyclopropyl, CH_2-methylcyclopropyl, CH_2-dimethylamino-cyclohexyl, $(CH_2)_2$-cyclopentanole, CH_2-cyclohexanol), R_8-(substituted or unsubstituted, saturated, unsaturated or aromatic, single, fused or spiro 3-10 membered heterocyclic ring) (e.g., $(CH_2)_3$-piperidine, $(CH_2)_3$-4-fluoro-piperidine, $(CH_2)_3$-pyran, $(CH_2)_2$-pyrrazole, $(CH_2)_2$-imidazole, CH_2-tetrahydrofurane, CH_2-dioxane, CH_2-oxetane, CH_2-piperidine, CH_2-triazole, CH_2-1-oxa-8-azaspiro[4.5]decane, $(CH_2)_3$-diazabicyclo[2.2.1]heptane, CH_2-methyl-THF, CH_2-ethyl-piperidine, CH_2-oxa-azaspirodecane, $(CH_2)_3$-dimethylpyrazole, CH_2-2-oxo-methylpyrrolidine, CH_2-methyl-azetidine, CH_2-azaspiroheptane), CF_3, CD_3, OCD_3, CN, NO_2, -CH_2CN, -R_8CN, NH_2, NHR, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, R_8-$N(R_{10})(R_{11})$ (e.g., $(CH_2)_2$-NH_2, $(CH_2)_3$-$N(CH_2CH_3)_2$, $(CH_2)_3$-$N(CH(CH_3)_2)_2$, $(CH_2)_3$-piperidine, $(CH_2)_3$-4-fluoro-piperidine, $(CH_2)_3$-4-cyano-piperidine, $(CH_2)_4$-$NH(CH_3)$, $(CH_2)_3$-NH-CH_3, $(CH_2)_3$-NH-CH_2CH_3, $(CH_2)_3$-$N(CH_2CH_3)_2$, $(CH_2)_3$-NH_2, $(CH_2)_3$-$N(CH_2CH_3)(CH_2CF_3)$), R_9-R_8-$N(R_{10})(R_{11})$ (e.g., $(CH_2)_2$-C(O)-piperidine), $B(OH)_2$, -$OC(O)CF_3$, -OCH_2Ph, NHC(O)-R_{10}, NHCO-$N(R_{10})(R_{11})$, COOH, -C(O)Ph, C(O)O-R_{10}, R_8-C(O)-R_{10}, C(O)H, C(O)-R_{10} (e.g., $C(O)CH_3$), C_1-C_5 linear or branched C(O)-haloalkyl, -$C(O)NH_2$, C(O)NHR, $C(O)N(R_{10})(R_{11})$, SO_2R, $SO_2N(R_{10})(R_{11})$, $CH(CF_3)(NH\text{-}R_{10})$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., $CH(CH_3)CH_2OCH_3$, $CH(CH_3)CH_2NH_2$, $CH(CH_3)C(O)N(CH_3)_2$, CH_2-CH(OH)Ph, $(CH_2)_3N(H)CH_2CH_3$, $CH(CH_3)(CH_2)_2OH$, $CH(CH_2OH)(CH_2CH_3)$, $(CH_2)_3$-OCH_3, $(CH_2)_2$-OCH_3, $(CH_2)_2$-$OCH(CH_3)_2$, $CH(CH_2OH)(CH_2CH(CH_3)_2)$, $CH_2CH(CH_3)(OCH_3)$, $CH_2CH(N(CH_3)_2)(CH_2CH_3)$, benzyl, methyl, ethyl, CH_2-OCH_2-CH_2-O-CH_3, $CH(CH_3)C(O)N(CH_3)_2$), C_1-C_5 linear or branched, substituted or unsubstituted alkenyl, C_1-C_5 linear or branched, or C_3-C_8 cyclic haloalkyl, substituted or unsubstituted C_1-C_5 linear or branched, or C_3-C_8 cyclic alkoxy (e.g. methoxy, O-$(CH_2)_2$-O-CH_3), optionally wherein at least one methylene group (CH_2) in the alkoxy is replaced with an oxygen atom, C_1-C_5 linear or branched thioalkoxy, C_1-C_5 linear or branched haloalkoxy, C_1-C_5 linear or branched alkoxyalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclopropyl, cyclobutyl, cyclohexyl, methoxycyclopropyl, methylcyclobutyl, aminomethyl-cyclobutyl, methoxycyclobutyl, 2,3-dihydro-1H-indenol), R_8-(substituted or unsubstituted C_3-C_8 cycloalkyl), substituted or unsubstituted 3-8 membered heterocyclic ring (e.g., piperidine, 1-methyl-piperidine, azetidine, pyrrolidine, pyrrolidinone, quinuclidine, tetrahydropyran, azaspiro[3.3]heptane, imidazole, trifluoromethyl-oxetane, hydroxy-tetrahydrofurane, azepan-2-one, azabicyclohexane), substituted or unsubstituted aryl, substituted or unsubstituted R_8-aryl (e.g., benzyl), substituted or unsubstituted benzyl;

or R_6 and R_5 are joined to form a substituted or unsubstituted 5-8 membered heterocyclic ring (e.g., azepane, piperazine, 2-(piperazin-1-yl)acetamide;

or R_6 is represented by the structure of formula **B** or **Bi**:



B



Bi

wherein

m is 0 or 1; and

R_{12} is R_{20} or C_1-C_5 C(O)-alkyl, and R_{13} is R_{30}; or

R_{12} and R_{13} are both H;

R_{12} and R_{13} are each independently H or substituted or unsubstituted C_1-C_5 alkyl (e.g., ethyl, trifluoroethyl);

R_{12} and **C3** are joined to form ring **A** and R_{13} is R_{30}; or

R_{12} and R_{13} are joined to form ring **B**; or

R_{12} and **C1** are joined to form ring **C** and R_{13} is R_{30}; or

C1 and **C3** are joined to form ring **D** and R_{12} and R_{13} are each independently R_{30}; or

R_{13} and **C2** are joined to form ring **E,** m is 1, and R_{12} is R_{30}; or

R_{12} and R_{13} are joined to form ring **B** and **C1** and **C3** are joined to form ring **D**;

wherein

Ring **A**, **C** and **E** are each independently a substituted or unsubstituted single spiro or fused 3-8 membered heterocyclic ring (e.g., **A**: pyrrolidine, methylpyrrolidine, ethylpyrrolidine); **C:** piperidine, pyrrolidine, methyl-2-oxopyrrolidine, pyran-pyrrolidine, methyl-azetidine, azabicyclooctane, 2-azabicyclo[2.1.1]hexane, 2-azaspiro[3.3]heptane; **E:** pyrrolidine, azetidine, ethylpyrrolidine, oxopyrrolidine, methylpiperidine;

Ring **B** is a substituted or unsubstituted single, spiro or fused 3-8 membered heterocyclic ring **(B**: piperidine, piperidin-2-one, 4-fluoropiperidin-2-one, piperidine-

4-carbonitrile, 4-fluoropiperidine, 4-fluoro-2-methylpiperidine, methyl-piperidin, fluoropiperidine, difluoropiperidine, pyrrolidine, piperazine, methylpyrrolidine, thiomorpholine 1,1-dioxide, 2-oxa-6-azaspiro[3.3]heptane, methyl-piperazine, dimethyl-pyrazole, imidazole, 2-methyl-2,5-diazabicyclo[2.2.1]heptane, hydroxymethyl-pyrrolidine, diazabicyclo[2.2.1]heptane, 6-fluoro-3-azabicyclo[3.1.1]heptane; and

Ring **D** is a substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclobutane, cyclohexane);

R_7 is H, F, Cl, Br, I, OH, O-R_{20}, SH, R_8-OH, R_8-SH, SR_{10}, -R_8-O-R_{10}, -R_8-S-R_{10}, R_8-(C_3-C_8 cycloalkyl), CF_3, CD_3, OCD_3, CN, NO_2, -CH_2CN, -R_8CN, NH_2, NHR, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, R_8-$N(R_{10})(R_{11})$, R_9-R_8-$N(R_{10})(R_{11})$, $B(OH)_2$, -$OC(O)CF_3$, -OCH_2Ph, NHC(O)-R_{10}, NHCO-$N(R_{10})(R_{11})$, COOH, -C(O)Ph, C(O)O-R_{10}, R_8-C(O)-R_{10}, C(O)H, C(O)-R_{10}, C_1-C_5 linear or branched C(O)-haloalkyl, -$C(O)NH_2$, C(O)NHR (e.g., $C(O)NH(CH_3)$), $C(O)N(R_{10})(R_{11})$ (e.g., $C(O)NH(CH_3)$, $C(O)NH(CH_2CH_2OCH_3)$, $C(O)NH(CH_2CH_2OH)$), SO_2R, $SO_2N(R_{10})(R_{11})$, $CH(CF_3)(NH\text{-}R_{10})$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methylimidazole, methyl, ethyl), C_1-C_5 linear or branched, substituted or unsubstituted alkenyl, C_1-C_5 linear or branched, or C_3-C_8 cyclic haloalkyl (e.g., CHF_2), C_1-C_5 linear or branched, or C_3-C_8 cyclic alkoxy (e.g. methoxy, ethoxy), optionally wherein at least one methylene group (CH_2) in the alkoxy is replaced with an oxygen atom, C_1-C_5 linear or branched thioalkyl, C_1-C_5 linear or branched thioalkoxy, C_1-C_5 linear or branched haloalkoxy, C_1-C_5 linear or branched alkoxyalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclopropyl, cyclopropanol, cyclohexyl), substituted or unsubstituted 4-7 membered heterocyclic ring (e.g., morpholine (e.g., 2 or 3-morpholine), tetrahydrofuran, tetrahydropyran, oxetane, oxetan-3-ol, pyrrolidine, pyrrolidine-3-ol, 1-methylpyrrolidine, pyrrolidin-2-one, pyrrolidinone, imidazole, pyrazole, piperazine, piperidine, piperidine-4-ol, piperidine-4-carbonitrile, 4-fluoropiperidine, oxadiazole, triazole, 2-oxopyrrolidine, pyridine, 1-methylpyridine), R_8-(substituted or unsubstituted single, fused or spiro 3-8 membered heterocyclic ring), substituted or unsubstituted aryl, substituted or unsubstituted benzyl;

R_7', R_7'', R_7''' and R_7'''' are each independently H, F, Cl, Br, I, OH, O-R_{20}, SH, R_8-OH, R_8-SH, -R_8-O-R_{10}, R_8-(C_3-C_8 cycloalkyl), R_8-(3-8 membered heterocyclic ring), CF_3, CD_3, OCD_3, CN, NO_2, -CH_2CN, -R_8CN, NH_2, NHR, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, R_8-$N(R_{10})(R_{11})$, R_9-R_8-$N(R_{10})(R_{11})$, $B(OH)_2$, -$OC(O)CF_3$, -OCH_2Ph, NHC(O)-R_{10}, NHCO-$N(R_{10})(R_{11})$, COOH, -C(O)Ph, C(O)O-R_{10}, R_8-C(O)-R_{10}, C(O)H, C(O)-R_{10}, C_1-C_5 linear or branched C(O)-haloalkyl, -$C(O)NH_2$, C(O)NHR, $C(O)N(R_{10})(R_{11})$, SO_2R, $SO_2N(R_{10})(R_{11})$, $CH(CF_3)(NH\text{-}R_{10})$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., isopropyl, methyl, ethyl), C_1-C_5 linear or branched, substituted or unsubstituted alkenyl, C_1-C_5 linear or branched, or C_3-C_8 cyclic haloalkyl (e.g., CHF_2), C_1-C_5 linear or branched, or C_3-C_8 cyclic alkoxy (e.g. methoxy), optionally wherein at least one methylene group (CH_2) in the alkoxy is replaced with an oxygen atom, C_1-C_5 linear or branched thioalkoxy, C_1-C_5 linear or branched haloalkoxy, C_1-C_5 linear or branched alkoxyalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclopropyl,

cyclohexyl), substituted or unsubstituted 3-8 membered heterocyclic ring (e.g., morpholine, pyran, oxetane, pyrrolidine, imidazole, piperazine, piperidine, dioxazole, 2-oxopyrrolidine), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted benzyl;

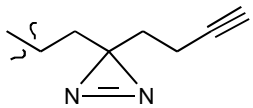
or $\mathbf{R_7'}$ and $\mathbf{R_7''}$ are joined to form a 3-8 membered substituted or unsubstituted, saturated, unsaturated or aromatic, carbocyclic or heterocyclic ring (e.g., cyclopentyl, cyclohexyl, piperidine, tetrahydrofuran, tetrahydropyran, pyrrolidine);

or $\mathbf{R_7''}$ and $\mathbf{R_7}$ are joined to form a 3-8 membered substituted or unsubstituted carbocyclic or heterocyclic ring (e.g., cyclopentyl, cyclohexyl, piperidine, tetrahydrofuran, tetrahydropyran, pyrrolidine);

or $\mathbf{R_7}$ and $\mathbf{R_7'''}$ are joined to form a 3-8 membered substituted or unsubstituted carbocyclic or heterocyclic ring (e.g., cyclopentyl, cyclohexyl, piperidine, tetrahydrofuran, tetrahydropyran, pyrrolidine);

or $\mathbf{R_7'''}$ and $\mathbf{R_7''''}$ are joined to form a 3-8 membered substituted or unsubstituted carbocyclic or heterocyclic ring (e.g., cyclopentyl, cyclohexyl, piperidine, tetrahydrofuran, tetrahydropyran, pyrrolidine);

$\mathbf{R_{20}}$ is represented by the following structure:



$\mathbf{R_{30}}$ is H, $\mathbf{R_{20}}$, F, Cl, Br, I, OH, SH, alkoxy, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, CF_3, CN, NO_2, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, ethyl, CH_2-CH_2-O-CH_2-CH_2-O-CH_3, CH_2-O-CH_2-CH_2-O-CH_3), C_1-C_5 linear or branched alkoxy, C_1-C_5 linear or branched haloalkyl (e.g., CHF_2, CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), -R_8-O-R_8-O-R_{10} (e.g. $(CH_2)_2$-O-$(CH_2)_2$-O-CH_3), -R_8-O-R_{10}, -R_8-R_{10} (e.g., $(CH_2)_2$-O-CH_3), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R is H, F, Cl, Br, I, OH, SH, COOH, CO($\mathbf{R_{10}}$), $C(O)CH_3$, $NH(R_{10})$, NH-CH_2-cyclopropyl, $N(R_{10})(R_{11})$, CF_3, CN, NO_2, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, ethyl, iPr, CH_2-cyclopropyl, CH_2-OH, CH_2-CH_2-OH, CH_2-CH_2-O-CH_2-CH_2-O-CH_3, CH_2-O-CH_2-CH_2-O-CH_3), C_3-C_8 substituted or unsubstituted cycloalkyl, cyclopropyl, substituted or unsubstituted C_1-C_5 linear or branched alkoxy, (e.g., methoxy, ethoxy, O-(CH_2CH_3), $OCHF_2$, O-$(CH_2)_2$-O-CH_3, isopropoxy, O-(CH_2)-cyclopropyl, O-CH_2-methylcyclobutyl, O-CH_2-3-methyloxetane, O-$CH(CH_3)$-CH_2-O-CH_3) C_1-C_5 linear or branched haloalkyl (e.g., CHF_2, CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), -R_8-O-R_8-O-R_{10} (e.g. $(CH_2)_2$-O-$(CH_2)_2$-O-CH_3), -R_8-O-R_{10}, O-R_8-R_{10} (e.g. O-$(CH_2)_2$-O-CH_3, O-(CH_2CH_3), O-(CH_2)-cyclopropyl), -R_8-R_{10} (e.g., (CH_2)-cyclopropyl, $(CH_2)_2$-O-CH_3, (CH_2)-OH, $(CH_2)_2$-OH, (CH_2)-COOH), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

each $\mathbf{R_8}$ is independently $[\mathbf{CH_2}]_p$

wherein **p** is between 1 and 10 (e.g., 1, 2);

$\mathbf{R_9}$ is $[CH]_q$, $[C]_q$

wherein **q** is between 2 and 10;

$\mathbf{R_{10}}$ and $\mathbf{R_{11}}$ are each independently H, OH, COOH, C_1-C_5 substituted or unsubstituted linear or branched alkyl (e.g., methyl, ethyl, CH_2-cyclopropyl, CH_2-CH_2-O-CH_3), C_3-C_8 substituted or unsubstituted cycloalkyl (e.g., cyclopropyl), C_1-C_5 substituted or unsubstituted linear or branched haloalky (e.g., CH_2CF_3), C_1-C_5 linear or branched alkoxy (e.g., O-CH_3), $\mathbf{R_{20}}$, C(O)R, or $S(O)_2R$;

or $\mathbf{R_{10}}$ and $\mathbf{R_{11}}$ are joined to form a substituted or unsubstituted 3-8 membered heterocyclic ring (e.g., piperazine, piperidine),

n is an integer between 0 and 4 (e.g., 1, 2);

or its pharmaceutically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, prodrug, isotopic variant (e.g., deuterated analog), PROTAC, pharmaceutical product or any combination thereof.

[007b] In another aspect, there is provided a compound represented by any one of the following structures:

Compound No.	Compound Name
130R	*(R)-3-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[4,5]thiazolo[2,3-c][1,2,4]triazole-7-carboxamide*
130S	*(S)-3-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[4,5]thiazolo[2,3-c][1,2,4]triazole-7-carboxamide*
400S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-6-carboxamide*
400R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-6-carboxamide*
401	*7-bromo-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-isopropoxybenzo[d]imidazo[2,1-b]thiazole*
402	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-5,6,7,8-tetrahydrobenzo[d]imidazo[2,1-b]thiazole-7-carboxylic acid*
403	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxylic acid*
404	*2-bromo-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
408	*N-(3-(4-fluoropiperidin-1-yl)propyl)-2-(pyrrolidin-2-ylethynyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
409	*N-(3-(4-fluoropiperidin-1-yl)propyl)-2-(pyrrolidine-2-carboxamido)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
410	*N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxy-2-(pyrrolidine-2-carboxamido)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*

[007c] In another aspect, there is provided a pharmaceutical composition comprising the compound as defined above and a pharmaceutically acceptable carrier.

[0007d] In another aspect, there is provided the use of a compound as defined above, in the preparation of a medicament for treating, suppressing, reducing the severity, reducing the risk of developing or inhibiting cancer in a subject.

[0007e] In another aspect, there is provided the use of a compound as defined above, in the preparation of a medicament for suppressing, reducing or inhibiting tumor growth in a subject.

[0007f] In another aspect, there is provided a method of modulating c-MYC mRNA translation, or regulating c-MYC mRNA transcription in a cell, comprising contacting a compound as defined above with a cell, thereby modulating c-MYC mRNA translation, or regulating c-MYC mRNA transcription in said cell.

[008] This disclosure provides a compound or its pharmaceutically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, prodrug, isotopic variants (e.g., deuterated analog), PROTAC, pharmaceutical product or any combination thereof, represented by the structure of formula **I** and/or **I(a)-I(n)** and by the structures listed in Table 1, as defined herein below. In various examples, the compound is a c-MYC mRNA translation modulator. In various examples, the compound is a c-MYC mRNA transcription regulator. In various examples, the compound is a c-

MYC inhibitor. In various examples, the compound is any combination of a c-MYC mRNA translation modulator, c-MYC mRNA transcription regulator and c-MYC inhibitor.

[009] This disclosure further provides a pharmaceutical composition comprising a compound or its pharmaceutically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, prodrug, isotopic variants (e.g., deuterated analog), PROTAC, pharmaceutical product or any combination thereof, represented by the structure of formula **I** and/or **I(a)-I(n)** and by the structures listed in Table 1, as defined herein below, and a pharmaceutically acceptable carrier.

[0010] This disclosure further provides a method of treating, suppressing, reducing the severity, reducing the risk of developing or inhibiting cancer in a subject, comprising administering a compound represented by the structure of formula **I** and/or **I(a)-I(n)** and by the structures listed in Table 1, as defined herein below, to a subject suffering from cancer under conditions effective to treat, suppress, reduce the severity, reduce the risk of developing, or inhibit cancer in said subject.

[0011] This disclosure further provides a method for suppressing, reducing or inhibiting tumor growth in a subject, comprising administering a compound represented by the structure of formula **I** and/or **I(a)-I(n)** and by the structures listed in Table 1, as defined herein below, to a subject, under conditions effective to suppress, reduce or inhibit tumor growth in said subject. In some example, the tumor is cancerous. In some example, the subject suffers from cancer.

[0012] This disclosure further provides a method of modulating c-MYC mRNA translation in a cell, comprising contacting a compound represented by the structure of formula **I** and/or **I(a)-I(n)** and by the structures listed in Table 1, as defined herein below, with a cell, thereby modulating c-MYC mRNA translation in said cell.

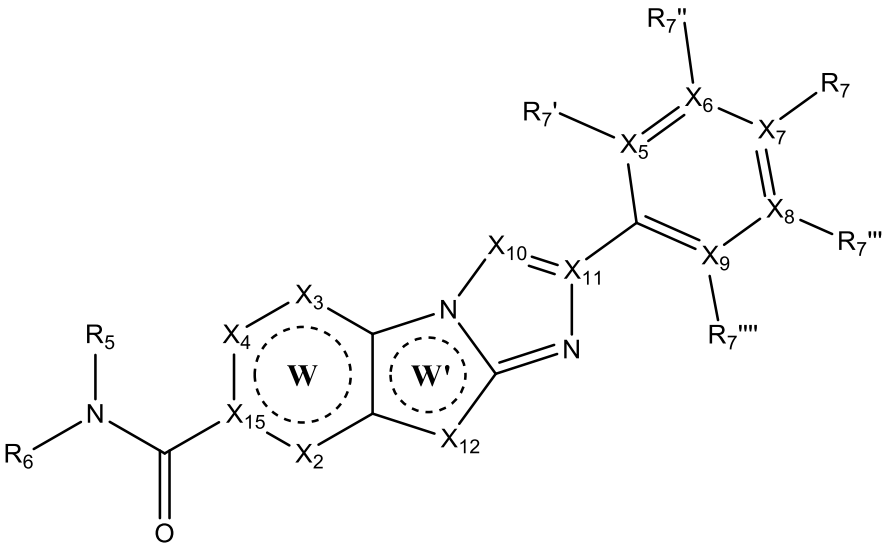
[0013] This disclosure further provides a method of regulating c-MYC mRNA transcription in a cell, comprising contacting a compound represented by the structure of formula **I** and/or **I(a)-I(n)** and by the structures listed in Table 1, as defined herein below, with a cell, thereby regulating c-MYC mRNA transcription in said cell.

DETAILED DESCRIPTION OF THE INVENTION

[0014] In various embodiments, this invention is directed to a compound represented by the structure of formula (**I**):

WHAT IS CLAIMED:

1. A compound represented by the structure of formula **I(k)**:



I(k)

wherein

Ring W may be either aromatic or non-aromatic ring,

wherein if **ring W** is aromatic then

X_2, **X_3**, and **X_4**, are each independently CH, C(R) or N (e.g., $C(CH_3)$, $C(O\text{-}CH_2\text{-cyclopropyl})$, $C(O\text{-}CH_2\text{-methylcyclobutyl})$, $C(O\text{-}CH_2\text{-3-methyloxetane})$, $C(NH\text{-}CH_2\text{-cyclopropyl})$, C(isopropoxy), $C(O\text{-}CH(CH_3)\text{-}CH_2\text{-}O\text{-}CH_3)$, $C(CH_2CH_3)$, C-iPr, $C\text{-}CH_2\text{-cyclopropyl}$, $C(OCH_3)$, $C(OCH_2CH_3)$, $C(O\text{-}(CH_2)_2\text{-}O\text{-}CH_3)$, $C(OCHF_2)$, C(Cl), $C(C(O)CH_3)$, $C(O\text{-}CH_2CH_2\text{-}O\text{-}CH_3)$, C(OH));

X_{15} is C; and

wherein if **ring W** is non-aromatic then

X_2, **X_3**, and **X_4**, are each independently CH_2, CH(R), $C(R)_2$, NH, N(R), O, S, S=O or SO_2 (e.g., CH_2);

X_{15} is CH, C(R) or N (e.g., CH, N);

X_5, **X_6** , **X_7**, **X_8** and **X_9** are each independently nitrogen or carbon atoms;

wherein if either one of **X_5**, **X_6**, **X_7**, **X_8** and **X_9** is nitrogen, then the respective **R_7'**, **R_7''**, **R_7**, **R_7'''**, and **R_7''''** substitution is absent;

X_{10} is N, CH, C(R), or C=O; wherein if **X_{10}** is C=O then **X_{11}** is N (e.g., $C(CH_2\text{-OH})$, $C(CH_2\text{-}CH_2\text{-OH})$, $C(NH\text{-}CH_2\text{-cyclopropyl})$, C(COOH), $C(CH_3)$, C(cyclopropyl), C(isopropoxy));

X_{11} is N or C; wherein if **X_{11}** is N then **X_{10}** is C=O;

Ring W' may be either aromatic or non-aromatic ring,

wherein if **ring W'** is aromatic then

X_{12} is S, SO_2, O, NH, N(R), N-OH, CH=CH, CH=CH(R), C(R)=CH, N=CH, N=C(R), CH=N or C(R)=N (e.g., N-CH_2-COOH, N-CH_2-CH_2-OH, N-CH_3, N-CH_2CH_3, N-iPr, N-cyclopropyl, N-CH_2-cyclopropyl);

wherein if **ring W'** is non-aromatic then

X_{12} is CH=CH, CH=CH(R), C(R)=CH, OCH_2, SCH_2, CH=N, C(R)=N, N=CH, N=C(R);

wherein if both **Ring W** and **Ring W'** are aromatic, then at least one of **X_2**, **X_3**, and **X_4** is C(R); **X_{11}** is N; or **X_{12}** is not S;

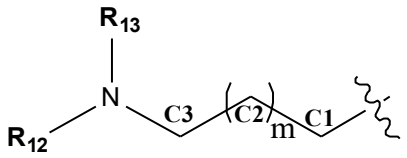
R_5 is H or C_1-C_5 linear or branched alkyl (e.g. methyl)**;**

R_6 is H, F, Cl, Br, I, OH, SH, R_8-OH, R_8-SH, -R_8-O-R_{10} (e.g., CH_2-O-CH_3, $(CH_2)_2$-O-CH_3 $(CH_2)_3$-O-CH_3, $(CH_2)_2$-O-$CH(CH_3)_2$), R_8-S-R_{10} (e.g., $(CH_2)_3$-S-$(CH_2)_2CH_3$), R_8-NHC(O)-R_{10}, -O-R_8-R_{10}, R_8-(substituted or unsubstituted C_3-C_8 cycloalkyl) (e.g., CH_2-cyclopropyl, CH_2-cyclobutanol, CH_2-difluorocyclopropyl, CH_2-methylcyclopropyl, CH_2-dimethylamino-cyclohexyl, $(CH_2)_2$-cyclopentanole, CH_2-cyclohexanol), R_8-(substituted or unsubstituted, saturated, unsaturated or aromatic, single, fused or spiro 3-10 membered heterocyclic ring) (e.g., $(CH_2)_3$-piperidine, $(CH_2)_3$-4-fluoro-piperidine, $(CH_2)_3$-pyran, $(CH_2)_2$-pyrrazole, $(CH_2)_2$-imidazole, CH_2-tetrahydrofurane, CH_2-dioxane, CH_2-oxetane, CH_2-piperidine, CH_2-triazole, CH_2-1-oxa-8-azaspiro[4.5]decane, $(CH_2)_3$-diazabicyclo[2.2.1]heptane, CH_2-methyl-THF, CH_2-ethyl-piperidine, CH_2-oxa-azaspirodecane, $(CH_2)_3$-dimethylpyrazole, CH_2-2-oxo-methylpyrrolidine, CH_2-methyl-azetidine, CH_2-azaspiroheptane), CF_3, CD_3, OCD_3, CN, NO_2, -CH_2CN, -R_8CN, NH_2, NHR, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, R_8-$N(R_{10})(R_{11})$ (e.g., $(CH_2)_2$-NH_2, $(CH_2)_3$-$N(CH_2CH_3)_2$, $(CH_2)_3$-$N(CH(CH_3)_2)_2$, $(CH_2)_3$-piperidine, $(CH_2)_3$-4-fluoro-piperidine, $(CH_2)_3$-4-cyano-piperidine, $(CH_2)_4$-$NH(CH_3)$, $(CH_2)_3$-NH-CH_3, $(CH_2)_3$-NH-CH_2CH_3, $(CH_2)_3$-$N(CH_2CH_3)_2$, $(CH_2)_3$-NH_2, $(CH_2)_3$-$N(CH_2CH_3)(CH_2CF_3)$), R_9-R_8-$N(R_{10})(R_{11})$ (e.g., $(CH_2)_2$-C(O)-piperidine), $B(OH)_2$, -$OC(O)CF_3$, -OCH_2Ph, NHC(O)-R_{10}, NHCO-$N(R_{10})(R_{11})$, COOH, -C(O)Ph, C(O)O-R_{10}, R_8-C(O)-R_{10}, C(O)H, C(O)-R_{10} (e.g., $C(O)CH_3$), C_1-C_5 linear or branched C(O)-haloalkyl, -$C(O)NH_2$, C(O)NHR, $C(O)N(R_{10})(R_{11})$, SO_2R, $SO_2N(R_{10})(R_{11})$, $CH(CF_3)(NH$-$R_{10})$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., $CH(CH_3)CH_2OCH_3$, $CH(CH_3)CH_2NH_2$, $CH(CH_3)C(O)N(CH_3)_2$, CH_2-CH(OH)Ph, $(CH_2)_3N(H)CH_2CH_3$, $CH(CH_3)(CH_2)_2OH$, $CH(CH_2OH)(CH_2CH_3)$, $(CH_2)_3$-OCH_3, $(CH_2)_2$-OCH_3, $(CH_2)_2$-$OCH(CH_3)_2$, $CH(CH_2OH)(CH_2CH(CH_3)_2)$, $CH_2CH(CH_3)(OCH_3)$, $CH_2CH(N(CH_3)_2)(CH_2CH_3)$, benzyl, methyl, ethyl, CH_2-OCH_2-CH_2-O-CH_3, $CH(CH_3)C(O)N(CH_3)_2$), C_1-C_5 linear or branched, substituted or unsubstituted alkenyl, C_1-C_5 linear or branched, or C_3-C_8 cyclic haloalkyl, substituted or unsubstituted C_1-C_5 linear or branched, or C_3-C_8 cyclic alkoxy (e.g. methoxy, O-$(CH_2)_2$-O-CH_3), optionally wherein at least one methylene group (CH_2) in the alkoxy is replaced with an oxygen atom, C_1-C_5 linear or branched thioalkoxy, C_1-C_5 linear or branched haloalkoxy, C_1-C_5 linear or branched alkoxyalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclopropyl, cyclobutyl, cyclohexyl, methoxycyclopropyl, methylcyclobutyl, aminomethyl-cyclobutyl, methoxycyclobutyl, 2,3-dihydro-1H-indenol), R_8-(substituted or unsubstituted C_3-C_8 cycloalkyl), substituted or unsubstituted 3-8 membered heterocyclic ring (e.g., piperidine, 1-methyl-piperidine, azetidine, pyrrolidine, pyrrolidinone,

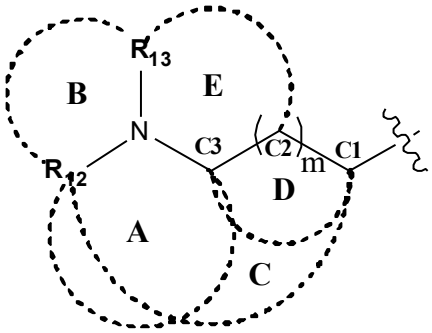
quinuclidine, tetrahydropyran, azaspiro[3.3]heptane, imidazole, trifluoromethyl-oxetane, hydroxy-tetrahydrofurane, azepan-2-one, azabicyclohexane), substituted or unsubstituted aryl, substituted or unsubstituted R_8-aryl (e.g., benzyl), substituted or unsubstituted benzyl;

or **R_6** and **R_5** are joined to form a substituted or unsubstituted 5-8 membered heterocyclic ring (e.g., azepane, piperazine, 2-(piperazin-1-yl)acetamide;

or **R_6** is represented by the structure of formula **B** or **Bi**:



B



Bi

wherein

m is 0 or 1; and

R_{12} is **R_{20}** or C_1-C_5 C(O)-alkyl, and **R_{13}** is **R_{30}**; or

R_{12} and **R_{13}** are both H;

R_{12} and **R_{13}** are each independently H or substituted or unsubstituted C_1-C_5 alkyl (e.g., ethyl, trifluoroethyl);

R_{12} and **C3** are joined to form ring **A** and **R_{13}** is **R_{30}**; or

R_{12} and **R_{13}** are joined to form ring **B**; or

R_{12} and **C1** are joined to form ring **C** and **R_{13}** is **R_{30}**; or

C1 and **C3** are joined to form ring **D** and **R_{12}** and **R_{13}** are each independently **R_{30}**; or

R_{13} and **C2** are joined to form ring **E,** m is 1, and **R_{12}** is **R_{30}**; or

R_{12} and **R_{13}** are joined to form ring **B** and **C1** and **C3** are joined to form ring **D**;

wherein

Ring **A**, **C** and **E** are each independently a substituted or unsubstituted single spiro or fused 3-8 membered heterocyclic ring (e.g., **A**: pyrrolidine, methylpyrrolidine, ethylpyrrolidine); **C:** piperidine, pyrrolidine, methyl-2-oxopyrrolidine, pyran-pyrrolidine, methyl-azetidine, azabicyclooctane, 2-azabicyclo[2.1.1]hexane, 2-azaspiro[3.3]heptane; **E:** pyrrolidine, azetidine, ethylpyrrolidine, oxopyrrolidine, methylpiperidine;

Ring **B** is a substituted or unsubstituted single, spiro or fused 3-8 membered heterocyclic ring **(B**: piperidine, piperidin-2-one, 4-fluoropiperidin-2-one, piperidine-4-carbonitrile, 4-fluoropiperidine, 4-fluoro-2-methylpiperidine, methyl-piperidin, fluoropiperidine, difluoropiperidine, pyrrolidine, piperazine, methylpyrrolidine, thiomorpholine 1,1-dioxide, 2-oxa-6-azaspiro[3.3]heptane, methyl-piperazine, dimethyl-pyrazole, imidazole, 2-methyl-2,5-diazabicyclo[2.2.1]heptane, hydroxymethyl-pyrrolidine, diazabicyclo[2.2.1]heptane, 6-fluoro-3-azabicyclo[3.1.1]heptane; and

Ring **D** is a substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclobutane, cyclohexane);

R_7 is H, F, Cl, Br, I, OH, O-R_{20}, SH, R_8-OH, R_8-SH, SR_{10}, -R_8-O-R_{10}, -R_8-S-R_{10}, R_8-(C_3-C_8 cycloalkyl), CF_3, CD_3, OCD_3, CN, NO_2, -CH_2CN, -R_8CN, NH_2, NHR, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, R_8-$N(R_{10})(R_{11})$, R_9-R_8-$N(R_{10})(R_{11})$, $B(OH)_2$, -$OC(O)CF_3$, -OCH_2Ph, $NHC(O)$-R_{10}, $NHCO$-$N(R_{10})(R_{11})$, COOH, -C(O)Ph, $C(O)O$-R_{10}, R_8-$C(O)$-R_{10}, C(O)H, $C(O)$-R_{10}, C_1-C_5 linear or branched C(O)-haloalkyl, -$C(O)NH_2$, C(O)NHR (e.g., $C(O)NH(CH_3)$), $C(O)N(R_{10})(R_{11})$ (e.g., $C(O)NH(CH_3)$, $C(O)NH(CH_2CH_2OCH_3)$, $C(O)NH(CH_2CH_2OH)$), SO_2R, $SO_2N(R_{10})(R_{11})$, $CH(CF_3)(NH$-$R_{10})$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methylimidazole, methyl, ethyl), C_1-C_5 linear or branched, substituted or unsubstituted alkenyl, C_1-C_5 linear or branched, or C_3-C_8 cyclic haloalkyl (e.g., CHF_2), C_1-C_5 linear or branched, or C_3-C_8 cyclic alkoxy (e.g. methoxy, ethoxy), optionally wherein at least one methylene group (CH_2) in the alkoxy is replaced with an oxygen atom, C_1-C_5 linear or branched thioalkyl, C_1-C_5 linear or branched thioalkoxy, C_1-C_5 linear or branched haloalkoxy, C_1-C_5 linear or branched alkoxyalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclopropyl, cyclopropanol, cyclohexyl), substituted or unsubstituted 4-7 membered heterocyclic ring (e.g., morpholine (e.g., 2 or 3-morpholine), tetrahydrofuran, tetrahydropyran, oxetane, oxetan-3-ol, pyrrolidine, pyrrolidine-3-ol, 1-methylpyrrolidine, pyrrolidin-2-one, pyrrolidinone, imidazole, pyrazole, piperazine, piperidine, piperidine-4-ol, piperidine-4-carbonitrile, 4-fluoropiperidine, oxadiazole, triazole, 2-oxopyrrolidine, pyridine, 1-methylpyridine), R_8-(substituted or unsubstituted single, fused or spiro 3-8 membered heterocyclic ring), substituted or unsubstituted aryl, substituted or unsubstituted benzyl;

R_7', R_7'', R_7''' and **R_7''''** are each independently H, F, Cl, Br, I, OH, O-R_{20}, SH, R_8-OH, R_8-SH, -R_8-O-R_{10}, R_8-(C_3-C_8 cycloalkyl), R_8-(3-8 membered heterocyclic ring), CF_3, CD_3, OCD_3, CN, NO_2, -CH_2CN, -R_8CN, NH_2, NHR, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, R_8-$N(R_{10})(R_{11})$, R_9-R_8-$N(R_{10})(R_{11})$, $B(OH)_2$, -$OC(O)CF_3$, -OCH_2Ph, $NHC(O)$-R_{10}, $NHCO$-$N(R_{10})(R_{11})$, COOH, -C(O)Ph, $C(O)O$-R_{10}, R_8-$C(O)$-R_{10}, C(O)H, $C(O)$-R_{10}, C_1-C_5 linear or branched C(O)-haloalkyl, -$C(O)NH_2$, C(O)NHR, $C(O)N(R_{10})(R_{11})$, SO_2R, $SO_2N(R_{10})(R_{11})$, $CH(CF_3)(NH$-$R_{10})$, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., isopropyl, methyl, ethyl), C_1-C_5 linear or branched, substituted or unsubstituted alkenyl, C_1-C_5 linear or branched, or C_3-C_8 cyclic haloalkyl (e.g., CHF_2), C_1-C_5 linear or branched, or C_3-C_8 cyclic alkoxy (e.g. methoxy), optionally wherein at least one methylene group (CH_2) in the alkoxy is replaced

with an oxygen atom, C_1-C_5 linear or branched thioalkoxy, C_1-C_5 linear or branched haloalkoxy, C_1-C_5 linear or branched alkoxyalkyl, substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclopropyl, cyclohexyl), substituted or unsubstituted 3-8 membered heterocyclic ring (e.g., morpholine, pyran, oxetane, pyrrolidine, imidazole, piperazine, piperidine, dioxazole, 2-oxopyrrolidine), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted benzyl;

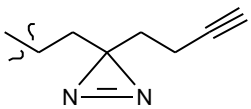
or **R_7'** and **R_7''** are joined to form a 3-8 membered substituted or unsubstituted, saturated, unsaturated or aromatic, carbocyclic or heterocyclic ring (e.g., cyclopentyl, cyclohexyl, piperidine, tetrahydrofuran, tetrahydropyran, pyrrolidine);

or **R_7''** and **R_7** are joined to form a 3-8 membered substituted or unsubstituted carbocyclic or heterocyclic ring (e.g., cyclopentyl, cyclohexyl, piperidine, tetrahydrofuran, tetrahydropyran, pyrrolidine);

or **R_7** and **R_7'''** are joined to form a 3-8 membered substituted or unsubstituted carbocyclic or heterocyclic ring (e.g., cyclopentyl, cyclohexyl, piperidine, tetrahydrofuran, tetrahydropyran, pyrrolidine);

or **R_7'''** and **R_7''''** are joined to form a 3-8 membered substituted or unsubstituted carbocyclic or heterocyclic ring (e.g., cyclopentyl, cyclohexyl, piperidine, tetrahydrofuran, tetrahydropyran, pyrrolidine);

R_{20} is represented by the following structure:



R_{30} is H, **R_{20}**, F, Cl, Br, I, OH, SH, alkoxy, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, CF_3, CN, NO_2, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, ethyl, CH_2-CH_2-O-CH_2-CH_2-O-CH_3, CH_2-O-CH_2-CH_2-O-CH_3), C_1-C_5 linear or branched alkoxy, C_1-C_5 linear or branched haloalkyl (e.g., CHF_2, CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), -R_8-O-R_8-O-R_{10} (e.g. $(CH_2)_2$-O-$(CH_2)_2$-O-CH_3), -R_8-O-R_{10}, -R_8-R_{10} (e.g., $(CH_2)_2$-O-CH_3), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

R is H, F, Cl, Br, I, OH, SH, COOH, CO(**R_{10}**), $C(O)CH_3$, $NH(R_{10})$, NH-CH_2-cyclopropyl, $N(R_{10})(R_{11})$, CF_3, CN, NO_2, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (e.g., methyl, ethyl, iPr, CH_2-cyclopropyl, CH_2-OH, CH_2-CH_2-OH, CH_2-CH_2-O-CH_2-CH_2-O-CH_3, CH_2-O-CH_2-CH_2-O-CH_3), C_3-C_8 substituted or unsubstituted cycloalkyl, cyclopropyl, substituted or unsubstituted C_1-C_5 linear or branched alkoxy, (e.g., methoxy, ethoxy, O-(CH_2CH_3), $OCHF_2$, O-$(CH_2)_2$-O-CH_3, isopropoxy, O-(CH_2)-cyclopropyl, O-CH_2-methylcyclobutyl, O-CH_2-3-methyloxetane, O-$CH(CH_3)$-CH_2-O-CH_3) C_1-C_5 linear or branched haloalkyl (e.g., CHF_2, CF_3, CF_2CH_3, CH_2CF_3, $CF_2CH_2CH_3$, $CH_2CH_2CF_3$, $CF_2CH(CH_3)_2$,$CF(CH_3)$-$CH(CH_3)_2$), R_8-aryl (e.g., CH_2-Ph), -R_8-O-R_8-O-R_{10} (e.g. $(CH_2)_2$-O-$(CH_2)_2$-O-CH_3), -R_8-O-R_{10}, O-R_8-R_{10} (e.g. O-$(CH_2)_2$-O-CH_3, O-(CH_2CH_3), O-(CH_2)-cyclopropyl), -R_8-R_{10} (e.g.,

(CH_2)-cyclopropyl, (CH_2)$_2$-O-CH_3, (CH_2)-OH, (CH_2)$_2$-OH, (CH_2)-COOH), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine);

each $\mathbf{R_8}$ is independently $[\mathbf{CH_2}]_p$

wherein **p** is between 1 and 10 (e.g., 1, 2);

$\mathbf{R_9}$ is $[CH]_q$, $[C]_q$

wherein **q** is between 2 and 10;

$\mathbf{R_{10}}$ and $\mathbf{R_{11}}$ are each independently H, OH, COOH, C_1-C_5 substituted or unsubstituted linear or branched alkyl (e.g., methyl, ethyl, CH_2-cyclopropyl, CH_2-CH_2-O-CH_3), C_3-C_8 substituted or unsubstituted cycloalkyl (e.g., cyclopropyl), C_1-C_5 substituted or unsubstituted linear or branched haloalky (e.g., CH_2CF_3), C_1-C_5 linear or branched alkoxy (e.g., O-CH_3), $\mathbf{R_{20}}$, C(O)R, or $S(O)_2R$;

or $\mathbf{R_{10}}$ and $\mathbf{R_{11}}$ are joined to form a substituted or unsubstituted 3-8 membered heterocyclic ring (e.g., piperazine, piperidine),

n is an integer between 0 and 4 (e.g., 1, 2);

or its pharmaceutically acceptable salt, stereoisomer, tautomer, hydrate, *N*-oxide, reverse amide analog, prodrug, isotopic variant (e.g., deuterated analog), PROTAC, pharmaceutical product or any combination thereof.

2. The compound of claim 1, wherein $\mathbf{R_5}$ is H or CH_3.
3. The compound of claims 1 or 2, wherein $\mathbf{R_6}$ is H, C_1-C_5 linear or branched, substituted or unsubstituted alkyl (preferably methyl), substituted or unsubstituted 3-8 membered heterocyclic ring (preferably substituted or unsubstituted piperidine or tetrahydropyran), R_8-$N(R_{10})(R_{11})$ (preferably (CH_2)$_2$-NH_2 , (CH_2)$_3$-NH_2, (CH_2)$_3$-piperidine or (CH_2)$_3$-4-fluoro-piperidine), or $\mathbf{R_6}$ is represented by the structure of formula **Bi**.
4. The compound of claim 3, wherein $\mathbf{R_{12}}$ and $\mathbf{R_{13}}$ of formula **Bi** are joined to form a substituted or unsubstituted piperidine ring, or wherein $\mathbf{R_{10}}$ and $\mathbf{R_{11}}$ are joined to form a substituted or unsubstituted 3-8 membered heterocyclic ring (e.g., piperidine or 4-fluoro-piperidine).
5. The compound of any one of the preceding claims, wherein $\mathbf{R_7}$ is H, $C(O)N(R_{10})(R_{11})$ (preferably $C(O)NH(CH_3)$), C_1-C_5 linear or branched, substituted or unsubstituted alkyl (preferably methyl), substituted or unsubstituted C_3-C_8 cycloalkyl (preferably cyclopropanol), substituted or unsubstituted 4-7 membered heterocyclic ring (preferably morpholine, pyrrolidine, pyrrolidine-3-ol, piperidine, piperidine-4-ol, tetrahydrofuran, oxetane, oxetan-3-ol, pyridine, or 1-methylpyridine), or substituted or unsubstituted aryl.
6. The compound of any one of the preceding claims, wherein $\mathbf{R_7'}$ is H or F.
7. The compound of any one of the preceding claims, wherein **Ring W** is aromatic and one of $\mathbf{X_2}$, $\mathbf{X_3}$ and $\mathbf{X_4}$ is C(R); preferably wherein **R** is alkoxy, more preferably methoxy.
8. The compounds of any one of the preceding claims, wherein $\mathbf{X_{12}}$ is O, NH, N(R), CH=N, N=CH, CH=CH, OCH_2, or N-OH; preferably wherein **R** is C_1-C_5 linear or branched, substituted or

unsubstituted alkyl, substituted or unsubstituted C_1-C_5 linear or branched alkoxy, O-R_8-R_{10}, OH, NH(R_{10}), haloalkoxy or cycloalkyl.

9. The compound of any one of the preceding claims, wherein R is CH_2-COOH, CH_2-CH_2-OH, CH_3, CH_2CH_3, iPr, cyclopropyl or CH_2-cyclopropyl.

10. The compound of any one of the preceding claims, wherein $\mathbf{X_4}$ is C(R) and R is alkoxy, preferably methoxy.

11. The compound of any one of the preceding claims, selected from the following:

Compound No.	Compound Name
100R	*(R)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-6-((3-methyloxetan-3-yl)oxy)-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
100S	*(S)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-6-((3-methyloxetan-3-yl)oxy)-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
101R	*6-(((R)-1-methoxypropan-2-yl)oxy)-N-(3-(piperidin-1-yl)propyl)-2-(4-(tetrahydrofuran-2-yl)phenyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
101S	*6-(((S)-1-methoxypropan-2-yl)oxy)-N-(3-(piperidin-1-yl)propyl)-2-(4-(tetrahydrofuran-2-yl)phenyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
102S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
102R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
104S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-((3-methyloxetan-3-yl)oxy)-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
104R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-((3-methyloxetan-3-yl)oxy)-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
105R	*6-(((R)-1-methoxypropan-2-yl)oxy)-N-(3-(piperidin-1-yl)propyl)-2-(4-(pyrrolidin-2-yl)phenyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
105S	*6-(((S)-1-methoxypropan-2-yl)oxy)-N-(3-(piperidin-1-yl)propyl)-2-(4-(pyrrolidin-2-yl)phenyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
106S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-isopropoxy-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
106R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-isopropoxy-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
107S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-5-isopropoxy-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
107R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-5-isopropoxy-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
108S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-8-isopropoxy-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
108R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-8-isopropoxy-N-(3-(piperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
110S	*(S)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-((3-methyloxetan-3-yl)methoxy)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
110R	*(R)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-((3-methyloxetan-3-yl)methoxy)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
111S	*(S)-6-(cyclopropylmethoxy)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
111R	*(R)-6-(cyclopropylmethoxy)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
112	*6-(cyclopropylmethoxy)-2-(2-fluoro-4-(1-hydroxycyclopropyl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
113	*6-(cyclopropylmethoxy)-2-(2-fluoro-4-(3-hydroxyoxetan-3-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
118S	*(S)-6-((cyclopropylmethyl)amino)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*

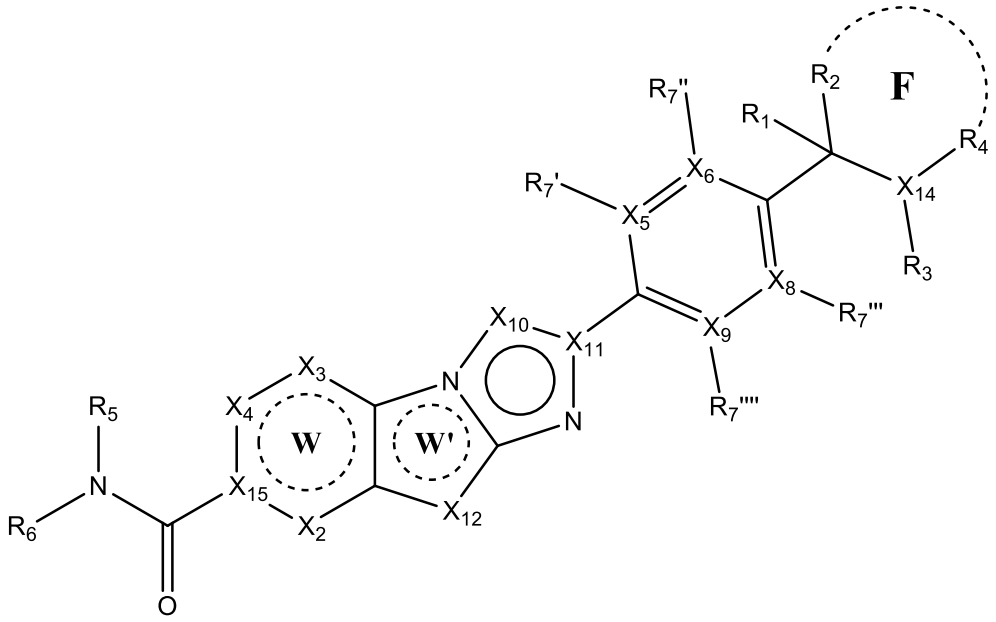
118R	*(R)-6-((cyclopropylmethyl)amino)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
119S	*(S)-5-(cyclopropylmethoxy)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
119R	*(R)-5-(cyclopropylmethoxy)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
120S	*(S)-8-(cyclopropylmethoxy)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
120R	*(R)-8-(cyclopropylmethoxy)-2-(2-fluoro-4-(tetrahydrofuran-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
121S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9-methyl-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
121R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9-methyl-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
122S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
122R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
123S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]oxazole-7-carboxamide*
123R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]oxazole-7-carboxamide*
124S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9-hydroxy-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
124R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9-hydroxy-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
125S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9-(2-hydroxyethyl)-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
125R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9-(2-hydroxyethyl)-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
126S	*(S)-2-(2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-7-((3-(4-fluoropiperidin-1-yl)propyl)carbamoyl)-9H-benzo[d]imidazo[1,2-a]imidazol-9-yl)acetic acid*
126R	*(R)-2-(2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-7-((3-(4-fluoropiperidin-1-yl)propyl)carbamoyl)-9H-benzo[d]imidazo[1,2-a]imidazol-9-yl)acetic acid*
131S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-3-oxo-2,3-dihydrobenzo[4,5]thiazolo[2,3-c][1,2,4]triazole-7-carboxamide*
131R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-3-oxo-2,3-dihydrobenzo[4,5]thiazolo[2,3-c][1,2,4]triazole-7-carboxamide*
135	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)imidazo[1,2-a]quinoxaline-7-carboxamide*
136	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)imidazo[1,2-a]quinazoline-7-carboxamide*
137S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-8-methylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
137R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-8-methylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
138	*9-ethyl-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
139	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9-isopropyl-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
140	*9-cyclopropyl-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
141	*9-(cyclopropylmethyl)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
142	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-5,8-dihydroimidazo[2',1':2,3]thiazolo[5,4-c]pyridine-7(6H)-carboxamide*
143	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-isopropylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
144	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*

145	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6,9-dimethyl-9H-benzo[d]imidazo[1,2-a]imidazole-7-carboxamide*
146	*6-ethyl-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
147	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-isopropoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
148	*8-ethyl-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
149S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
149R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
150	*N-(3-(4-fluoropiperidin-1-yl)propyl)-6-(2-methoxyethoxy)-2-(4-(pyrrolidin-2-yl)phenyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
151	*2-(2-fluoro-4-(5-oxopyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
152	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-5,6,7,8-tetrahydrobenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
153S	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxy-N-((S)-1-methylpiperidin-3-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
153R	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxy-N-((R)-1-methylpiperidin-3-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
154	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-5,6,7,8-tetrahydrobenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
155	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
156	*6-(cyclopropylmethyl)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
157	*N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxy-2-(4-(methylcarbamoyl)phenyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
158	*8-(cyclopropylmethyl)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
159	*2-(2-fluoro-4-(methylcarbamoyl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
160	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxy-N-methylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
161	*N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxy-2-(pyridin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
162	*N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxy-2-(m-tolyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
163	*6-methoxy-N-(1-methylpiperidin-3-yl)-2-(m-tolyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
164	*6-(difluoromethoxy)-N-(3-(4-fluoropiperidin-1-yl)propyl)-2-(4-(pyrrolidin-2-yl)phenyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
165	*N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxy-2-(2-methylpyridin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
166	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-(2-methoxyethoxy)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
167	*2-(2-fluoro-5-methylphenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
168	*2-(2-fluoro-4-(methylcarbamoyl)phenyl)-6-methoxy-N-(1-methylpiperidin-3-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
169	*6-methoxy-N-(1-methylpiperidin-3-yl)-2-(pyridin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
170	*6-methoxy-N-(piperidin-4-yl)-2-(m-tolyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
171	*N-(2-aminoethyl)-6-methoxy-2-(m-tolyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
172	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]oxazole-7-carboxamide*
173	*N-(3-aminopropyl)-6-methoxy-2-(m-tolyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
174	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxy-N,N-dimethylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*

175	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxy-N-(1-methylpiperidin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
176	*N-(2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazol-7-yl)acetamide*
177	*N-(3-(4-fluoropiperidin-1-yl)propyl)-7-methoxy-2-(m-tolyl)benzo[4,5]thiazolo[3,2-b][1,2,4]triazole-6-carboxamide*
178	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-7-methoxybenzo[4,5]thiazolo[3,2-b][1,2,4]triazole-6-carboxamide*
179	*2-(2-fluoro-4-(methylcarbamoyl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-7-methoxybenzo[4,5]thiazolo[3,2-b][1,2,4]triazole-6-carboxamide*
180	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-hydroxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
181	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-7-methoxy-N-methylbenzo[4,5]thiazolo[3,2-b][1,2,4]triazole-6-carboxamide*
182	*2-(2-fluoro-4-(pyrrolidin-3-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
183	*2-(2-fluoro-4-(pyrrolidin-3-yl)phenyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
184	*2-(2-fluoro-4-(pyrrolidin-3-yl)phenyl)-6-methoxy-N-methylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
185	*2-(2-fluoro-4-(pyrrolidin-3-yl)phenyl)-6-methoxy-N-(1-methylpiperidin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
186	*2-(2-fluoro-4-(piperidin-4-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
187	*2-(2,3-difluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
188	*6-chloro-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
189	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxy-N-(1-methylpiperidin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
190	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxy-N-(1-methylpiperidin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
191	*2-(2-fluoro-4-(4-hydroxypiperidin-4-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
192	*2-(2-fluoro-4-(piperidin-3-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
195	*2-(2-fluoro-4-(morpholin-3-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
196	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)imidazo[1,2-a]quinoline-7-carboxamide*
197	*2-(2-fluoro-4-(3-hydroxypyrrolidin-3-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
198	*6-ethoxy-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
199	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-4H-benzo[b]imidazo[1,2-d][1,4]oxazine-7-carboxamide*
200S	*2-(2-fluoro-4-((2S,4S)-4-hydroxypyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
200R	*2-(2-fluoro-4-((2S,4R)-4-hydroxypyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
201S	*2-(2-fluoro-4-((2S,4S)-4-hydroxypyrrolidin-2-yl)phenyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
201R	*2-(2-fluoro-4-((2S,4R)-4-hydroxypyrrolidin-2-yl)phenyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
202S	*2-(2-fluoro-4-((2S,4S)-4-hydroxypyrrolidin-2-yl)phenyl)-6-methoxy-N-methylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
202R	*2-(2-fluoro-4-((2S,4R)-4-hydroxypyrrolidin-2-yl)phenyl)-6-methoxy-N-methylbenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
203S	*2-(2-fluoro-4-((2S,4S)-4-hydroxypyrrolidin-2-yl)phenyl)-6-methoxy-N-(1-methylpiperidin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*

203R	*2-(2-fluoro-4-((2S,4R)-4-hydroxypyrrolidin-2-yl)phenyl)-6-methoxy-N-(1-methylpiperidin-4-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
204	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(1-methylpiperidin-4-yl)-4H-benzo[b]imidazo[1,2-d][1,4]oxazine-7-carboxamide*
205	*N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxy-2-(pyrrolidin-2-yl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*

12. The compound according to claim 1, represented by the structure of formula **I(l)**:



wherein

Ring F is absent or is a substituted or unsubstituted, saturated or unsaturated, 3-8 membered heterocyclic or carbocyclic ring (e.g., pyrrolidine, 1-methylpyrrolidine, pyrrolidine-3-ol, pyrrolidin-2-one, pyridine, piperidine, piperidine-4-ol, tetrahydrofurane, morpholine, tetrahydrothiophene, cyclopropyl, oxetane, oxetan-3-ol, imidazole, pyrimidine, triazole, oxadiazole, pyrazole);

R_1 and **R_2** are each independently H, F, Cl, Br, I, OH, SH, or CF_3, substituted or unsubstituted C_1-C_5 alkyl, C_1-C_5 linear or branched, or C_3-C_8 cyclic haloalkyl, substituted or unsubstituted C_1-C_5 linear or branched, or C_3-C_8 cyclic alkoxy;

or **R_1** and **R_2** are joined to form a 3-8 membered carbocyclic or heterocyclic ring (e.g., cyclopropyl, oxetane);

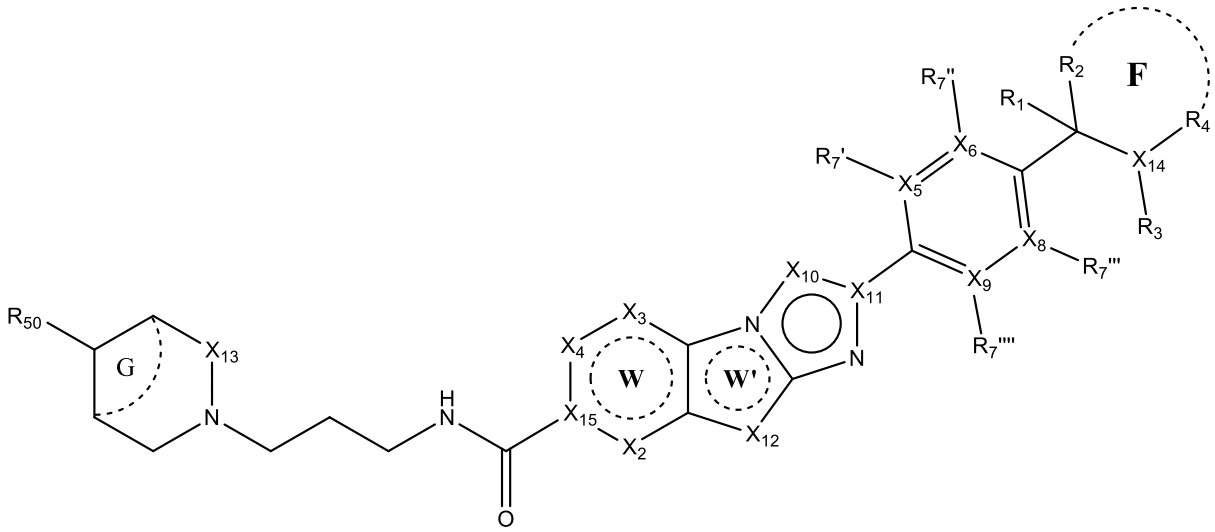
or **R_2** and **R_4** are joined to form **Ring F** as defined above (e.g., pyrrolidine, pyrrolidin-2-one, piperidine, morpholine, pyridine, pyrimidine, triazole, oxadiazole, pyrazole, tetrahydrofurane), wherein if **Ring F** is aromatic, then **R_1** and/or **R_3** are absent;

R_3 and **R_4** are each independently H, Me, substituted or unsubstituted C_1-C_5 alkyl (e.g., methoxyethylene, methylaminoethyl, aminoethyl), -R_8-O-R_{10} (e.g., $(CH_2)_2$-O-CH_3), R_8-N(R_{10})(R_{11}) (e.g., $(CH_2)_2$-NH(CH_3)), substituted or unsubstituted C_3-C_8 cycloalkyl (e.g., cyclopropyl), substituted or unsubstituted 5-7 membered heterocyclic ring (e.g., pyrrolidine, methylpyrrolidine, piperidine), or $R_{20;}$

or **R_3** and **R_4** are joined to form a 3-8 membered heterocyclic ring (e.g., pyrrolidine, , pyrrolidone, 2-oxopyrrolidine, piperidine, morpholine, piperazine, imidazole); and

$\mathbf{X_{14}}$ is S, O, N or CH, wherein if $\mathbf{X_{14}}$ is CH then Ring **F** is not absent and if $\mathbf{X_{14}}$ is S or O then $\mathbf{R_3}$ is absent.

13. The compound of claims 1 or 12, represented by the structure of formula **I(m)**:



I(m)

wherein

$\mathbf{X_{13}}$ is CH_2, CH(R) (e.g., CH-CH_3), $C(R)_2$, or C=O;

Ring G is absent or is a substituted or unsubstituted 3-8 membered carbocyclic or heterocyclic ring (e.g., cyclobutane, cyclopentane, cyclohexane);

$\mathbf{R_{50}}$ is H, $\mathbf{R_{20}}$, F, Cl, Br, I, OH, SH, $N(R)_2$, $NH(R_{10})$, $N(R_{10})(R_{11})$, CF_3, CN, NO_2, C_1-C_5 linear or branched, substituted or unsubstituted alkyl C_1-C_5 linear or branched alkoxy, C_1-C_5 linear or branched haloalkyl, -R_8-R_{10} (e.g., $(CH_2)_2$-O-CH_3), substituted or unsubstituted aryl (e.g., phenyl), substituted or unsubstituted heteroaryl (e.g., pyridine (2, 3, and 4-pyridine).

14. The compound of any one of claims 12 or 13, wherein $\mathbf{X_{14}}$ is O or N.

15. The compound of any one of claims 12-14, wherein $\mathbf{R_1}$ is H, or wherein $\mathbf{R_1}$ and $\mathbf{R_2}$ are joined to form a 3-8 membered carbocyclic or heterocyclic ring (e.g., cyclopropyl, oxetane, pyrrolidine).

16. The compound of any one of claims 12-15, wherein $\mathbf{R_3}$ is H, substituted or unsubstituted C_1-C_5 alkyl or absent.

17. The compound of any one of claims 12-16, wherein $\mathbf{R_2}$ and $\mathbf{R_4}$ are joined to form **Ring F** (preferably pyrrolidine, piperidine, tetrahydrofurane, pyrrolidin-2-one, pyrrolidin-3-ol, morpholine).

18. A compound represented by any one of the following structures:

Compound No.	Compound Name
130R	*(R)-3-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[4,5]thiazolo[2,3-c][1,2,4]triazole-7-carboxamide*
130S	*(S)-3-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)benzo[4,5]thiazolo[2,3-c][1,2,4]triazole-7-carboxamide*
400S	*(S)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-6-carboxamide*

400R	*(R)-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-N-(3-(4-fluoropiperidin-1-yl)propyl)-9H-benzo[d]imidazo[1,2-a]imidazole-6-carboxamide*
401	*7-bromo-2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-isopropoxybenzo[d]imidazo[2,1-b]thiazole*
402	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-5,6,7,8-tetrahydrobenzo[d]imidazo[2,1-b]thiazole-7-carboxylic acid*
403	*2-(2-fluoro-4-(pyrrolidin-2-yl)phenyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxylic acid*
404	*2-bromo-N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxybenzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
408	*N-(3-(4-fluoropiperidin-1-yl)propyl)-2-(pyrrolidin-2-ylethynyl)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
409	*N-(3-(4-fluoropiperidin-1-yl)propyl)-2-(pyrrolidine-2-carboxamido)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*
410	*N-(3-(4-fluoropiperidin-1-yl)propyl)-6-methoxy-2-(pyrrolidine-2-carboxamido)benzo[d]imidazo[2,1-b]thiazole-7-carboxamide*

19. The compound of any one of the preceding claims, wherein the compound is a substantially pure single stereoisomer.

20. The compound according to any one of the preceding claims, wherein the compound is a c-MYC mRNA translation modulator, a c-MYC mRNA transcription regulator, a c-MYC inhibitor or any combination thereof.

21. A pharmaceutical composition comprising the compound of any one of the preceding claims and a pharmaceutically acceptable carrier.

22. Use of a compound according to any one of claims 1-21, in the preparation of a medicament for treating, suppressing, reducing the severity, reducing the risk of developing or inhibiting cancer in a subject.

23. The use of claim 22,

wherein the cancer is selected from the list of: breast cancer, ovarian carcinoma, acute myeloid leukemia, chronic myelogenous leukemia, Hodgkin's and Burkitt's lymphoma, diffuse large Bcell lymphoma, prostate cancer, colon cancer, gastric cancer, primary central nervous system lymphoma, glioblastoma, medulloblastoma, melanoma, non-small cell lung carcinoma, germinal center-derived lymphomas, esophageal squamous cell carcinoma, osteosarcoma, bladder cancer, pancreatic cancer, lung adenocarcinoma, BRAF V600E thyroid cancer, choroid plexus carcinoma, colitis-associated cancer, epithelial ovarian cancer, colorectal cancer, pancreatic cancer and uterine cancer;

wherein the cancer is early cancer, advanced cancer, invasive cancer, metastatic cancer, drug resistant cancer or any combination thereof;

wherein the subject has been previously treated with chemotherapy, immunotherapy, radiotherapy, biological therapy, surgical intervention, or any combination thereof;

wherein the compound is administered in combination with an anti-cancer therapy;

or any combination thereof.

24. The use of claim 23, wherein the anti-cancer therapy is chemotherapy, immunotherapy, radiotherapy, biological therapy, surgical intervention, or any combination thereof.

25. Use of a compound according to any one of claims 1-21, in the preparation of a medicament for suppressing, reducing or inhibiting tumor growth in a subject.

26. A method of modulating c-MYC mRNA translation, or regulating c-MYC mRNA transcription in a cell, comprising contacting a compound according to any one of claims 1-22 with a cell, thereby modulating c-MYC mRNA translation, or regulating c-MYC mRNA transcription in said cell.

27. The method of claim 26, wherein said method is carried out

(a) by regulating c-MYC mRNA splicing (inclusion or exclusion of untranslated region or alternative usage of exons);

(b) by regulation of c-MYC mRNA modifications;

(c) by regulation of the interaction of RNA binding protein with c-MYC mRNA thereby changing mRNA localization;

(d) by regulating c-MYC mRNA localization in the cytoplasm;

(e) by regulating ribosomes or ribosome accessory factor to c-MYC mRNA;

(f) by reducing the amount of c-MYC protein in the cell;

or any combination thereof.