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(54) Title: METHODS AND COMPOSITIONS FOR INHIBITION OF THE TRANSITIONAL ENDOPLASMIC RETICULUM ATPASE

(57) Abstract: Compounds of Formulas I-XLIII are identified as direct inhibitors of p97 ATPase or of the degradation of a p97-dependent ubiquitin-proteasome system (UPS) substrate. Methods and compositions are disclosed for inhibiting p97 ATPase and the degradation of a p97-dependent UPS substrate, and for identifying inhibitors thereof.

METHODS AND COMPOSITIONS FOR INHIBITION OF THE TRANSITIONAL ENDOPLASMIC RETICULUM ATPASE

CROSS-REFERENCE TO RELATED APPLICATION(S)

[0001] This application claims priority to and the benefit of U.S. Provisional Application Serial Nos. 61/332,667, filed on May 7, 2010, the entire contents of which are incorporated herein by reference.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] This invention was made with government support under MH085687 awarded by National Institutes of Health. The government has certain rights in the invention.

TECHNICAL FIELD

[0003] Embodiments of this invention are directed to selective inhibitors of the ubiquitin-proteasome system (UPS). In particular, inhibitors of the transitional endoplasmic reticulum (p97) ATPase and an ubiquitin substrate are identified.

TECHNICAL BACKGROUND

The ubiquitin-proteasome system (UPS) comprises one of the most important mechanisms for post-translational regulation of protein function in eukaryotic cells. The UPS comprises hundreds of enzymes that promote covalent attachment of ubiquitin and ubiquitin-like proteins (UBL) to target proteins, as well as enzymes that reverse the modification. Conjugation of ubiquitin to target proteins is a multi-step process (Weissman, 2001, *Nat. Rev. Mol. Cell. Biol.*, 2:169-178; Finley, 2009, *Annu. Rev. Biochem.*, 78:477-513; Schrader et al., 2009, *Nat. Chem. Biol.*, 5:815-822; Deshaies et al., 2009, *Annu. Rev. Biochem.*, 78: 399-434). The most intensively-studied consequence of ubiquitination is protein degradation. Given the importance of the UPS to regulatory biology there has been considerable interest in developing small molecule inhibitors as potential therapies for a range of human diseases. The UPS has been validated as an important target in cancer by clinical use of the proteasome inhibitor, bortezomib (Velcade), for the treatment of multiple myeloma and mantle cell lymphoma (Kane et al., 2003, *Oncologist,* 8:508-513; Colson et al., 2004, *Clin. J. Oncol. Nurs.*,8:473-480).

[0004] The AAA (ATPase associated with diverse cellular activities) ATPase p97 is conserved across all eukaryotes and is essential for life in budding yeast (Giaever et al., 2002, *Nature,* 418:387-391) and mice (Muller et al., 2007, *Biochem. Biophys. Res. Commun.*, 354:459-465). p97 (also referred to as the transitional endoplasmic reticulum ATPase) is overexpressed in several cancers supporting the idea that it could be a target of general

importance in oncology (Yamamoto et al., 2004, *Clin. Cancer Res.*, 10:5558-5565; Yamamoto et al., 2003, *J. Clin. Oncol.*, 21:447-452). Elevated expression levels of p97 have been associated with poor prognosis of cancer (Yamamoto et al., 2004, *Ann. Surg. Oncol.* 11:697-704; Tsujimoto et al., 2004, *Clin. Cancer Res.*, 10:23007-3012). Additionally, p97 is an essential ATP hydrolase and thus, it should be druggable and have antiproliferative activity. Furthermore, p97 is essential for endoplasmic reticulum associated degradation (ERAD) (Ye et al., 2004, *Nature*, 429:841-847; Ye et al., 2003, *J. Cell Biol.*, 162:71-84; Neuber et al., 2005, *Nat. Cell Biol.*, 7:993-998). Blockade of ERAD is thought to be a key mechanism underlying the anti-cancer effects of bortezomib (Nawrocki et al., 2005, *Cancer Res.*, 65:11510-11519). Given that p97 is implicated in ERAD, but otherwise has a more restricted role in the UPS compared to the proteasome, it is possible that drugs that target p97 might retain much of the efficacy of bortezomib but with less toxicity.

SUMMARY

[0005] In one embodiment of the present invention, a method of decreasing p97 ATPase activity and/or degradation of a p97-dependent ubiquitin-proteasome system (UPS) substrate in a human cell, is provided, including administering to a human an effective amount of at least one of (i) a compound represented by any of Formulas I-VII, IX, XI-XLIII, (ii) a PEGylated analog of the compound, (iii) a pharmaceutically acceptable salt of said compound or analog, or (iv) an isomer of said compound, analog, or salt, wherein, for Formula I, R^1, R^2, R^3, R^4, and R^5 are selected from the combinations listed in Tables 1.1, 12.1, and 18.1; wherein, for Formula II, R^1 is selected from the groups listed in Tables 2.1, 13.1, and 19.1; wherein, for Formula III, R^1 is selected from the groups listed in Table 3.1; wherein, for Formula IV, R^1 is selected from the groups listed in Table 4.1; wherein, for Formula V, R^1 is selected from the groups listed in Table 5.1; wherein, for Formula VI, R^1 is selected from the groups listed in Tables 6.1 and 20.1; wherein, for Formula VII, R^1, n, X, and Y are selected from the combinations listed in Tables 7.1 and 14.1; wherein for Formula XI, R^2 is selected from the groups listed in Tables 9.1 and 21; wherein for Formula XII, R^4 is selected from the groups listed in Tables 10.1 and 22.1; wherein, for Formula XXI, R1 is 5,6-dimethyl; and wherein, for Formula XXV, R^1 is chlorine at position 3 and R^2 is selected from hydrogen and methoxy at position 4.

[0006] In one embodiment, the preceding method is provided wherein the compound decreases p97 ATPase activity and degradation of a p97-dependent UPS substrate in a human cell, and the compound is represented by any of Formulas I-VII, IX, and XI-XIX, wherein: for Formula I, R^1, R^2, R^3, R^4, and R^5 are selected from the combinations listed in Table 1.1, for Formula II, R^1 is selected from the groups listed in Table 2.1, for Formula III, R^1 is selected from the groups listed in Table 3.1, for Formula IV, R^1 is selected from the groups listed in Table 4.1, for Formula V, R^1 is selected from the groups listed in Table 5.1, for

Formula VI, R^1 is selected from the groups listed in Table 6.1, for Formula VII, R^1, n, X, and Y are selected from the combinations listed in Table 7.1,
for Formula XI, R^2 is selected from the groups listed in Table 9.1, and for Formula XII, R^4 is selected from the groups listed in Table 10.1.

[0007] In one embodiment, the preceding method is provided wherein the isomer is a regioisomer or a stereoisomer.

[0008] In one embodiment, a method of identifying an inhibitory compound that decreases p97 activity in a human cell is provided, including: (a) forming a p97 protein control solution; (b) forming a test solution comprising p97 protein and at least one of (i) a compound represented by any of Formulas LII through LXVI, (ii) a PEGylated, biotinylated, or fluorescently labeled analog of the compound, (iii) a pharmaceutically acceptable salt of said compound or analog, or (iv) an isomer of said compound analog, or salt; (c) measuring p97 activity of the control solution and of the test solution in the presence of ATP and a kinase; and (d) comparing the measured activities, wherein for Formula LII, n is selected from 0, 1, and 2; wherein, for Formula LIII, R^1 and R^2 are independently selected from hydrogen, methyl, ethyl, propyl and butyl; wherein, for Formula LIV, R^1 is selected from hydrogen, methyl, fluorine, chlorine, bromine, and OMe (methoxy), and R^2 is selected from hydrogen, methyl, ethyl, propyl, and butyl; wherein, for Formula LV, R^1 is selected from hydrogen, methyl, fluorine, chlorine, bromine, and OMe (methoxy), and R^2 is selected from hydrogen, methyl, ethyl, propyl, and butyl; wherein, for Formula LVI, R^1 and R^2 are independently selected from hydrogen, methyl, fluorine, chlorine, bromine, and OMe(methoxy); wherein, for Formula LVII, X is oxygen, NMe (nitrogen-methyl), NEt (nitrogen-ethyl), NPh (nitrogen-phenyl); n is selected from -1, 0, 1, and 2; m is selected from 1, 2, 3, and 4; and R^1 and R^2 are independently selected from hydrogen, methyl, fluorine, chlorine, bromine and methoxy; wherein, for Formula LVIII, X is selected from oxygen, NMe (nitrogen-methyl), NEt (nitrogen-ethyl), and NPh (nitrogen-phenyl); n is selected from -1, 0, 1, and 2; m is selected from 1, 2, 3, and 4; and R^1 is selected from hydrogen, methyl, fluorine, chlorine, bromine, and methoxy; wherein, for Formula LIX, R^1, R^2 and R^3 are independently selected from hydrogen, $A(CH_2)_nCH_3$, and $A(CH_2)_nX$, where n is selected from 0, 1, 2, 3, 4 and 5, A is O, S or NH and X is selected from heteroaryl, O(alkyl), S(alkyl), $(O\text{-alkyl})_2$, and $(S\text{-alkyl})_2$; wherein, for Formula LX, A^1 is selected from O, S, Se, N, NH, CH, CH_2, CHalkyl, and Calkyl, wherein n is 1 or 2; A^2 is selected from N, NH, CH, and Calkyl; and R^1 is selected from H, $A(CH_2)_nCH_3$, or $A(CH_2)_nX$, where A is O, S or NH and X is heteroaryl, O(alkyl), S(alkyl), $(O\text{-alkyl})_2$, or $(S\text{-alkyl})_2$; and n is 0, 1, 2, 3, 4, or 5; wherein, for Formula LXI, R^1, R^2 and R^3 are independently selected from alkyl, alkoxyalkyl, and aminoalkyl; wherein, for Formula LXII; n is selected from -1, 0, 1, and 2; m is selected from 0, 1, and 2; and X is selected from CH_2, O, NMe, NEt, and NPh; wherein, for Formula LXIII, R^1 and R^2 are independently selected from H, Me, Et, Pr, and Bu; X is selected from CH_2, O,

NMe, NEt, and NPh; and n is selected from -1, 0, 1 and 2; wherein, for Formula LXIV, R^1 is selected from H, Me, F, Cl, Br, and OMe; R^2 is selected from H, Me, Et, Pr, and Bu; X is selected from CH_2, O, NMe, NEt, and NPh; and n is selected from -1, 0, 1, and 2; wherein, for Formula LXV, R^1 is selected from H, Me, F, Cl, Br, and OMe; R^2 is selected from H, Me, Et, Pr, and Bu; X is selected from CH_2, O, NMe, NEt, and NPh; and n is selected from -1, 0, 1, and 2; and, wherein, for Formula LXVI, R^1 and R^2 are independently selected from H, Me, F, Cl, Br, and OMe; X is selected from CH_2, O, NMe, NEt, and NPh; and n is selected from -1, 0, 1, and 2.

[0009] In one embodiment, the preceding composition is provided wherein the isomer is a regioisomer or a stereoisomer.

[0010] In one embodiment, a composition for decreasing p97 ATPase activity and/or degradation of a p97-dependent UPS substrate is provided, including: at least one of (i) a compound selected from any of Formulas II-VII, IX, XI, XII, XX, XXI, XXIV, XXV, XLII, and XLIII, (ii) a PEGylated, biotinylated, or fluorescently labeled analog of the compound, (iii) a pharmaceutically acceptable salt of said compound or analog; or (iv) an isomer of said compound analog, or salt, wherein, for Formula II, R^1 is selected from the groups listed in Tables 2.2, 13.1, and 19.1; wherein, for Formula III, R^1 is selected from the groups listed in Table 3.1; wherein, for Formula IV, R^1 is selected from the groups listed in Table 4.1; wherein, for Formula V, R^1 is selected from the groups listed in Table 5.1; wherein, for Formula VI, R^1 is selected from the groups listed in Tables 6.1 and 20.1; wherein, for Formula VII, R^1, n, X, and Y are selected from the combinations listed in Tables 7.1 and 14.1; wherein, for Formula XI, R^2 is selected from the groups listed in Tables 9.1 and 21; wherein, for Formula XII, R^4 is selected from the groups listed in Tables 10.1 and 22.1; and wherein, for Formula XXV, R^1 is chlorine at position 3 and R^2 is selected from hydrogen and methoxy at position 4.

[0011] In one embodiment, the preceding composition for decreasing p97 ATPase activity and/or degradation of a p97-dependent UPS substrate is provided further including a pharmaceutically acceptable carrier.

[0012] In one embodiment, the preceding composition for decreasing p97 ATPase activity and/or degradation of a p97-dependent UPS substrate is provided, wherein the isomer is a regioisomer or a stereoisomer.

[0013] In one embodiment, the preceding composition decreases p97 ATPase activity and degradation of a p97-dependent UPS substrate, and the compound is represented by any of Formulas II-VII, IX, XI, and XII, wherein, for Formula II, R^1 is selected from the groups listed in Table 2.2; for Formula III, R^1 is selected from the groups listed in Table 3.1; for Formula IV, R^1 is selected from the groups listed in Table 4.1; for Formula V, R^1 is selected from the groups listed in Table 5.1; for Formula VI, R^1 is selected from the groups listed in Table 6.1; for Formula VII, R^1, n, X, and Y are selected from the combinations listed in Table

7.1; for Formula XI, R^2 is selected from the groups listed in Table 9.1; and for Formula XII, R^4 is selected from the groups listed in Table 10.1.

[0014] In one embodiment, the preceding composition that decreases p97 ATPase activity and degradation of a p97-dependent UPS substrate is provided, further including a pharmaceutically acceptable carrier.

[0015] In one embodiment, the preceding composition that decreases p97 ATPase activity and degradation of a p97-dependent UPS substrate is provided, wherein the isomer is a regeoisomer or a stereoisomer.

In one embodiment, a composition for identifying an inhibitor that decreases p97 ATPase activity and/or degradation of a p97-dependent UPS substrate is provided, including: at least one of (i) a compound selected from any of Formulas LII-LXVI, (ii) a PEGylated, biotinylated, or fluorescently labeled analog of the compound, (iii) a pharmaceutically acceptable salt of said compound or analog; or (iv) a isomer of said compound, analog, or salt: wherein for Formula LII, n is selected from 0, 1, and 2; wherein, for Formula LIII, R^1 and R^2 are independently selected from hydrogen, methyl, ethyl, propyl and butyl; wherein, for Formula LIV, R^1 is selected from hydrogen, methyl, fluorine, chlorine, bromine, and OMe (methoxy), and R^2 is selected from hydrogen, methyl, ethyl, propyl, and butyl; wherein, for Formula LV, R^1 is selected from hydrogen, methyl, fluorine, chlorine, bromine, and OMe (methoxy), and R^2 is selected from hydrogen, methyl, ethyl, propyl, and butyl; wherein, for Formula LVI, R^1 and R^2 are independently selected from hydrogen, methyl, fluorine, chlorine, bromine, and OMe(methoxy); wherein, for Formula LVII, X is oxygen, NMe (nitrogen-methyl), NEt (nitrogen-ethyl), NPh (nitrogen-phenyl); n is selected from -1, 0, 1, and 2; m is selected from 1, 2, 3, and 4; and R^1 and R^2 are independently selected from hydrogen, methyl, fluorine, chlorine, bromine and methoxy; wherein, for Formula LVIII, X is selected from oxygen, NMe (nitrogen-methyl), NEt (nitrogen-ethyl), and NPh (nitrogen-phenyl); n is selected from -1, 0, 1, and 2; m is selected from 1, 2, 3, and 4; and R^1 is selected from hydrogen, methyl, fluorine, chlorine, bromine, and methoxy; wherein, for Formula LIX, R^1, R^2 and R^3 are independently selected from hydrogen, $A(CH_2)_nCH_3$, and $A(CH_2)_nX$, where n is selected from 0, 1, 2, 3, 4 and 5, A is O, S or NH and X is selected from heteroaryl, O(alkyl), S(alkyl), $(O\text{-alkyl})_2$, and $(S\text{-alkyl})_2$; wherein, for Formula LX, A^1 is selected from O, S, Se, N, NH, CH, CH_2, CHalkyl, and Calkyl, wherein n is 1 or 2; A^2 is selected from N, NH, CH, and Calkyl; and R^1 is selected from H, $A(CH_2)_nCH_3$, or $A(CH_2)_nX$, where A is O, S or NH and X is heteroaryl, O(alkyl), S(alkyl), $(O\text{-alkyl})_2$, or $(S\text{-alkyl})_2$; and n is 0, 1, 2, 3, 4, or 5; wherein, for Formula LXI, R^1, R^2 and R^3 are independently selected from alkyl, alkoxyalkyl, and aminoalkyl; wherein, for Formula LXII; n is selected from -1, 0, 1, and 2; m is selected from 0, 1, and 2; and X is selected from CH_2, O, NMe, NEt, and NPh; wherein, for Formula LXIII, R^1 and R^2 are independently selected from H, Me, Et, Pr, and Bu; X is selected from CH_2, O, NMe, NEt, and NPh; and n is selected from -1, 0, 1 and 2; wherein, for

Formula LXIV, R^1 is selected from H, Me, F, Cl, Br, and OMe; R^2 is selected from H, Me, Et, Pr, and Bu; X is selected from CH_2, O, NMe, NEt, and NPh; and n is selected from -1, 0, 1, and 2; wherein, for Formula LXV, R^1 is selected from H, Me, F, Cl, Br, and OMe; R^2 is selected from H, Me, Et, Pr, and Bu; X is selected from CH_2, O, NMe, NEt, and NPh; and n is selected from -1, 0, 1, and 2; and, wherein, for Formula LXVI, R^1 and R^2 are independently selected from H, Me, F, Cl, Br, and OMe; X is selected from CH_2, O, NMe, NEt, and NPh; and n is selected from -1, 0, 1, and 2.

[0016] In one embodiment, the preceding composition for identifying an inhibitor is provided, further including a pharmaceutically acceptable carrier.

[0017] In one embodiment, the preceding composition for identifying an inhibitor is provided, wherein the isomer is a regeoisomer or a stereoisomer.

In one embodiment, a method of decreasing p97 ATPase activity and/or degradation of a p97-dependent ubiquitin-proteasome system (UPS) substrate in a human cell is provided, including: administering to a human an effective amount of at least one of (i) a compound represented by any of Formulas VIII, X, XI, and XII, (ii) a PEGylated analog of the compound, (iii) a pharmaceutically acceptable salt of said compound or analog; or (iv) an isomer of said compound, analog, or salt, wherein, for Formula XI, R^2 is selected from the groups listed in Tables 9.2 and 15.1; and wherein, for Formula XII, R^4 is selected from the groups listed in Tables 10.2 and 22.2.

[0018] In one embodiment, a composition for decreasing p97 ATPase activity and/or degradation of a p97-dependent UPS substrate is provided, including at least one of (i) a compound selected from any of Formulas VIII, X, XI, XII, (ii) a PEGylated, biotinylated, or fluorescently labeled analog of the compound, (iii) a pharmaceutically acceptable salt of said compound, or (iv) an isomer of said compound, analog, or salt, wherein, for Formula XI, R^2 is selected from the groups listed in Tables 9.2 and 15.1, and wherein, for Formula XII, R^4 is selected from the groups listed in Tables 10.2 and 22.2.

[0019] In one embodiment, the preceding composition for decreasing p97 ATPase activity and/or degradation of a p97-dependent UPS substrate is provided, further including a pharmaceutically acceptable carrier.

[0020] In one embodiment, the preceding composition for decreasing p97 ATPase activity and/or degradation of a p97-dependent UPS substrate is provided, wherein the isomer is a regeoisomer or a stereoisomer.

DETAILED DESCRIPTION

[0021] Utilizing a set of dual-reporter human cell lines and a chase protocol to quantify and distinguish p97-specific inhibitors of proteasomal degradation, compounds that directly inhibit p97 and inhibit the degradation of a UPS substrate that depends on p97 were identified and characterized.

[0022] Compounds were identified as "inhibitors" if the compound had an IC_{50} of 20μM or less (potency). Inhibition was measured using a p97 ATPase assay and a p97-dependent Ub^{G76V}-GFP assay that measures Ub^{G76V}-GFP turn over. In one embodiment, a compound of the present invention decreases p97 activity and/or p97-dependent Ub^{G76V}-GFPdegradation turn-over to 20μM or less. In another embodiment, the compound decreases the p97 ATPase activity and/or p97-dependent Ub^{G76V}-GFPdegradation turn-over to 15μM or less. In another embodiment, the compound decreases the p97 ATPase activity and/or p97-dependent Ub^{G76V}-GFP degradation turn-over to 10μM or less. In a preferred embodiment, the compound decreases the p97 ATPase activity and/or p97-dependent Ub^{G76V}-GFP degradation turn-over is decreased to 5μM or less. In a most preferred embodiment, the compound decreases the p97 ATPase activity and/or p97-dependent Ub^{G76V}-GFP degradation turn-over to 2μM or less.

[0023] Compounds were categorized into three types of inhibitors: 1) inhibitors of both p97 and Ub^{G76V}-GFP turn-over (degradation); 2) inhibitors of p97 that do not inhibit Ub^{G76V}-GFP turn over; and 3) inhibitors of Ub^{G76V}-GFP turn-over that do not inhibit p97. Comparative Examples are shown in Tables 28-33, listing compounds assayed that did not decrease either p97 or Ub^{G76V}-GFP turnover to at least 20 μM.

[0024] In one embodiment, a method for decreasing p97 ATPase activity and/or decreasing the degradation of the p97-dependent UPS substrate (Ub^{G76V}-GFP), is carried out using a compound represented by one of Formulas I-XLIII and, where applicable, having variable groups as shown in Tables 1-26.

[0025] As shown in the tables throughout, compounds and variable groups are characterized using abbreviations, which are defined as follows. In the * column of the tables, "P" refers to a purchased compound and "S" refers to a synthesized compound. R groups include H(hydrogen), C (carbon) N (nitrogen) Cl (chlorine), F(flourine), Br(bromine), NO_2 (nitro), Me (methyl), OMe (methoxy), Ph (phenyl), PhOMe (methoxyphenyl). Standard IUPAC nomenclature is followed for all chemical abbreviations unless indicated otherwise. Numbers preceding the atom groups indicate the position for that atom. Specific compound data is found in the enclosed NMR data (**Example 9**, **Appendix**).

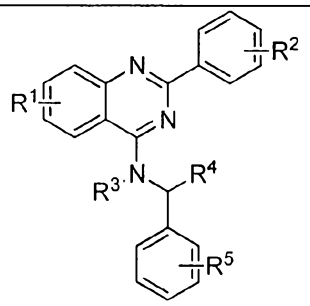
[0026] Inhibitors of p97 and p97-dependent UPS substrate (Ub^{G76V}-GFP)

Tables 1-11 show compounds represented by Formulas I-XIX having an IC_{50} of 20 μM or less in both a p97 ATPase assay (**Example 7**) and a p97-dependent Ub^{G76V}-GFP degradation turn-over assay (**Example 8**).

[0027] FORMULA I

Table 1

FORMULA I:



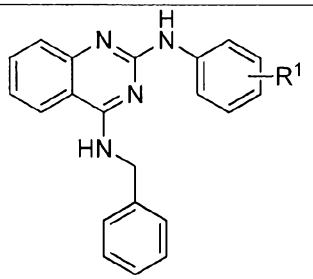
										IC$_{50}$ (μM)	
Cpd	CID	SID	KU SCC #	*	R1	R2	R3	R4	R5	ATPase	Ub^{G76V}-GFP turn over
I-1	886813	87796231	KSC-1-150	P	H	2-F	H	H	H	3±0.8	9.0±1.3
I-1	886813	96022089	KSC-16-88	S	H	2-F	H	H	H	1.1±0.3	8±1.7
I-2	780643	87796227	KSC-1-145	P	H	H	H	H	H	4.2±2.3	12±3
I-3	1894007	87796228	KSC-1-146	P	H	2-Cl	H	H	H	1.2±0.6	8±3
I-4	2927831	87796230	KSC-1-149	P	H	3-NO_2	H	H	H	5.9±3	4.0±1.6
I-5	4084712	87796265	KSC-1-226	P	H	3-Me	H	H	H	4.2±0.2	17±4
I-6	159117	87796273	KSC-1-236	P	H	4-Cl	H	H	H	5.5±1.9	20±3
I-8	1187251	87796271	KSC-1-234	P	H	4-NO_2	H	H	H	11±6	19±7
I-9	949742	87796266	KSC-1-227	P	H	4-OMe	H	H	H	1.6±0.3	15±2
I-10	3395671	87796263	KSC-1-224	P	H	4-Me	H	H	H	5.7±0.7	13±2
I-13	2452802	87796251	KSC-1-212	P	H	H	H	H	4-F	11±3	19±3
I-17	20963125	87796258	KSC-1-219	P	H	4-OMe	H	H	4-F	7.8±0.4	9.8±3
I-20	2096	87796	KSC-1-	P	H	4-OMe	H	H	4-	13±4	15±5

	3158	259	220						OMe		
I-21	2096 3177	87796 260	KSC-1-221	P	H	4-OMe	H	H	4-Me	8±2	12±2
I-22	2096 3187	87796 261	KSC-1-222	P	H	4-OMe	H	H	4-Cl	8±2	9.3±1
I-23	2096 3255	87796 262	KSC-1-223	P	H	4-Cl	H	H	4-F	8±0.2	20±5
I-24	4084 711	87796 264	KSC-1-225	P	H	3-Me	H	H	4-F	15±2	12±0.8
I-30	2790 952	87796 274	KSC-1-237	P	H	4-Me	H	Me	H	7±4	17±4

[0028] FORMULA II

Table 2

FORMULA II:

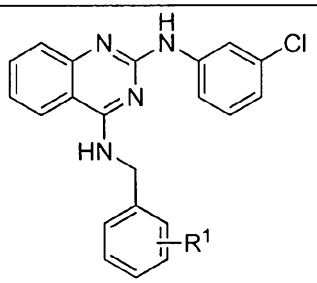


Cpd #	CID	SID	KU SCC #	*	R1	IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
II-1	2909 934	87796 234	KSC-1-153	P	H	2.3±1	3.1±0.4
II-2	9295 48	87796 285	KSC-1-251	P	4-Me	2.2±0.4	6.3±1.4
II-3	2351 737	87796 281	KSC-1-246	P	4-Cl	5.4±2	5.9±1.2
II-4	7976 50	87796 284	KSC-1-249	P	4-F	3.8±1.2	9.4±1
II-5	1943 389	87796 280	KSC-1-245	P	4-Br	1.8±0.4	6.0±0.8
II-6	1330 474	92093 141	KSC-1-250	P	4-OMe	3.8±0.5	4.5±1.1
II-6	1330	92252	KSC-1-	S	4-OMe	3.5±0.5	4.8±0.7

	474	642	290				
II-7	949445	87796286	KSC-1-252	P	2-Me	3.4±1.5	10±2
II-9	886196	87796282	KSC-1-247	P	2-F	0.85±0.17	10±2
II-11	1415819	87796283	KSC-1-248	P	2-OMe	2.2±0.9	11±3
II-12	950033	87796287	KSC-1-253	P	3-Me	1.7±0.5	3.0±0.7
II-13	1633082	87796279	KSC-1-244	P	3-Cl	0.48±0.16	7.8±1.3
II-14	11645888	92252644	KSC-1-292	S	3-F	1.6±0.1	2.7±0.4
II-15	45108365	92252645	KSC-1-293	S	3-Br	2.5±0.5	4.3±0.8
II-16	39861404	92252643	KSC-1-291	S	3-OMe	2.5±0.2	4.3±0.7
II-17	1571079	87796290	KSC-1-259	P	3,4-di-Cl	8.1±2.6	12±2
II-18	45108364	92252647	KSC-1-295	S	3-Cl-6-F	13±3	13±2
II-19	45108364	92252647	KSC-1-294	S	3,5-di-Cl	8.2±0.3	13±1
II-22	46850871	99239933	KSC-16-155	S	3-NO_2	5.2±0.5	19±2

[0029] FORMULA III

Table 3

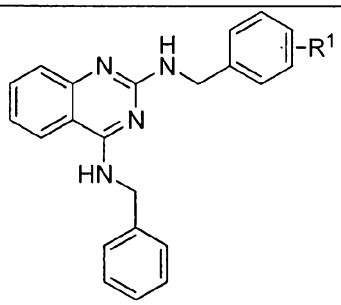
FORMULA III:							
						IC_{50} (μM)	
Cpd #	CID	SID	KU SCC #	*	R1	ATPase	Ub^{G76V}-GFP

							turn over
III-1	4617 3070	9602 2083	KSC-16-72	S	4-Me	1.4±0.3	12±2
III-2	4617 3066	9602 2090	KSC-16-89	S	4-Cl	2.8±0.9	7.6±2.4
III-3	4617 3057	9602 2093	KSC-16-98	S	4-F	1.5±0.3	5.7±1.3
III-4	4617 3059	9602 2096	KSC-16-101	S	4-Br	7.4±2	10±3
III-5	4617 3063	9602 2086	KSC-16-79	S	4-OMe	2.3±0.6	11±4
III-6	4617 3069	9602 2080	KSC-16-63	S	2-Me	4.2±1.1	11±3
III-7	4617 3062	9602 2087	KSC-16-84	S	2-Cl	4.7±1.4	18±5
III-8	4617 3072	9602 2091	KSC-16-92	S	2-F	1.8±0.5	7.8±2.1
III-9	4617 3058	9602 2094	KSC-16-99	S	2-Br	4±1.7	12±5
III-10	4617 3067	9602 2084	KSC-16-75	S	2-OMe	1.6±0.4	11±2
III-11	4617 3061	9602 2081	KSC-16-66	S	3-Me	2.3±0.6	9.7±2.7
III-12	4617 3068	9602 2088	KSC-16-87	S	3-Cl	5±1.2	15±4
III-13	4617 3060	9602 2092	KSC-16-95	S	3-F	1.2±0.2	6.3±1.7
III-14	4617 3065	9602 2095	KSC-16-100	S	3-Br	3.7±0.9	9.9±2
III-15	4617 3071	9602 2085	KSC-16-78	S	3-OMe	1±0.1	9.9±1.6

[0030] FORMULA IV

Table 4

FORMULA IV:



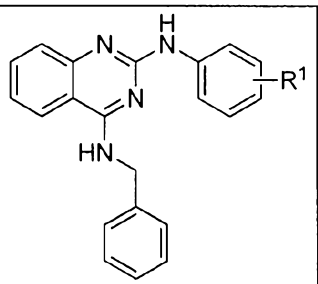
Cpd	CID	SID	KU SCC #	*	R1	IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
IV-1	2514 4450	9337 4186	KSC-1-300	S	4-Me	3±0.3	1.5±0.4
IV-2	4538 2112	9337 4224	KSC-16-33	S	4-Cl	3.1±0.2	2.1±0.4
IV-3	4538 2121	9337 4227	KSC-16-38	S	4-F	2.6±0.2	3.4±0.5
IV-4	4538 2119	9337 4230	KSC-16-42	S	4-Br	4.3±0.9	3.9±0.3
IV-5	4538 2111	9337 4187	KSC-16-2	S	4-OMe	3±0.5	1.3±0.2
IV-6	4538 2120	9337 4191	KSC-16-8	S	2-Me	2.7±0.5	1.9±0.4
IV-7	4538 2117	9337 4222	KSC-16-31	S	2-Cl	5.3±1.2	2.9±0.9
IV-8	4538 2108	9337 4225	KSC-16-35	S	2-F	2.9±0.4	2.8±0.4
IV-9	4538 2107	9337 4228	KSC-16-40	S	2-Br	2.0±0.3	3.8±0.7
IV-10	4538 2105	9337 4193	KSC-16-29	S	2-OMe	3.6±0.8	1.9±0.2
IV-11	4538 2113	9337 4192	KSC-16-28	S	3-Me	2.3±0.4	2.5±0.5
IV-12	4538 2114	9337 4223	KSC-16-32	S	3-Cl	2.7±0.1	2.5±0.4

IV-13	4538 2110	9337 4226	KSC-16-36	S	3-F	3.1±0.4	2.8±0.4
IV-14	4538 2118	9337 4229	KSC-16-41	S	3-Br	3.7±0.4	2.8±0.4
IV-15	4538 2116	9337 4221	KSC-16-30	S	3-OMe	4.5±0.8	2.5±0.8
IV-16	4538 2109	9337 4190	KSC-16-6	S	4-CF_3	2.6±0.4	2.3±0.3
IV-17	4538 2106	9337 4188	KSC-16-3	S	3,4-di-Cl	3±0.5	1.9±0.2
IV-18	4538 2115	9337 4189	KSC-16-4	S	4-Cl-3-CF_3	4.7±1	2.2±0.4

[0031] FORMULA V

Table 5

FORMULA V:

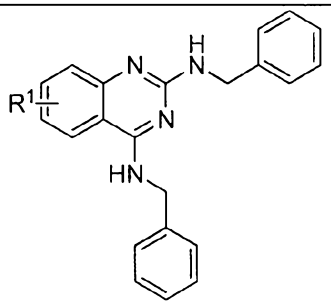


Cpd	CID	SID	KU SCC #	*	R1	IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
V-1	4622 4527	9607 9523	KSC-16-103	S	3-Cl-2-OMe	0.9±0.2	6.3±1.7
V-2	4622 4522	9607 9524	KSC-16-104	S	3-F-2-Me	0.9±0.1	3.7±0.8
V-3	4622 4524	9607 9525	KSC-16-105	S	3-F-5-Me	0.7±0.05	5.4±0.8
V-4	4622 4529	9607 9526	KSC-16-106	S	3-F-2-OMe	1.7±0.5	12±3
V-5	4622 4523	9607 9527	KSC-16-107	S	3-Cl-2-Me	0.7±0.1	5.5±1
V-6	4622 4519	9607 9528	KSC-16-108	S	3-F-6-Me	0.8±0.1	5±1

V-7	4622 4528	9607 9529	KSC-16-109	S	3-F-4-Me	0.9±0.2	5.2±1.2
V-8	4622 4530	9607 9530	KSC-16-110	S	3-F-4-OMe	0.9±0.1	4.7±0.8
V-9	4622 4526	9607 9531	KSC-16-112	S	3-Cl-6-Me	0.8±0.07	7±1.5
V-10	4622 4518	9607 9532	KSC-16-113	S	3-Cl-6-OMe	1.1±0.2	16±6
V-11	4682 9342	9920 6553	KSC-16-120	S	3-F-6-OMe	6.7±3	9.3±1

[0032] FORMULA VI

Table 6

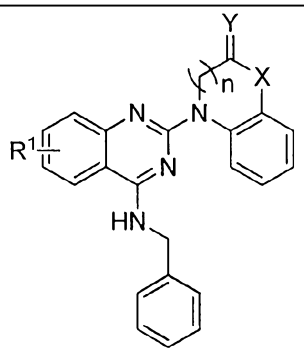
FORMULA VI:							
						IC_{50} (μM)	
Cpd #	CID	SID	KU SCC #	*	R1	ATPase	Ub^{G76V}-GFP turn over
VI-1	4622 4525	9607 9533	KSC-16-114	S	5-Cl	2.2±0.7	16±2
VI-2	4622 4521	9607 9534	KSC-16-115	S	5-F	1.2±0.3	13±2
VI-3	4622 4520	9607 9535	KSC-16-117	S	6-Cl	1.6±0.4	6.6±0.9
VI-4	5276 745	9602 2097	KSC-16-102	S	6,7-di-OMe	4.4±1.8	8.8±1.5
VI-5	4682 9340	9920 6522	KSC-16-121	S	8-OMe	0.6±0.06	10±2
VI-6	4682 9333	9920 6552	KSC-16-118	S	7-Me	2.2±0.4	6.1±1.6
VI-7	4685 0874	9923 9928	KSC-16-160	S	7-CF_3	9.1±2	19±1

VI-9	4685 0882	9923 9931	KSC-16-153	S	8-Br	3.3±0.9	30±2
VI-10	4685 0883	9923 9932	KSC-16-154	S	8-F	3.1±0.5	18±2
VI-11	4685 0884	9923 9934	KSC-16-156	S	7-F	2.6±0.5	6.1±0.8
VI-12	4685 0880	9923 9935	KSC-16-159	S	7-Cl	5.5±0.9	6.3±0.9
VI-13	4685 0885	9923 9938	KSC-16-166	S	7-OMe	5.7±1	42±6
VI-14	4685 0877	9923 9939	KSC-16-172	S	6-OMe	7.5±1.1	8.6±1.7
VI-15	4685 0873	9923 9941	KSC-16-175	S	6-F	4.7±0.4	8.2±1.5

[0033] FORMULA VII

Table 7

FORMULA VII:

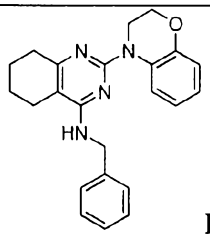
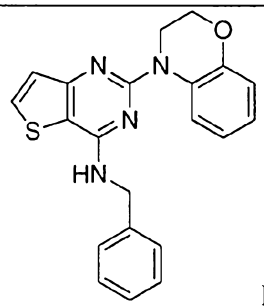
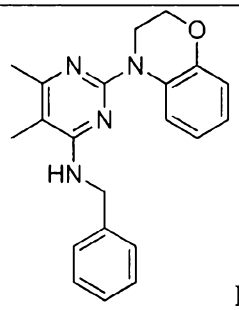


Cpd #	CID	SID	KU SCC #	*	R1	n	X	Y**	IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
VII-1	4682 9336	9923 9922	KSC-16-125	S	H	1	CH_2	H,H	4.4±1.8	10±2
VII-2	4682 9332	9923 9923	KSC-16-144	S	H	0	CH_2	H,H	2±0.5	11±3
VII-3	4617 3064	9602 2082	KSC-16-70	S	H	1	O	H,H	0.6±0.2	7±1.9
VII-4	4682 9338	9920 6557	KSC-16-147	S	H	1	NH	H,H	0.4±0.05	6.3±1
VII-5	4687	9931	KSC-16-	S	8-OMe	1	NH	H,H	0.9±0.1	3.7±0.2

	3816	3586	182							
VII-6	4687 3819	9931 3591	KSC-16-191	S	8-OMe	1	O	H,H	0.2±0.02	3.3±0.4
VII-7	4693 1212	9943 7738	KSC-16-232	S	8-OH	1	O	H,H	1.2±0.3	7.7±1.7
VII-8	4983 0264	1039 0418 0	KSC-16-255	S	8-Ph	1	O	H,H	3.5±0.6	5±0.9
VII-9	4983 0253	1039 0418 1	KSC-16-260	S	8-OCH_2CH_2OH	1	O	H,H	0.17±0.05	3.8±0.8
VII-10	4983 0265	1039 0418 3	KSC-16-265	S	8$OCH_2CH_2NEt_2$	1	O	H,H	0.4±0.08	5.3±0.6
VII-11	4983 0267	1039 0418 4	KSC-16-268	S	8-p-OMePh	1	O	H,H	1.1±0.1	9±1
VII-12	4985 2177	1042 2195 2	KSC-25-17	S	8-OMe	1	NMe	H,H	3.1±0.5	7.8±0.7
VII-13	4985 2173	1042 2195 3	KSC-25-15c1	S	8-OMe	1	NC OMe	H,H	2.7±0.6	8±1
VII-14	4985 2181	1042 2195 7	KSC-25-29	S	8-OCH_2CH_2OMe	1	O	H,H	0.6±0.03	6.5±0.7
VII-16	4983 0258	1039 0416 9	KSC-16-270	S	8-OMe	0	NH	NH	0.11±0.03	0.9±0.1
VII-17	4983 0270	1039 0417 2	KSC-16-262cc	S	8-OMe	0	O	O	0.11±0.03	5±1

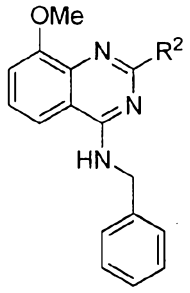
[0034] FORMULAS VIII to X

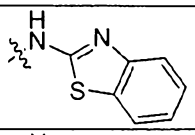
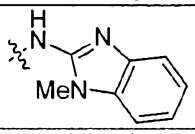
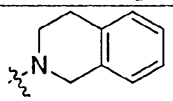
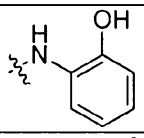
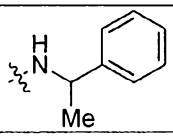
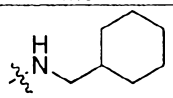
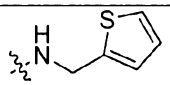
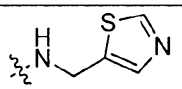
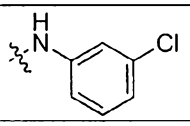
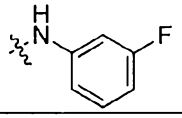
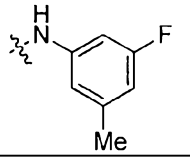
Table 8

Cpd	CID	SID	KU SCC #	*		IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
VIII	4983 0260	1039 0418 5	KSC-16-290	S	 **Formula VIII**	0.11±0.03	3.5±0.4
IX	4985 2184	1042 2195 0	KSC-25-14	S	 **Formula IX**	0.4±0.1	6.4±1
X	4985 2172	1042 2195 5	KSC-25-24	S	 **Formula X**	1.1±0.2	10±1

[0035] FORMULA XI

Table 9

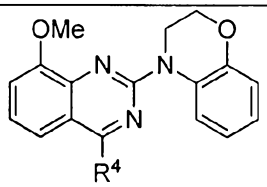
Formula XI: 						IC_{50} (uM)	
Cpd #	CID	SID	KU SCC #	*	R2	ATPase	Ub^{G76V}-GFP turn over

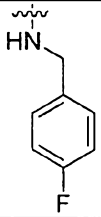
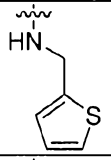
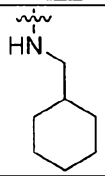
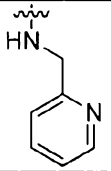
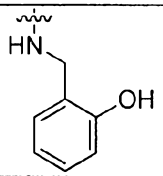
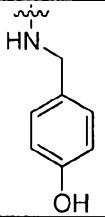
	XI-5	4985 2185	10422 1947	KSC-25-22	S		0.5±0.2	14±2
	XI-6	4985 2183	10422 1949	KSC-25-21	S		0.3±0.07	7.8±1.2
	XI-8	2514 4452	99313 587	KSC-16-187	S		15±3	7±1.3
	XI-10	4693 1213	99437 735	KSC-16-203	S		2.6±0.4	2.8±0.5
	XI-11	4983 0269	10390 4171	KSC-16-273	S		12±5	2.1±0.7
	XI-13	4983 0255	10390 4174	KSC-16-278	S		5.4±0.9	4.2±1
	XI-14	4983 0257	10390 4175	KSC-16-282	S		1.7±0.4	1.8±0.3
	XI-15	4983 0266	10390 4176	KSC-16-283	S		11±1	10±3
	XI-16	4687 3815	99313 592	KSC-16-193	S		0.5±0.1	5.4±1
	XI-17	4687 3818	99313 593	KSC-16-194	S		0.52±0.04	4.8±0.7
	XI-18	4687 3813	99313 594	KSC-16-196	S		1.5±0.2	7.1±0.5

[0036] FORMULA XII

Table 10

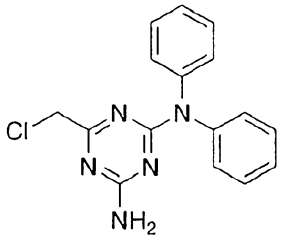
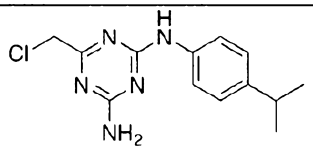
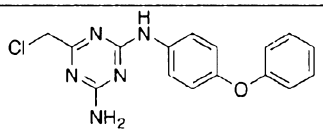
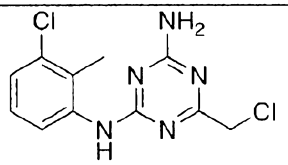
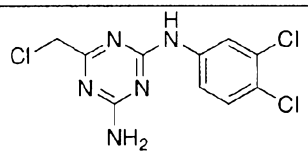
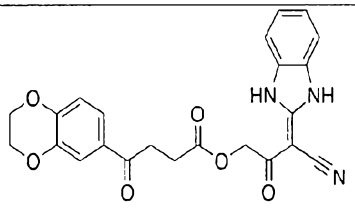
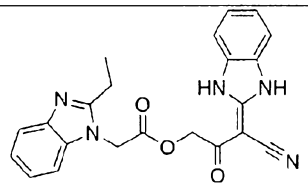
FORMULA XII:



Cpd #	CID	SID	KU SCC #	*	R4	IC_{50} (uM) ATPase	Ub^{G76V}-GFP turn over
XII-4	49830256	10390 4182	KSC-16-261	S		1.9±0.4	3.7±0.6
XII-5	49830261	10390 4186	KSC-16-295	S		1.2±0.2	3±0.6
XII-6	49830262	10390 4187	KSC-16-299	S		7.4±0.9	8.2±1
XII-7	46931214	99437 736	KSC-16-219	S		19±5	15±4
XII-8	46931210	99437 737	KSC-16-222	S		4.6±1	6±0.6
XII-10	46931211	99437 740	KSC-16-235c2	S		2.4±0.5	7.3±1

[0037] FORMULAS XIII-XIX

Table 11

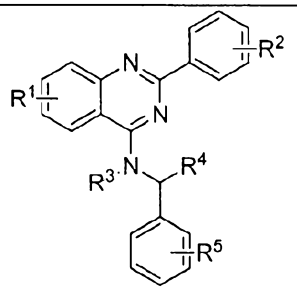
Cpd #	KU SCC #	*		IC_{50} (uM) ATPase	Ub^{G76V}-GFP turn over
XIII	KSC-16-13	P	 **Formula XIII**	13±5	10±2
XIV	KSC-16-16	P	 **Formula XIV**	15±5	14±2.4
XV	KSC-16-22	P	 **Formula XV**	14±5	3.7±0.6
XVI	KSC-16-23	P	 **Formula XVI**	18±8	5.9±1
XVII	KSC-16-24	P	 **Formula XVII**	15±4	5.7±0.8
XVIII	KSC-16-55	P	 **Formula XVIII**	10±4	6.3±0.6
XIX	KSC-16-56	P	 **Formula XIX**	14±6	7.2±1.1

[0038] Inhibitors of p97

Tables 12-17 disclosed the compounds having an IC_{50} of 20 μM or less in the p97 ATPase assay (**Example 7**), but did not decrease the p97-dependent Ub^{G76V}-GFP degradation turn-over assay to 20 μM or less(**Example 8**).

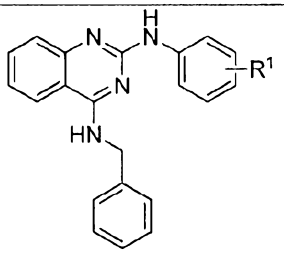
[0039] FORMULA I

Table 12

FORMULA I:										IC50 (μM)	
Cpd #	CID	SID	KU SCC #	*	R1	R2	R3	R4	R5	ATPase	Ub^{G76V}-GFP turn over
I-11	18190025	87796240	KSC-1-200	P	H	3,4-di-Cl	H	H	H	7.1±0.4	37±6
I-28	15661 44	87796272	KSC-1-235	P	H	4-NO_2	Me	H	H	8.4±4	28±4

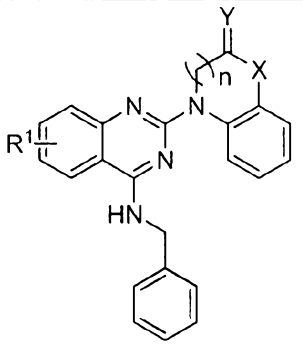
[0040] FORMULA II

Table 13

Formula II:						IC50 (μM)	
Cpd	CID	SID	KU SCC #	*	R1	ATPase	Ub^{G76V}-GFP turn over
II-21	46850881	99239930	KSC-16-152	S	3-I	5.2±1.9	36±4

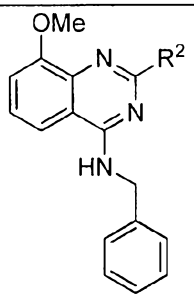
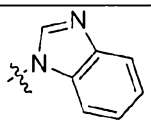
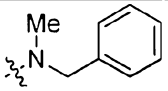
[0041] FORMULA VII

Table 14

Formula VII:									IC$_{50}$ (μM)	
Cpd #	CID	SID	KU SCC #	*	R1	n	X	Y	ATPase	Ub^{G76V}-GFP turn over
VII-15	4985 2171	1042 2195 8	KSC-25-30	S	8-nButyl	1	O	H,H	2.63±0.7	28±3

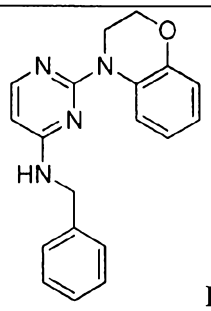
[0042] FORMULA XI

Table 15

Formula XI:						IC$_{50}$ (μM)	
Cpd #	CID	SID	KU SCC #	*	R2	ATPase	Ub^{G76V}-GFP turn over
XI-1	49852176	10422 1943	KSC-25-3	S		3.3±1.1	78±45
XI-12	49830259	10390 4173	KSC-16-277	S		7±3	>>20

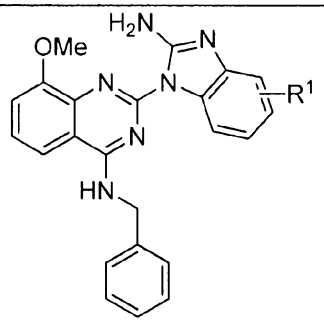
[0043] FORMULA XX

Table 16

Cpd #	CID	SID	KU SCC #	*		IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
XX	4985 2180	10422 1956	KSC-25-28	S	 **Formula XX**	2.9±0.2	27±3

[0044] FORMULA XXI

Table 17

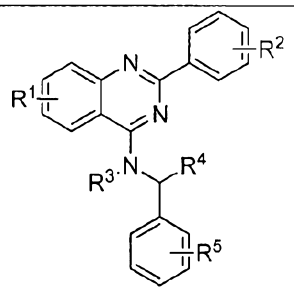
Formula XXI						IC_{50} (μM)	
Cpd	CID	SID	KU SCC #	*	R1	ATPase	Ub^{G76V}-GFP turn over
XXI-1	4985 2182	10422 1948	KSC-25-23	S	5,6-di-Me	2±0.4	89±39

[0045] Inhibitors of p97-dependent UPS substrate Ub^{G76V}-GFP

Tables 18-26 disclosed the compounds having an IC_{50} of 20 μM or less in the p97-dependent Ub^{G76V}-GFP degradation turn-over assay (**Example 7**), but did not decrease p97 to less than 20 uM.

[0046] FORMULA I

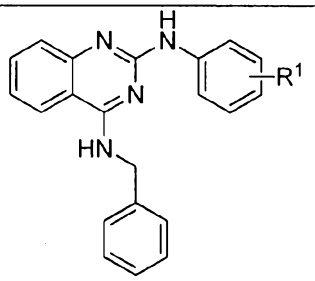
Table 18

FORMULA I:											
										IC_{50} (μM)	
Cpd	CID	SID	KU SCC #	*	R1	R2	R3	R4	R5	ATPase	Ub^{G76V}-GFP turn over
I-12	2452792	87796250	KSC-1-211	P	H	H	H	H	3-Cl	28±9	17±4
I-14	2465033	87796253	KSC-1-214	P	H	H	H	H	2-Cl	30±10	11±3
I-15	2456309	87796254	KSC-1-215	P	H	H	H	H	4-Cl	>30	15±3
I-16	15993188	87796256	KSC-1-217	P	H	2-F	H	H	2-Cl	26±12	15±3
I-25	1553819	87796289	KSC-1-258	P	H	H	Me	H	H	49±17	17±5
I-26	15995431	87796257	KSC-1-218	P	H	2-F	Me	H	H	25±4	6.0±2.0
I-27	2178012	87796229	KSC-1-148	P	H	2-NO_2	Me	H	H	25±11	11±6
I-29	5051334	87796275	KSC-1-238	P	H	H	H	Me	H	27±14	13±1
I-31	15992808	87796255	KSC-1-216	P	H	2-F	H	Me	H	>30	15±4
I-32	8074678	87796236	KSC-1-193	P	7-Cl	H	H	H	H	70±24	12±4
I-35	2454628	87796252	KSC-1-213	P	H	H	CH2-*	H	2-CH_2-*	>30	19±5

***R^3 and R^5 are connected**

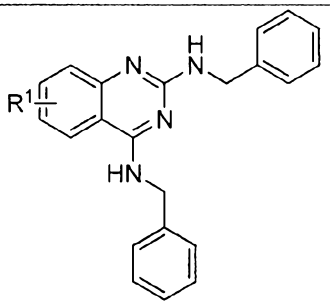
[0047] FORMULA II

Table 19

FORMULA II:							
						IC_{50} (μM)	
Cpd	CID	SID	KU SCC #	*	R1	ATPase	Ub^{G76V}-GFP turn over
II-8	2384230	92252641	KSC-1-289	S	2-Cl	69±25	13±2
II-10	45108363	92252640	KSC-1-288	S	2-Br	64±24	13±2

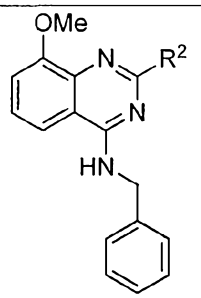
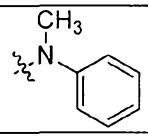
[0048] FORMULA VI

Table 20

FORMULA VI:							
						IC_{50} (μM)	
Cpd	CID	SID	KU SCC #	*	R1	ATPase	Ub^{G76V}-GFP turn over
VI-16	46850876	99239943	KSC-16-122	S	7-Br	22±4	10±2

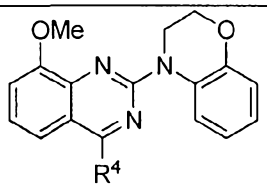
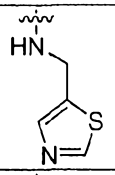
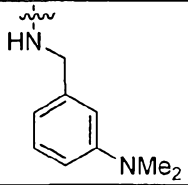
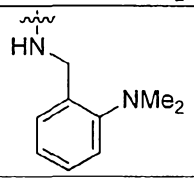
[0049] FORMULA XI

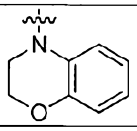
Table 21

Formula XI:							
						IC_{50} (μM)	
Cpd	CID	SID	KU SCC #	*	R2	ATPase	Ub^{G76V}-GFP turn over
XI-9	46873821	99313588	KSC-16-188	S		>30	9.2±1.2

[0050] FORMULA XII

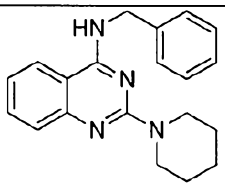
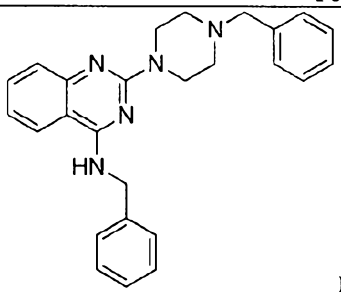
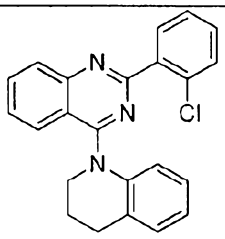
Table 22

FORMULA XII:							
						IC_{50} (μM)	
Cpd #	CID	SID	KU SCC #	*	R4	ATPase	Ub^{G76V}-GFP turn over
XII-1	49852170	10422 1951	KSC-25-6	S		38±7	20±3
XII-2	49830271	10390 4178	KSC-16-243	S		52±10	19±4
XII-9	46931215	99437 739	KSC-16-227	S		47±22	4.5±0.5

XII-11	46873814	99313590	KSC-16-190	S		>30	8.1±1.8

[0051] FORMULAS XXII-XXIV

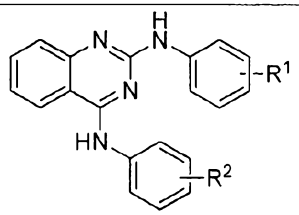
Table 23

Cpd	CID	SID	KU SCC #	*		IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
XXII	696840	87796233	KSC-1-152	P	 **Formula XXII**	26±4	7.3±2
XXIII	1337599	92093137	KSC-1-203	P	 **Formula XXIII**	33±8	12±1
XXIV	46873817	99313595	KSC-16-197	S	 **Formula XXIV**	>30	11±0.8

[0052] FORMULA XXV

Table 24

Formula XXV

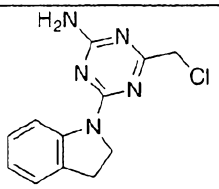
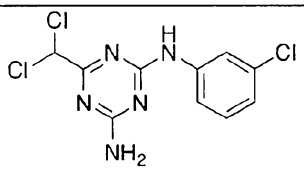
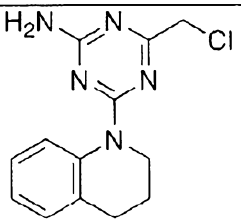
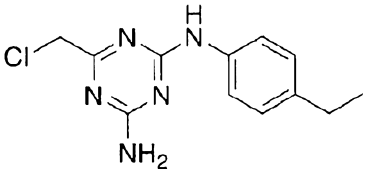
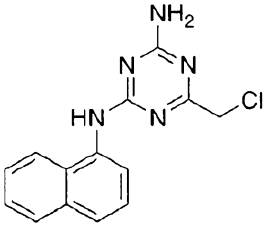
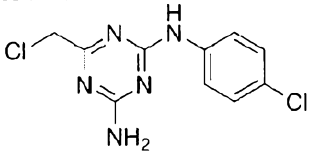


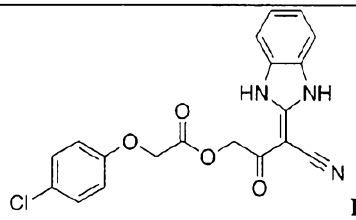
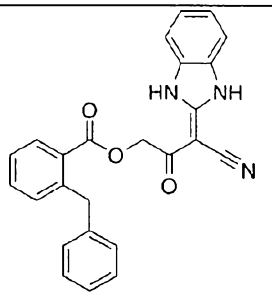
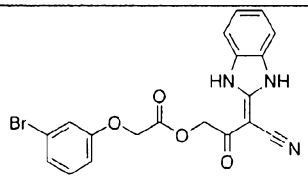
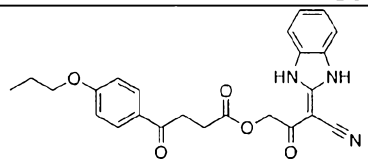
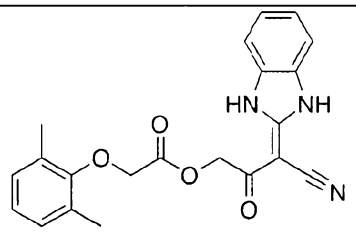
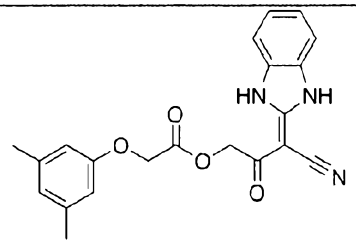
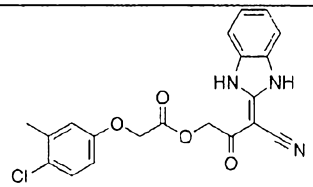
Cpd #	CID	SID	KU SCC #	*	R1	R2	IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over

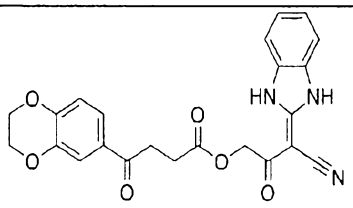
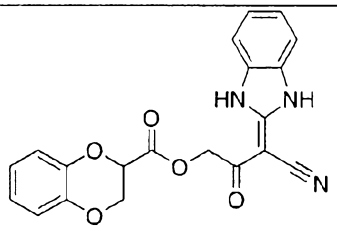
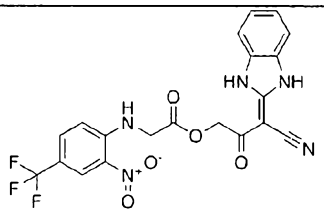
XXV-2	4685 0879	9923 9936	KSC-16-163	S	3-Cl	H	34±16	12±2
XXV-3	4685 0870	9923 9937	KSC-16-164	S	3-Cl	4-OMe	34±14	13±1

[0053] FORMULAS XXVI-XLI

Table 25

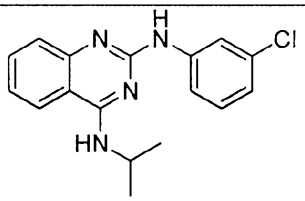
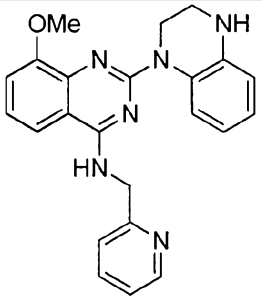
Cpd #	KU SCC #	*		IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
XXVI	KSC-16-16	P	 **Formula XXVI**	ND (no data)	10.4±1.5
XXVII	KSC-16-22	P	 **Formula XXVII**	ND	13±3
XXVIII	KSC-16-11	P	 **Formula XXVIII**	ND	17±3
XXIX	KSC-16-14	P	 **FormulaXXIX**	ND	18±3
XXX	KSC-16-18	P	 **Formula XXX**	ND	14±3
XXXI	KSC-16-45	P	 **Formula XXXI**	ND	8±2

XXXII	KSC-16-46	P	 **Formula XXXII**	ND	2.6±0.2
XXXIII	KSC-16-47	P	 **Formula XXXIII**	ND	3.4±0.6
XXXIV	KSC-16-48	P	 **Formula XXXIV**	ND	5.9±0.8
XXXV	KSC-16-49	P	 **Formula XXXV**	ND	6.1±0.6
XXXVI	KSC-16-50	P	 **Formula XXXVI**	ND	15±2
XXXVII	KSC-16-51	P	 **Formula XXXVII**	ND	13±1.4
XXXVIII	KSC-16-53	P	 **Formula XXXVIII**	ND	16±1.4

XXXIX	KSC-16-55	P	 Formula XXXIX	ND	6.3±0.6
XL	KSC-16-57	P	 Formula XL	ND	10±1.4
XLI	KSC-16-59	P	 Formula XLI	ND	6.5±0.8

[0054] FORMULAS XLII and XLIII

Table 26

Cpd#	CID	SID	KU SCC #	*		ATPase	Ub^{G76V}-GFP turn over
						IC_{50} (μM)	
XLII	46873820	99313589	KSC-16-189	S	 Formula XLII	>30	11±2
XLIII	49830263	10390 4177	KSC-16-241	S	 Formula XLIII	30±6	16±2

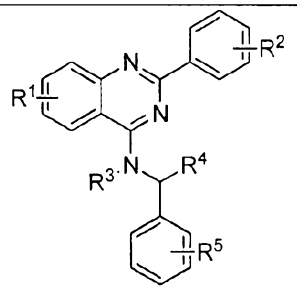
[0055] Comparative Examples

In the following **Tables 27-33**, compounds are shown that did not decrease either p97 or Ub^{G76V}-GFP to 20 μM or less.

[0056] FORMULA I

Table 27

Formula I:

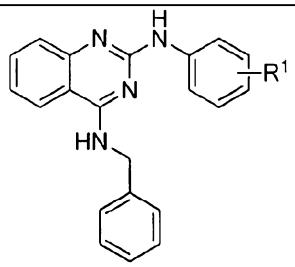


Cpd#	CID	SID	KU SCC #	*	R1	R2	R3	R4	R5	IC_{50} (μM) ATPase	IC_{50} (μM) Ub^{G76V}-GFP turn over
I-7	2047240	87796235	KSC-1-147	P	H	4-Br	H	H	H	72±14	25±10
I-33	8080035	87796237	KSC-1-194	P	7-Cl	4-Me	H	H	H	39±13	24±5
I-34	8080040	87796238	KSC-1-195	P	7-Cl	4-OMe	H	H	H	25±11	70±30

[0057] Formula II

Table 28

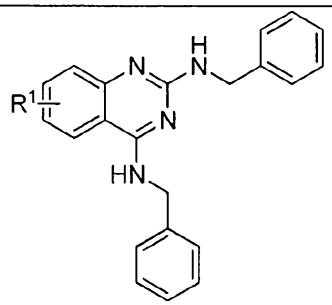
FORMULA II:



Cpd #	CID	SID	KU SCC #	*	R1	IC_{50} (μM) ATPase	IC_{50} (μM) Ub^{G76V}-GFP turn over
II-20	46829335	99239925	KSC-16-150	S	3-CF3	50±16	21±1

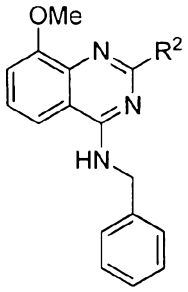
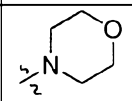
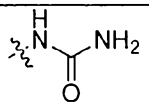
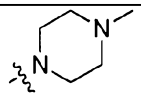
[0058] FORMULA VI

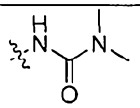
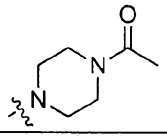
Table 29

FORMULA VI:							
						IC_{50} (μM)	
Cpd #	CID	SID	KU SCC #	*	R1	ATPase	Ub^{G76V}-GFP turn over
VI-8	4685 0869	9923 9929	KSC-16-167	S	7-CN	25±10	21±3

[0059] FORMULA XI

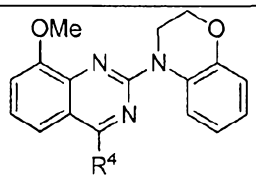
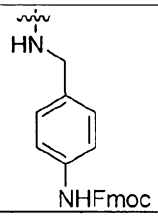
Table 30

Formula XI:					 **Formula XI**		
						IC_{50} (μM)	
Cpd#	CID	SID	KU SCC #	*	R2	ATPase	Ub^{G76V}-GFP turn over
XI-2	4985 2179	1042 2194 4	KSC-25-10	S		31±7	47±9
XI-3	4985 2174	1042 2194 5	KSC-25-12	S		49±10	108±31
XI-4	4985 2178	1042 2194 6	KSC-25-16	S		>>30	45±18

XI-7	4985 2175	1042 2195 4	KSC-25-19	S		60±23	37±7
XI-19	4983 0268	1039 0417 0	KSC-16-272	S		>30	>>20

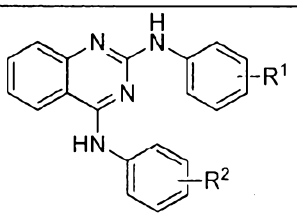
[0060] FORMULA XII

Table 31

FORMULA XII:						IC_{50} (μM)	
Cpd #	CID	SID	KU SCC #	*	R4	ATPase	Ub^{G76V}-GFP turn over
XII-3	4983 0254	10390 4179	KSC-16-251	S		33±7	23±2

[0061] FORMULA XXV

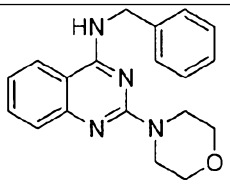
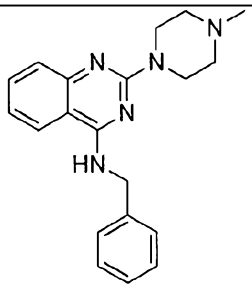
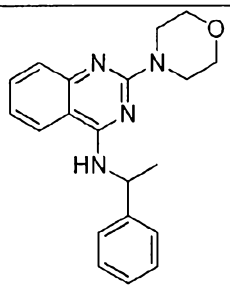
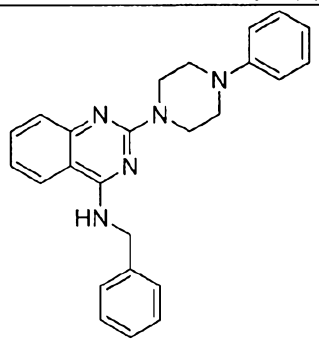
Table 32

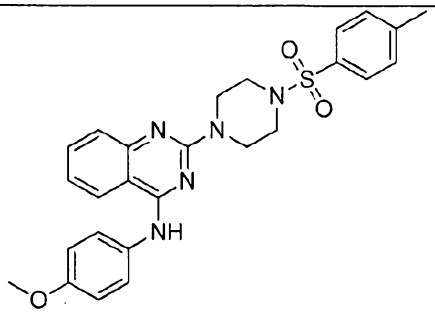
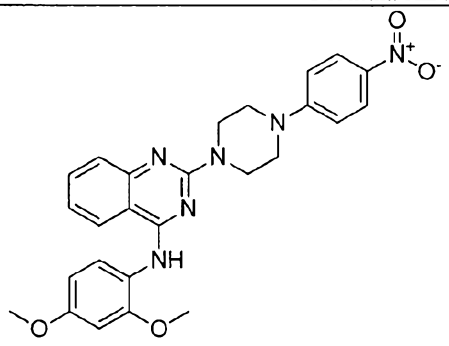
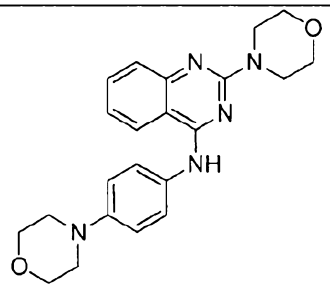
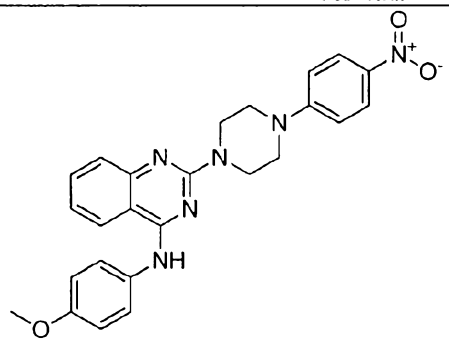
Formula XXV							IC_{50} (μM)	
Cpd #	CID	SID	KU SCC #	*	R1	R2	ATPase	Ub^{C76V}-GFP turn over
XXV-1	1732 4423	9923 9924	KSC-16-149	S	4-OMe	4-OMe	22±4	23±3
XXV-4	4685	9923	KSC-16-	S	3-Cl	4-Me	49±19	30±4

	0872	9940	174					
XXV-5	4685 0878	9923 9942	KSC-16-176	S	3-Cl	4-Cl	117±5.8	21±2
XXV-6	4685 0875	9923 9944	KSC-16-151	S	4-Me	4-Me	54±19	21±4

[0062] FORMULAS XLIV-XLXI

Table 33

Cpd #	CID	SID	KU SCC #	*		IC_{50} (μM) ATPase	Ub^{G76V}-GFP turn over
XLIV	832282	87796232	KSC-1-151	P	 **Formula XLIV**	23±6	36±9
XLV	832283	92093143	KSC-1-260	P	 **Formula XLV**	53±18	31±6
XLVI	2950240	87796276	KSC-1-240	P	 **Formula XLVI**	34±10	36±0.3
XLVII	1330669	87796248	KSC-1-208	P	 **Formula XLVII**	34±11	35±5

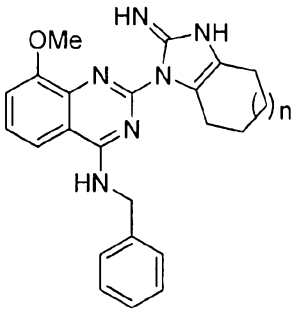
XLVIII	29556 41	8779 6277	KSC-1-241	P	 Formula XLVIII	22±12	39±18
XLIX	34198 14	9209 3139	KSC-1-239	P	 Formula XLIX	43±13	70±16
LI	1091 839	920 931 40	KSC-1-242	P	 Formula L	57±15	56±10
LI	2932 797	920 931 42	KSC-1-254	P	 Formula LI	30±6	34±6

Compound Derivatives

[0063] In one embodiment, a compound of the present invention is a derivative of one of the compounds disclosed herein. In another embodiment of the present invention, an

inhibitor of p97 ATPase is identified by assaying any of the compound derivatives of Formulas LII through LXVI in the ATPase assay as described in Example 7.

[0064] For example, a compound derivative is represented by Formula LII:

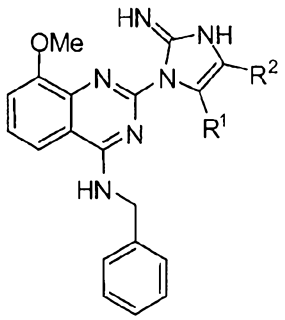


n = 0,1,2

Formula LII

[0065] For Formula LII above, n is 0, 1 or 2. A compound of Formula LII can be synthesized as detailed in **Example 3**.

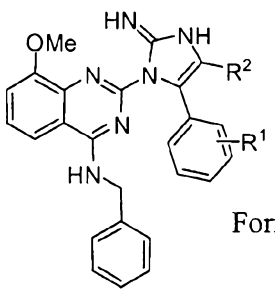
[0066] In another example, a compound derivative is represented by Formula LIII:



Formula LIII

[0067] For Formula LIII above, R^1 and R^2 can vary independently. R^1 and R^2 are independently selected from hydrogen (H), methyl, ethyl, propyl, or butyl. A compound of Formula LIII can be synthesized as detailed in **Example 3**.

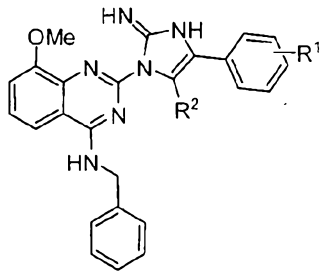
[0068] In another example, a compound derivative is represented by Formula LIV:



Formula LIV

[0069] For Formula LIV above, R^1 is selected from H, methyl, F, Cl, Br, and OMe on any position in the ring. R^2 is selected from hydrogen (H), methyl, ethyl, propyl and butyl. A compound of Formula LIV can be synthesized as detailed in **Example 3**.

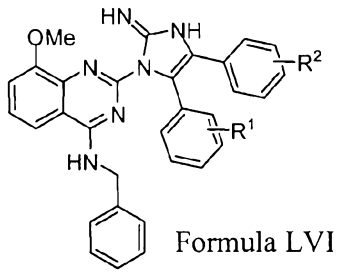
[0070] In another example, a compound derivative is represented by Formula LV:



Formula LV

[0071] For Formula LV above, R^1 is selected from H, methyl, F, Cl, Br, and OMe on any position in the ring. A compound of Formula LV can be synthesized as detailed in **Example 3**.

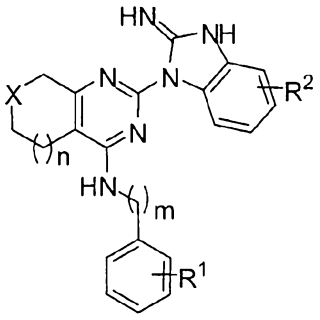
[0072] In another example, a compound derivative is represented by Formula LVI:



Formula LVI

[0073] For Formula LVI above, R^1 and R^2 vary independently. R^1 and R^2 are selected from H, methyl, F, Cl, Br, and OMe on any position in the ring. A compound of Formula LVI can be synthesized as detailed in **Example 3**.

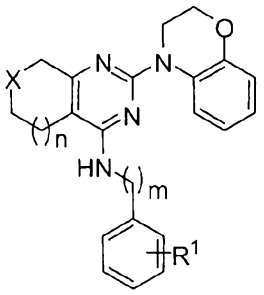
[0074] In another example, a compound derivative is represented by Formula LVII:



Formula LVII

[0075] For Formula LVII above, X is selected from O, NMe (nitrogen-methyl), NEt (nitrogen-ethyl), and NPh (nitrogen-phenyl) at any position in the ring; n is -1, 0, 1, or 2; and m is 1, 2, 3, or 4. R^1 and R^2 can vary independently. R^1 and R^2 are independently selected from H, Me, F, Cl, Br, and OMe at any position on the ring. A compound of Formula LVII can be synthesized as detailed in **Example 4**.

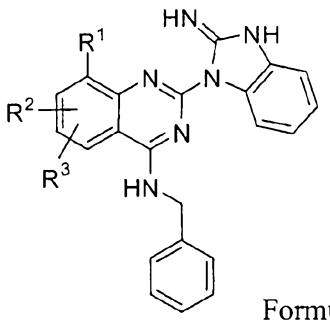
[0076] In another example, a compound derivative is represented by Formula LVIII:



Formula LVIII

[0077] For Formula LVIII above, X is selected from O, NMe (nitrogen-methyl), NEt (nitrogen-ethyl), and NPh (nitrogen-phenyl) at any position in the ring; n is -1, 0, 1, or 2; and m is 1, 2, 3, or 4. R^1 is selected from H, Me, F, Cl, Br, and OMe on any position on the ring. A compound of Formula LVIII can be synthesized as detailed in **Example 4**.

[0078] In another example, a compound derivative is represented by Formula LIX:

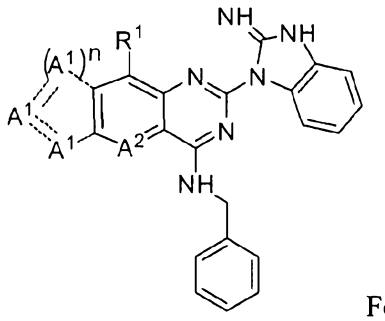


Formula LIX

[0079] For Formula LIX above, R^1, R^2 and R^3 can vary independently and are each independently selected from H, $A(CH_2)_nCH_3$, and $A(CH_2)_nX$, where n is 0, 1, 2, 3, 4 or 5, A =

O, S or NH and X is heteroaryl, O(alkyl), S(alkyl), $(O\text{-alkyl})_2$, or $(S\text{-alkyl})_2$. A compound of Formula LIX can be synthesized as detailed in **Example 5**.

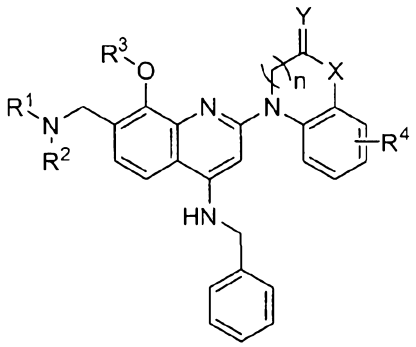
[0080] In another example, a compound derivative is represented by Formula LX:



Formula LX

[0081] For Formula LX above, R^1 is selected from H, $A(CH_2)_nCH_3$, and $A(CH_2)_nX$, wherein n is 0, 1, 2, 3, 4, or 5, A is O, S or NH and X is selected from heteroaryl, O(alkyl), S(alkyl), $(O\text{-alkyl})_2$, and $(S\text{-alkyl})_2$. A^1 is selected from O, S, Se, N, NH, CH, CH_2, CHalkyl, and Calkyl; and A^2 is selected from N, NH, CH, and Calkyl. A compound of Formula LVX can be synthesized as detailed in **Example 5**.

[0082] In another example, a compound derivative is represented by Formula LXI:

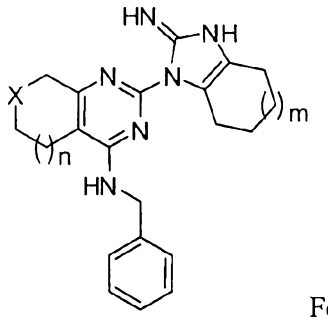


X = CH2, O, NH, NMe, NEt, NCOMe, NPh
Y = NH, O, S, [H,H]
n = 0, 1

Formula LXI

[0083] For Formula LXI above, R^1, R^2 and R^3 can vary independently. R^1, R^2 and R^3 are independently selected from alkyl, alkoxyalkyl, and aminoalkyl. R^4 is selected from H, halogen, alkyl, and alkyoxy. X is selected from CH_2, O NH, NMe, NEt, NCOMe, and NPh. Y is selected from NH, O, S, [H, H], and n is 0 or 1. A compound of Formula LXI can be synthesized as detailed in **Example 6**.

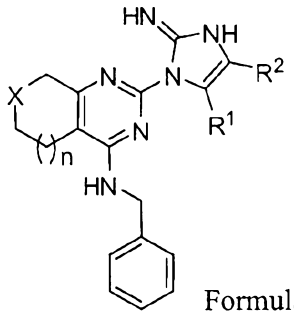
[0084] In another example, a compound derivative is represented by Formula LXII:



Formula LXII

[0085] For Formula LXII above, n is -1, 0, 1, or 2; m is 0, 1, or 2, and X is selected from CH_2, O, NMe, NEt, and NPh at any position in the ring. A compound of Formula LXII can be synthesized following a scheme as shown in **Example 4**.

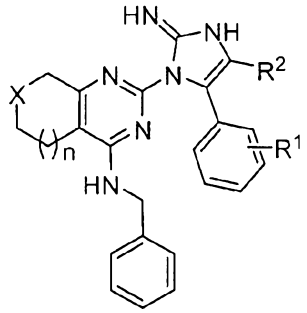
[0086] In another example, a compound derivative is represented by Formula LXIII:



Formula LXIII

[0087] For Formula LXIII above, R^1 and R^2 vary independently. R^1 and R^2 are independently selected from H, Me, Et, Pr, and Bu. n is -1, 0, 1, or 2. X is selected from CH_2, O, NMe, NEt, NPh at any position in the ring. A compound of Formula LXIII can be synthesized following a scheme as shown in **Example 4**.

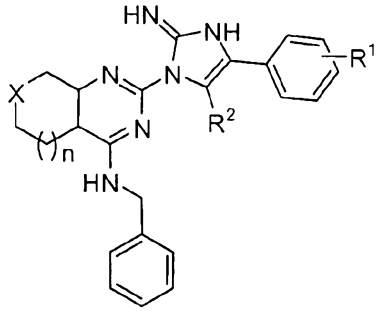
[0088] In another example, a compound derivative is represented by Formula LXIV:



Formula LXIV

[0089] For Formula LXIV, R^1 is selected from H, Me, F, Cl, Br, and OMe at any position on the ring. R^2 is selected from H, Me, Et, Pr, and Bu. X is selected from CH_2, O, NMe, NEt, and NPh at any position on the ring. n is -1, 0, 1, or 2. A compound of Formula LXIV can be synthesized following a scheme as shown in **Example 4**.

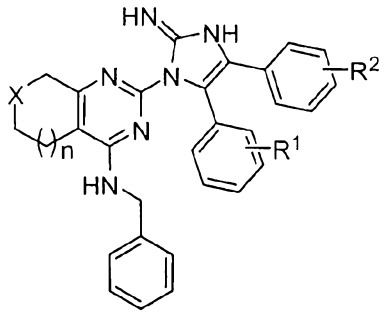
[0090] In another example, a compound derivative is represented by Formula LXV:



Formula LXV

[0091] For Formula LXV, R^1 is selected from H, Me, F, Cl, Br, and OMe at any position on the ring. R^2 is selected from H, Me, Et, Pr, and Bu. X is selected from CH_2, O, NMe, NEt, and NPh at any position on the ring. n is -1, 0, 1, or 2. A compound of Formula LXV can be synthesized following a scheme as shown in **Example 4**.

[0092] In another example, a compound derivative is represented by Formula LXVI:



Formula LXVI

[0093] For Formula LXVI, R^1 and R^2 can vary independently. R^1 and R^2 are independently selected from H, Me, F, Cl, Br, and OMe at any position on the ring. X is selected from CH_2, O, NMe, NEt, and NPh at any position on the ring. n is -1, 0, 1, or 2. A compound of Formula LXVI can be synthesized following a scheme as shown in **Example 4**.

Isomers

[0094] Compounds of this invention may contain asymmetrically substituted carbon atoms in the R or S configuration, wherein the terms "R" and "S" are as defined in *Pure Appl. Chem.* (1976) 45, 11-30. Compounds having asymmetrically substituted carbon atoms with equal amounts of R and S configurations are racemic at those atoms. Atoms having excess of one configuration over the other are assigned the configuration in excess, preferably an excess of about 85%-90%, more preferably an excess of about 95%-99%, and still more preferably an excess greater than about 99%. Accordingly, this invention is meant to embrace racemic mixtures and relative and absolute diastereoisomers of the compounds thereof.

[0095] Compounds of this invention may also contain carbon-carbon double bonds or carbon-nitrogen double bonds in the Z or E configuration, in which the term "Z" represents the larger two substituents on the same side of a carbon-carbon or carbon-nitrogen double bond and the term "E" represents the larger two substituents on opposite sides of a carbon-carbon or carbon-nitrogen double bond. The compounds of this invention may also exist as a mixture of "Z" and "E" isomers.

[0096] Compounds of this invention may also exist as tautomers or equilibrium mixtures thereof wherein a proton of a compound shifts from one atom to another. Examples of tautomers include, but are not limited to, keto-enol, phenol-keto, oxime-nitroso, nitro-aci, imine-enamine and the like.

[0097] In one embodiment, isomers of the disclosed compounds are regioisomers or stereoisomers.

[0098] Compound Analogs

The compounds disclosed herein may be further modified to enhance solubility, detection and/or delivery in the body. The following modifications are not necessarily exclusive to another and can be combined. For example, a PEGylated and fluorescently labeled compound is disclosed.

[0099] In one embodiment, a compound of the present invention is fluorescently labeled. Suitable fluorescent labels are well known. A fluorescent label to be added to an inhibitor compound includes, but is not limited to, NBD-Cl (4-Chloro-7-nitro-2,1,3-benzoxadiazole), R-NCO (isocyanate), R-NCS (FITC).

[00100] In one embodiment, a compound of the present invention is biotinylated. Biotinylation is carried out using a biotin derivative. Examples of biotin derivatives include ester-biotin, amine-biotin, amide-biotin, and OH-biotin.

[00101] In one embodiment, a compound of the present invention is PEGylated with at least one PEG moiety. It is well known in the art that polyalkylene glycols, such as polyethylene glycol (PEG), may be attached to a therapeutic agent. Polyalkylene glycolated (PAGylated) therapeutic agents, and in particular, PEGylated therapeutic agents, have been reported to increase solubility, circulating life, safety, decrease renal excretion, and decrease immunogenicity thus potentially providing a method of improved drug delivery. A PEGylated therapeutic agent may exhibit (a) increased plasma circulatory half lives in vivo compared to the corresponding non-PEGylated compound, (b) enhanced therapeutic indices compared to the corresponding non-PEGylated compounds and (c) increased solubility compared to the corresponding non-PEGylated compounds, effecting possible improved drug delivery. Examples in which PEGylation has been used to effect drug delivery are disclosed, for example, in U.S. Patent No 6,623,729, U.S. Patent No 6,517,824, U.S. Patent No 6,515,017, U.S. Patent No 6,217,869, U S Patent No 6,191 ,105, U S Patent No 5,681 ,811 ,

U S Patent No 5,455,027, U S Published Patent Application No 20040018960, U S Published Patent Application No 20030229010, U S Published Patent Application No 20030229006, U S Published Patent Application No 20030186869, U S Published Patent Application No 20030026764, and U S Published Patent Application No 20030017131 U S Patent No 6,214,966, U S Published Patent Application No 2003000447, and U S Published Patent Application No. 2001021763 describe soluble, degradable poly(ethylene glycol) derivatives for controlled release of bound molecules into solution. Recent reviews on PEGylation are provided in, for example, Greenwald R. B., Choe Y.H., McGuire J., Conover CD. Adv. Drug Del. Rev. 2003, 55, 217, Molineux G. Pharmacotherapy 2003, (8 Pt 2), 3S-8S, Roberts M.J., Bentley, M. D., Harris J. M. Adv. Drug Deliv. Rev. 2002, 54, 459, Bhadra D., Bhadra S., Jain P., Jain N. K. Pharmazie 2002, 57, 5, Greenwald R B. J. Controlled Release 2001 , 74, 159, Veronese F. M., Morpurgo M. Farmaco. 1999, 54, 497 and Zalipsky S. Adv. Drug Deliv. Rev. 1995, 76, 157. In particular, the compounds of formulas I through LXVI as described herein, may be PEGylated.

Pharmaceutical Salts

[00102] The phrase "pharmaceutically acceptable" is used herein to refer to those compounds, materials, compositions, and/or dosage forms which are, within the scope of the medical arts, suitable for use in contact with the tissues of human beings and animals without excessive toxicity, irritation, allergic response, or other problem or complication, commensurate with a reasonable benefit/risk ratio.

[00103] Compounds of the present invention, including all analogs and isomers of the compounds may exist as acid addition salts, basic addition salts or zwitterions. Salts of compounds disclosed herein are prepared during their isolation or following their purification. Acid addition salts are those derived from the reaction of a compound of the present invention with acid. Accordingly, salts including the acetate, adipate, alginate, bicarbonate, citrate, aspartate, benzoate, benzenesulfonate (besylate), bisulfate, butyrate, camphorate, camphorsulfonate, digluconate, formate, fumarate, glycerophosphate, glutamate, hemisulfate, heptanoate, hexanoate, hydrochloride, hydrobromide, hydroiodide, lactobionate, lactate, maleate, mesitylenesulfonate, methanesulfonate, naphthylenesulfonate, nicotinate, oxalate, pamoate, pectinate, persulfate, phosphate, picrate, propionate, succinate, tartrate, thiocyanate, trichloroacetic, trifluoroacetic, para-toluenesulfonate and undecanoate salts of the compounds having any of formulas I through LXVI are meant to be embraced by this invention. Basic addition salts of compounds are those derived from the reaction of the compounds with the bicarbonate, carbonate, hydroxide or phosphate of cations such as lithium, sodium, potassium, calcium and magnesium. Lists of suitable salts are found in Remington's Pharmaceutical Sciences, 17th ed., Mack Publishing Company, Easton, Pa.,

1985, p. 1418 and in the Journal of Pharmaceutical Science, 66, 2 (1977), the disclosures of each of which are hereby incorporated by reference.

[00104] Pharmaceutical Formulations and Dosage Forms

When employed as pharmaceuticals, the compounds of any of Formulas (I-LXVI) can be administered in the form of pharmaceutical compositions. These compositions can be administered by a variety of routes including oral, rectal, transdermal, subcutaneous, intravenous, intramuscular, and intranasal, and can be prepared in a manner well known in the pharmaceutical art.

[00105] This invention also includes pharmaceutical compositions which contain, as the active ingredient, one or more of the compounds of Formulas I-LXVI (including analogs and isomers thereof) above in combination with one or more pharmaceutically acceptable carriers. In making the compositions of the invention, the active ingredient is typically mixed with an excipient, diluted by an excipient or enclosed within such a carrier in the form of, for example, a capsule, sachet, paper, or other container. When the excipient serves as a diluent, it can be a solid, semi-solid, or liquid material, which acts as a vehicle, carrier or medium for the active ingredient. Thus, the compositions can be in the form of tablets, pills, powders, lozenges, sachets, cachets, elixirs, suspensions, emulsions, solutions, syrups, aerosols (as a solid or in a liquid medium), ointments containing, for example, up to 10% by weight of the active compound, soft and hard gelatin capsules, suppositories, sterile injectable solutions, and sterile packaged powders.

[00106] In preparing a formulation, the active compound can be milled to provide the appropriate particle size prior to combining with the other ingredients. If the active compound is substantially insoluble, it can be milled to a particle size of less than 200 mesh. If the active compound is substantially water soluble, the particle size can be adjusted by milling to provide a substantially uniform distribution in the formulation, e.g. about 40 mesh.

[00107] Some examples of suitable excipients include lactose, dextrose, sucrose, sorbitol, mannitol, starches, gum acacia, calcium phosphate, alginates, tragacanth, gelatin, calcium silicate, microcrystalline cellulose, polyvinylpyrrolidone, cellulose, water, syrup, and methyl cellulose. The formulations can additionally include: lubricating agents such as talc, magnesium stearate, and mineral oil; wetting agents; emulsifying and suspending agents; preserving agents such as methyl- and propylhydroxy-benzoates; sweetening agents; and flavoring agents. The compositions of the invention can be formulated so as to provide quick, sustained or delayed release of the active ingredient after administration to the patient by employing procedures known in the art.

[00108] The active compound can be effective over a wide dosage range and is generally administered in a pharmaceutically effective amount. It will be understood, however, that the amount of the compound actually administered will usually be determined by a physician,

according to the relevant circumstances, including the condition to be treated, the chosen route of administration, the actual compound administered, the age, weight, and response of the individual patient, the severity of the patient's symptoms, and the like.

[00109] Compositions for inhalation or insufflation include solutions and suspensions in pharmaceutically acceptable, aqueous or organic solvents, or mixtures thereof, and powders. The liquid or solid compositions may contain suitable pharmaceutically acceptable excipients as described supra. In some embodiments, the compositions are administered by the oral or nasal respiratory route for local or systemic effect. Compositions in can be nebulized by use of inert gases. Nebulized solutions may be breathed directly from the nebulizing device or the nebulizing device can be attached to a face masks tent, or intermittent positive pressure breathing machine. Solution, suspension, or powder compositions can be administered orally or nasally from devices which deliver the formulation in an appropriate manner.

[00110] The amount of compound or composition administered to a patient will vary depending upon what is being administered, the purpose of the administration, such as prophylaxis or therapy, the state of the patient, the manner of administration, and the like. In therapeutic applications, compositions can be administered to a patient already suffering from a disease in an amount sufficient to cure or at least partially arrest the symptoms of the disease and its complications. An amount adequate to accomplish this is referred to as "therapeutically effective amount." Effective doses will depend on the disease condition being treated as well as by the judgement of the attending clinician depending upon factors such as the severity of the disease, the age, weight and general condition of the patient, and the like.

[00111] The compositions administered to a patient can be in the form of pharmaceutical compositions described above. These compositions can be sterilized by conventional sterilization techniques, or may be sterile filtered. Aqueous solutions can be packaged for use as is, or lyophilized, the lyophilized preparation being combined with a sterile aqueous carrier prior to administration. The pH of the compound preparations typically will be between 3 and 11, more preferably from 5 to 9 and most preferably from 7 to 8. It will be understood that use of certain of the foregoing excipients, carriers, or stabilizers will result in the formation of pharmaceutical salts.

[00112] Compounds disclosed herein may be administered, for example, bucally, ophthalmically, orally, osmotically, parenterally (intramuscularly, intraperintoneally intrasternally, intravenously, subcutaneously), rectally, topically, transdermally, vaginally and intraarterially as well as by intraarticular injection, infusion, and placement in the body, such as, for example, the vasculature by means of, for example, a stent.

[00113] The present invention also includes pharmaceutical kits useful, for example, in the treatment of cancers, which comprise one or more containers containing a pharmaceutical composition comprising a therapeutically effective amount of a compound of Formula (I-

LXVI). Such kits can further include, if desired, one or more of various conventional pharmaceutical kit components, such as, for example, containers with one or more pharmaceutically acceptable carriers, additional containers, etc., as will be readily apparent to those skilled in the art. Instructions, either as inserts or as labels, indicating quantities of the components to be administered, guidelines for administration, and/or guidelines for mixing the components, can also be included in the kit.

EXAMPLES

Example 1. Purchased Compounds

[00114] Compounds shown in Tables 1-33 were either synthesized or purchased as indicated in the Tables, wherein S indicates synthesized and P indicates purchased. Table 34 below provides company information for purchased compounds.

Table 34

Cpd#	KU SCC #	Company
I-1	KSC-1-150	Chembridge
I-2	KSC-1-145	Aldrich
I-3	KSC-1-146	Chembridge
I-4	KSC-1-149	Chembridge
I-5	KSC-1-226	Chemdiv
I-6	KSC-1-236	Princeton Biomecular Research, Inc
I-7	KSC-1-147	Chembridge
I-8	KSC-1-234	Princeton Biomecular Research, Inc
I-9	KSC-1-227	Chemdiv
I-10	KSC-1-224	Chemdiv
I-11	KSC-1-200	Ryan Scientific, Inc.
I-12	KSC-1-211	Ryan Scientific
I-13	KSC-1-212	Ryan Scientific
I-14	KSC-1-214	Ryan Scientific
I-15	KSC-1-215	Ryan Scientific
I-16	KSC-1-217	Chemdiv
I-17	KSC-1-219	Chemdiv
I-20	KSC-1-220	Chemdiv
I-21	KSC-1-221	Chemdiv
I-22	KSC-1-222	Chemdiv
I-23	KSC-1-223	Chemdiv

I-24	KSC-1-225	Chemdiv
I-25	KSC-1-258	Interchim
I-26	KSC-1-218	Chemdiv
I-27	KSC-1-148	Chembridge
I-28	KSC-1-235	Princeton Biomecular Research, Inc
I-29	KSC-1-238	Princeton Biomecular Research, Inc
I-30	KSC-1-237	Princeton Biomecular Research, Inc
I-31	KSC-1-216	Chemdiv
I-32	KSC-1-193	Albany Molecular Research, Inc.
I-33	KSC-1-194	Albany Molecular Research
I-34	KSC-1-195	Albany Molecular Research
I-35	KSC-1-213	Ryan Scientific
XXII	KSC-1-152	Chembridge
XLIV	KSC-1-151	Chembridge
XLV	KSC-1-260	interchim
XLVI	KSC-1-240	Princeton Biomecular Research, Inc
XLVII	KSC-1-208	Ryan Scientific
XLVIII	KSC-1-241	Princeton Biomecular Research, Inc
XXIII	KSC-1-203	Ryan Scientific
XLIX	KSC-1-239	Princeton Biomecular Research
L	KSC-1-242	Princeton Biomecular Research
LI	KSC-1-254	Princeton Biomecular Research, Inc
II-1	KSC-1-153	Chembridge
II-2	KSC-1-251	Princeton Biomecular Research
II-3	KSC-1-246	Princeton Biomecular Research
II-4	KSC-1-249	Princeton Biomecular

		Research
II-5	KSC-1-245	Princeton Biomecular Research
II-6	KSC-1-250	Princeton Biomecular Research
II-7	KSC-1-252	Princeton Biomecular Research
II-9	KSC-1-247	Princeton Biomecular Research
II-11	KSC-1-248	Princeton Biomecular Research
II-12	KSC-1-253	Princeton Biomecular Research
II-13	KSC-1-244	Princeton Biomecular Research
II-17	KSC-1-259	interchim

Example 2. Compound Synthesis

[00115] In general, compounds of the invention, including salts and solvates thereof, can be prepared using known organic synthesis techniques and can be synthesized according to any of numerous possible synthetic routes. The reactions for preparing compounds of the invention can be carried out in suitable solvents which can be readily selected by one of skill in the art of organic synthesis. Suitable solvents can be substantially nonreactive with the starting materials (reactants), the intermediates, or products at the temperatures at which the reactions are carried out, i.e., temperatures which can range from the solvent's freezing temperature to the solvent's boiling temperature. A given reaction can be carried out in one solvent or a mixture of more than one solvent. Depending on the particular reaction step, suitable solvents for a particular reaction step can be selected.

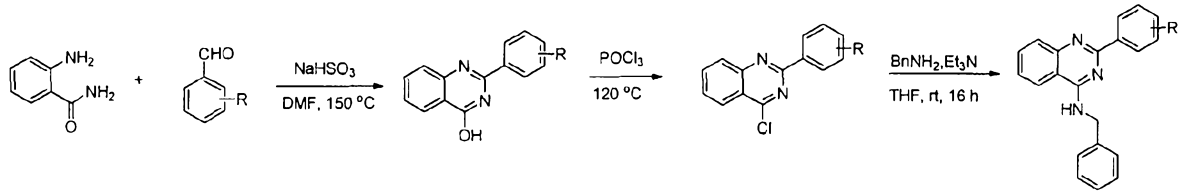
[00116] Preparation of compounds of the invention can involve the protection and deprotection of various chemical groups. The need for protection and deprotection, and the selection of appropriate protecting groups can be readily determined by one skilled in the art. The chemistry of protecting groups can be found, for example, in T. W. Greene and P. G. M. Wuts, Protective Groups in Organic Synthesis, 3rd. Ed., Wiley & Sons, Inc., New York (1999), which is incorporated herein by reference in its entirety.

[00117] Reactions can be monitored according to any suitable method known in the art. For example, product formation can be monitored by spectroscopic means, such as nuclear magnetic resonance spectroscopy (e.g., ^{1}H or ^{13}C) infrared spectroscopy, spectrophotometry

(e.g., UV-visible), or mass spectrometry, or by chromatography such as high performance liquid chromatography (HPLC) or thin layer chromatography.

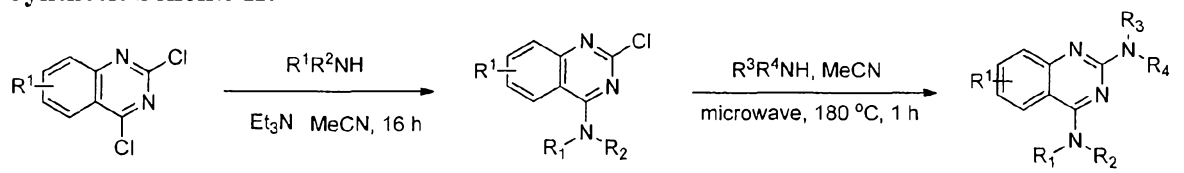
[00118] Synthesized compounds were synthesized using one of the following three synthesis schemes. Synthesis scheme I was carried out with reference to Gavish et al. WO 2008/023357A1.

Synthesis Scheme I:

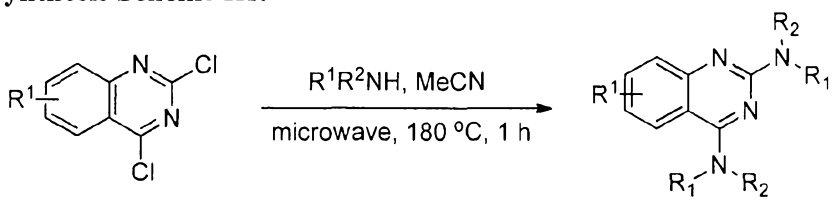


[00119] Synthesis scheme II was carried out with reference to Gahman et al. US 2009/0209536 A1.

Synthesis Scheme II:



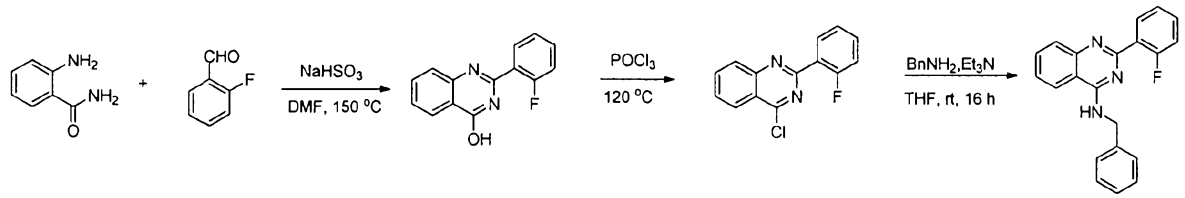
[00120] **Synthesis Scheme III:**



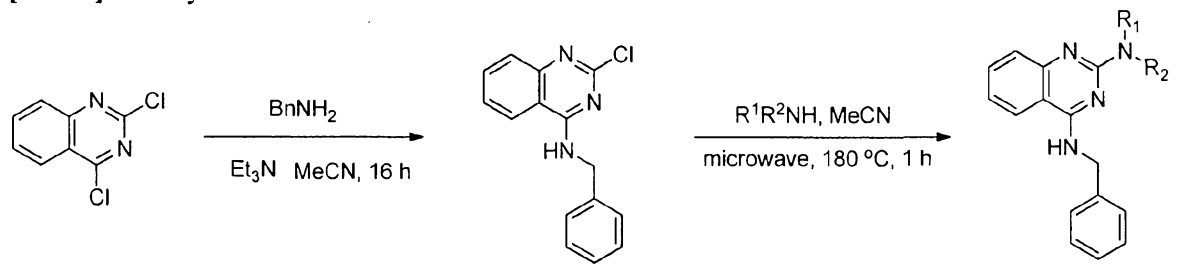
Representative compound synthesis:N2,N4-dibenzyl-8-methoxyquinazoline-2,4-diamine. (Compound # VI-5). To a suspension of 2,4-dichloro-8-methoxyquinazoline (50 mg, 0.22 mmol) in acetonitrile (1 mL) was added benzylamine (0.12 mL, 1.09 mmol, 5 equiv.). The mixture was heated to 180 °C for 1 h under microwave irradiation. The concentrated residue was purified by silica gel chromatography (Ethyl acetate) to give a white solid. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.44 – 7.18 (m, 11H), 7.11 (dd, J = 1.6, 7.9 Hz, 1H), 7.07 – 6.93 (m, 2H), 5.86 (s, br. 1H), 5.49 (s, br. 1H),), 4.78 (d, J = 5.7 Hz, 2H), 4.75 (d, J = 5.7 Hz, 2H), 3.99 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.3, 153.2, 144.2, 140.2, 138.7, 128.7, 128.4, 128.0, 127.5, 126.8, 120.4, 112.5, 111.2, 110.9, 55.9, 45.7, 45.2. HRMS (m/z): calcd for $C_{23}H_{23}N_4O$ (M+H) 371.1872; found 371.1871.

[00121] Some specific examples of synthesis schemes are shown as follows.

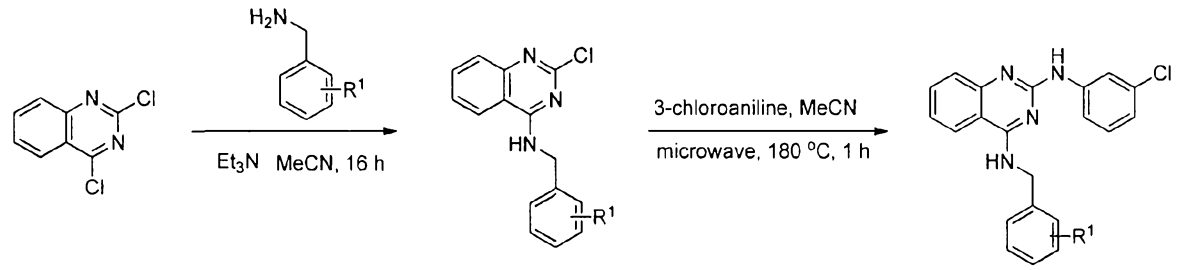
[00122] Specifically, for XXIV, the synthesis scheme is as shown below:



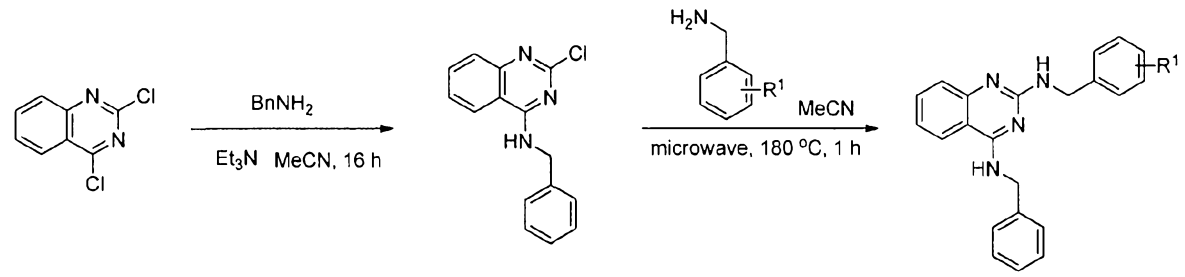
[00123] A synthesis scheme for Formula II is shown below:



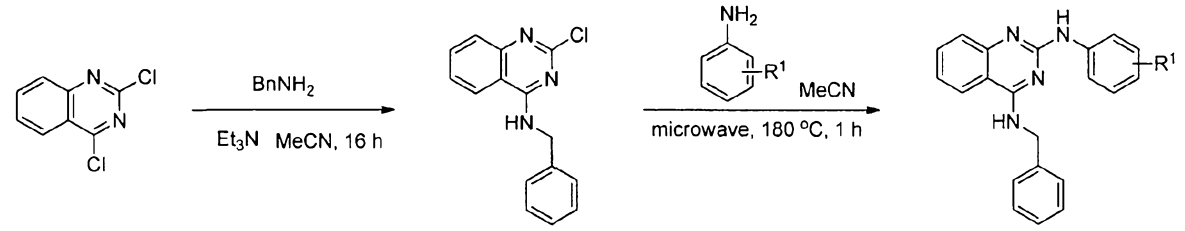
[00124] A synthesis scheme for Formula III is shown below:



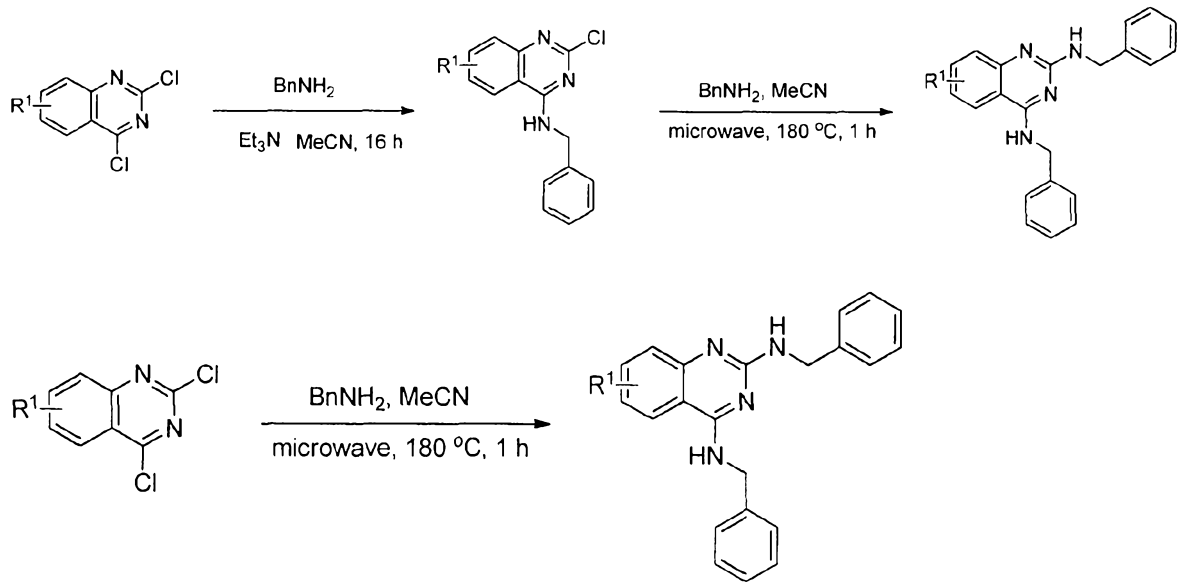
[00125] A synthesis scheme for Formula IV is shown below:



[00126] A synthesis scheme for Formula V is shown below:

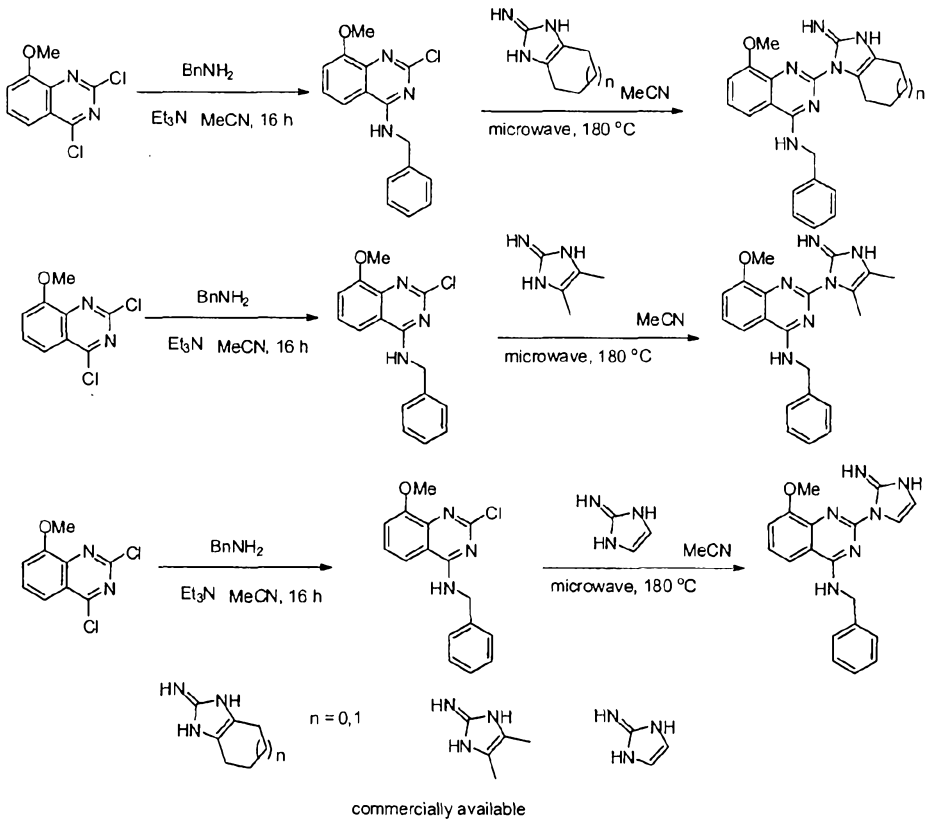


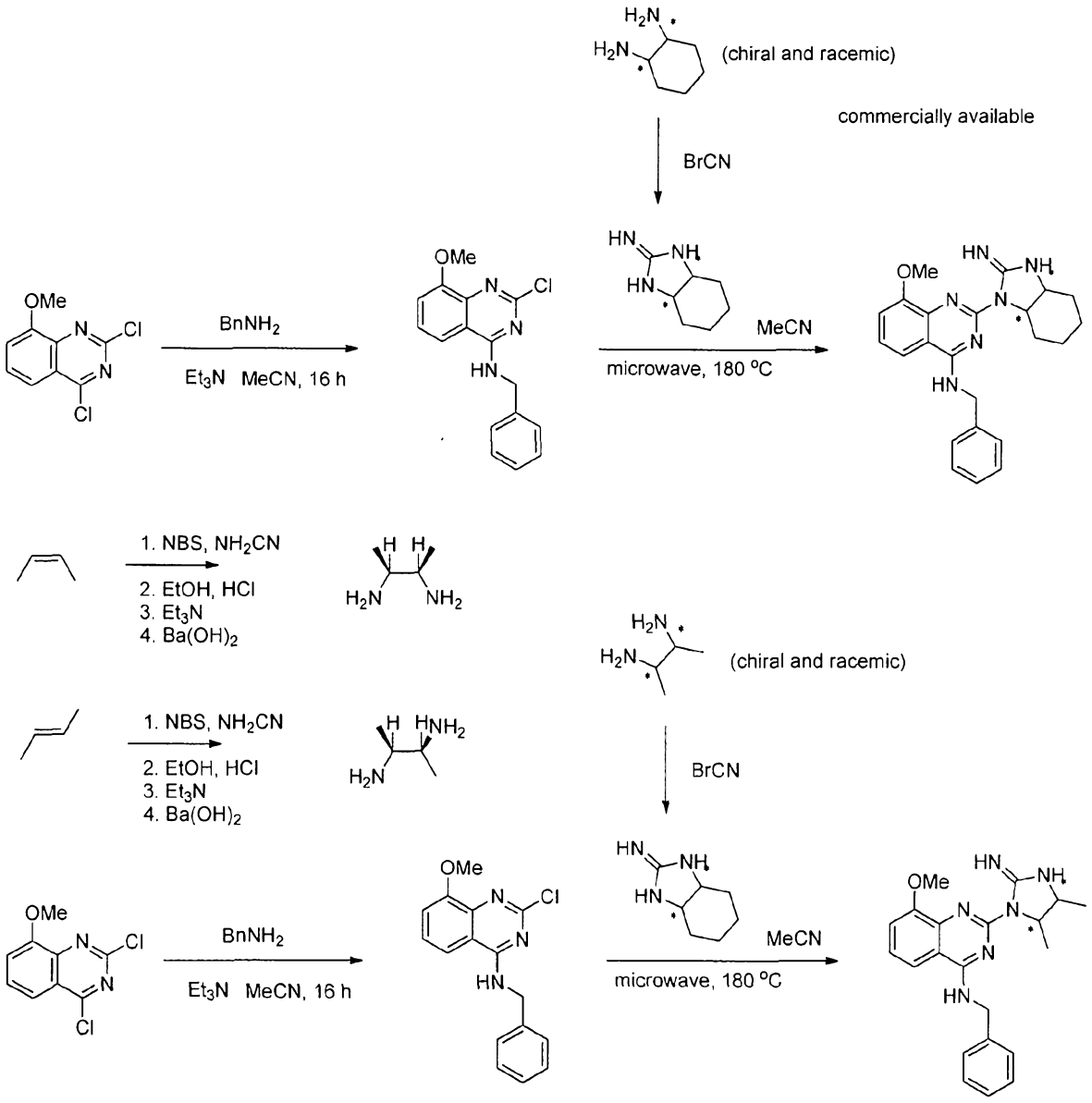
[00127] A synthesis scheme for Formula VI is shown below:



Example 3. Synthesis of Compound Derivatives LII, LIII, LIV, LV and LVI

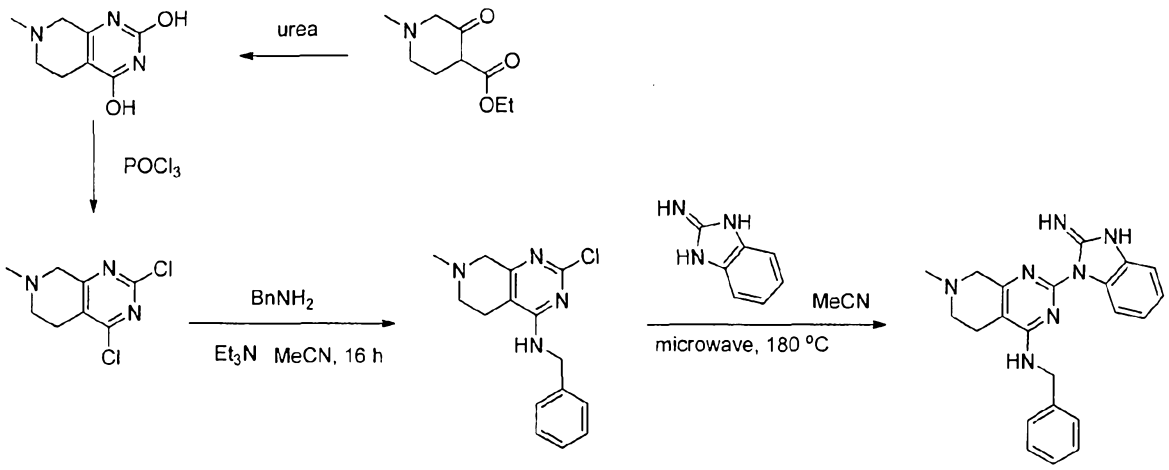
[00128] Synthesis Schemes with reference to Kohn et al., 1983, *J. Am. Chem. Soc*, 105, 4106-4108.





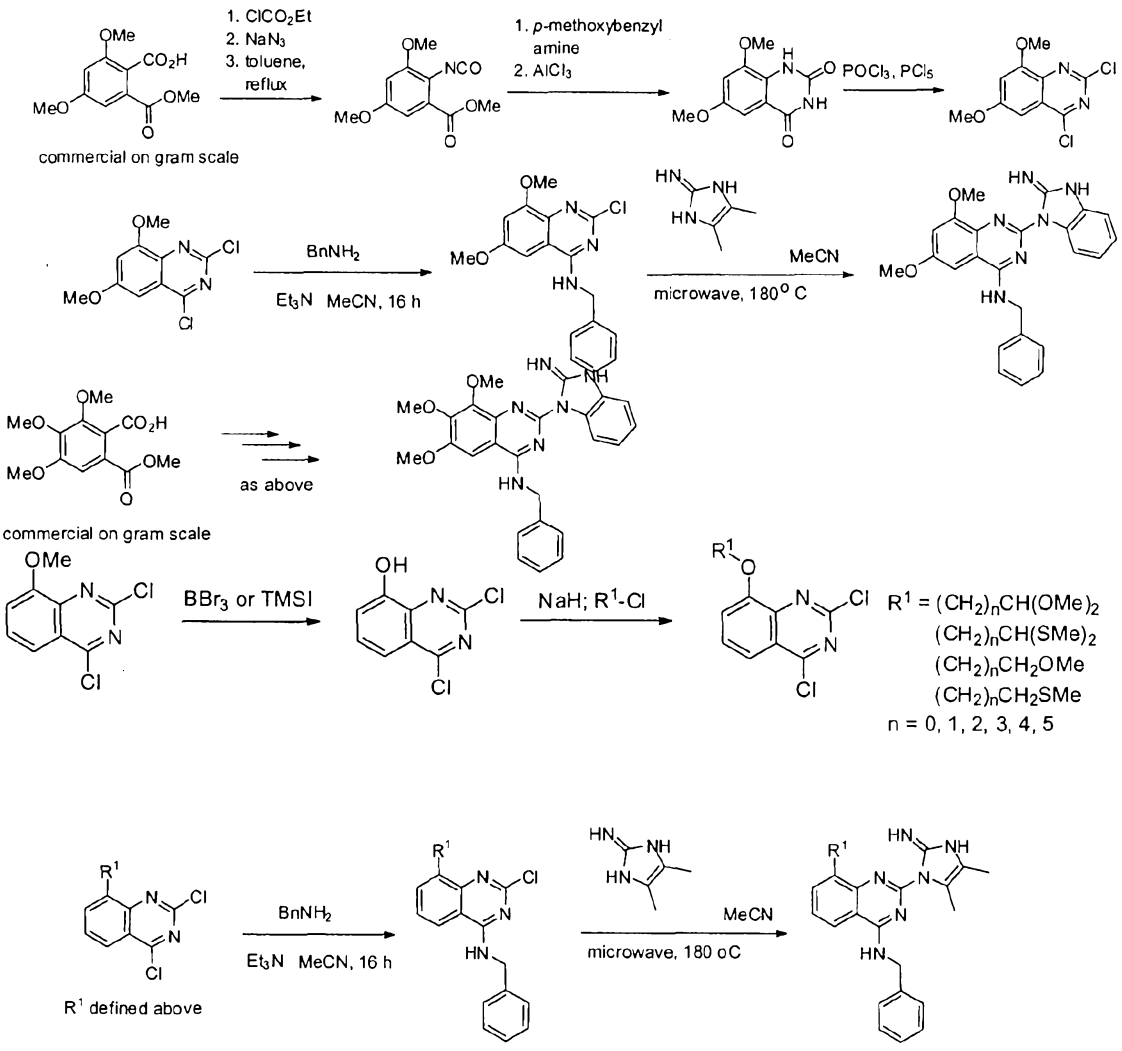
Example 4. Synthesis of Compound Derivatives LVII, LVIII, LXII, LXIII, LXIV, LXV, and LXVI.

[00129] Synthesis scheme for LVII. For LVIII and LXII-LXVI, reference is made to the scheme below, with reference to schemes disclosed herein and Zaugg, 1984, *Synthesis,* 86-110.

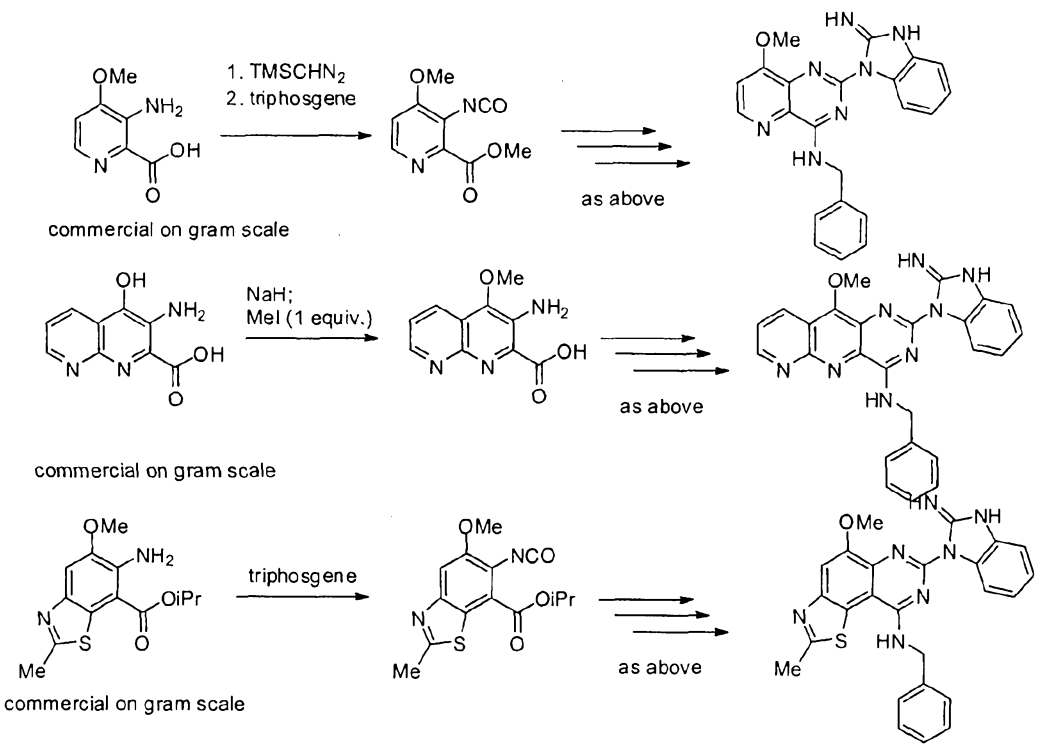


Example 5. Synthesis of Compound Derivatives LIX and LXI:

[00130] Synthesis scheme for LIX with reference to Tikad et al., 2006, *Synlett,* 1938-1942.

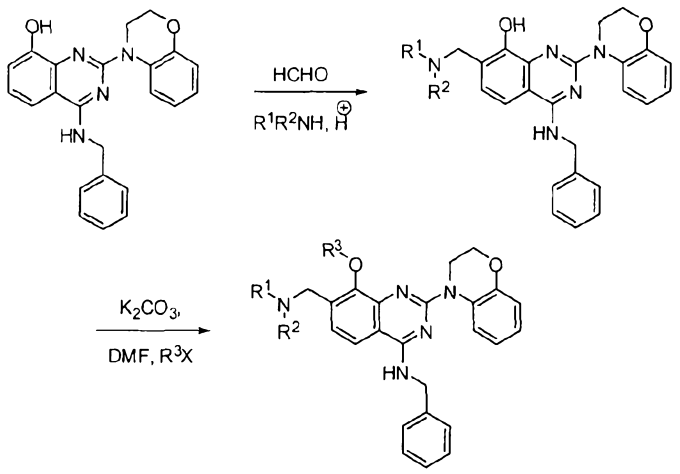


[00131] Synthesis scheme for LX with reference to above reaction and reference for LIX.



Example 6. Synthesis of Compound Derivative LXI:

Synthesis scheme for LXI with reference to Zaugg, 1984, *Synthesis,*86-110.



Example 7. ATPase assay.

[00132] Assay Buffer (20 μL of 2.5x concentration, where 1x = 50 mM Tris pH 7.4, 20 mM $MgCl_2$, 1 mM EDTA, 0.5 mM TCEP) was dispensed into each well of a 96 well plate. Purified p97 (25 μL of 50 μM) was diluted in 975 μL of 1x Assay Buffer and 10 μL was dispensed in each well. Test compound (10 μL) or 5% DMSO (10μL) was then added to each well and the plate was incubated at room temperature for 10 min. The ATPase assay was carried out by adding to each well 10 μL of 500 μM ATP (pH 7.5), incubating at room

temperature for 60 min, and then adding 50 μL Kinase Glo Plus reagent (Promega) followed by a final 10 min incubation at room temperature in the dark. Luminescence was read on an Analyst AD (Molecular Devices). Compounds were assayed at a range of concentrations (0, 0.048, 0.24, 1.2, 6, 30 μM) in triplicate. The percent of remaining activity for each reaction was calculated using the following mathematical expression: ((Test Compound-High Control)/(Low Control-High Control)) * 100. Test_Compound is defined as wells containing test compound, Low_Control is defined as wells containing DMSO, High_Control is defined as wells containing no p97 protein. IC_{50} values were calculated from fitting the percentage of remaining activity (%RA) with various concentrations of compounds to a Langmuir equation [%RA =100/(1 + [Compound]/IC_{50})] by non-linear regression analysis using the JUMP IN program. The result was expressed as mean +/- standard error.

For assays with Myriad 12 and 19, 100 μL of biomol green reagent (Enzo Life Sciences) was added to each well instead of kinase Glo Plus (Promega) and absorbance at 630 nm was measured. This was done because these compounds interfered with luciferase activity. For assays with compounds that interfered with luciferase activity, 100 μL of biomol green reagent (Enzo Life Sciences) was added to each well instead of kinase Glo Plus (Promega) and absorbance at 630 nm was measured.

Example 8. Ub^{G76V}-GFP degradation assay.

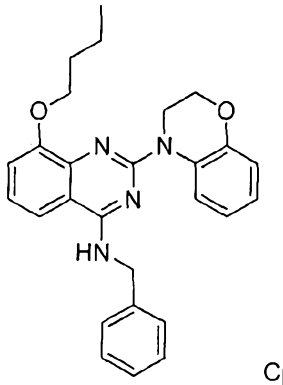
[00133] Two GFP images with 100 ms exposure time per well were acquired and the average GFP intensity per area of a HeLa cell was determined by using MetaXpress software. Mean GFP intensity of 300-500 cells was calculated using Excel. Normalized GFP intensity was calculated using the following formula: (Test compound – Background)/(Basal GFP intensity – Background). Where: Test compound is defined as Mean GFP intensity of Ub^{G76V}-GFP-expressing cells treated with the test compound. Background is defined as background GFP intensity of HeLa cells. Basal GFP intensity is defined as mean GFP intensity of Ub^{G76V}-GFP-expressing cells treated with DMSO. The degradation rate constant (k) was obtained from the slope of the linear range of plotting Ln (Normalized GFP intensity) versus time ranging from 90 to 180 min. The percent of remaining k for each compound is calculated using the following formula: (Test compound/DMSO control) * 100. Where: Test_compound is defined as k determined from wells containing test compound, DMSO control is defined as k determined from wells containing DMSO. IC_{50} values were calculated from fitting the percentage of remaining k (%k) with various concentrations of compounds to a Langmuir equation [%k =100/(1 + [Compound]/IC_{50})] by non-linear regression analysis using the JUMP IN program. The result was expressed as mean +/- standard error.

Example 9. NMR analysis of Compounds

[00134] NMR data for all compounds in attached in the **Appendix**.

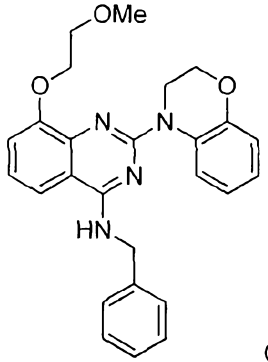
^{1}H and ^{13}C spectra were recorded on a Bruker Avance 400 or 500 MHz spectrometer. Chemical shifts are reported in parts per million and were referenced to residual proton solvent signals.

APPENDIX



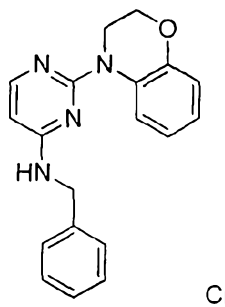
KSC-25-30 Cpd # VII-15

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzyl-8-butoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.37 (d, *J* = 8.2 Hz, 1H), 7.47 – 7.31 (m, 5H), 7.20 – 7.07 (m, 2H), 7.04 (dd, *J* = 1.5, 7.5 Hz, 1H), 7.00 – 6.89 (m, 2H), 6.89 – 6.77 (m, 1H), 5.85 (s, 1H), 4.84 (d, *J* = 5.4 Hz, 2H), 4.48 – 4.38 (m, 2H), 4.35 – 4.32 (m, 2H), 4.15 (t, *J* = 6.5 Hz, 2H), 2.04 – 1.89 (m, 2H), 1.72 – 1.62 (m, 2H), 1.08 (t, *J* = 7.4 Hz, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.7, 155.9, 153.6, 146.2, 143.7, 138.5, 128.8, 128.3, 127.7, 127.6, 124.4, 123.1, 121.9, 119.5, 116.6, 112.7, 112.1, 111.8, 68.6, 66.1, 45.4, 42.1, 31.4, 19.4, 14.0. HRMS (m/z): calcd for $C_{27}H_{29}N_4O_2$ (M+H) 441.2291; found 441.2296.



KSC-25-29 Cpd # VII-14

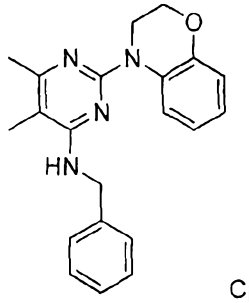
2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzyl-8-(2-methoxyethoxy)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.28 (d, *J* = 7.7 Hz, 1H), 7.40 - 7.39 (m, 4H), 7.37 – 7.32 (m, 1H), 7.21 - 719 (m, 1H), 7.13 – 7.09 (m, 2H), 6.99 – 6.88 (m, 2H), 6.83 – 6.79 (m, 1H), 5.86 (s, br. 1H), 4.83 (d, *J* = 5.4 Hz, 2H), 4.45 – 4.38 (m, 2H), 4.38 – 4.27 (m, 4H), 3.97 – 3.88 (m, 2H), 3.56 (s, 3H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 159.7, 156.0, 153.2, 146.2, 143.9, 138.4, 128.8, 128.1, 127.7, 127.6, 124.5, 123.2, 121.9, 119.4, 116.6, 114.0, 113.0, 111.9, 71.1, 68.8, 66.1, 59.5, 45.4, 42.1, 29.7. HRMS (m/z): calcd for $C_{26}H_{27}N_4O_3$ (M+H) 443.2083; found 443.2088.



KSC-25-28 Cpd # XX

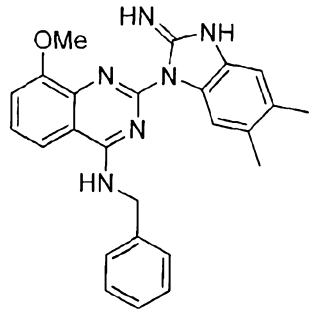
2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzylpyrimidin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.08 – 7.96 (m, 2H), 7.45 – 7.30 (m, 5H), 7.01 – 6.89 (m, 2H), 6.89 – 6.78 (m, 1H), 5.91 (d, *J* = 5.8 Hz, 1H), 5.13 (s, 1H), 4.57 (d, *J* = 5.0 Hz, 2H), 4.35 – 4.27 (m, 2H), 4.27 – 4.17 (m, 2H). ^{13}C NMR (101 MHz,

$CDCl_3$) δ 162.6, 159.7, 156.2, 146.3, 138.5, 128.7, 127.8, 127.5, 127.4, 124.4, 123.6, 119.6, 116.8, 66.0, 45.3, 42.1. HRMS (m/z): calcd for $C_{19}H_{19}N_4O$ (M+H) 319.1559; found 319.1555.



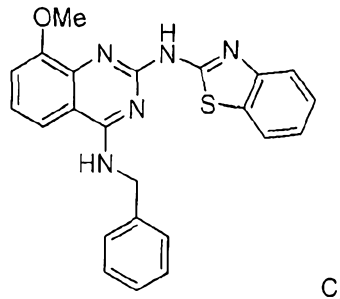
KSC-25-24 Cpd # X

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzyl-5,6-dimethylpyrimidin-4-amine. ^1H NMR (400 MHz, $CDCl_3$) δ 8.13 – 7.99 (m, 1H), 7.42 – 7.30 (m, 5H), 6.94 – 6.87 (m, 2H), 6.81 – 6.74 (m, 1H), 4.82 (s, 1H), 4.69 (d, J = 5.6 Hz, 2H), 4.31 – 4.26 (m, 2H), 4.29 – 4.23 (m, 2H), 2.35 (s, 3H), 2.01 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 161.7, 160.9, 157.2, 145.9, 139.5, 128.6, 128.4, 127.5, 127.2, 124.0, 122.7, 119.5, 116.6, 101.8, 65.9, 45.3, 42.2, 22.2, 10.9. HRMS (m/z): calcd for $C_{21}H_{23}N_4O$ (M+H) 347.1872; found 347.1872.



KSC-25-23 Cpd # XXI

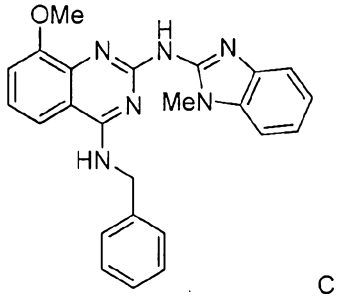
N-benzyl-2-(2-imino-5,6-dimethyl-2,3-dihydro-1H-benzo[d]imidazol-1-yl)-8-methoxyquinazolin-4-amine. ^1H NMR (400 MHz, DMSO) δ 9.27 (t, J = 6.0 Hz, 1H), 8.09 (s, 2H), 8.07 (s, 1H), 7.90 (d, J = 7.5 Hz, 1H), 7.47 – 7.39 (m, 3H), 7.39 – 7.30 (m, 3H), 7.25 (t, J = 7.3 Hz, 1H), 6.94 (s, 1H), 4.98 (d, J = 5.9 Hz, 2H), 3.98 (s, 3H), 2.19 (s, 3H), 2.04 (s, 3H). ^{13}C NMR (101 MHz, DMSO) δ 160.9, 154.2, 153.5, 140.9, 140.2, 138.5, 130.0, 129.7, 128.5, 126.9, 126.5, 126.2, 124.7, 115.7, 115.5, 114.1, 112.8, 112.7, 56.1, 44.4, 19.7. HRMS (m/z): calcd for $C_{25}H_{25}N_6O$ (M+H) 425.2090; found 425.2090.



KSC-25-22 Cpd # XI-5

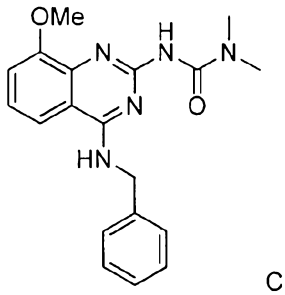
N2-(benzo[d]thiazol-2-yl)-N4-benzyl-8-methoxyquinazoline-2,4-diamine. ^1H NMR (400 MHz, DMSO) δ 11.43 (s, br. 1H), 8.91 (s, 1H), 7.91 – 7.75 (m, 2H), 7.62 (d, J = 7.8 Hz, 1H), 7.48 (d, J = 7.2 Hz, 2H), 7.40 – 7.30 (m, 3H), 7.30 – 7.11 (m, 4H), 4.94 (d, J = 5.6 Hz, 2H), 3.96 (s, 3H). ^{13}C NMR (126 MHz,

DMSO) δ 160.3, 160.2, 153.5, 153.3, 149.7, 141.8, 139.3, 132.4, 128.3, 127.5, 126.8, 125.5, 122.9, 121.9, 120.8, 119.2, 117.7, 114.1, 112.5, 55.8, 44.1. HRMS (m/z): calcd for $C_{23}H_{20}N_5OS$ (M+H) 414.1389; found 414.1390.



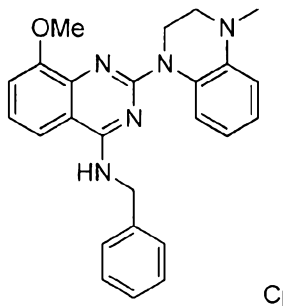
KSC-25-21 Cpd # XI-6

N4-benzyl-8-methoxy-N2-(1-methyl-1H-benzo[d]imidazol-2-yl)quinazoline-2,4-diamine. ^{1}H NMR (500 MHz, DMSO) δ 9.36 (s, 1H), 8.28 (s, 1H), 8.24 (d, *J* = 8.0 Hz, 1H), 7.93 (d, *J* = 7.9 Hz, 1H), 7.51 (s, 1H), 7.50 – 7.39 (m, 2H), 7.35 (td, *J* = 2.7, 9.5 Hz, 3H), 7.25 (t, *J* = 7.3 Hz, 1H), 7.16 (d, *J* = 5.4 Hz, 2H), 6.93 (s, 1H), 4.88 (d, *J* = 5.7 Hz, 2H), 3.99 (s, 3H), 3.42 (s, 3H). HRMS (m/z): calcd for $C_{24}H_{23}N_6O$ (M+H) 411.1933; found 411.1937.



KSC-25-19 Cpd # XI-7

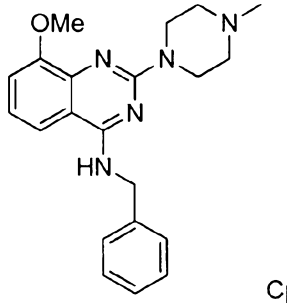
3-(4-(benzylamino)-8-methoxyquinazolin-2-yl)-1,1-dimethylurea. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.46 – 7.41 (m, 2H), 7.41 – 7.35 (m, 2H), 7.33 (dt, *J* = 2.2, 5.6 Hz, 1H), 7.10 (dd, *J* = 2.2, 7.2 Hz, 1H), 7.01 – 6.93 (m, 2H), 5.78 (s, 1H), 4.84 (d, *J* = 5.4 Hz, 2H), 3.99 (s, 3H), 3.29 (s, 6H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.5, 159.3, 153.2, 144.3, 139.0, 128.7, 128.0, 127.4, 119.9, 112.5, 110.9, 110.2, 56.0, 45.2, 37.0. Not stable under LC conditions.



KSC-25-17 Cpd # VII-12

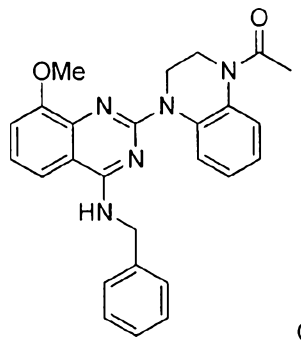
N-benzyl-8-methoxy-2-(4-methyl-3,4-dihydroquinoxalin-1(2H)-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.77 (dd, *J* = 1.4, 8.1 Hz, 1H), 7.44 – 7.30 (m, 5H), 7.14 (d, *J* = 6.9 Hz, 1H), 7.08 (t, *J* = 7.9 Hz, 1H), 7.05 – 7.01 (m, 1H), 6.96 (dd, *J* = 4.2, 11.2 Hz, 1H), 6.73 (dd, *J* = 1.3, 8.2 Hz, 1H), 6.58

(t, J = 7.6 Hz, 1H), 5.77 (s, 1H), 4.77 (d, J = 5.4 Hz, 2H), 4.47 – 4.36 (m, 2H), 4.02 (s, 3H), 3.49 – 3.38 (m, 2H), 2.99 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.5, 156.8, 153.8, 143.9, 139.4, 138.7, 128.7, 127.9, 127.5, 127.1, 124.6, 123.7, 121.2, 115.3, 112.4, 111.7, 111.3, 111.1, 56.2, 51.0, 45.3, 41.8, 38.7. HRMS (m/z): calcd for $C_{25}H_{26}N_5O$ (M+H) 412.2137; found 412.2148.



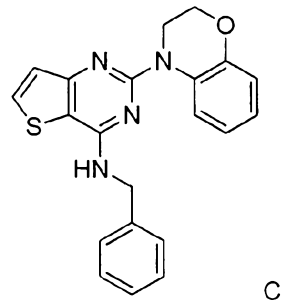
KSC-25-16 Cpd # XI-4

N-benzyl-8-methoxy-2-(4-methylpiperazin-1-yl)quinazolin-4-amine. ^{1}H NMR (500 MHz, DMSO) δ 8.47 (t, J = 5.9 Hz, 1H), 7.60 (dd, J = 1.4, 8.0 Hz, 1H), 7.37 (d, J = 7.1 Hz, 2H), 7.30 (dd, J = 4.8, 10.3 Hz, 2H), 7.21 (t, J = 7.3 Hz, 1H), 7.03 (dd, J = 1.3, 7.8 Hz, 1H), 6.99 (t, J = 7.8 Hz, 1H), 4.68 (d, J = 5.8 Hz, 2H), 3.82 (s, 3H), 3.71 (s, 4H), 2.27 (t, J = 4.9 Hz, 4H), 2.17 (s, 3H). ^{13}C NMR (126 MHz, DMSO) δ 159.6, 157.8, 152.8, 143.6, 140.1, 128.1, 127.3, 126.6, 120.0, 114.1, 111.8, 110.8, 55.5, 54.6, 45.9, 43.7, 43.3. HRMS (m/z): calcd for $C_{21}H_{26}N_5O$ (M+H) 364.2137; found 364.2142.



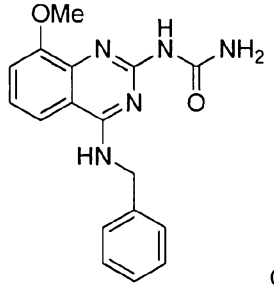
KSC-25-15 Cpd # VII-13

1-(4-(4-(benzylamino)-8-methoxyquinazolin-2-yl)-3,4-dihydroquinoxalin-1(2H)-yl)ethanone. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.34 – 7.21 (m, 5H), 7.15 – 6.87 (m, 6H), 5.98 – 5.73 (m, 1H), 4.70 (d, J = 5.4 Hz, 2H), 4.19 (s, br. 2H), 3.96 (s, br. 2H), 3.92 (s, 3H), 2.18 (s, 3H). HRMS (m/z): calcd for $C_{26}H_{26}N_5O_2$ (M+H) 440.2087; found 440.2096.



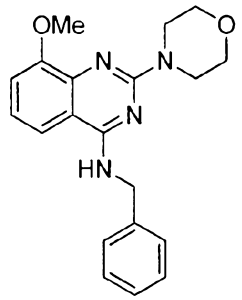
KSC-25-14 Cpd # IX

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzylthieno[3,2-d]pyrimidin-4-amine. ^{1}H NMR (500 MHz, DMSO) δ 8.39 (t, *J* = 5.9 Hz, 1H), 8.01 (d, *J* = 5.3 Hz, 1H), 7.86 (dd, *J* = 1.5, 8.3 Hz, 1H), 7.36 – 7.29 (m, 4H), 7.28 – 7.21 (m, 1H), 7.19 (d, *J* = 5.3 Hz, 1H), 6.90 – 6.84 (m, 1H), 6.82 (dd, *J* = 1.7, 8.1 Hz, 1H), 6.68 (ddd, *J* = 1.7, 7.1, 8.6 Hz, 1H), 4.66 (d, *J* = 5.9 Hz, 2H), 4.23 – 4.16 (m, 2H), 4.15 – 4.13 (m, 2H). ^{13}C NMR (126 MHz, DMSO) δ 160.9, 157.7, 156.7, 145.6, 139.7, 133.0, 128.3, 128.2, 127.0, 126.6, 124.3, 123.7, 122.7, 119.1, 116.2, 107.6, 65.3, 43.4, 42.1. HRMS (m/z): calcd for $C_{21}H_{19}N_4OS$ (M+H) 375.1280; found 375.1284.



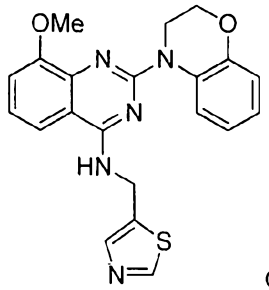
KSC-25-12 Cpd # XI-3

1-(4-(benzylamino)-8-methoxyquinazolin-2-yl)urea. ^{1}H NMR (500 MHz, DMSO) δ 8.32 (d, *J* = 7.1 Hz, 1H), 7.58 (dd, *J* = 1.3, 8.2 Hz, 1H), 7.36 (d, *J* = 7.0 Hz, 2H), 7.31 (dd, *J* = 4.9, 10.3 Hz, 2H), 7.23 (t, *J* = 7.2 Hz, 1H), 7.01 (d, *J* = 6.7 Hz, 1H), 6.96 (t, *J* = 7.9 Hz, 1H), 6.13 (s, 2H), 4.73 (d, *J* = 5.9 Hz, 2H), 3.81 (s, 3H). ^{13}C NMR (126 MHz, DMSO) δ 160.2, 159.8, 152.6, 143.6, 139.9, 128.2, 127.9, 127.3, 126.6, 119.5, 114.0, 111.3, 111.0, 55.2, 43.1. HRMS (m/z): calcd for $C_{17}H_{18}N_5O_2$ (M+H) 324.1460; found 324.1449.



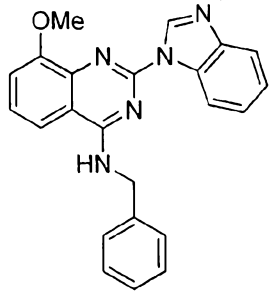
KSC-25-10 Cpd # XI-2

N-benzyl-8-methoxy-2-morpholinoquinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 8.52 (t, *J* = 5.7 Hz, 1H), 7.63 (dd, *J* = 1.9, 7.6 Hz, 1H), 7.41 – 7.35 (m, 2H), 7.35 – 7.28 (m, 2H), 7.26 – 7.18 (m, 1H), 7.08 – 6.98 (m, 2H), 4.70 (d, *J* = 5.8 Hz, 2H), 3.83 (s, 3H), 3.74 – 3.66 (m, 4H), 3.64 – 3.54 (m, 4H). ^{13}C NMR (101 MHz, DMSO) δ 159.7, 157.9, 152.9, 143.4, 140.0, 128.2, 127.3, 126.6, 120.3, 114.2, 112.0, 111.0, 66.1, 55.5, 44.2, 43.7. HRMS (m/z): calcd for $C_{20}H_{23}N_4O_2$ (M+H) 351.1821; found 351.1814.



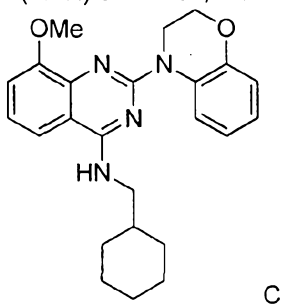
KSC-25-6 Cpd # XII-1

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-8-methoxy-N-(thiazol-5-ylmethyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.71 (s, 1H), 8.29 – 8.01 (m, 1H), 7.82 (s, 1H), 7.16 (s, 2H), 7.06 (d, *J* = 8.6 Hz, 1H), 6.96 – 6.84 (m, 3H), 6.28 – 5.93 (m, 1H), 5.03 (d, *J* = 5.5 Hz, 2H), 4.53 – 4.42 (m, 2H), 4.42 – 4.29 (m, 2H), 4.01 (s, 3H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 159.3, 156.0, 153.6, 146.4, 143.7, 142.1, 135.7, 127.8, 124.4, 123.6, 122.2, 119.5, 116.9, 113.9, 112.4, 111.7, 66.3, 56.1, 42.4, 37.3. HRMS (m/z): calcd for $C_{21}H_{20}N_5O_2S$ (M+H) 406.1338; found 406.1341.



KSC-25-3 Cpd # XI-1

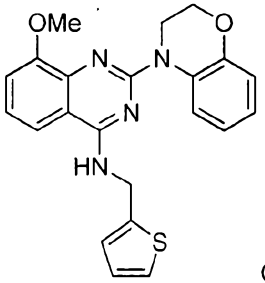
2-(1H-benzo[d]imidazol-1-yl)-N-benzyl-8-methoxyquinazolin-4-amine. ^{1}H NMR (500 MHz, DMSO) δ 9.27 (s, 1H), 9.08 (s, 1H), 8.72 (d, *J* = 7.5 Hz, 1H), 7.91 (d, *J* = 7.4 Hz, 1H), 7.74 (d, *J* = 7.4 Hz, 1H), 7.53 – 7.42 (m, 3H), 7.39 – 7.30 (m, 5H), 7.25 (d, *J* = 7.4 Hz, 1H), 4.92 (d, *J* = 5.8 Hz, 2H), 4.01 (s, 3H). ^{13}C NMR (126 MHz, DMSO) δ 160.6, 154.3, 151.5, 144.5, 142.1, 141.2, 139.2, 131.8, 128.4, 127.2, 126.9, 125.1, 124.0, 123.1, 119.6, 115.9, 114.14, 114.12, 113.0, 56.1, 44.3. HRMS (m/z): calcd for $C_{23}H_{20}N_5O$ (M+H) 382.1668; found 382.1658.



KSC-16-299 Cpd # XII-6

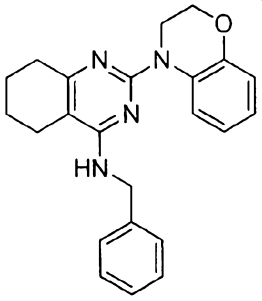
2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-(cyclohexylmethyl)-8-methoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.26 (dd, *J* = 1.4, 8.1 Hz, 1H), 7.20 – 7.09 (m, 2H), 7.03 (dd, *J* = 1.9, 7.1 Hz, 1H), 7.01 – 6.86 (m, 3H), 5.69 (s, 1H), 4.46 (dd, *J* = 3.6, 5.2 Hz, 2H), 4.37 (dd, *J* = 3.6, 5.2 Hz, 2H), 4.02 (s, 3H), 3.54 – 3.42 (m, 2H), 187 – 1.71 (m, 6H), 1.40 – 1.13 (m, 4H), 1.04 (q, *J* = 12.0 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.0, 156.4, 153.9, 146.2, 143.4, 128.2, 124.4, 123.1, 121.7, 119.3, 116.7,

112.2, 111.9, 111.2, 66.2, 56.1, 47.6, 42.2, 37.8, 31.1, 26.5, 25.9. HRMS (m/z): calcd for $C_{24}H_{29}N_4O_2$ (M+H) 405.2291; found 405.2289.



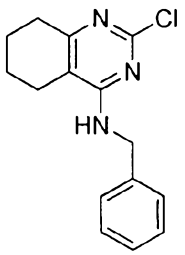
KSC-16-295 Cpd # XII-5

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-8-methoxy-N-(thiophen-2-ylmethyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (dd, *J* = 1.4, 8.2 Hz, 1H), 7.27 (dd, *J* = 1.3, 5.1 Hz, 1H), 7.19 – 7.09 (m, 2H), 7.08 – 7.02 (m, 2H), 6.99 (ddd, *J* = 2.5, 4.1, 8.1 Hz, 1H), 6.95 (dd, *J* = 1.8, 4.0 Hz, 1H), 6.93 – 6.86 (m, 1H), 5.90 (s, 1H), 4.98 (d, *J* = 5.1 Hz, 2H), 4.47 (dd, *J* = 3.6, 5.3 Hz, 2H), 4.37 (dd, *J* = 3.6, 5.3 Hz, 2H), 4.02 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.3, 156.1, 153.9, 146.2, 143.6, 141.2, 128.1, 126.9, 126.2, 125.4, 124.4, 123.3, 122.0, 119.5, 116.7, 112.4, 111.7, 111.5, 66.2, 56.1, 42.3, 40.2. HRMS (m/z): calcd for $C_{22}H_{21}N_4O_2S$ (M+H) 405.1385; found 405.1383.



KSC-16-290 Cpd # VIII

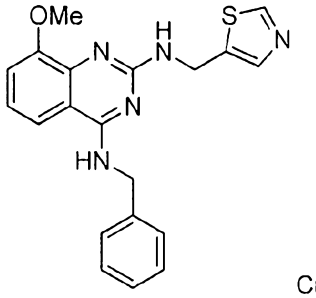
2-(2H-benzo[*b*][1,4]oxazin-4(3H)-yl)-N-benzyl-5,6,7,8-tetrahydroquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.09 – 8.01 (m, 1H), 7.42 – 7.30 (m, 5H), 6.92 – 6.86 (m, 2H), 6.80 – 6.73 (m, 1H), 4.79 (s, 1H), 4.69 (d, *J* = 5.6 Hz, 2H), 4.28 (dd, *J* = 3.1, 5.0 Hz, 2H), 4.23 (dd, *J* = 3.1, 5.0 Hz, 2H), 2.67 (t, *J* = 5.7 Hz, 2H), 2.32 (t, *J* = 5.7 Hz, 2H), 1.93 – 1.77 (m, 4H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 162.5, 160.7, 157.3, 145.9, 139.5, 128.6, 128.5, 127.5, 127.3, 123.9, 122.6, 119.5, 116.6, 103.8, 65.9, 45.0, 42.2, 32.2, 22.6, 22.5, 21.9. HRMS (m/z): calcd for $C_{23}H_{25}N_4O$ (M+H) 373.2028; found 373.2030.



KSC-16-285

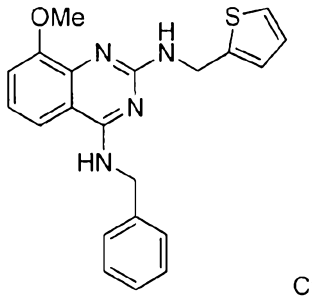
N-benzyl-2-chloro-5,6,7,8-tetrahydroquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.44 – 7.31 (m, 5H), 4.95 (s, 1H), 4.71 (d, *J* = 5.4 Hz, 2H), 2.71 (t, *J* = 5.4 Hz, 2H), 2.28 (t, *J* = 5.5 Hz, 2H), 1.95 –

1.74 (m, 4H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 164.3, 161.7, 157.5, 138.2, 128.8, 128.1, 127.8, 110.3, 45.4, 31.6, 21.9, 21.9.



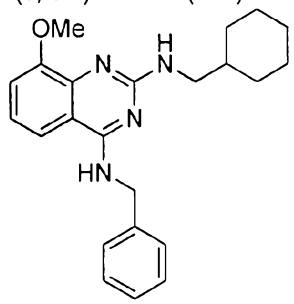
KSC-16-283 Cpd # XI-15

N4-benzyl-8-methoxy-N2-(thiazol-5-ylmethyl)quinazoline-2,4-diamine. ^1H NMR (400 MHz, DMSO) δ 8.86 (s, 1H), 8.45 (s, 1H), 7.75 (s, 1H), 7.63 (d, *J* = 7.9 Hz, 1H), 7.43 – 7.11 (m, 6H), 7.02 (d, *J* = 13.8 Hz, 2H), 4.83 – 4.55 (m, 4H), 3.84 (s, 3H). HRMS (m/z): calcd for $C_{20}H_{20}N_5OS$ (M+H) 378.1389; found 378.1384.



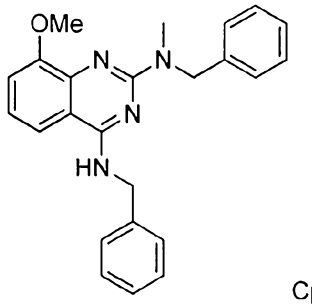
KSC-16-282 Cpd # XI-14

N4-benzyl-8-methoxy-N2-(thiophen-2-ylmethyl)quinazoline-2,4-diamine. ^1H NMR (400 MHz, DMSO) δ 8.33 (s, 1H), 7.53 (dd, *J* = 1.3, 8.0 Hz, 1H), 7.27 (d, *J* = 7.2 Hz, 2H), 7.24 – 7.16 (m, 3H), 7.13 (dd, *J* = 6.0, 8.3 Hz, 1H), 6.98 – 6.83 (m, 3H), 6.83 – 6.72 (m, 1H), 4.66 (d, *J* = 5.8 Hz, 2H), 4.57 (d, *J* = 5.7 Hz, 2H), 3.74 (s, 3H). HRMS (m/z): calcd for $C_{21}H_{21}N_4OS$ (M+H) 377.1436; found 377.1433.



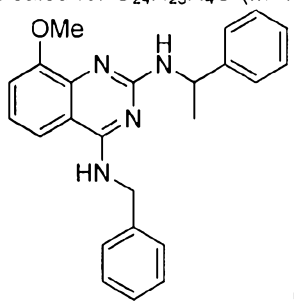
KSC-16-278 Cpd # XI-13

N4-benzyl-N2-(cyclohexylmethyl)-8-methoxyquinazoline-2,4-diamine. ^1H NMR (400 MHz, DMSO) δ 8.58 – 7.91 (m, 1H), 7.50 (d, *J* = 7.2 Hz, 1H), 7.28 (d, *J* = 7.1 Hz, 2H), 7.22 (t, *J* = 7.5 Hz, 2H), 7.14 (t, *J* = 7.2 Hz, 1H), 6.91 (d, *J* = 7.5 Hz, 1H), 6.85 (t, *J* = 7.9 Hz, 1H), 6.79 – 6.12 (m, 1H), 4.63 (d, *J* = 5.7 Hz, 2H), 3.73 (s, 3H), 3.02 (s, 2H), 1.53 (s, br. 5H), 1.42 – 1.21 (m, 1H), 1.00 (s, br., 3H), 0.72 (s, br., 2H). HRMS (m/z): calcd for $C_{23}H_{29}N_4O$ (M+H) 377.2341; found 377.2338.



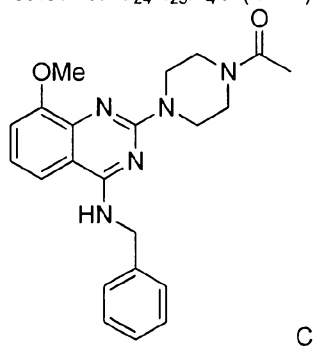
KSC-16-277 Cpd # XI-12

N2,N4-dibenzyl-8-methoxy-N2-methylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.40 – 7.19 (m, 10H), 7.12 (dd, *J* = 2.0, 7.3 Hz, 1H), 7.07 – 6.93 (m, 2H), 5.81 (s, 1H), 5.02 (s, 2H), 4.75 (d, *J* = 5.5 Hz, 2H), 4.00 (s, 3H), 3.28 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.6, 159.1, 153.4, 139.4, 138.9, 128.7, 128.3, 127.9, 127.5, 127.4, 126.7, 120.1, 112.5, 111.1, 110.6, 56.1, 52.5, 45.2, 34.7. HRMS (m/z): calcd for $C_{24}H_{25}N_4O$ (M+H) 385.2028; found 385.2024.



KSC-16-273 Cpd # XI-II

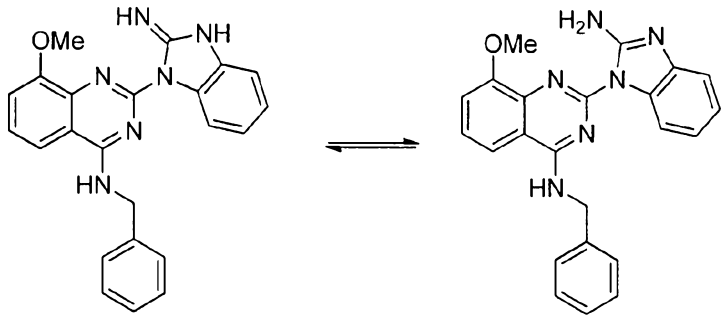
N4-benzyl-8-methoxy-N2-(1-phenylethyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.39 (d, *J* = 7.2 Hz, 2H), 7.36 – 7.24 (m, 7H), 7.23 – 7.16 (m, 1H), 7.04 (dd, *J* = 2.2, 7.4 Hz, 1H), 6.96 (td, *J* = 4.3, 7.5 Hz, 2H), 5.77 (s, 1H), 5.52 (s, 1H), 5.33 – 5.16 (m, 1H), 4.69 (dd, *J* = 9.4, 11.0 Hz, 2H), 3.99 (s, 3H), 1.53 (d, *J* = 6.9 Hz, 3H). ^{13}C NMR (101 MHz, CDCl3) δ 160.0, 158.7, 153.1, 145.9, 144.3, 138.8, 128.7, 128.3, 128.0, 127.4, 126.5, 126.0, 120.2, 112.5, 110.9, 110.7, 55.9, 51.1, 45.1, 23.5. HRMS (m/z): calcd for $C_{24}H_{25}N_4O$ (M+H) 385.2028; found 385.2018.



KSC-16-272 Cpd # XI-I9

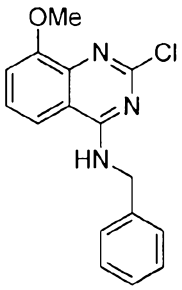
1-(4-(4-(benzylamino)-8-methoxyquinazolin-2-yl)piperazin-1-yl)ethanone. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.43 – 7.34 (m, 4H), 7.34 – 7.29 (m, 1H), 7.16 (dd, *J* = 1.3, 8.2 Hz, 1H), 7.05 (t, *J* = 7.9 Hz, 1H), 6.99 (dd, *J* = 1.2, 7.8 Hz, 1H), 5.97 (t, *J* = 5.3 Hz, 1H), 4.81 (d, *J* = 5.4 Hz, 2H), 3.99 (s, 3H), 3.98 – 3.94 (m, 2H), 3.91 (dd, *J* = 4.3, 6.3 Hz, 2H), 3.74 – 3.63 (m, 2H), 3.58 – 3.46 (m, 2H), 2.15 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 169.2, 159.8, 158.4, 153.4, 143.9, 138.7, 128.7, 127.8, 127.5, 121.0, 112.6,

111.2, 111.0, 56.1, 46.4, 45.4, 44.0, 43.8, 41.6, 21.5. HRMS (m/z): calcd for $C_{22}H_{26}N_5O_2$ (M+H) 392.2087; found 392.2084.



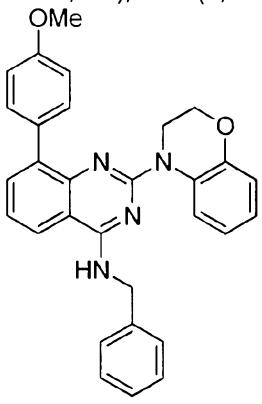
KSC-16-270 (probe) Cpd # VII-16

2-(2-amino-1H-benzo[*d*]imidazol-1-yl)-N-benzyl-8-methoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 9.33 (t, *J* = 5.9 Hz, 1H), 8.31 – 8.05 (m, 3H), 7.93 (d, *J* = 7.5 Hz, 1H), 7.50 – 7.39 (m, 3H), 7.39 – 7.30 (m, 3H), 7.25 (t, *J* = 7.3 Hz, 1H), 7.15 (d, *J* = 7.1 Hz, 1H), 7.03 (td, *J* = 1.2, 7.6 Hz, 1H), 6.87 – 6.76 (m, 1H), 4.92 (d, *J* = 5.8 Hz, 2H), 3.98 (s, 3H). ^{13}C NMR (101 MHz, DMSO) δ 160.8, 154.7, 153.5, 153.4, 142.8, 140.0, 138.5, 131.5, 128.5, 126.9, 126.6, 124.9, 122.5, 118.7, 114.8, 114.6, 114.1, 113.0, 112.7, 56.1, 44.5. HRMS (m/z): calcd for $C_{23}H_{21}N_6O$ (M+H) 397.1777; found 397.1776.



KSC-16-252 and 177

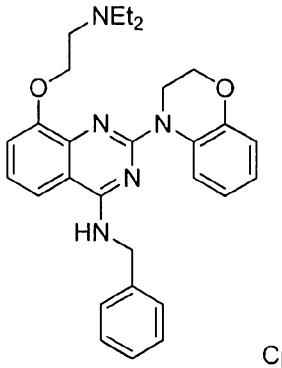
N-benzyl-2-chloro-8-methoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.38 – 7.22 (m, 6H), 7.12 (d, *J* = 7.5 Hz, 1H), 7.05 (d, *J* = 7.8 Hz, 1H), 5.97 (s, 1H), 4.78 (d, *J* = 5.2 Hz, 2H), 3.94 (s, 3H).



KSC-16-268 Cpd # VII-II

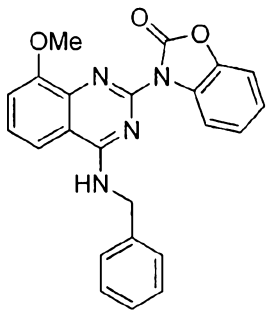
2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzyl-8-(4-methoxyphenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.17 – 8.09 (m, 1H), 7.75 – 7.69 (m, 2H), 7.68 (dd, *J* = 1.4, 7.3 Hz, 1H), 7.56 (dd, *J* = 1.3, 8.2 Hz, 1H), 7.40 (dd, *J* = 1.9, 3.5 Hz, 4H), 7.39 – 7.32 (m, 1H), 7.28 – 7.21 (m, 1H), 7.07 – 7.00 (m, 2H), 6.92 (dtd, *J* = 1.6, 8.1, 9.9 Hz, 2H), 6.77 – 6.70 (m, 1H), 5.94 (s, 1H), 4.85 (t, *J* = 5.3 Hz, 2H), 4.33 – 4.25 (m, 4H), 3.92 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 158.8, 156.1, 149.5, 146.2, 138.6, 137.6, 133.1, 131.9, 131.6, 128.8, 128.2, 127.7, 127.6, 125.1, 123.2, 121.9, 119.5, 119.4,

116.5, 113.2, 111.6, 66.1, 55.4, 45.5, 42.1. HRMS (m/z): calcd for $C_{30}H_{27}N_4O_2$ (M+H) 475.2134; found 475.2135.



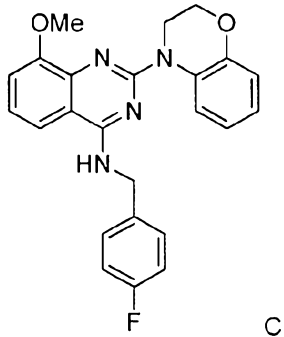
KSC-16-265 Cpd # VII-10

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzyl-8-(2-(diethylamino)ethoxy)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.98 – 7.79 (m, 1H), 7.31 – 7.22 (m, 6H), 7.05 (s, 2H), 6.85 (s, 2H), 6.70 (s, 1H), 4.75 (d, *J* = 5.5, 2H), 4.58 (s, 2H), 4.21 (s, 4H), 3.48 (s, 2H), 3.21 (d, *J* = 7.3, 4H), 1.32 (t, *J* = 7.3, 6H). HRMS (m/z): calcd for $C_{29}H_{34}N_5O_2$ (M+H) 484.2713; found 484.2712.



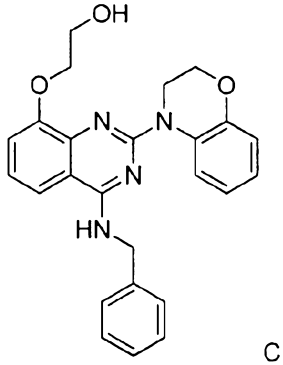
KSC-16-262 Cpd # VII-17

3-(4-(benzylamino)-8-methoxyquinazolin-2-yl)benzo[d]oxazol-2(3H)-one. ^{1}H NMR (400 MHz, DMSO) δ 9.22 (t, *J* = 6.0 Hz, 1H), 7.91 (d, *J* = 7.4 Hz, 1H), 7.83 (d, *J* = 7.9 Hz, 1H), 7.50 (t, *J* = 8.1 Hz, 1H), 7.45 (d, *J* = 7.0 Hz, 2H), 7.40 (d, *J* = 7.9 Hz, 1H), 7.38 – 7.31 (m, 3H), 7.27 (t, *J* = 7.3 Hz, 1H), 7.22 (t, *J* = 7.8 Hz, 1H), 7.15 (t, *J* = 7.8 Hz, 1H), 4.86 (d, *J* = 5.9 Hz, 2H), 3.98 (s, 3H). ^{13}C NMR (101 MHz, DMSO) δ 160.8, 154.3, 150.7, 150.1, 141.6, 141.2, 139.1, 129.3, 128.4, 127.4, 126.9, 125.8, 123.8, 123.4, 114.1, 114.0, 113.8, 113.0, 109.5, 56.0, 43.9. HRMS (m/z): calcd for $C_{23}H_{19}N_4O_3$ (M+H) 399.1457; found 399.1451.



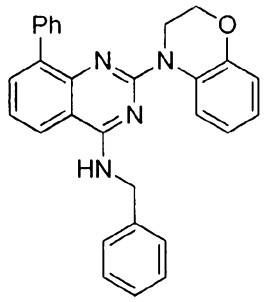
KSC-16-261 Cpd # XII-4

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-(4-fluorobenzyl)-8-methoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.12 – 7.87 (m, 1H), 7.25 (s, br. 2H), 7.14 – 7.02 (m, 2H), 6.98 – 6.93 (m, 2H), 6.84 (s, br. 2H), 6.78 – 6.56 (m, 1H), 5.89 – 5.66 (m, 1H), 4.69 (s, br. 2H), 4.32 (s, br. 2H), 4.24 (s, br. 2H), 3.92 (s, 3H). HRMS (m/z): calcd for $C_{24}H_{22}FN_4O_2$ (M+H) 417.1727; found 417.1726.



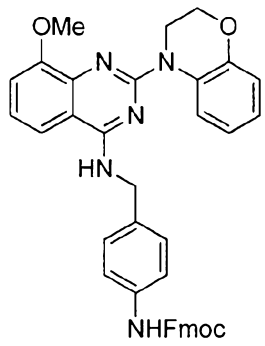
KSC-16-260 Cpd # VII-9

2-((2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-4-(benzylamino)quinazolin-8-yl)oxy)ethanol. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.05 (d, *J* = 7.3 Hz, 1H), 7.39 (dd, *J* = 5.9, 7.5 Hz, 6H), 7.20 (d, *J* = 6.7 Hz, 1H), 7.12 (t, *J* = 7.9 Hz, 1H), 6.99 (d, *J* = 6.9 Hz, 1H), 6.97 – 6.91 (m, 1H), 6.84 (t, *J* = 7.6 Hz, 1H), 4.84 (d, *J* = 5.5 Hz, 2H), 4.34 (s, 4H), 4.29 – 4.18 (m, 2H), 3.92 – 3.81 (m, 2H). HRMS (m/z): calcd for $C_{25}H_{25}N_4O_3$ (M+H) 429.1927; found 429.1925.



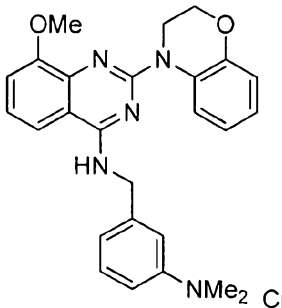
KSC-16-255 Cpd # VII-8

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzyl-8-phenylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.03 (d, *J* = 7.0 Hz, 1H), 7.69 – 7.55 (m, 3H), 7.50 (d, *J* = 7.0 Hz, 1H), 7.38 (t, *J* = 7.4 Hz, 2H), 7.34 – 7.22 (m, 5H), 7.18 – 7.11 (m, 1H), 6.79 (dt, *J* = 6.6, 8.1 Hz, 2H), 6.62 (dd, *J* = 4.3, 10.9 Hz, 1H), 5.86 (s, 1H), 4.76 (d, *J* = 5.4 Hz, 2H), 4.18 (s, 4H). ^{13}C NMR (126 MHz, CDCl3) δ 160.0, 156.1, 149.5, 146.2, 139.5, 138.5, 138.1, 133.5, 130.5, 128.8, 128.2, 127.7, 127.7, 127.6, 126.9, 125.0, 123.2, 121.8, 120.0, 119.4, 116.4, 111.6, 66.0, 45.5, 42.0. HRMS (m/z): calcd for $C_{29}H_{25}N_4O$ (M+H) 445.2028; found 445.2025.



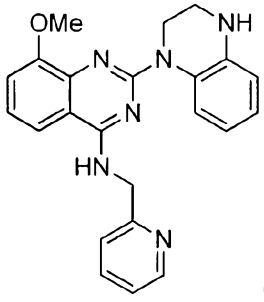
KSC-16-251 Cpd # XII-3

(9H-fluoren-9-yl)methyl(4-(((2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-8-methoxyquinazolin-4-yl)amino)methyl)phenyl)carbamate. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.24 – 8.06 (m, 1H), 7.81 (d, *J* = 7.5 Hz, 2H), 7.64 (d, *J* = 7.5 Hz, 2H), 7.44 (t, *J* = 7.4 Hz, 2H), 7.41 – 7.30 (m, 5H), 7.23 – 7.09 (m, 2H), 7.06 (s, 1H), 6.94 (s, 2H), 6.88 – 6.78 (m, 1H), 6.78 – 6.61 (m, 1H), 5.99 – 5.71 (m, 1H), 4.77 (s, br. 2H), 4.58 (d, *J* = 6.5 Hz, 2H), 4.42 (s, br. 2H), 4.34 – 4.28 (m, 3H), 4.02 (s, 3H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 159.7, 153.4, 143.7, 141.4, 137.0, 128.6, 127.8, 127.6, 127.2, 124.9, 120.1, 119.0, 111.8, 66.9, 66.2, 56.2, 47.1, 44.9, 42.2, 29.7. HRMS (m/z): calcd for $C_{39}H_{34}N_5O_4$ (M+H) 636.2611; found 636.2613.



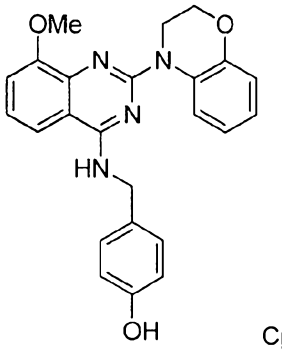
KSC-16-243 Cpd # XII-2

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-(3-(dimethylamino)benzyl)-8-methoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.39 – 8.15 (m, 1H), 7.26 (s, 1H), 7.14 (s, 2H), 7.05 (s, 1H), 6.94 (s, 2H), 6.90 – 6.82 (m, 1H), 6.76 (d, *J* = 7.1 Hz, 2H), 6.71 (d, *J* = 8.0 Hz, 1H), 5.93 – 5.72 (m, 1H), 4.77 (s, br. 2H), 4.46 (s, br. 2H), 4.36 (s, br. 2H), 4.02 (s, 3H), 2.95 (s, 6H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.7, 151.0, 139.2, 129.5, 124.4, 123.1, 121.8, 119.5, 116.7, 116.0, 112.4, 112.2, 111.4, 111.8, 111.8, 66.2, 56.1, 46.2, 42.2, 40.6. HRMS (m/z): calcd for $C_{26}H_{28}N_5O_2$ (M+H) 442.2243; found 442.2239.



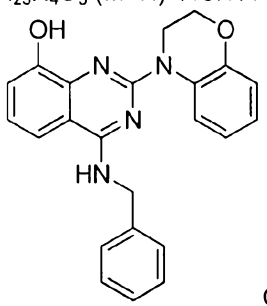
KSC-16-241 Cpd # XLIII

2-(3,4-dihydroquinoxalin-1(2H)-yl)-8-methoxy-N-(pyridin-2-ylmethyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.51 (s, 1H), 7.83 – 7.66 (m, 1H), 7.57 (dd, *J* = 5.9, 7.7 Hz, 1H), 7.13 (s, 1H), 7.06 (s, 2H), 6.94 (d, *J* = 7.9 Hz, 1H), 6.89 – 6.77 (m, 1H), 6.77 – 6.68 (m, 1H), 6.64 – 6.50 (m, 2H), 4.78 (s, br. 2H), 4.27 (s, br. 2H), 3.91 (s, 3H), 3.39 (s, br. 2H). HRMS (m/z): calcd for $C_{23}H_{23}N_6O$ (M+H) 399.1933; found 399.1929.



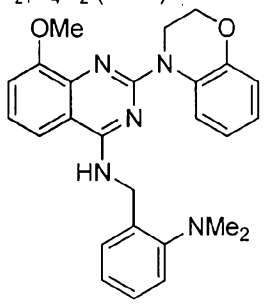
KSC-16-235 Cpd # XII-10

4-(((2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-8-methoxyquinazolin-4-yl)amino)methyl)phenol. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.01 (s, 1H), 7.13 – 7.11 (m, 3H), 7.03 (t, *J* = 8.0 Hz, 1H), 6.94 (d, *J* = 8.6 Hz, 1H), 6.91 – 6.78 (m, 2H), 6.72 (d, *J* = 8.4 Hz, 3H), 4.62 (d, *J* = 5.0 Hz, 2H), 4.31 (d, *J* = 4.5 Hz, 2H), 4.23 (d, *J* = 4.6 Hz, 2H), 3.90 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.6, 155.3, 146.3, 130.2, 129.3, 124.2, 123.5, 122.1, 119.5, 116.8, 115.6, 112.7, 111.8, 111.6, 66.2, 56.1, 44.9, 42.3. HRMS (m/z): calcd for $C_{24}H_{23}N_4O_3$ (M+H) 415.1770; found 415.1760.



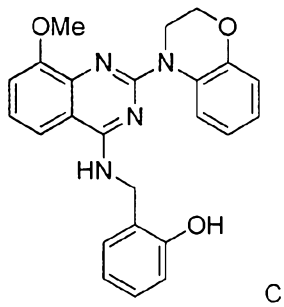
KSC-16-232 Cpd # VII-7

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-4-(benzylamino)quinazolin-8-ol. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.88 (s, 1H), 7.30 (d, *J* = 4.6 Hz, 4H), 7.28 – 7.21 (m, 1H), 7.09 - 7.06 (m, 2H), 7.02 – 6.88 (m, 2H), 6.86 (d, *J* = 6.5 Hz, 1H), 6.79 – 6.74 (m, 1H), 4.76 (d, *J* = 5.4 Hz, 2H), 4.23 (s, 4H). HRMS (m/z): calcd for $C_{23}H_{21}N_4O_2$ (M+H) 385.1665; found 385.1657.



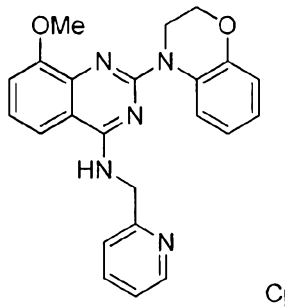
KSC-16-227 Cpd # XII-9

2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-(2-(dimethylamino)benzyl)-8-methoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.16 (s, 1H), 7.31 (s, br. 1H), 7.21 (d, *J* = 7.2 Hz, 2H), 7.14 (d, *J* = 7.5 Hz, 1H), 7.04 – 6.97 (m, 3H), 6.94 – 6.91 (m, 1H), 6.89 – 6.85 (m, 2H), 6.84 – 6.74 (m, 1H), 4.82 (d, *J* = 5.1 Hz, 2H), 4.40 – 4.36 (m, 2H), 4.29 – 4.27 (m, 2H), 3.92 (s, 3H), 2.71 (s, 6H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 159.8, 132.2, 129.6, 128.4, 124.4, 124.0, 121.8, 120.0, 119.3, 116.7, 112.4, 112.3, 111.2, 66.2, 56.1, 44.7, 43.4, 42.2. HRMS (m/z): calcd for $C_{26}H_{28}N_5O_2$ (M+H) 442.2243; found 442.2233.



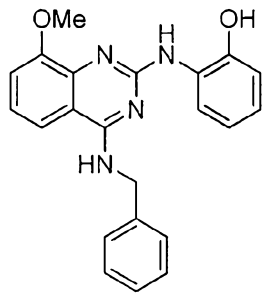
KSC-16-222 Cpd # XII-8

2-(((2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-8-methoxyquinazolin-4-yl)amino)methyl)phenol. ^{1}H NMR (400 MHz, CDCl3) δ 8.91 (s, br. 1H), 7.97 (s, br. 1H), 7.14 – 7.04 (m, 3H), 7.01 (t, *J* = 7.9 Hz, 1H), 6.93 (d, *J* = 8.8 Hz, 1H), 6.91 – 6.85 (m, 2H), 6.82 (t, *J* = 7.3 Hz, 1H), 6.73 (t, *J* = 7.2 Hz, 2H), 4.68 (s, br. 2H), 4.30 (s, 4H), 3.87 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.9, 155.8, 146.3, 130.8, 129.9, 124.0, 122.8, 119.9, 119.7, 117.4, 117.2, 112.6, 112.1, 111.7, 66.0, 56.1, 43.1, 42.0. HRMS (m/z): calcd for $C_{24}H_{23}N_4O_3$ (M+H) 415.1770; found 415.1763.



KSC-16-219 Cpd # XII-7

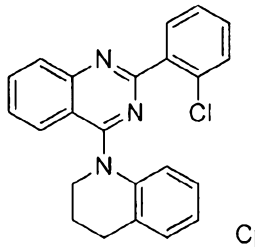
2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-8-methoxy-N-(pyridin-2-ylmethyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.53 (s, 1H), 8.10 (s, 1H), 7.59 (td, *J* = 1.7, 7.7 Hz, 1H), 7.32 (s, br. 1H), 7.22 (d, *J* = 7.8 Hz, 1H), 7.18 – 7.12 (m, 1H), 7.09 (t, *J* = 8.0 Hz, 1H), 6.96 (d, *J* = 7.1 Hz, 1H), 6.93 – 6.77 (m, 3H), 4.79 (d, *J* = 4.6 Hz, 2H), 4.39 – 4.32 (m, 2H), 4.28 – 4.22 (m, 2H), 3.92 (s, 3H). ^{13}C NMR (101 MHz, CDCl3) δ 159.7, 156.6, 149.0, 146.3, 136.7, 124.2, 123.3, 122.4, 122.2, 119.4, 116.8, 112.2, 122.0, 111.5, 66.2, 56.1, 45.9, 42.3. HRMS (m/z): calcd for $C_{23}H_{22}N_5O_2$ (M+H) 400.1773; found 400.1768.



KSC-16-203 Cpd # XI-10

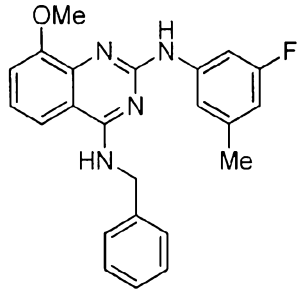
2-((4-(benzylamino)-8-methoxyquinazolin-2-yl)amino)phenol. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.47 – 7.31 (m, 5H), 7.16 – 7.10 (m, 3H), 7.10 – 7.06 (m, 1H), 7.03 (td, *J* = 2.0, 6.8 Hz, 1H), 6.94 (d, *J* = 6.6 Hz, 2H), 6.87 – 6.78 (m, 1H), 6.08 (s, br. 1H), 4.83 (d, *J* = 5.4 Hz, 2H), 3.99 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.3, 156.5, 153.2, 149.3, 137.9, 128.9, 128.3, 128.0, 127.8, 125.3, 122.5, 121.8, 120.9,

119.6, 112.1, 111.9, 111.2, 56.1, 45.4. HRMS (m/z): calcd for $C_{22}H_{21}N_4O_2$ (M+H) 373.1665; found 373.1657.



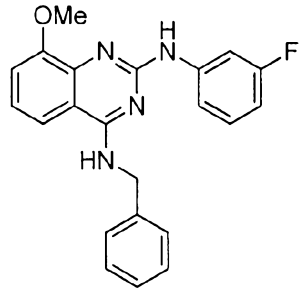
KSC-16-197 Cpd # XXIV

2-(2-chlorophenyl)-4-(3,4-dihydroquinolin-1(*2H*)-yl)quinazoline. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.03 (d, *J* = 7.9 Hz, 1H), 7.99 – 7.92 (m, 1H), 7.74 (ddd, *J* = 1.4, 6.9, 8.4 Hz, 1H), 7.54 (ddd, *J* = 1.3, 5.7, 6.9 Hz, 2H), 7.41 (pd, *J* = 1.8, 7.4 Hz, 2H), 7.26 (ddd, *J* = 1.3, 6.9, 8.4 Hz, 2H), 7.04 (td, *J* = 1.3, 7.4 Hz, 1H), 6.98 (td, *J* = 1.7, 7.7 Hz, 1H), 6.83 – 6.74 (m, 1H), 4.19 (t, *J* = 6.5 Hz, 2H), 2.97 (t, *J* = 6.7 Hz, 2H), 2.19 (p, *J* = 6.6 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 162.0, 161.4, 152.4, 142.7, 138.7, 132.9, 132.7, 131.8, 130.6, 130.3, 130.0, 129.0, 128.9, 126.8, 126.2, 126.1, 125.5, 123.4, 120.7, 116.3, 47.8, 27.0, 24.2. HRMS (m/z): calcd for $C_{23}H_{19}ClN_3$ (M+H) 372.1268; found 372.1266.



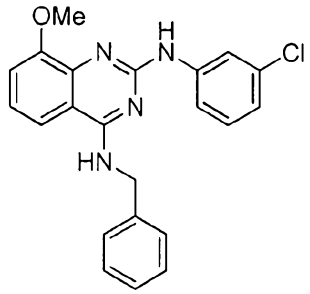
KSC-16-196 Cpd # XI-18

N4-benzyl-N2-(3-fluoro-5-methylphenyl)-8-methoxyquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.53 (d, *J* = 11.7 Hz, 1H), 7.41 – 7.22 (m, 5H), 7.12 – 7.00 (m, 2H), 7.00 – 6.89 (m, 2H), 6.41 (d, *J* = 9.3 Hz, 1H), 5.84 (s, 1H), 4.80 (d, *J* = 5.1 Hz, 2H), 3.95 (s, 3H), 2.20 (s, 3H). ^{13}C NMR (101 MHz, CDCl3) δ 164.4, 162.0, 160.2, 156.4, 153.7, 141.8, 141.7, 140.1, 140.0, 138.0, 128.9, 127.9, 127.8, 122.0, 114.6, 112.4, 111.7, 111.3, 109.0, 108.7, 103.3, 103.0, 56.1, 45.7, 21.58, 21.56. HRMS (m/z): calcd for $C_{23}H_{22}FN_4O$ (M+H) 389.1778; found 389.1781.



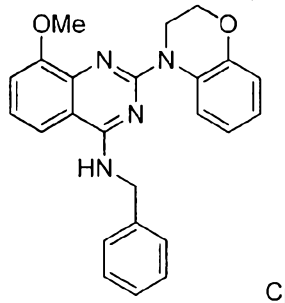
KSC-16-194 Cpd # XI-17

N4-benzyl-N2-(3-fluorophenyl)-8-methoxyquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.73 (dt, J = 2.1, 11.8 Hz, 1H), 7.42 – 7.20 (m, 6H), 7.15 – 7.00 (m, 4H), 6.96 (dd, J = 1.7, 7.3 Hz, 1H), 6.64 – 6.51 (m, 1H), 5.86 (s, 1H), 4.79 (d, J = 5.1 Hz, 2H), 3.95 (s, 3H). ^{13}C NMR (101 MHz, CDCl3) δ 164.5, 162.1, 160.2, 156.3, 153.7, 143.3, 142.2, 142.1, 138.0, 129.7, 129.6, 128.9, 127.9, 127.8, 122.1, 114.0, 114.0, 112.4, 111.8, 111.3, 108.1, 107.8, 106.1, 105.8, 56.1, 45.7. HRMS (m/z): calcd for $C_{22}H_{20}FN_4O$ (M+H) 375.1621; found 375.1626.



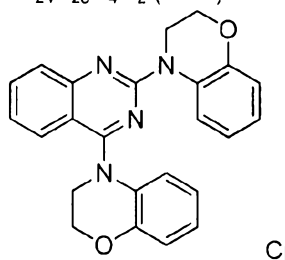
KSC-16-193 Cpd # XI-16

N4-benzyl-N2-(3-chlorophenyl)-8-methoxyquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.03 (t, J = 2.1 Hz, 1H), 7.51 – 7.33 (m, 6H), 7.28 (d, J = 11.5 Hz, 1H), 7.23 – 7.12 (m, 3H), 7.07 (dd, J = 1.9, 7.1 Hz, 1H), 6.96 (ddd, J = 0.9, 2.0, 7.9 Hz, 1H), 5.94 (s, br. 1H), 4.90 (d, J = 5.1 Hz, 2H), 4.05 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 156.3, 153.7, 141.7, 138.0, 134.4, 129.7, 128.9, 127.9, 127.8, 122.1, 121.4, 118.8, 116.7, 112.4, 111.8, 111.3, 56.1, 45.7. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4O$ (M+H) 391.1326; found 391.1325.



KSC-16-191 Cpd # VII-6

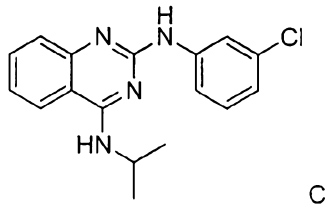
2-(2H-benzo[*b*][1,4]oxazin-4(3H)-yl)-N-benzyl-8-methoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.21 – 8.08 (m, 1H), 7.46 – 7.31 (m, 5H), 7.18 7.11 (m, 2H), 7.05 (dd, J = 1.6, 7.3 Hz, 1H), 6.99 – 6.88 (m, 2H), 6.80 (ddd, J = 2.3, 6.5, 8.7 Hz, 1H), 5.86 (s, 1H), 4.83 (d, J = 5.5 Hz, 2H), 4.50 – 4.40 (m, 2H), 4.40 – 4.29 (m, 2H), 4.03 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.7, 156.2, 153.9, 146.2, 143.6, 138.5, 128.8, 128.1, 127.8, 127.6, 124.3, 123.2, 121.9, 119.4, 116.7, 112.3, 111.8, 111.4, 66.2, 56.1, 45.4, 42.2. HRMS (m/z): calcd for $C_{24}H_{23}N_4O_2$ (M+H) 399.1821; found 399.1824.



KSC-16-190 Cpd # XII-II

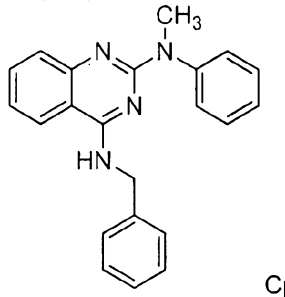
4,4'-(quinazoline-2,4-diyl)bis(3,4-dihydro-2*H*-benzo[*b*][1,4]oxazine). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.03 (dd, J = 1.5, 8.2 Hz, 1H), 7.66 (dd, J = 0.8, 8.4 Hz, 1H), 7.59 (dd, J = 0.8, 8.5 Hz, 1H), 7.53 (ddd, J = 1.4,

6.7, 8.4 Hz, 1H), 7.00 (ddd, J = 1.4, 6.7, 8.2 Hz, 1H), 6.96 – 6.75 (m, 5H), 6.71 (d, J = 8.1 Hz, 1H), 6.67 – 6.53 (m, 1H), 4.48 – 4.36 (m, 2H), 4.36 – 4.22 (m, 4H), 4.07 – 3.95 (m, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 161.4, 156.4, 154.0, 146.4, 145.7, 133.3, 129.7, 127.7, 127.0, 126.2, 124.3, 124.0, 123.8, 122.2, 120.4, 120.0, 119.5, 117.3, 117.0, 113.7, 66.5, 66.1, 45.6, 42.3. HRMS (m/z): calcd for $C_{24}H_{21}N_4O_2$ (M+H) 397.1665; found 397.1664.



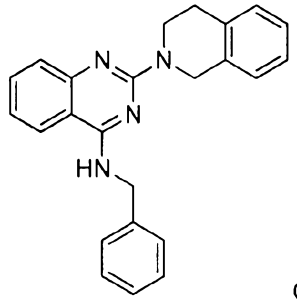
KSC-16-189 Cpd # XLII

N2-(3-chlorophenyl)-N4-isopropylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.06 (t, J = 2.0 Hz, 1H), 7.64 – 7.42 (m, 3H), 7.31 (ddd, J = 0.9, 2.1, 8.2 Hz, 1H), 7.25 – 7.03 (m, 3H), 6.88 (ddd, J = 0.9, 2.0, 7.9 Hz, 1H), 5.39 (d, J = 7.2 Hz, 1H), 4.44 (q, J = 6.5 Hz, 1H), 1.31 (d, J = 6.5 Hz, 6H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.5, 156.6, 151.1, 141.8, 134.4, 132.9, 129.6, 126.3, 122.4, 121.4, 120.6, 118.9, 116.7, 111.5, 43.1, 22.7. HRMS (m/z): calcd for $C_{17}H_{18}ClN_4$ (M+H) 313.1220; found 313.1221.



KSC-16-188 Cpd # XI-9

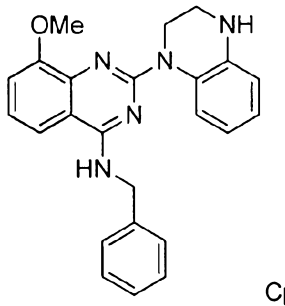
N4-benzyl-N2-methyl-N2-phenylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.36 (dd, J = 1.3, 4.6 Hz, 2H), 7.31 (t, J = 7.8 Hz, 1H), 7.26 – 7.09 (m, 7H), 7.05 – 7.00 (m, 2H), 7.00 – 6.94 (m, 1H), 6.90 (ddd, J = 3.3, 4.9, 8.2 Hz, 1H), 5.58 (s, 1H), 4.38 (d, J = 5.6 Hz, 2H), 3.45 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.2, 158.9, 152.2, 146.3, 138.9, 132.5, 128.6, 128.4, 128.0, 127.3, 126.6, 126.5, 124.6, 121.3, 120.6, 110.9, 45.0, 38.2. HRMS (m/z): calcd for $C_{22}H_{21}N_4$ (M+H) 341.1766; found 341.1766.



KSC-16-187 Cpd # XI-8

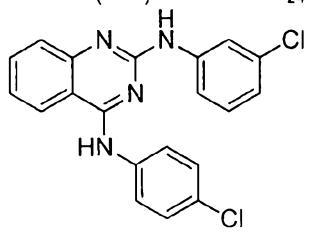
N-benzyl-2-(3,4-dihydroisoquinolin-2(*1H*)-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.45 (d, J = 3.6 Hz, 2H), 7.41 (d, J = 8.2 Hz, 1H), 7.35 (d, J = 7.3 Hz, 2H), 7.33 – 7.21 (m, 3H), 7.16 – 7.03 (m, 4H), 7.03 – 6.89 (m, 1H), 5.73 (s, br. 1H), 4.95 (s, 2H), 4.78 (d, J = 5.4 Hz, 2H), 4.07 (t, J = 5.9 Hz, 2H), 2.84 (t, J = 5.9 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.6, 139.0, 135.5, 134.9, 132.6, 128.7, 128.6, 127.9, 127.5,

126.6, 126.03, 125.95, 120.9, 120.7, 110.3, 46.4, 45.3, 41.5, 29.2. HRMS (m/z): calcd for $C_{24}H_{23}N_4$ (M+H) 367.1923; found 367.1921.



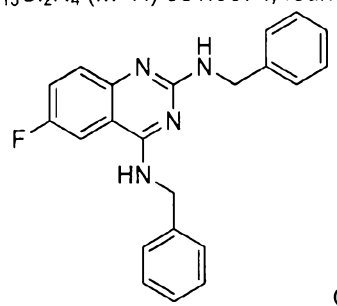
KSC-16-182 Cpd # VII-5

N-benzyl-2-(3,4-dihydroquinoxalin-1(*2H*)-yl)-8-methoxyquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.72 (d, *J* = 7.8 Hz, 1H), 7.37 – 7.21 (m, 5H), 7.04 (d, *J* = 7.8 Hz, 1H), 6.98 (t, *J* = 7.8 Hz, 1H), 6.92 (d, *J* = 7.7 Hz, 1H), 6.77 (t, *J* = 6.9 Hz, 1H), 6.59 – 6.44 (m, 2H), 5.68 (s, 1H), 4.69 (d, *J* = 5.4 Hz, 2H), 4.33 – 4.24 (m, 2H), 3.92 (s, 3H), 3.48 – 3.37 (m, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.6, 156.8, 153.8, 138.7, 137.0, 128.7, 127.9, 127.5, 126.7, 125.2, 123.5, 121.3, 118.8, 116.1, 114.5, 112.4, 111.7, 111.3, 56.2, 45.3, 42.5, 41.5. HRMS (m/z): calcd for $C_{24}H_{24}N_5O$ (M+H) 398.1981; found 398.1974.



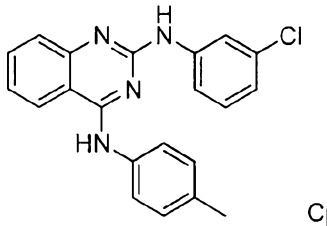
KSC-16-176 Cpd # XXV-5

N2-(3-chlorophenyl)-N4-(4-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.97 (t, *J* = 2.0 Hz, 1H), 7.78 – 7.61 (m, 5H), 7.46 – 7.36 (m, 4H), 7.32 (ddd, *J* = 2.1, 6.1, 8.2 Hz, 1H), 7.23 (t, *J* = 8.0 Hz, 2H), 7.01 (ddd, *J* = 0.9, 2.0, 7.9 Hz, 1H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 158.1, 156.0, 151.8, 141.2, 136.6, 134.5, 133.5, 129.7, 129.7, 129.2, 126.9, 123.4, 123.2, 122.1, 120.4, 119.2, 117.2, 111.5. HRMS (m/z): calcd for $C_{20}H_{15}Cl_2N_4$ (M+H) 381.0674; found 381.0668.



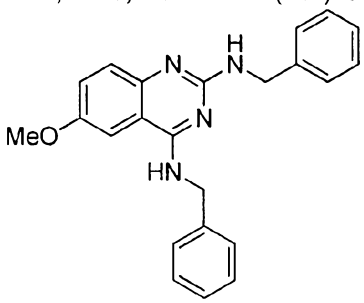
KSC-16-175 Cpd # VI-15

N2,N4-dibenzyl-6-fluoroquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.49 (dd, *J* = 5.2, 9.1 Hz, 1H), 7.43 – 7.30 (m, 10H), 7.27 (d, *J* = 7.2 Hz, 1H), 7.16 (dd, *J* = 2.7, 9.0 Hz, 1H), 5.70 (s, br. 1H), 5.40 (s, br. 1H), 4.78 (d, *J* = 5.4 Hz, 2H), 4.73 (d, *J* = 5.7 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.7, 159.6, 159.2, 158.4, 156.0, 148.9, 140.0, 138.4, 128.8, 128.5, 128.0, 127.7, 127.6, 127.0, 122.0, 121.8, 110.7, 110.6, 105.5, 105.3, 103.0, 45.6, 45.2. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1672.



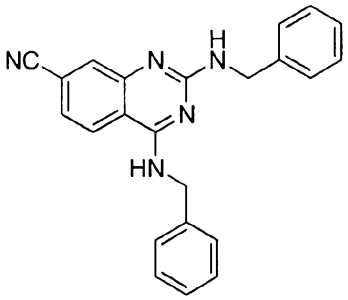
KSC-16-174 Cpd # XXV-4

N2-(3-chlorophenyl)-N4-(p-tolyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.89 (t, J = 2.0 Hz, 1H), 7.66 (d, J = 8.1 Hz, 1H), 7.60 (dd, J = 1.6, 5.1 Hz, 2H), 7.47 (d, J = 8.4 Hz, 2H), 7.38 – 7.30 (m, 1H), 7.22 (ddd, J = 4.7, 7.4, 8.2 Hz, 2H), 7.16 (s, br. 2H), 7.12 (t, J = 8.1 Hz, 2H), 6.89 (ddd, J = 0.9, 2.0, 7.9 Hz, 1H), 2.32 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 158.5, 156.1, 151.7, 141.4, 135.3, 134.6, 134.5, 133.3, 129.7, 129.6, 126.8, 123.0, 122.5, 121.8, 120.5, 119.0, 117.0, 111.7, 21.0. HRMS (m/z): calcd for $C_{21}H_{18}ClN_4$



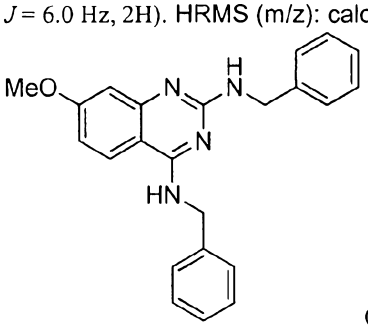
(M+H) 361.1220; found 361.1228. KSC-16-172 Cpd # VI-14

N2,N4-dibenzyl-6-methoxyquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.36 (d, J = 9.1 Hz, 1H), 7.32 – 7.08 (m, 11H), 6.77 (d, J = 2.7 Hz, 1H), 5.80 (s, 1H), 5.17 (s, 1H), 4.69 (d, J = 5.4 Hz, 2H), 4.61 (d, J = 5.4 Hz, 2H), 3.70 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.6, 158.6, 154.3, 147.3, 140.2, 138.9, 128.7, 128.4, 128.0, 127.6, 127.5, 127.0, 126.9, 123.4, 110.8, 101.4, 55.7, 45.7, 45.1. HRMS (m/z): calcd for $C_{23}H_{23}N_4O$ (M+H) 371.1872; found 371.1874.



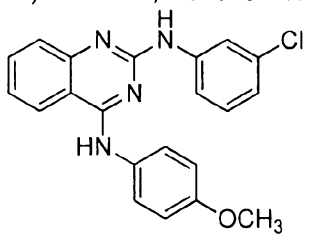
KSC-16-167 Cpd # VI-8

2,4-bis(benzylamino)quinazoline-7-carbonitrile. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.79 (s, br. 1H), 7.55 (d, J = 8.3 Hz, 1H), 7.47 – 7.30 (m, 10H), 7.24 (dd, J = 1.6, 8.3 Hz, 1H), 5.83 (s, 1H), 5.55 – 5.32 (m, 1H), 4.78 (d, J = 5.4 Hz, 2H), 4.74 (d, J = 6.0 Hz, 2H). HRMS (m/z): calcd for $C_{23}H_{20}N_5$ (M+H) 366.1719; found



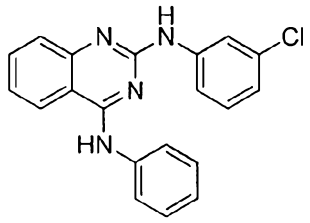
366.1719. KSC-16-166 Cpd # VI-13

N2,N4-dibenzyl-7-methoxyquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.33 – 7.08 (m, 11H), 6.75 (s, 1H), 6.57 (dd, J = 2.5, 8.9 Hz, 1H), 5.72 (s, br. 1H), 5.32 (s, br. 1H), 4.64 (d, J = 5.5 Hz, 2H), 4.61 (d, J = 5.8 Hz, 2H), 3.72 (s, 3H). ^{13}C NMR (101 MHz, CDCl3) δ 163.4, 160.1, 159.9, 154.5, 140.1, 138.9, 128.7, 128.5, 128.0, 127.6, 127.5, 127.0, 122.3, 112.7, 105.2, 104.9, 55.4, 45.6, 45.0. HRMS (m/z): calcd for $C_{23}H_{23}N_4O$ (M+H) 371.1872; found 371.1872.



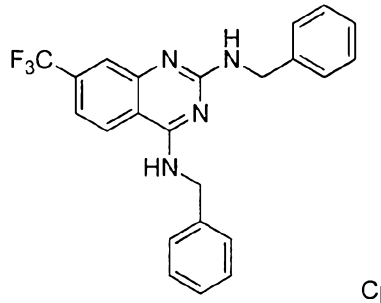
KSC-16-164 Cpd # XXV-3

N2-(3-chlorophenyl)-N4-(4-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ ^{1}H NMR (400 MHz, CDCl3) δ 7.85 (t, J = 2.0 Hz, 1H), 7.63 (d, J = 8.0 Hz, 1H), 7.61 – 7.52 (m, 2H), 7.49 – 7.39 (m, 2H), 7.31 – 7.11 (m, 4H), 7.08 (t, J = 8.1 Hz, 1H), 6.94 – 6.80 (m, 3H), 3.77 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 158.8, 157.1, 156.2, 151.6, 141.4, 134.4, 133.3, 130.8, 129.6, 126.7, 124.6, 122.9, 121.7, 120.6, 118.9, 117.0, 114.4, 111.6, 55.6. HRMS (m/z): calcd for $C_{21}H_{18}ClN_4O$ (M+H) 377.1169; found 377.1169.



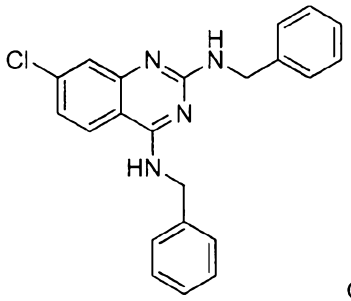
KSC-16-163 Cpd # XXV-2

N2-(3-chlorophenyl)-N4-phenylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.88 (t, J = 2.0 Hz, 1H), 7.71 – 7.53 (m, 5H), 7.37 (dd, J = 5.2, 10.7 Hz, 3H), 7.31 (s, br. 1H), 7.22 (ddd, J = 2.9, 5.3, 8.2 Hz, 1H), 7.17 – 7.00 (m, 3H), 6.89 (ddd, J = 0.9, 2.0, 7.9 Hz, 1H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 158.2, 156.1, 151.8, 141.3, 138.1, 134.5, 133.3, 129.7, 129.2, 126.9, 124.7, 123.1, 122.1, 121.9, 120.5, 119.1, 117.1, 111.7. HRMS (m/z): calcd for $C_{20}H_{16}ClN_4$ (M+H) 347.1063; found 347.1061.



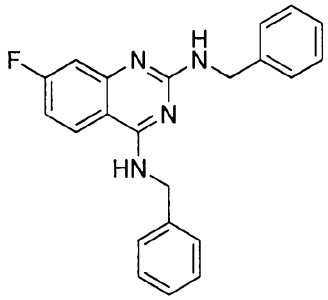
KSC-16-160 Cpd # VI-7

N2,N4-dibenzyl-7-(trifluoromethyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, CDCl3) δ 7.78 (s, 1H), 7.60 (d, J = 8.5 Hz, 1H), 7.39 – 7.33 (m, 9H), 7.32 – 7.21 (m, 2H), 5.91 (s, br. 1H), 5.51 (s, br. 1H), 4.80 (d, J = 5.4 Hz, 2H), 4.75 (d, J = 5.9 Hz, 2H). ^{13}C NMR (101 MHz, CDCl3) δ 160.0, 159.7, 152.0, 139.6, 138.2, 134.5, 134.2, 128.8, 128.6, 128.0, 127.8, 127.6, 127.1, 125.2, 122.5, 121.9, 116.64, 116.61, 45.5, 45.2. HRMS (m/z): calcd for $C_{23}H_{20}F_3N_4$ (M+H) 409.1640; found 409.1642.



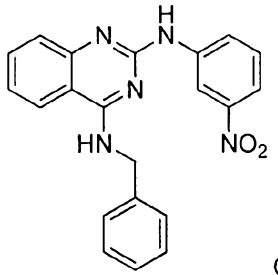
KSC-16-159 Cpd # VI-12

N2,N4-dibenzyl-7-chloroquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.54 (s, br. 1H), 7.50 – 7.37 (m, 10H), 7.32 (d, J = 7.0 Hz, 1H), 7.08 (dd, J = 2.1, 8.7 Hz, 1H), 5.82 (s, br. 1H), 5.42 (s, br. 1H), 4.83 (d, J = 5.4 Hz, 2H), 4.79 (d, J = 5.9 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.8, 153.3, 139.8, 138.7, 138.4, 128.8, 128.5, 128.0, 127.7, 127.6, 127.1, 124.8, 122.2, 121.6, 109.5, 45.5, 45.1. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1377.



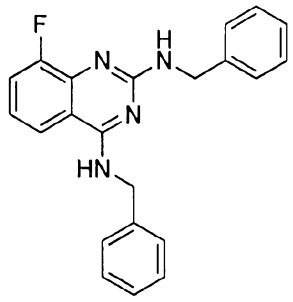
KSC-16-156 Cpd # VI-11

N2,N4-dibenzyl-7-fluoroquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.49 (dd, J = 5.9, 9.0 Hz, 1H), 7.46 – 7.31 (m, 9H), 7.30 – 7.23 (m, 1H), 7.12 (d, J = 10.3 Hz, 1H), 6.82 (td, J = 2.5, 8.6 Hz, 1H), 5.81 (s, br. 1H), 5.41 (s, br. 1H), 4.78 (d, J = 5.4 Hz, 2H), 4.73 (d, J = 5.9 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 167.0, 164.5, 160.1, 159.8, 154.5, 154.3, 139.8, 138.5, 128.8, 128.5, 128.0, 127.6, 127.1, 123.1, 123.0, 110.4, 110.1, 45.5, 45.1. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1674.



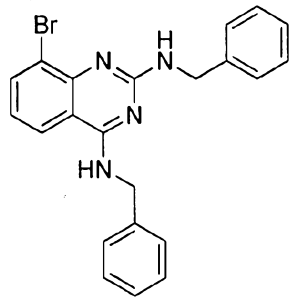
KSC-16-155 Cpd # II-22

N4-benzyl-N2-(3-nitrophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 9.03 (t, J = 2.2 Hz, 1H), 7.82 – 7.68 (m, 2H), 7.62 (d, J = 3.6 Hz, 2H), 7.56 (d, J = 8.2 Hz, 1H), 7.45 (s, br. 1H), 7.42 – 7.26 (m, 6H), 7.20 (dd, J = 3.9, 8.0 Hz, 1H), 5.94 (s, 1H), 4.87 (d, J = 5.2 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 156.3, 151.0, 148.8, 141.6, 137.9, 133.3, 129.3, 128.9, 127.9, 127.9, 126.6, 124.1, 123.0, 120.7, 116.1, 113.4, 111.6, 45.6, 29.7. HRMS (m/z): calcd for $C_{21}H_{18}N_5O_2$ (M+H) 372.1460; found 372.1462.



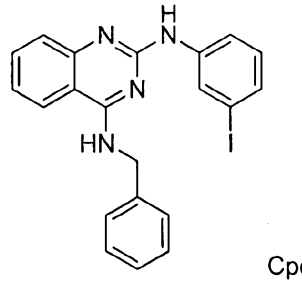
KSC-16-154 Cpd # VI-10

N2,N4-dibenzyl-8-fluoroquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.47 – 7.12 (m, 12H), 6.95 (td, J = 4.9, 8.0 Hz, 1H), 6.15 (s, br. 1H), 5.68 (s, br. 1H), 4.77 (d, J = 5.5 Hz, 2H), 4.74 (d, J = 5.7 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.7, 159.6, 157.4, 154.9, 142.7, 142.6, 140.0, 138.5, 128.7, 128.5, 128.0, 127.6, 127.0, 119.8, 119.7, 117.0, 116.9, 116.6, 116.6, 112.8, 45.6, 45.1. . HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1675.



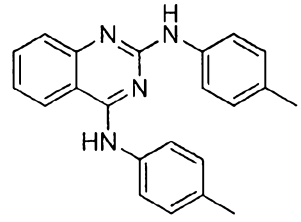
KSC-16-153 Cpd # VI-9

N2,N4-dibenzyl-8-bromoquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.86 (dd, J = 1.1, 7.6 Hz, 1H), 7.68 – 7.19 (m, 11H), 6.90 (t, J = 7.8 Hz, 1H), 5.89 (s, br. 1H), 5.74 – 5.16 (m, 1H), 4.77 (d, J = 5.4 Hz, 4H). HRMS (m/z): calcd for $C_{22}H_{20}BrN_4$ (M+H) 419.0871 and 421.0851; found 421.0848.



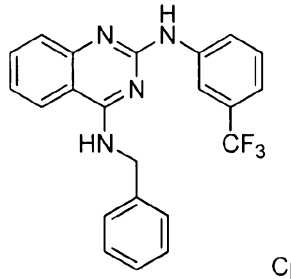
KSC-16-152 Cpd # II-21

N4-benzyl-N2-(3-iodophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.38 (t, J = 1.9 Hz, 1H), 7.62 (tdd, J = 4.1, 5.9, 9.2 Hz, 4H), 7.50 – 7.31 (m, 6H), 7.22 (ddd, J = 3.0, 5.2, 8.2 Hz, 2H), 7.02 (t, J = 8.0 Hz, 1H), 5.95 (s, 1H), 4.88 (d, J = 5.3 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.5, 151.3, 141.6, 138.1, 133.1, 130.5, 130.2, 128.9, 127.9, 127.8, 127.7, 126.5, 122.6, 120.7, 118.1, 111.5, 94.3, 45.5. HRMS (m/z): calcd for $C_{21}H_{18}IN_4$ (M+H) 453.0576; found 453.0571.



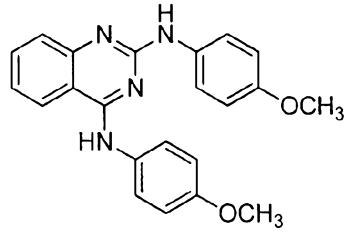
KSC-16-151 Cpd # XXV-6

N2,N4-di-p-tolylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.70 (t, J = 8.0 Hz, 1H), 7.66 (dd, J = 3.8, 4.5 Hz, 2H), 7.64 – 7.56 (m, 4H), 7.39 (s, br. 1H), 7.28 – 7.19 (m, 3H), 7.14 (d, J = 8.1 Hz, 2H), 7.08 (s, br. 1H), 2.42 (s, 3H), 2.37 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 158.3, 156.8, 152.1, 137.6, 135.7, 134.1, 133.0, 131.5, 129.5, 129.3, 126.7, 122.3, 122.3, 120.6, 119.7, 111.6, 21.0, 20.9. HRMS (m/z): calcd for $C_{22}H_{21}N_4$ (M+H) 341.1766; found 341.1759.



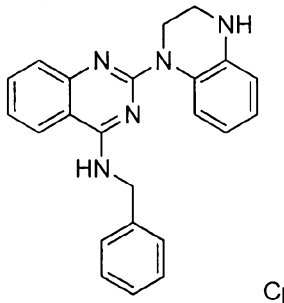
KSC-16-150 Cpd # II-20

N4-benzyl-N2-(3-(trifluoromethyl)phenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.34 (s, 1H), 7.77 (d, J = 8.2 Hz, 1H), 7.71 – 7.54 (m, 3H), 7.54 – 7.31 (m, 7H), 7.24 (ddd, J = 2.4, 5.0, 8.2 Hz, 2H), 5.95 (s, br. 1H), 4.89 (d, J = 5.3 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 156.5, 151.3, 140.9, 138.0, 133.1, 131.5, 131.2, 130.9, 130.5, 129.1, 128.9, 127.9, 127.8, 126.5, 125.7, 123.0, 122.7, 121.7, 120.7, 118.1, 118.04, 118.00, 117.97, 115.7, 115.66, 115.62, 115.58, 111.6, 45.5. HRMS (m/z): calcd for $C_{22}H_{18}F_3N_4$ (M+H) 395.1484; found 395.1481.



KSC-16-149 Cpd # XXV-1

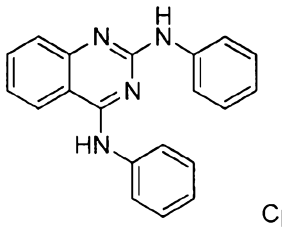
N2,N4-bis(4-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.71 (d, J = 8.0 Hz, 1H), 7.68 – 7.52 (m, 6H), 7.29 (s, br. 1H), 7.24 (ddd, J = 1.7, 6.5, 8.2 Hz, 1H), 7.08 – 6.92 (m, 3H), 6.93 – 6.83 (m, 2H), 3.87 (s, 3H), 3.83 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 158.4, 156.9, 156.7, 155.1, 152.0, 133.3, 133.0, 131.3, 126.5, 124.2, 122.2, 121.5, 120.5, 114.2, 114.0, 111.4, 55.58, 55.56. HRMS (m/z): calcd for $C_{22}H_{21}N_4O_2$ (M+H) 373.1665; found 373.1659.



KSC-16-147 Cpd # VII-4

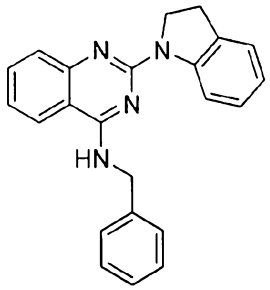
N-benzyl-2-(3,4-dihydroquinoxalin-1(2H)-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.82 (d, J = 7.8 Hz, 1H), 7.57 (dd, J = 6.2, 13.7 Hz, 3H), 7.45 – 7.31 (m, 5H), 7.21 – 7.09 (m, 1H), 6.94 – 6.84 (m, 1H), 6.62 (dd, J = 4.4, 12.2 Hz, 2H), 5.82 (s, br. 1H), 4.81 (d, J = 5.5 Hz, 2H), 4.40 – 4.25 (m, 2H), 3.55 – 3.45 (m, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.6, 157.2, 152.0, 138.7, 137.2, 132.6, 128.7, 127.8, 127.5, 126.7, 126.6,

125.7, 123.8, 121.7, 120.6, 116.1, 114.6, 111.2, 45.2, 42.4, 41.5. HRMS (m/z): calcd for $C_{23}H_{22}N_5$ (M+H) 368.1875; found 368.1874.



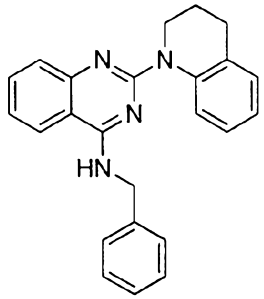
KSC-16-146 Cpd # X

N2,N4-diphenylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.79 – 7.71 (m, 6H), 7.71 – 7.65 (m, 2H), 7.48 – 7.42 (m, 2H), 7.40 (s, br. 1H), 7.38 – 7.29 (m, 3H), 7.26 – 7.20 (m, 1H), 7.17 (s, br. 1H), 7.09 – 7.00 (m, 1H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 158.2, 156.5, 152.0, 140.0, 138.3, 133.2, 129.0, 128.8, 126.8, 124.5, 122.7, 122.1, 122.1, 120.4, 119.5, 111.6. HRMS (m/z): calcd for $C_{20}H_{17}N_4$ (M+H) 313.1453; found 313.1451.



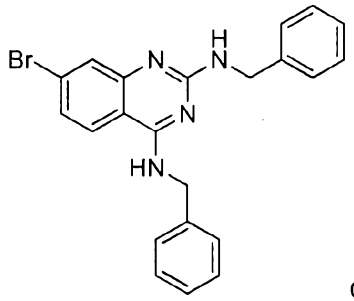
KSC-16-144 Cpd # VII-2

N-benzyl-2-(indolin-1-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.50 (d, J = 8.0 Hz, 1H), 7.76 – 7.53 (m, 3H), 7.52 – 7.32 (m, 5H), 7.23 – 7.11 (m, 3H), 6.91 (t, J = 7.4 Hz, 1H), 5.90 (s, 1H), 4.94 (d, J = 5.4 Hz, 2H), 4.45 – 4.28 (m, 2H), 3.19 (t, J = 8.7 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.7, 156.6, 151.9, 144.4, 138.6, 132.7, 132.4, 128.8, 127.9, 127.6, 127.1, 126.7, 124.5, 121.8, 120.8, 120.7, 115.4, 110.9, 49.0, 45.7, 27.3. HRMS (m/z): calcd for $C_{23}H_{21}N_4$ (M+H) 353.1766; found 353.1761.



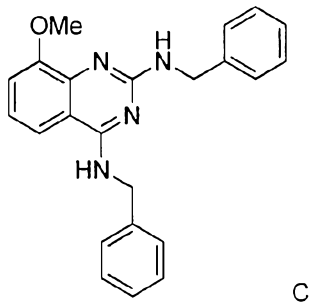
KSC-16-125 Cpd # VII-1

N-benzyl-2-(3,4-dihydroquinolin-1(2H)-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.76 (d, J = 7.2 Hz, 1H), 7.50 (dd, J = 1.0, 4.5 Hz, 2H), 7.46 (d, J = 8.2 Hz, 1H), 7.33 – 7.20 (m, 5H), 7.10 – 7.00 (m, 2H), 6.94 (dd, J = 4.1, 11.4 Hz, 1H), 6.87 (td, J = 1.2, 7.3 Hz, 1H), 5.73 (s, br. 1H), 4.69 (d, J = 5.5 Hz, 2H), 4.23 – 4.03 (m, 2H), 2.75 (t, J = 6.6 Hz, 2H), 1.94 (dt, J = 6.6, 12.7 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.5, 158.1, 152.0, 140.5, 138.8, 132.6, 130.3, 128.7, 128.4, 127.8, 127.5, 126.8, 125.1, 124.9, 122.3, 121.8, 120.6, 111.3, 45.2, 45.1, 27.7, 24.1. HRMS (m/z): calcd for $C_{24}H_{23}N_4$ (M+H) 367.1923; found 367.1917.



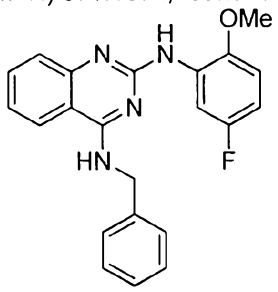
KSC-16-122 Cpd # VI-16

N2,N4-dibenzyl-7-bromoquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.67 (s, br. 1H), 7.47 – 7.32 (m, 10H), 7.31 – 7.25 (m, 1H), 7.17 (dd, J = 1.9, 8.6, 1H), 5.78 (s, br. 1H), 5.37 (s, br. 1H), 4.77 (d, J = 5.4 Hz, 2H), 4.73 (d, J = 5.9 Hz, 2H). HRMS (m/z): calcd for $C_{22}H_{20}BrN_4$ (M+H) 419.0871 and 421.0851; found 421.0845.



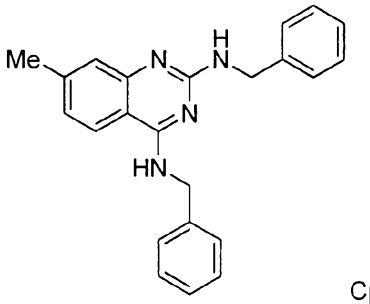
KSC-16-121 Cpd # VI-5

N2,N4-dibenzyl-8-methoxyquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.44 – 7.18 (m, 11H), 7.11 (dd, J = 1.6, 7.9 Hz, 1H), 7.07 – 6.93 (m, 2H), 5.86 (s, br. 1H), 5.49 (s, br. 1H),), 4.78 (d, J = 5.7 Hz, 2H), 4.75 (d, J = 5.7 Hz, 2H), 3.99 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.3, 153.2, 144.2, 140.2, 138.7, 128.7, 128.4, 128.0, 127.5, 126.8, 120.4, 112.5, 111.2, 110.9, 55.9, 45.7, 45.2. HRMS (m/z): calcd for $C_{23}H_{23}N_4O$ (M+H) 371.1872; found 371.1871.



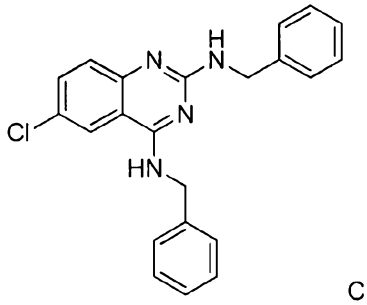
KSC-16-120 Cpd # V-11

N4-benzyl-N2-(5-fluoro-2-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.75 – 8.57 (m, 1H), 7.71 – 7.52 (m, 3H), 7.40 (qdd, J = 5.5, 8.0, 13.6 Hz, 6H), 7.18 (ddd, J = 3.3, 4.8, 8.2 Hz, 1H), 6.76 – 6.60 (m, 2H), 5.91 (s, br. 1H), 4.88 (d, J = 5.4 Hz, 2H), 3.91 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.0, 158.9, 156.8, 156.5, 151.6, 148.8, 148.7, 138.4, 132.9, 128.8, 127.9, 127.7, 126.5, 126.14, 126.11, 122.1, 120.7, 119.3, 119.2, 111.4, 106.4, 106.1, 98.6, 98.4, 55.9, 45.4. HRMS (m/z): calcd for $C_{22}H_{20}FN_4O$ (M+H) 375.1621; found 375.1622.



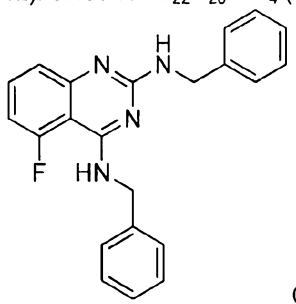
KSC-16-118 Cpd # VI-6

N2,N4-dibenzyl-7-methylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.47 – 7.19 (m, 12H), 6.93 (dd, J = 1.4, 8.3 Hz, 1H), 5.75 (s, br. 1H), 5.28 (s, br. 1H), 4.79 (d, J = 5.5 Hz, 2H), 4.75 (d, J = 4.5 Hz, 2H), 2.44 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 156.0, 159.7, 152.4, 143.3, 140.2, 138.8, 128.7, 128.5, 128.0, 127.6, 127.5, 126.9, 125.2, 123.0, 120.6, 108.9, 45.6, 45.0, 21.8. HRMS (m/z): calcd for $C_{23}H_{23}N_4$ (M+H) 355.1923; found 355.1924.



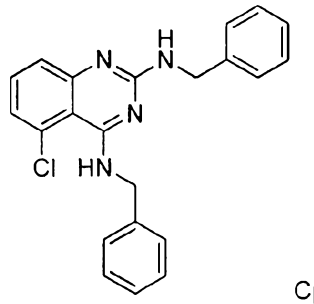
KSC-16-117 Cpd # VI-3

N2,N4-dibenzyl-6-chloroquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.55 – 7.21 (m, 13H), 5.78 (s, br. 1H), 5.40 (s, br. 1H), 4.77 (d, J = 5.4 Hz, 2H), 4.73 (d, J = 5.9 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.5, 159.2, 150.7, 139.8, 138.3, 133.2, 128.8, 128.5, 128.0, 127.7, 127.6, 127.2, 127.1, 126.0, 120.3, 45.6, 45.2. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1376.



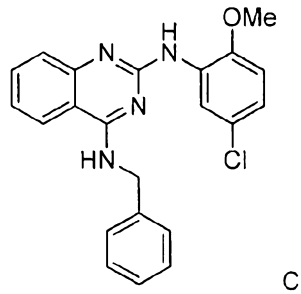
KSC-16-115 Cpd # VI-2

N2,N4-dibenzyl-5-fluoroquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.30 (dd, J = 8.2, 14.8 Hz, 1H), 7.22 – 7.17 (m , 8H), 7.12 – 7.08 (m, 2H), 6.82 – 6.63 (m, 1H), 6.58 (dd, J = 7.9, 12.7 Hz, 1H), 4.69 – 4.61 (m, 2H), 4.57 (d, J = 5.9 Hz, 2H). ^{13}C NMR (101 MHz, CDCl3) δ 161.2, 159.8, 159.0, 158.7, 154.5, 139.8, 138.5, 132.5, 132.4, 128.7, 128.5, 127.7, 127.6, 127.5, 127.1, 121.3, 106.3, 106.1, 45.5, 45.0. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1676.



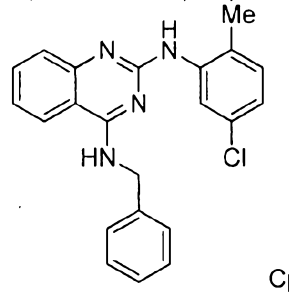
KSC-16-114 Cpd # VI-1

N2,N4-dibenzyl-5-chloroquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.93 (s, br. 1H), 7.51 – 7.21 (m, 12H), 7.06 (dd, J = 2.5, 6.3 Hz, 1H), 5.60 (s, br. 1H), 4.78 (d, J = 5.2 Hz, 2H), 4.72 (d, J = 6.0 Hz, 2H). ^{13}C NMR (101 MHz, CDCl3) δ 159.6, 159.1, 155.2, 140.0, 138.5, 131.9, 129.1, 128.7, 128.5, 127.7, 127.6, 127.4, 127.0, 125.3, 123.3, 109.1, 45.6, 45.4. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1377.



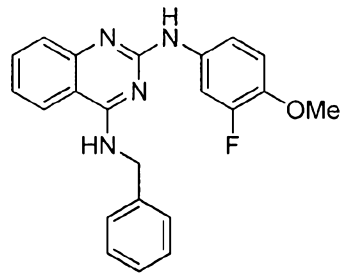
KSC-16-113 Cpd # V-10

N4-benzyl-N2-(5-chloro-2-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.83 (s, 1H), 7.75 – 7.41 (m, 4H), 7.41 – 7.21 (m, 5H), 7.11 (ddd, J = 1.7, 6.5, 8.2 Hz, 1H), 6.80 (dd, J = 2.6, 8.6 Hz, 1H), 6.69 (d, J = 8.6 Hz, 1H), 5.87 (s, br. 1H), 4.81 (d, J = 5.3 Hz, 2H), 3.81 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.3, 146.3, 138.2, 133.0, 131.0, 128.9, 128.0, 127.8, 126.4, 125.9, 122.6, 120.7, 120.2, 118.5, 111.4, 110.4, 56.0, 45.5. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4O$ (M+H) 391.1326; found 391.1324.



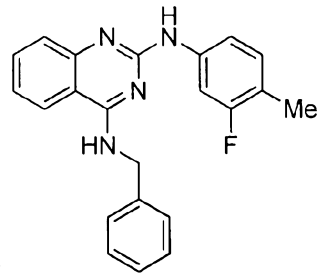
KSC-16-112 Cpd # V-9

N4-benzyl-N2-(5-chloro-2-methylphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.48 (d, J = 2.1 Hz, 1H), 7.61 – 7.44 (m, 3H), 7.38 – 7.21 (m, 5H), 7.12 (ddd, J = 2.8, 5.3, 8.2 Hz, 1H), 7.01 (d, J = 8.1 Hz, 1H), 6.85 (dd, J = 2.2, 8.0 Hz, 2H), 5.88 (s, br. 1H), 4.77 (d, J = 5.1 Hz, 2H), 2.24 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 156.6, 139.3, 138.1, 133.1, 131.8, 131.0, 128.9, 128.0, 127.8, 126.2, 124.9, 122.6, 121.9, 120.7, 120.5, 111.5, 45.4, 17.7. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1379.



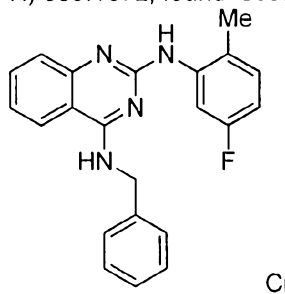
KSC-16-110 Cpd # V-8

N4-benzyl-N2-(3-fluoro-4-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.76 (dd, J = 2.6, 13.8 Hz, 1H), 7.59 – 7.41 (m, 3H), 7.39 – 7.20 (m, 5H), 7.16 – 7.02 (m, 2H), 6.95 (s, br. 1H), 6.81 (t, J = 9.1 Hz, 1H), 5.83 (s, br. 1H), 4.75 (d, J = 5.2 Hz, 2H), 3.79 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.7, 153.6, 151.4, 151.2, 142.6, 142.4, 138.2, 134.4, 134.3, 133.0, 128.9, 127.9, 127.7, 126.4, 122.3, 120.7, 114.4, 114.4, 114.1, 114.1, 111.5, 108.5, 108.3, 56.9, 45.3. HRMS (m/z): calcd for $C_{22}H_{20}FN_4O$ (M+H) 375.1621; found 375.1623.



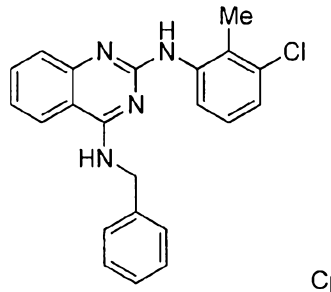
KSC-16-109 Cpd # V-7

N4-benzyl-N2-(3-fluoro-4-methylphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.78 (dd, J = 2.1, 12.4, 1H), 7.64 – 7.55 (m, 2H), 7.51 (d, J = 8.1, 1H), 7.43 – 7.25 (m, 5H), 7.20 – 7.12 (m, 1H), 7.12 – 6.92 (m, 3H), 5.87 (s, br. 1H), 4.81 (d, J = 5.2 Hz, 2H), 2.20 (d, J = 1.6 Hz, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 162.5, 160.11, 160.08, 156.6, 151.4, 139.6, 139.5, 138.2, 133.0, 131.02, 130.95, 128.9, 127.9, 127.7, 126.5, 122.4, 120.7, 117.6, 117.4, 114.14, 114.11, 111.5, 106.3, 106.1, 45.4, 14.02, 13.99. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1673.



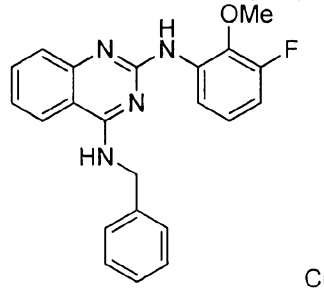
KSC-16-108 Cpd # V-6

N4-benzyl-N2-(5-fluoro-2-methylphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.30 (dd, J = 2.6, 12.1 Hz, 1H), 7.54 (d, J = 3.6 Hz, 2H), 7.49 (d, J = 8.2 Hz, 1H), 7.39 – 7.20 (m, 5H), 7.11 (dt, J = 4.1, 8.2 Hz, 1H), 7.06 – 6.94 (m, 1H), 6.83 (s, br. 1H), 6.56 (td, J = 2.7, 8.2 Hz, 1H), 5.87 (s, br. 1H), 4.76 (d, J = 5.2 Hz, 2H), 2.23 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 162.8, 160.5, 160.1, 156.6, 151.1, 139.6, 139.4, 138.1, 133.1, 130.7, 130.6, 128.9, 128.0, 127.8, 126.4, 122.6, 121.3, 120.7, 111.5, 108.3, 108.0, 107.4, 107.1, 45.4, 17.5. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1678.



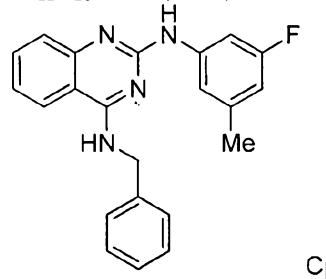
KSC-16-107 Cpd # V-5

N4-benzyl-N2-(3-chloro-2-methylphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.02 (dd, J = 2.6, 6.7 Hz, 1H), 7.60 – 7.53 (m, 3H), 7.41 – 7.26 (m, 5H), 7.16 (ddd, J = 1.5, 6.6, 8.2 Hz, 1H), 7.12 – 7.01 (m, 2H), 7.00 – 6.71 (s, br. 1H), 5.92 (s, br. 1H), 4.76 (d, J = 5.2 Hz, 2H), 2.38 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 157.1, 151.1, 139.5, 138.2, 134.5, 133.1, 128.8, 127.9, 127.7, 126.9, 126.5, 126.1, 123.9, 122.4, 120.8, 120.7, 111.4, 45.3, 14.8. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1378.



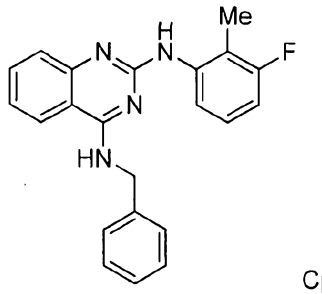
KSC-16-106 Cpd # V-4

N4-benzyl-N2-(3-fluoro-2-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.44 (d, J = 8.4 Hz, 1H), 7.72 – 7.41 (m, 4H), 7.41 – 7.21 (m, 5H), 7.12 (ddd, J = 2.8, 5.3, 8.2 Hz, 1H), 6.89 (td, J = 6.0, 8.4 Hz, 1H), 6.62 (ddd, J = 1.5, 8.4, 11.2 Hz, 1H), 5.85 (s, br. 1H), 4.80 (d, J = 5.3 Hz, 2H), 3.92 (d, J = 1.6 Hz, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.5, 156.3, 153.9, 151.2, 138.2, 136.0, 135.8, 134.9, 134.9, 133.0, 128.9, 127.9, 127.8, 126.5, 123.5, 123.4, 122.6, 120.7, 114.3, 111.5, 108.8, 108.6, 61.5, 61.4, 45.5. HRMS (m/z): calcd for $C_{22}H_{20}FN_4O$ (M+H) 375.1621; found 375.1624.



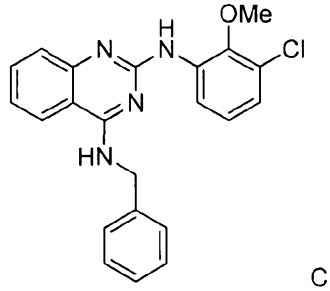
KSC-16-105 Cpd # V-3

N4-benzyl-N2-(3-fluoro-5-methylphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.64 (d, J = 11.6 Hz, 1H), 7.54 (d, J = 3.5 Hz, 2H), 7.47 (d, J = 8.1 Hz, 1H), 7.39 – 7.21 (m, 5H), 7.15 – 6.99 (m, 2H), 6.94 (s, 1H), 6.43 (d, J = 9.3 Hz, 1H), 5.85 (s, br. 1H), 4.77 (d, J = 5.0 Hz, 2H), 2.22 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 164.4, 162.0, 160.1, 156.5, 151.3, 141.7, 141.6, 140.1, 140.0, 138.2, 133.0, 128.9, 127.9, 127.8, 126.5, 122.5, 120.7, 114.74, 114.72, 111.5, 109.1, 108.9, 103.4, 103.2, 103.0, 45.4, 21.58, 21.56. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1675.



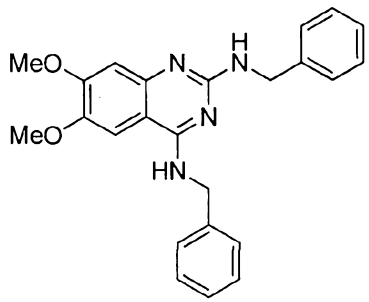
KSC-16-104 Cpd # V-2

N4-benzyl-N2-(3-fluoro-2-methylphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.07 (d, J = 8.3 Hz, 1H), 7.66 – 7.58 (m, 3H), 7.46 – 7.31 (m, 5H), 7.21 (ddd, J = 1.8, 6.3, 8.2 Hz, 1H), 7.15 (dd, J = 8.0, 15.0 Hz, 1H), 6.88 (s, br. 1H), 6.79 (t, J = 8.5 Hz, 1H), 5.97 (s, br. 1H), 4.84 (d, J = 5.2 Hz, 2H), 2.27 (d, J = 1.7 Hz, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 162.4, 160.2, 160.0, 157.1, 151.5, 139.9, 139.9, 138.3, 133.0, 128.8, 127.9, 127.7, 126.5, 126.43, 126.36, 122.4, 120.7, 116.89, 116.86, 115.1, 115.0, 111.5, 109.3, 109.0, 45.3, 9.32, 9.26. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1677.



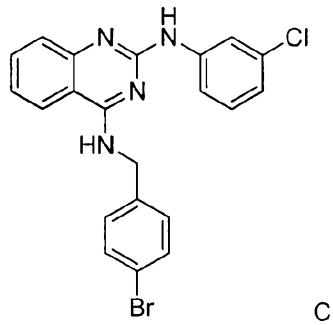
KSC-16-103 Cpd # V-1

N4-benzyl-N2-(3-chloro-2-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.60 (s, 1H), 7.61 (dd, J = 1.2, 4.6 Hz, 2H), 7.55 (d, J = 8.1 Hz, 1H), 7.47 – 7.28 (m, 5H), 7.23 – 7.10 (m, 1H), 6.99 (t, J = 8.1 Hz, 1H), 6.93 (dd, J = 1.7, 8.1 Hz, 1H), 5.92 (s, br. 1H), 4.85 (d, J = 5.3 Hz, 2H), 3.91 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.4, 144.6, 138.2, 135.4, 133.1, 128.9, 127.9, 127.8, 126.9, 126.3, 124.8, 122.7, 122.2, 120.7, 117.9, 111.5, 60.7, 45.5. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4O$ (M+H) 391.1326; found 391.1324.



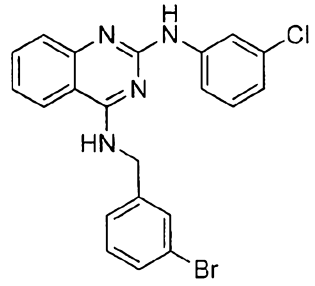
KSC-16-102 Cpd # VI-4

N2,N4-dibenzyl-6,7-dimethoxyquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.46 – 7.16 (m, 10H), 6.94 (s, 1H), 6.89 (s, 1H), 6.31 (s, 1H), 5.41 (s, 1H), 4.80 (d, J = 5.5 Hz, 2H), 4.70 (d, J = 5.7 Hz, 2H), 3.87 (s, 3H), 3.80 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.3, 159.0, 154.6, 148.5, 145.6, 140.1, 139.1, 128.6, 128.5, 128.1, 127.5, 127.4, 126.9, 105.3, 103.8, 101.1, 56.1, 56.0, 45.6, 45.0. HRMS (m/z): calcd for $C_{24}H_{25}N_4O_2$ (M+H) 401.1978; found 401.1978.



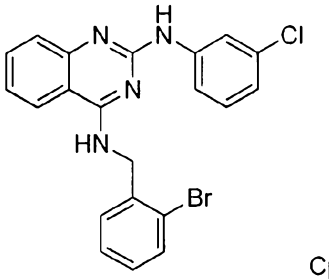
KSC-16-101 Cpd # III-4

N4-(4-bromobenzyl)-N2-(3-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.04 (t, J = 2.0 Hz, 1H), 7.72 – 7.63 (m, 2H), 7.60 (d, J = 8.2 Hz, 1H), 7.57 – 7.48 (m, 2H), 7.48 – 7.40 (m, 1H), 7.31 (d, J = 8.5 Hz, 2H), 7.27 – 7.20 (m, 2H), 7.05 (s, br. 1H), 7.02 – 6.90 (m, 1H), 5.94 (s, br. 1H), 4.85 (d, J = 5.6 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.4, 151.4, 141.5, 137.3, 134.4, 133.2, 131.9, 129.7, 129.4, 126.7, 122.7, 121.6, 121.5, 120.6, 118.9, 116.9, 111.4, 44.6. HRMS (m/z): calcd for $C_{21}H_{17}BrClN_4$ (M+H) 439.0325 and 441.0305; found 441.0296.



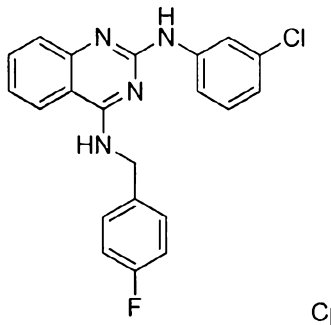
KSC-16-100 Cpd # III-14

N4-(3-bromobenzyl)-N2-(3-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.01 (s, 1H), 7.68 – 7.62 (m, 3H), 7.58 (s, 1H), 7.47 (t, J = 9.1 Hz, 2H), 7.36 (d, J = 7.7 Hz, 1H), 7.28 – 7.20 (m, 3H), 7.00 (d, J = 9.0 Hz, 1H), 6.04 (s, br. 1H), 4.87 (d, J = 5.4 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.3, 151.2, 141.4, 140.6, 134.4, 133.2, 130.8, 130.7, 130.4, 129.7, 126.5, 126.2, 122.9, 122.7, 121.7, 120.7, 118.9, 116.9, 111.4, 44.6. HRMS (m/z): calcd for $C_{21}H_{17}BrClN_4$ (M+H) 439.0325 and 441.0305; found 441.0299.



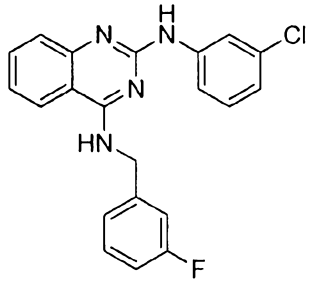
KSC-16-99 Cpd # III-9

N4-(2-bromobenzyl)-N2-(3-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.01 (t, J = 2.0 Hz, 1H), 7.67 – 7.62 (m, 4H), 7.49 – 7.45 (m, 2H), 7.34 – 7.30 (m, 1H), 7.28 – 7.13 (m, 4H), 7.04 – 6.95 (m, 1H), 6.19 (s, br. 1H), 4.96 (d, J = 5.7 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.0, 156.3, 151.2, 141.5, 137.1, 134.4, 133.1, 133.0, 130.1, 129.7, 129.3, 127.8, 126.5, 123.8, 122.7, 121.7, 120.7, 119.0, 117.0, 111.5, 45.5. HRMS (m/z): calcd for $C_{21}H_{17}BrClN_4$ (M+H) 439.0325 and 441.0305; found 441.0298.



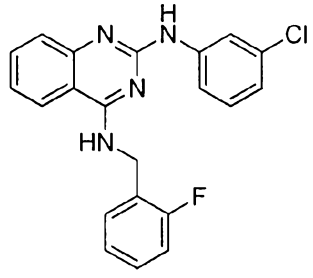
KSC-16-98 Cpd # III-3

N2-(3-chlorophenyl)-N4-(4-fluorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, CDCl3) δ 8.00 (t, J = 2.0 Hz, 1H), 7.65 – 7.57 (m, 2H), 7.54 (d, J = 8.2 Hz, 1H), 7.44 – 7.38 (m, 1H), 7.35 (dd, J = 5.3, 8.7 Hz, 2H), 7.22 – 7.14 (m, 2H), 7.09 (s, br. 1H), 7.06 – 6.99 (m, 2H), 6.93 (ddd, J = 0.9, 2.0, 7.9 Hz, 1H), 5.89 (s, br. 1H), 4.80 (d, J = 5.2 Hz, 2H). ^{13}C NMR (101 MHz, CDCl3) δ 163.6, 161.1, 160.1, 156.4, 151.3, 141.6, 134.4, 133.93, 133.90, 133.1, 130.0, 129.54, 129.46, 126.6, 122.7, 121.6, 120.7, 118.9, 116.9, 115.8, 115.6, 111.5, 44.6. HRMS (m/z): calcd for $C_{21}H_{17}ClFN_4$ (M+H) 379.1126; found 379.1123.



KSC-16-95 Cpd # III-13

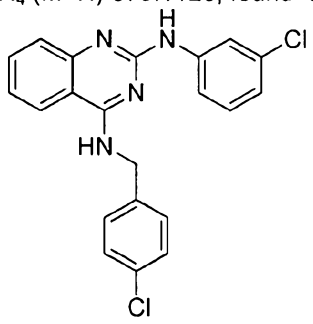
N2-(3-chlorophenyl)-N4-(3-fluorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.02 (t, J = 2.0 Hz, 1H), 7.71 – 7.64 (m, 2H), 7.62 (d, J = 8.2 Hz, 1H), 7.46 (d, J = 8.2 Hz, 1H), 7.41 – 7.33 (m, 1H), 7.28 – 7.23 (m, 1H), 7.21 (d, J = 8.0 Hz, 2H), 7.15 – 7.12 (m, 2H), 7.04 (t, J = 8.2 Hz, 1H), 6.99 (dd, J = 1.1, 7.9 Hz, 1H), 6.00 (s, br. 1H), 4.90 (d, J = 5.4 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 164.3, 161.9, 160.1, 156.4, 151.3, 141.5, 140.9, 140.8, 134.4, 133.2, 130.4, 130.3, 123.0, 126.6, 123.2, 123.1, 122.7, 121.6, 120.6, 118.9, 116.9, 114.66, 114.65, 114.5, 114.4, 111.4, 44.73, 44.71. HRMS (m/z): calcd for $C_{21}H_{17}ClFN_4$ (M+H) 379.1126; found 379.1125.



KSC-16-92 Cpd # III-8

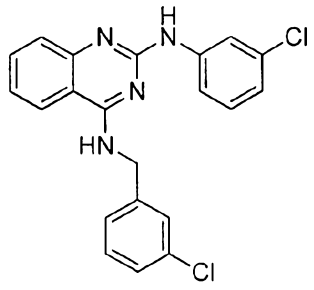
N2-(3-chlorophenyl)-N4-(2-fluorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.05 (t, J = 2.0 Hz, 1H), 7.71 – 7.57 (m, 3H), 7.53 – 7.40 (m, 2H), 7.38 – 7.30 (m, 1H), 7.28 – 7.20 (m, 2H), 7.20 – 7.07 (m, 3H), 7.04 – 6.96 (m, 1H), 6.02 (s, br. 1H), 4.95 (d, J = 5.6 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 162.5, 160.1, 160.0, 156.4, 151.3, 141.6, 134.4, 133.1, 130.2, 130.1, 129.7, 129.5, 129.4, 126.6, 125.2,

125.1, 124.41, 124.38, 122.6, 121.6, 120.7, 119.0, 116.9, 115.7, 115.5, 111.6, 39.4, 39.3. HRMS (m/z): calcd for $C_{21}H_{17}ClFN_4$ (M+H) 379.1126; found 379.1127.



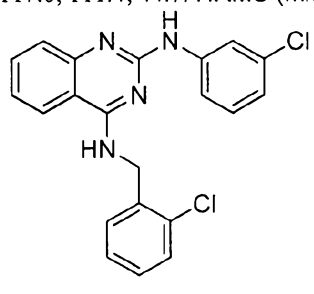
KSC-16-89 Cpd # III-2

N4-(4-chlorobenzyl)-N2-(3-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.00 (t, J = 2.0 Hz, 1H), 7.63 – 7.61 (m, 2H), 7.55 (d, J = 8.2, 1H), 7.45 – 7.38 (m, 1H), 7.33 (s, 4H), 7.22 – 7.19 (m, 1H), 7.17 (d, J = 8.1 Hz, 1H), 7.03 (s, br. 1H), 6.94 (dd, J = 1.1, 7.9 Hz, 1H), 5.90 (s, br. 1H), 4.82 (d, J = 5.6 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.4, 151.3, 141.5, 136.7, 134.4, 133.5, 133.2, 129.7, 129.1, 129.0, 126.6, 122.7, 121.6, 120.6, 118.9, 116.9, 111.4, 44.6. HRMS (m/z): calcd for $C_{21}H_{17}Cl_2N_4$ (M+H) 395.0830; found 395.0826.



KSC-16-87 Cpd # III-12

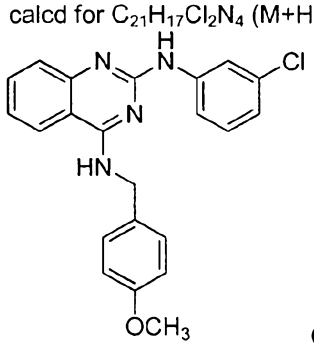
N4-(3-chlorobenzyl)-N2-(3-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.02 (t, J = 2.0 Hz, 1H), 7.73 – 7.57 (m, 3H), 7.49 – 7.39 (m, 2H), 7.33 – 7.32 (m, 3H), 7.29 – 7.18 (m, 2H), 7.12 (s, br. 1H), 7.05 – 6.93 (m, 1H), 5.98 (s, br. 1H), 4.88 (d, J = 5.5 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.3, 151.2, 141.4, 140.3, 134.7, 134.4, 133.2, 130.1, 129.7, 127.8, 127.7, 126.5, 125.8, 122.7, 121.7, 120.7, 119.0, 117.0, 111.4, 44.7. HRMS (m/z): calcd for $C_{21}H_{17}Cl_2N_4$ (M+H) 395.0830; found 395.0826.



KSC-16-84 Cpd # III-7

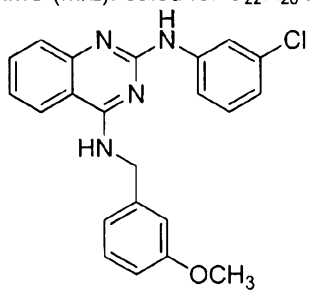
N4-(2-chlorobenzyl)-N2-(3-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, CDCl3) δ 8.02 (t, J = 2.1 Hz, 1H), 7.71 – 7.57 (m, 3H), 7.53 – 7.40 (m, 3H), 7.29 – 7.18 (m, 4H), 7.14 – 6.93 (m, 2H), 6.12 (s, br. 1H), 4.98 (d, J = 5.8 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.4, 151.4, 141.6, 135.5,

134.4, 133.8, 133.1, 129.9, 129.72, 129.69, 129.0, 127.1, 126.6, 122.7, 121.6, 120.7, 118.9, 116.9, 111.6, 43.2. HRMS (m/z): calcd for $C_{21}H_{17}Cl_2N_4$ (M+H) 395.0830; found 395.0826.



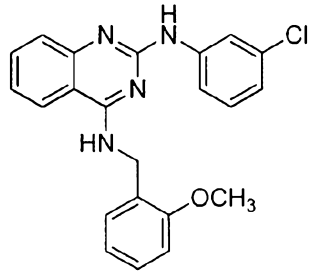
KSC-16-79 Cpd # III-5

N2-(3-chlorophenyl)-N4-(4-methoxybenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.09 (t, J = 2.1 Hz, 1H), 7.65 (d, J = 3.5 Hz, 2H), 7.56 (d, J = 8.2 Hz, 1H), 7.53 – 7.47 (m, 1H), 7.38 (d, J = 8.8 Hz, 2H), 7.23 (dt, J = 6.0, 8.2 Hz, 2H), 7.03 (s, br. 1H), 6.99 (dd, J = 1.1, 7.9 Hz, 1H), 6.97 – 6.92 (m, 2H), 5.82 (s, br. 1H), 4.81 (d, J = 5.2 Hz, 2H), 3.85 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.0, 159.3, 156.4, 151.2, 141.6, 134.4, 133.0, 130.1, 129.7, 129.3, 126.5, 122.6, 121.6, 120.7, 118.9, 116.9, 114.3, 111.5, 55.4, 45.0. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4O$ (M+H) 391.1326; found 391.1326.



KSC-16-78 Cpd # III-15

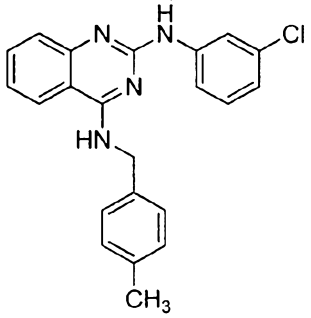
N2-(3-chlorophenyl)-N4-(3-methoxybenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.06 (t, J = 2.1 Hz, 1H), 7.70 – 7.62 (m, 2H), 7.59 (d, J = 8.2 Hz, 1H), 7.48 (ddd, J = 0.9, 2.1, 8.2 Hz, 1H), 7.37 – 7.30 (m, 1H), 7.24 – 7.20 (m, 2H), 7.15 (s, br. 1H), 7.03 (d, J = 7.5 Hz, 1H), 7.00 – 6.93 (m, 2H), 6.89 (dd, J = 1.9, 8.2 Hz, 1H), 5.93 (s, br. 1H), 4.85 (d, J = 5.3 Hz, 2H), 3.82 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 160.0, 156.5, 151.3, 141.6, 139.8, 134.4, 133.0, 130.0, 129.7, 126.6, 122.6, 121.5, 120.7, 120.0, 118.8, 116.8, 113.6, 113.0, 111.5, 55.3, 45.4. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4O$ (M+H) 391.1326; found 391.1326.



KSC-16-75 Cpd # III-10

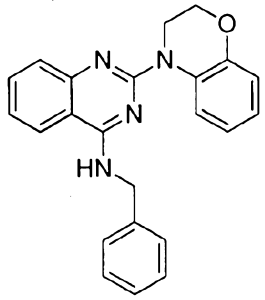
N2-(3-chlorophenyl)-N4-(2-methoxybenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.12 (t, J = 2.1 Hz, 1H), 7.68 – 7.59 (m, 2H), 7.56 (d, J = 8.2 Hz, 1H), 7.48 (ddd, J = 0.9, 2.1, 8.2 Hz, 1H), 7.41 (dd, J = 1.7, 7.6 Hz, 1H), 7.38 – 7.30 (m, 1H), 7.27 – 7.18 (m, 2H), 7.16 (s, br. 1H), 7.04 – 6.91 (m,

3H), 6.25 (s, br. 1H), 4.89 (d, J = 5.6 Hz, 2H), 3.96 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 157.8, 156.6, 151.3, 141.8, 134.4, 132.8, 129.9, 129.6, 129.1, 126.5, 126.1, 122.4, 121.4, 120.8, 120.7, 118.9, 116.9, 111.8, 110.5, 55.5, 41.4. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4O$ (M+H) 391.1326; found 391.1327.



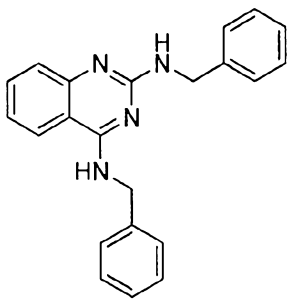
KSC-16-72 Cpd # III-1

N2-(3-chlorophenyl)-N4-(4-methylbenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.08 (t, J = 2.0 Hz, 1H), 7.65 (d, J = 3.5 Hz, 2H), 7.57 (d, J = 8.2 Hz, 1H), 7.53 – 7.46 (m, 1H), 7.34 (d, J = 8.0 Hz, 2H), 7.25 – 7.20 (m, 4H), 7.06 (s, br. 1H), 6.98 (ddd, J = 0.9, 2.0, 7.9 Hz, 1H), 5.86 (s, br. 1H), 4.83 (d, J = 5.3 Hz, 2H), 2.40 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.5, 151.3, 141.7, 137.6, 135.1, 134.4, 133.0, 129.7, 129.6, 127.9, 126.6, 122.6, 121.5, 120.7, 118.8, 116.8, 111.6, 45.2, 21.2. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1376.



KSC-16-70 Cpd # VII-3

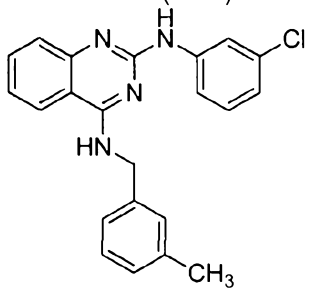
2-(2H-benzo[*b*][1,4]oxazin-4(3H)-yl)-N-benzylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.12 (d, J = 8.3 Hz, 1H), 7.68 – 7.61 (m, 2H), 7.58 (d, J = 8.2 Hz, 1H), 7.45 – 7.30 (m, 5H), 7.25 – 7.12 (m, 1H), 7.03 – 6.89 (m, 2H), 6.88 – 6.77 (m, 1H), 5.94 (s, 1H), 4.84 (d, J = 5.5 Hz, 2H), 4.39 (dd, J = 3.1, 5.1 Hz, 2H), 4.34 (dd, J = 3.1, 5.0 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 159.8, 156.7, 151.7, 146.3, 138.5, 132.8, 128.8, 128.1, 127.7, 127.6, 126.8, 124.7, 123.4, 122.3, 120.7, 119.4, 116.7, 111.3, 66.2, 45.3, 42.2. HRMS (m/z): calcd for $C_{23}H_{21}N_4O$ (M+H) 369.1715; found 369.1716.



KSC-16-67 Cpd # IV-19

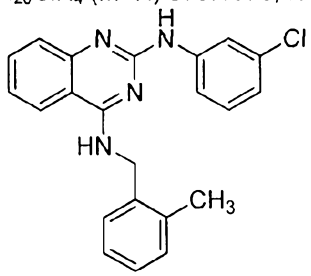
N2,N4-dibenzylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.65–7.55 (m, 1H), 7.51 (d, J = 8.3 Hz, 2H), 7.45–7.22 (m, 10H), 7.10 (ddd, J = 1.3, 6.8, 8.1 Hz, 1H), 5.82 (s, 1H), 5.30 (s, 1H), 4.80

(d, J = 5.5 Hz, 2H), 4.76 (d, J = 5.8 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) 160.1, 159.6, 152.2, 140.1, 138.7, 132.8, 128.7, 128.5, 128.0, 127.6, 127.5, 127.0, 125.7, 121.1, 120.8, 111.1, 45.6, 45.1. HRMS (m/z): calcd for C22H21N4 (M+H) 341.1766; found 341.1763.



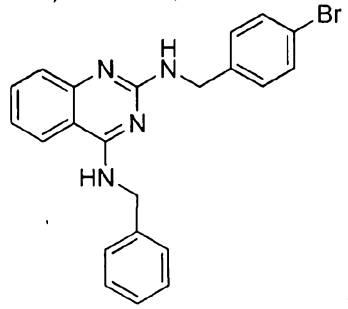
KSC-16-66 Cpd # III-11

N2-(3-chlorophenyl)-N4-(3-methylbenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.07 (t, *J* = 2.1 Hz, 1H), 7.65 (d, *J* = 3.5 Hz, 2H), 7.58 (d, *J* = 8.2 Hz, 1H), 7.49 (ddd, *J* = 0.9, 2.1 Hz, 8.2, 1H), 7.34 – 7.29 (m, 1H), 7.28 – 7.08 (m, 6H), 6.98 (ddd, *J* = 0.9, 2.0, 7.9 Hz, 1H), 5.90 (s, br. 1H), 4.84 (d, *J* = 5.2 Hz, 2H), 2.40 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.5, 151.3, 141.6, 138.7, 138.0, 134.4, 133.0, 129.7, 128.8, 128.7, 128.5, 126.6, 125.0, 122.6, 121.5, 120.7, 118.8, 116.8, 111.6, 45.4, 21.4. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1379.



KSC-16-63 Cpd # III-6

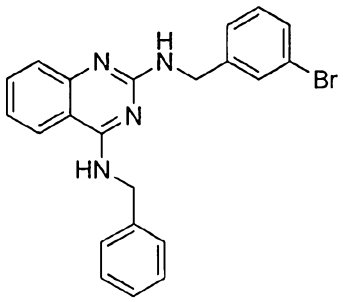
N2-(3-chlorophenyl)-N4-(2-methylbenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.07 (t, *J* = 2.0 Hz, 1H), 7.72 – 7.61 (m, 2H), 7.57 (d, *J* = 8.1 Hz, 1H), 7.52 – 7.42 (m, 1H), 7.38 (d, *J* = 7.3 Hz, 1H), 7.32 – 7.30 (m, 2H), 7.28 – 7.13 (m, 4H), 7.04 – 6.90 (m, 1H), 5.74 (s, br. 1H), 4.85 (d, *J* = 5.0 Hz, 2H), 2.44 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.5, 151.3, 141.7, 136.8, 135.7, 134.4, 133.0, 130.7, 129.7, 128.6, 128.1, 126.6, 126.4, 122.6, 121.5, 120.7, 118.9, 116.8, 111.5, 43.7, 19.2. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1376.



KSC-16-42 Cpd # IV-4

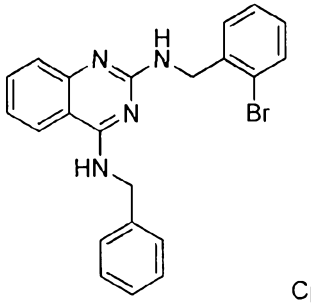
N4-benzyl-N2-(4-bromobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, CDCl3) δ 7.62 – 7.54 (m, 1H), 7.50 (t, *J* = 7.6 Hz, 2H), 7.43 (d, *J* = 8.4 Hz, 2H), 7.37 – 7.33 (m, 5H), 7.27 (d, *J* = 8.3 Hz, 2H), 7.12 (t, *J* = 8.1 Hz, 1H), 5.80 (s, br. 1H), 5.28 (s, br. 1H), 4.79 (d, *J* = 5.5 Hz, 2H), 4.69 (d, *J* = 6.1 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.4, 152.1, 139.3, 138.5, 132.8, 131.5, 129.2, 128.8, 127.9, 127.6, 125.8, 121.3,

120.7, 120.7, 111.1, 45.1, 44.9. HRMS (m/z): calcd for $C_{22}H_{20}BrN_4$ (M+H) 419.0871 and 421.0851; found 421.0846.



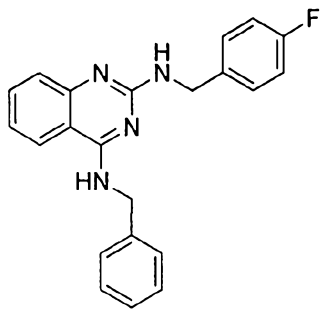
KSC-16-41 Cpd # IV-14

N4-benzyl-N2-(3-bromobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.62 – 7.54 (m, 2H), 7.51 (t, J = 7.4 Hz, 2H), 7.43 – 7.30 (m, 7H), 7.18 (t, J = 7.8 Hz, 1H), 7.15 – 7.07 (m, 1H), 5.82 (s, br. 1H), 5.33 (s, br. 1H), 4.79 (d, J = 5.4 Hz, 2H), 4.72 (d, J = 6.0 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.4, 152.1, 142.8, 138.6, 132.8, 130.5, 130.0, 128.8, 127.9, 127.6, 126.1, 125.7, 122.5, 121.3, 120.8, 111.1, 45.1, 44.9. HRMS (m/z): calcd for $C_{22}H_{20}BrN_4$ (M+H) 419.0871 and 421.0851; found 419.0866.



KSC-16-40 Cpd # IV-9

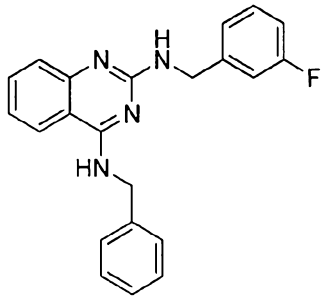
N4-benzyl-N2-(2-bromobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.58 (dd, J = 4.9, 11.7 Hz, 2H), 7.51 – 7.46 (m, 3H), 7.36 – 7.31 (m, 5H), 7.23 (t, J = 7.3 Hz, 1H), 7.16 – 7.05 (m, 2H), 5.82 (s, br. 1H), 5.47 (s, br. 1H), 4.82 (d, J = 6.4 Hz, 2H), 4.81 (d, J = 6.4 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.4, 152.2, 139.2, 138.6, 132.8, 132.6, 129.7, 128.8, 128.5, 127.9, 127.5, 127.4, 125.7, 123.5, 121.2, 120.7, 111.0, 45.6, 45.1. HRMS (m/z): calcd for $C_{22}H_{20}BrN_4$ (M+H) 419.0871 and 421.0851; found 419.0866.



KSC-16-38 Cpd # IV-3

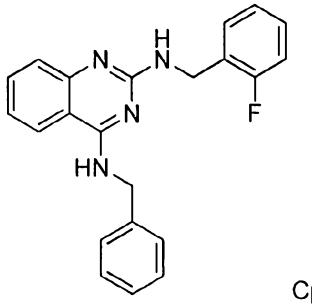
N4-benzyl-N2-(4-fluorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.58 (ddd, J = 1.4, 6.9, 8.2 Hz, 1H), 7.51 (t, J = 8.3 Hz, 2H), 7.43 – 7.30 (m, 7H), 7.11 (ddd, J = 1.3, 6.9, 8.2 Hz, 1H), 7.00 (t, J = 8.7 Hz, 2H), 5.86 (s, br. 1H), 5.33 (s, br. 1H), 4.80 (d, J = 5.5 Hz, 2H), 4.70 (d, J = 5.9 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 163.1, 160.7, 160.1, 159.4, 152.1, 138.6, 135.9, 132.8, 129.2, 129.1, 128.8, 127.9, 127.6,

125.8, 121.2, 120.9, 115.3, 115.1, 111.0, 45.1, 44.8. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1672.



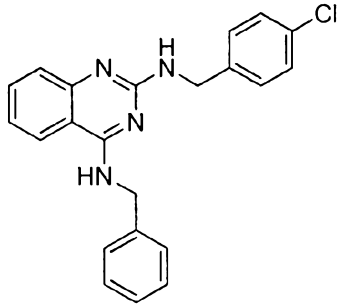
KSC-16-36 Cpd # IV-13

N4-benzyl-N2-(3-fluorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.57 (ddd, J = 1.3, 6.8, 8.2 Hz, 1H), 7.51 (dd, J = 8.3, 11.7 Hz, 2H), 7.42 – 7.30 (m, 5H), 7.29 – 7.23 (m, 1H), 7.20 – 7.04 (m, 3H), 6.94 (td, J = 1.9, 8.3 Hz, 1H), 5.92 (s, br. 1H), 5.44 (s, br. 1H), 4.78 (d, J = 5.5 Hz, 2H), 4.74 (d, J = 5.9 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 164.2, 161.8, 160.1, 159.4, 152.1, 143.1, 143.0, 138.6, 132.8, 129.9, 129.8, 128.8, 127.9, 127.6, 125.7, 123.0, 121.3, 120.8, 114.4, 114.2, 113.8, 113.6, 111.1, 45.1, 45.02, 45.00. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1671.



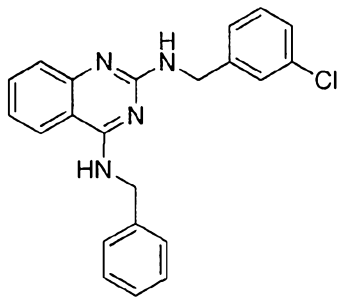
KSC-16-35 Cpd # IV-8

N4-benzyl-N2-(2-fluorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.51 – 7.43 (m, 1H), 7.40 (d, J = 7.9 Hz, 2H), 7.33 (s, 1H), 7.30 – 7.20 (m, 5H), 7.17 – 7.07 (m, 1H), 7.05 – 6.88 (m, 3H), 5.73 (s, br. 1H), 5.27 (s, br. 1H), 4.72 – 4.69 (m, 4H). ^{13}C NMR (101 MHz, CDCl3) δ 162.3, 160.1, 159.8, 159.4, 152.2, 138.6, 132.8, 129.9, 128.8, 128.6, 128.5, 127.9, 127.6, 127.2, 127.0, 125.7, 124.0, 124.0, 121.2, 120.7, 115.3, 115.0, 111.0, 45.1, 39.24, 39.20. HRMS (m/z): calcd for $C_{22}H_{20}FN_4$ (M+H) 359.1672; found 359.1672.



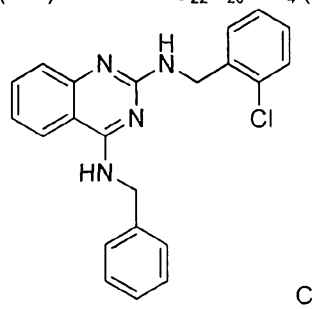
KSC-16-33 Cpd # IV-2

N4-benzyl-N2-(4-chlorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.61 – 7.55 (m, 1H), 7.51 (t, J = 8.1, 2H), 7.41 – 7.30 (m, 7H), 7.29 – 7.277 (m, 2H), 7.14 – 7.10 (m, 1H), 5.83 (s, br. 1H), 5.33 (s, br. 1H), 4.79 (d, J = 5.5 Hz, 2H), 4.71 (d, J = 6.0 Hz, 2H). HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1369.



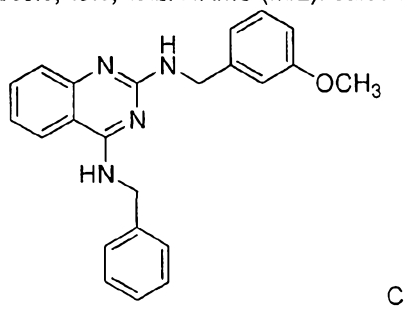
KSC-16-32 Cpd # IV-12

N4-benzyl-N2-(3-chlorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.52 – 7.44 (m, 1H), 7.41 (t, J = 8.0 Hz, 2H), 7.35 – 7.20 (m, 6H), 7.18 – 7.09 (m, 3H), 7.06 – 6.98 (m, 1H), 5.75 (s, br. 1H), 5.28 (s, br. 1H), 4.68 (d, J = 5.5 Hz, 2H), 4.62 (d, J = 6.1 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.4, 152.1, 142.5, 138.6, 134.3, 132.8, 129.7, 128.8, 127.9, 127.6, 127.1, 125.7, 125.6, 121.3, 120.8, 111.1, 45.1, 45.0. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1375.



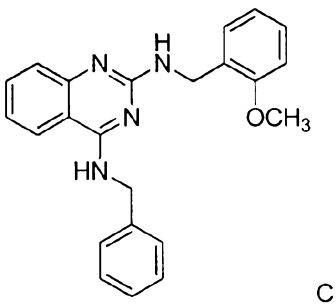
KSC-16-31 Cpd # IV-7

N4-benzyl-N2-(2-chlorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.62 – 7.54 (m, 1H), 7.50 (dd, J = 4.1, 7.7 Hz, 3H), 7.42 – 7.30 (m, 6H), 7.24 – 7.14 (m, 2H), 7.10 (ddd, J = 1.2, 6.8, 8.1 Hz, 1H), 5.83 (s, br. 1H), 5.44 (s, br. 1H), 4.84 (d, J = 6.3 Hz, 2H), 4.80 (d, J = 5.5 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.4, 152.2, 138.6, 137.6, 133.4, 132.8, 129.6, 129.3, 128.8, 128.2, 127.9, 127.5, 126.8, 125.8, 121.2, 120.7, 111.0, 45.1, 43.2. HRMS (m/z): calcd for $C_{22}H_{20}ClN_4$ (M+H) 375.1376; found 375.1376.



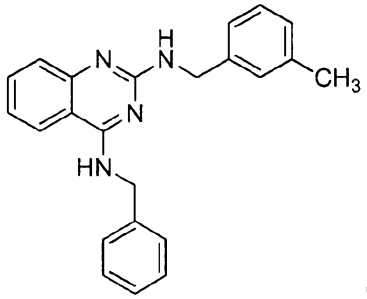
KSC-16-30 Cpd # IV-15

N4-benzyl-N2-(3-methoxybenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.63 – 7.45 (m, 3H), 7.43 – 7.30 (m, 5H), 7.25 (t, J = 7.8 Hz, 1H), 7.09 (ddd, J = 1.3, 6.8, 8.1 Hz, 1H), 6.99 (d, J = 8.1 Hz, 2H), 6.82 (dd, J = 1.9, 8.2 Hz, 1H), 5.89 (s, br. 1H), 5.36 (s, br. 1H), 4.80 (d, J = 5.5 Hz, 2H), 4.73 (d, J = 5.1 Hz, 2H), 3.80 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.8, 159.5, 152.2, 141.8, 138.7, 132.8, 129.5, 128.7, 128.0, 127.6, 125.7, 121.1, 120.8, 119.9, 113.1, 112.6, 111.1, 55.2, 45.6, 45.1. HRMS (m/z): calcd for $C_{23}H_{23}N_4O$ (M+H) 371.1872; found 371.1870.



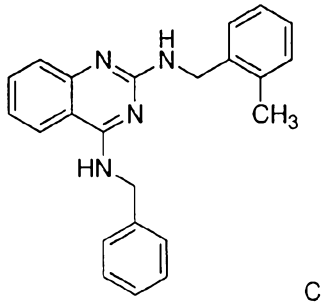
KSC-16-29 Cpd # IV-10

N4-benzyl-N2-(2-methoxybenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.61 – 7.43 (m, 3H), 7.43 – 7.30 (m, 6H), 7.28 – 7.20 (m, 1H), 7.11 – 7.01 (m, 1H), 6.95 – 6.81 (m, 2H), 5.93 (s, br. 1H), 5.48 (s, br. 1H), 4.84 (d, J = 5.4 Hz, 2H), 4.75 (d, J = 6.0 Hz, 2H), 3.86 (s, 3H). ^{13}C NMR (101 MHz, CDCl3) δ 160.1, 159.7, 157.6, 152.3, 138.8, 132.6, 129.4, 128.7, 128.2, 128.1, 128.0, 127.5, 125.6, 120.8, 120.8, 120.4, 110.9, 110.1, 55.3, 45.1, 41.1. HRMS (m/z): calcd for $C_{23}H_{23}N_4O$ (M+H) 371.1872; found 371.1869.



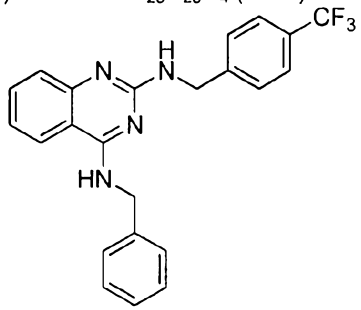
KSC-16-28 Cpd # IV-11

N4-benzyl-N2-(3-methylbenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, CDCl3) δ 7.62 – 7.46 (m, 3H), 7.43 – 7.30 (m, 5H), 7.27 – 7.15 (m, 3H), 7.09 (ddd, J = 1.4, 6.7, 8.1 Hz, 2H), 5.92 (s, br. 1H), 5.35 (s, br. 1H), 4.80 (d, J = 5.5 Hz, 2H), 4.72 (d, J = 5.1 Hz, 2H), 2.35 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.5, 152.2, 140.0, 138.7, 138.1, 132.8, 128.7, 128.4, 128.0, 127.7, 127.6, 125.7, 124.7, 121.1, 120.8, 111.1, 45.6, 45.1, 21.4. HRMS (m/z): calcd for $C_{23}H_{23}N_4$ (M+H) 355.1923; found 355.1922.



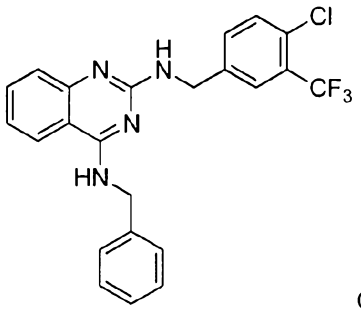
KSC-16-8 Cpd # IV-6

N4-benzyl-N2-(2-methylbenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.59 – 7.52 (m, 3H), 7.43 – 7.30 (m, 6H), 7.25 – 7.13 (m, 3H), 7.13 – 7.04 (m, 1H), 5.93 (s, br. 1H), 5.19 (s, br. 1H), 4.80 (d, J = 5.4 Hz, 2H), 4.72 (d, J = 5.0 Hz, 2H), 2.40 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.4, 152.2, 138.7, 137.6, 136.4, 132.8, 130.3, 128.8, 128.3, 128.0, 127.6, 127.2, 126.0, 125.7, 121.1, 120.8, 111.1, 45.1, 43.7, 19.1. HRMS (m/z): calcd for $C_{23}H_{23}N_4$ (M+H) 355.1923; found 355.1920.



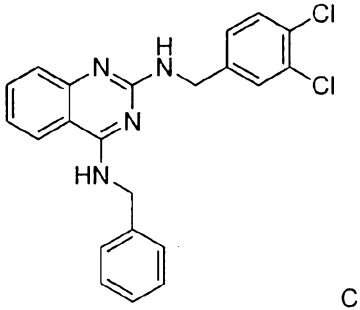
KSC-16-6 Cpd # IV-16

N4-benzyl-N2-(4-(trifluoromethyl)benzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.59 – 7.48 (m, 7H), 7.33 – 7.31 (m, 5H), 7.11 (ddd, J = 1.3, 6.9, 8.2 Hz, 1H), 5.92 (s, br. 1H), 5.52 (s, br. 1H), 4.79 (d, J = 6.2 Hz, 2H), 4.77 (d, J = 5.5 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.4, 152.1, 144.6, 138.5, 132.9, 129.2, 128.9, 128.8, 127.8, 127.6, 125.7, 125.6, 125.4, 125.34, 125.30, 125.26, 122.9, 121.4, 120.8, 111.1, 45.05. HRMS (m/z): calcd for $C_{23}H_{20}F_3N_4$ (M+H) 409.1640; found 409.1637.



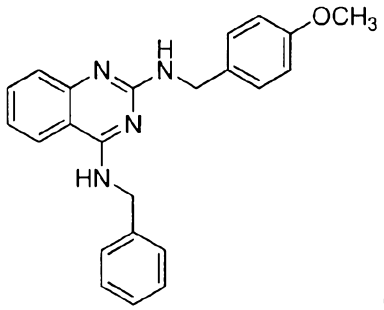
KSC-16-4 Cpd # IV-18

N4-benzyl-N2-(4-chloro-3-(trifluoromethyl)benzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.61 (s, 1H), 7.46 (ddd, J = 1.4, 6.9, 8.3 Hz, 1H), 7.42 (d, J = 8.3 Hz, 1H), 7.39 – 7.32 (m, 2H), 7.32 – 7.19 (m, 6H), 7.01 (ddd, J = 1.2, 6.9, 8.2 Hz, 1H), 5.83 (s, br. 1H), 5.50 (s, br. 1H), 4.65 (d, J = 5.5 Hz, 2H), 4.61 (d, J = 5.5 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 159.3, 152.0, 139.8, 138.4, 132.9, 131.8, 131.4, 130.4, 128.8, 128.3, 128.0, 127.7, 127.6, 126.62, 126.58, 125.7, 124.3, 121.6, 121.5, 120.8, 111.1, 45.1, 44.6. HRMS (m/z): calcd for $C_{23}H_{19}ClF_3N_4$ (M+H) 443.1250; found 443.1246.



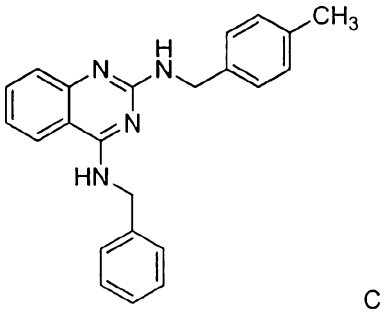
KSC-16-3 Cpd # IV-17

N4-benzyl-N2-(3,4-dichlorobenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.57 (ddd, J = 1.4, 6.9, 8.3 Hz, 1H), 7.54 – 7.47 (m, 3H), 7.40 – 7.30 (m, 6H), 7.18 (d, J = 8.1 Hz, 1H), 7.11 (ddd, J = 1.3, 6.9, 8.2 Hz, 1H), 5.97 (s, br. 1H), 5.59 (s, br. 1H), 4.77 (d, J = 5.5 Hz, 2H), 4.66 (d, J = 6.0 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 159.3, 152.0, 140.9, 138.5, 132.9, 132.3, 130.6, 130.3, 129.3, 128.8, 127.8, 127.6, 126.8, 125.7, 121.4, 120.8, 111.1, 45.1, 44.4. HRMS (m/z): calcd for $C_{22}H_{19}Cl_2N_4$ (M+H) 409.0987; found 409.0980.



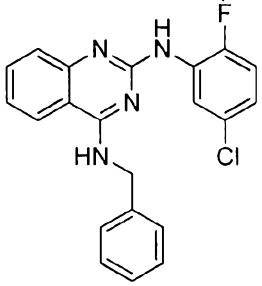
KSC-16-2 Cpd # IV-5

N4-benzyl-N2-(4-methoxybenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 8.44 (s, 1H), 8.03 (d, J = 7.3 Hz, 1H), 7.55 – 7.43 (m, 1H), 7.43 – 7.11 (m, 8H), 7.04 (t, J = 7.1 Hz, 2H), 6.82 (s, br. 2H), 4.74 (d, J = 4.7 Hz, 2H), 4.43 (s, br. 2H), 3.70 (s, 3H). ^{13}C NMR (101 MHz, DMSO) δ 159.9, 159.8, 159.3, 157.8, 139.9, 133.2, 132.2, 129.2, 128.5, 128.2, 127.3, 126.6, 122.7, 119.9, 113.5, 113.4, 54.9, 43.4, 43.3. HRMS (m/z): calcd for $C_{23}H_{23}N_4O$ (M+H) 371.1872; found 371.1868.



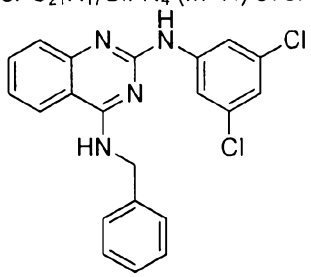
KSC-1-300 Cpd # IV-1

N4-benzyl-N2-(4-methylbenzyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.61 – 7.44 (m, 3H), 7.43 – 7.22 (m, 7H), 7.14 (d, J = 7.8 Hz, 2H), 7.12 – 7.03 (m, 1H), 5.92 (s, br. 1H), 5.32 (s, br. 1H), 4.80 (d, J = 5.4 Hz, 2H), 4.70 (d, J = 5.1 Hz, 2H), 2.36 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 159.5, 152.2, 138.7, 137.0, 136.6, 132.7, 129.2, 128.7, 128.0, 127.6, 127.5, 125.6, 121.1, 120.8, 111.0, 45.4, 45.1, 21.1. HRMS (m/z): calcd for $C_{23}H_{23}N_4$ (M+H) 355.1923; found 355.1924.



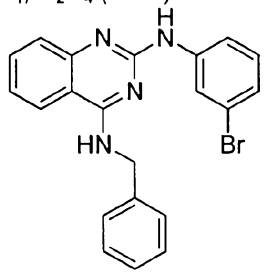
KSC-1-295 Cpd # II-18

N4-benzyl-N2-(5-chloro-2-fluorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 9.00 (dd, J = 2.6, 7.3 Hz, 1H), 7.77 – 7.62 (m, 2H), 7.59 (d, J = 8.0 Hz, 1H), 7.52 – 7.32 (m, 5H), 7.25 – 7.23 (m, 1H), 7.21 (s, br. 1H), 7.03 (dd, J = 8.7, 11.0 Hz, 1H), 6.89 (ddd, J = 2.6, 4.3, 8.6 Hz, 1H), 5.93 (s, br. 1H), 4.88 (t, J = 7.5 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.1, 151.7, 151.2, 149.3, 138.1, 133.1, 130.1, 130.0, 129.4, 129.3, 128.9, 128.0, 127.8, 126.8, 123.0, 120.7, 120.53, 120.45, 120.0, 115.3, 115.1, 111.7, 45.5. HRMS (m/z): calcd for $C_{21}H_{17}ClFN_4$ (M+H) 379.1126; found 379.1119.



KSC-1-294 Cpd # II-19

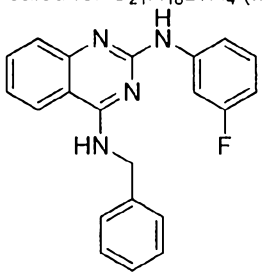
N4-benzyl-N2-(3,5-dichlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.75 (d, J = 1.8 Hz, 2H), 7.69 – 7.61 (m, 2H), 7.58 (d, J = 8.2 Hz, 1H), 7.52 – 7.31 (m, 6H), 7.28 – 7.18 (m, 1H), 6.96 (t, J = 1.8 Hz, 1H), 6.00 (t, J = 5.3 Hz, 1H), 4.86 (d, J = 5.4 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 156.3, 151.1, 142.4, 138.0, 134.8, 133.2, 128.9, 127.9, 127.8, 126.6, 122.9, 121.1, 120.8, 116.9, 111.6, 45.4. HRMS (m/z): calcd for $C_{21}H_{17}Cl_2N_4$ (M+H) 395.0830; found 395.0924.



KSC-1-293 Cpd # II-15

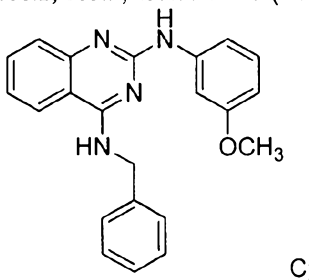
N4-benzyl-N2-(3-bromophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.21 (t, J = 1.9 Hz, 1H), 7.64 (t, J = 6.5 Hz, 2H), 7.58 (d, J = 8.2 Hz, 1H), 7.55 – 7.49 (m, 1H), 7.48 – 7.33 (m, 5H), 7.27 – 7.06 (m, 4H), 5.93 (t, J = 5.4 Hz, 1H), 4.88 (d, J = 5.4 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.5, 151.4,

141.8, 138.2, 133.0, 130.0, 128.9, 127.9, 127.8, 126.6, 124.4, 122.6, 122.6, 121.7, 120.7, 117.3, 111.6, 45.4. HRMS (m/z): calcd for $C_{21}H_{18}BrN_4$ (M+H) 405.0715 and 407.0694; found 407.0691.



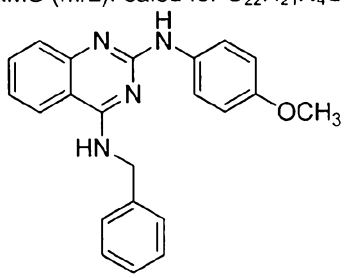
KSC-1-292 Cpd # II-14

N4-benzyl-N2-(3-fluorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.00 – 7.87 (m, 1H), 7.71 – 7.61 (m, 2H), 7.58 (d, J = 8.1, 1H), 7.50 – 7.33 (m, 5H), 7.29 – 7.12 (m, 4H), 6.78 – 6.62 (m, 1H), 5.97 (s, br. 1H), 4.87 (d, J = 5.3 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 164.5, 162.1, 160.1, 156.5, 151.4, 142.2, 142.1, 138.2, 133.0, 129.7, 129.6, 128.89, 127.87, 127.8, 126.6, 122.6, 120.7, 114.12, 114.09, 111.6, 108.2, 108.0, 106.2, 105.9, 45.4. HRMS (m/z): calcd for $C_{21}H_{18}FN_4$ (M+H) 345.1515; found 345.1510.



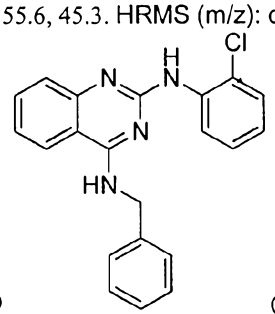
KSC-1-291 Cpd # II-16

N4-benzyl-N2-(3-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.70 – 7.59 (m, 3H), 7.56 (d, J = 8.0 Hz, 1H), 7.46 – 7.30 (m, 6H), 7.25 – 7.13 (m, 3H), 6.59 (ddd, J = 1.6, 2.4, 7.6 Hz, 1H), 6.01 (t, J = 5.3 Hz, 1H), 4.87 (d, J = 5.4 Hz, 2H), 3.81 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.2, 160.2, 156.9, 151.6, 141.7, 138.4, 132.9, 129.4, 128.9, 127.9, 127.7, 126.5, 122.3, 120.8, 111.50, 111.47, 107.5, 104.7, 55.2, 45.3. HRMS (m/z): calcd for $C_{22}H_{21}N_4O$ (M+H) 357.1715; found 357.1715.



KSC-1-290 Cpd # II-6

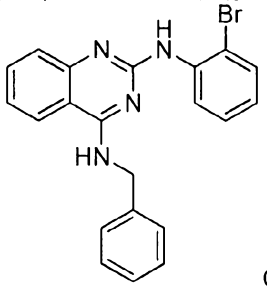
N4-benzyl-N2-(4-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.66 – 7.58 (m, 4H), 7.56 (d, J = 8.2 Hz, 1H), 7.46 – 7.39 (m, 4H), 7.37 – 7.33 (m, 1H), 7.16 (ddd, J = 2.3, 5.8, 8.2 Hz, 1H), 7.02 (s, br. 1H), 6.93 – 6.81 (m, 2H), 5.95 (s, br. 1H), 4.84 (d, J = 5.3 Hz, 2H), 3.82 (s, 3H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 157.2, 154.9, 151.8, 138.4, 133.6, 132.9, 128.8, 127.9, 127.6, 126.3, 121.9, 121.2, 120.7, 114.0, 111.4, 55.6, 45.3. HRMS (m/z): calcd for $C_{22}H_{21}N_4O$ (M+H) 357.1715; found 357.1711.



KSC-1-289 Cpd # II-8

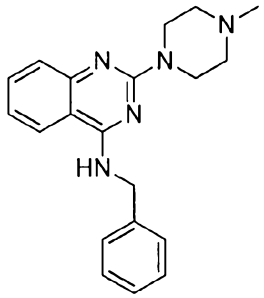
N4-benzyl-N2-(2-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.82 (dd, J = 1.5, 8.4 Hz, 1H), 7.72 – 7.62 (m, 2H), 7.59 (d, J = 8.1 Hz, 1H), 7.51 (s, br. 1H), 7.48 – 7.32 (m, 6H), 7.28 – 7.20 (m, 2H), 6.98 – 6.90 (m, 1H), 5.91 (s, br. 1H), 4.89 (d, J = 5.4 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.4,

151.4, 138.3, 137.0, 132.9, 128.93, 128.87, 128.0, 127.7, 127.3, 126.8, 122.7, 121.9, 121.8, 120.6, 120.3, 111.7, 45.4. HRMS (m/z): calcd for $C_{21}H_{18}ClN_4$ (M+H) 361.1220; found 361.1213.



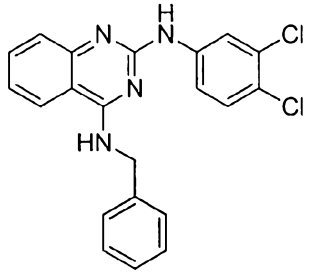
KSC-1-288 Cpd # II-10

N4-benzyl-N2-(2-bromophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.67 (dd, J = 1.5, 8.3 Hz, 1H), 7.59 – 7.51 (m, 2H), 7.51 – 7.44 (m, 2H), 7.41 (s, br. 1H), 7.37 – 7.28 (m, 4H), 7.28 – 7.19 (m, 2H), 7.13 (ddd, J = 2.3, 5.8, 8.2 Hz, 1H), 6.81 – 6.73 (m, 1H), 5.81 (s, br. 1H), 4.78 (d, J = 5.4 Hz, 2H). ^{13}C NMR (101 MHz, $CDCl_3$) δ 160.1, 156.5, 151.4, 138.3, 138.1, 132.9, 132.2, 128.9, 128.0, 127.9, 127.7, 126.7, 122.7, 122.4, 120.7, 120.6, 112.8, 111.7, 45.4. HRMS (m/z): calcd for $C_{21}H_{18}BrN_4$ (M+H) 405.0715 and 407.0694; found 407.0688.



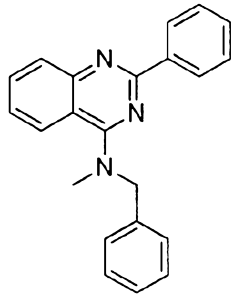
KSC-1-260 Cpd # XLV

N-benzyl-2-(4-methylpiperazin-1-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.52 – 7.36 (m, 3H), 7.36 – 7.20 (m, 5H), 6.98 (ddd, J = 1.4, 6.6, 8.1 Hz, 1H), 5.76 (s, br. 1H), 4.72 (t, J = 4.7 Hz, 2H), 3.87 – 3.83 (m, 4H), 2.44 – 2.40 (m, 4H). HRMS (m/z): calcd for $C_{20}H_{24}N_5$ (M+H) 334.2032; found 334.2026.



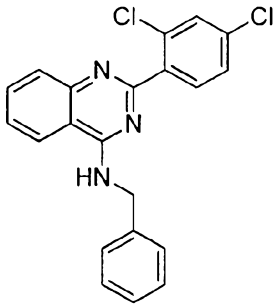
KSC-1-259 Cpd # II-17

N4-benzyl-N2-(3,4-dichlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 12.77 (s, br. 1H), 10.53 (s, br. 1H), 10.26 (s, br. 1H), 8.42 (d, J = 8.0 Hz, 1H), 7.95 (s, br. 1H), 7.88 (t, J = 7.4 Hz, 1H), 7.69 – 7.56 (m, 2H), 7.54 – 7.45 (m, 2H), 7.38 – 7.26 (m, 5H), 4.82 (d, J = 5.9 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}Cl_2N_4$ (M+H) 395.0830; found 395.0823.



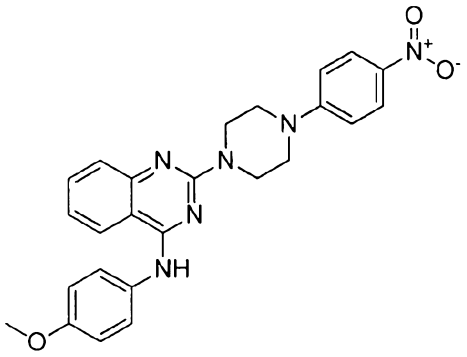
KSC-1-258 Cpd # I-25

N-benzyl-N-methyl-2-phenylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 9.36 (d, J = 8.4 Hz, 1H), 8.83 (d, J = 7.2 Hz, 2H), 8..05 (s, br. 1H), 7.89 (t, J = 7.2 Hz, 1H), 7.71 – 7.56 (m, 3H), 7.53 – 7.37 (m, 6H), 5.34 (s, 2H), 3.68 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{20}N_3$ (M+H) 326.1657; found 326.1653.



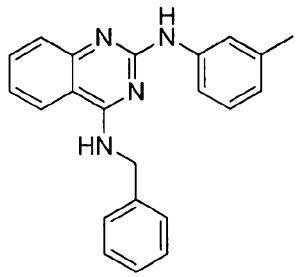
KSC-1-257

N-benzyl-2-(2,4-dichlorophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.97 (d, J = 7.8 Hz, 1H), 7.86 – 7.77 (m, 2H), 7.75 (d, J = 8.3 Hz, 1H), 7.52 (dd, J = 4.6, 9.0 Hz, 2H), 7.45 (d, J = 6.7 Hz, 2H), 7.43 – 7.32 (m, 4H), 6.01 (s, br. 1H), 4.97 (d, J = 5.4 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{16}Cl_2N_3$ (M+H) 380.0721; found 380.0714.



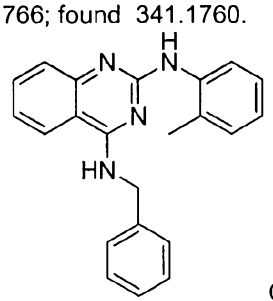
KSC-1-254 Cpd # LI

N-(4-methoxyphenyl)-2-(4-(4-nitrophenyl)piperazin-1-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 9.50 (s, 1H), 8.30 (d, J = 7.5 Hz, 1H), 8.09 (d, J = 9.5 Hz, 2H), 7.70 (d, J = 9.1 Hz, 2H), 7.61 (t, J = 7.0 Hz, 1H), 7.39 (d, J = 7.6 Hz, 1H), 7.19 (t, J = 7.0 Hz, 1H), 7.08 (d, J = 9.6 Hz, 2H), 7.00 (d, J = 9.1 Hz, 2H), 3.91 (s, br. 4H), 3.80 (s, 3H), 3.60 (s, br. 4H). HRMS (m/z): calcd for $C_{25}H_{25}N_6O_3$ (M+H) 457.1988; found 457.1980.



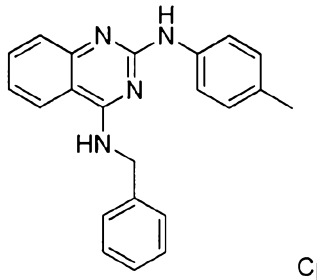
KSC-1-253 Cpd # II-12

N4-benzyl-N2-(m-tolyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 12.53 (s, br. 1H), 10.27 (s, br. 2H), 8.40 (d, J = 7.6 Hz, 1H), 7.86 (d, J = 7.3 Hz, 1H), 7.61 (d, J = 7.9 Hz, 1H), 7.51 (t, J = 7.1 Hz, 1H), 7.41 – 7.19 (m, 7H), 7.03 (s, br. 1H), 4.82 (d, J = 5.9 Hz, 2H), 2.24 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{21}N_4$ (M+H) 341.1766; found 341.1760.



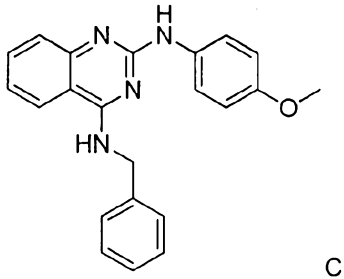
KSC-1-252 Cpd # II-7

N4-benzyl-N2-(o-tolyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ, 10.30 (s, br. 1H), 9.89 (s, br. 1H), 8.40 (d, J = 7.6 Hz, 1H), 7.85 (t, J = 7.2 Hz, 1H), 7.59 (d, J = 7.9 Hz, 1H), 7.49 (t, J = 7.2 Hz, 1H), 7.44 – 7.34 (m, 2H), 7.31 – 7.24 (m, 5H), 7.18 (s, br. 2H), 4.61 (s, br. 2H), 2.23 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{21}N_4$ (M+H) 341.1766; found 341.1760.



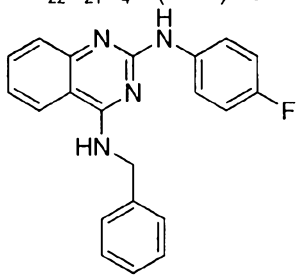
KSC-1-251 Cpd # II-2

N4-benzyl-N2-(p-tolyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 10.29 (s, br. 2H), 8.41 (d, J = 7.8 Hz, 1H), 7.85 (t, J = 7.3 Hz, 1H), 7.60 (d, J = 8.2 Hz, 1H), 7.50 (t, J = 7.3 Hz, 1H), 7.42 – 7.24 (m, 7H), 7.20 (d, J = 8.2 Hz, 2H), 4.79 (d, J = 5.8 Hz, 2H), 2.33 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{21}N_4$ (M+H) 341.1766; found 341.1758.



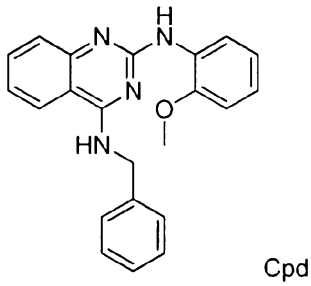
KSC-1-250 Cpd # II-6

N4-benzyl-N2-(4-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 12.74 – 12.22 (m, 1H), 10.30 (s, 1H), 10.24 (s, 1H), 8.42 (d, J = 7.7 Hz, 1H), 7.84 (t, J = 7.3 Hz, 1H), 7.59 (d, J = 8.2 Hz, 1H), 7.48 (t, J = 7.7 Hz, 1H), 7.43 – 7.19 (m, 6H), 6.96 (d, J = 8.7 Hz, 2H), 4.75 (s, br. 2H), 3.79 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{21}N_4O$ (M+H) 357.1715; found 357.1711.



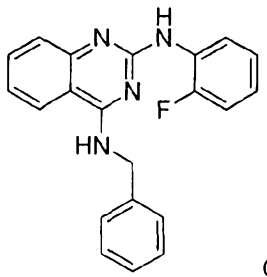
KSC-1-249 Cpd # II-4

N4-benzyl-N2-(4-fluorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 10.40 (s, br. 2H), 8.46 (d, J = 7.7 Hz, 1H), 7.86 (t, J = 7.3 Hz, 1H), 7.60 (d, J = 7.8 Hz, 1H), 7.55 – 7.41 (m, 3H), 7.41 – 7.26 (m, 5H), 7.22 (t, J = 8.8 Hz, 2H), 4.76 (d, J = 5.8 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{18}FN_4$ (M+H) 345.1515; found 345.1510.



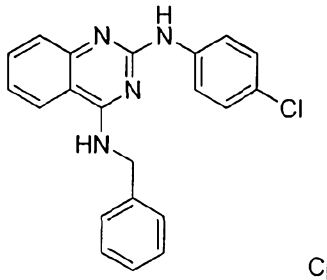
KSC-1-248 Cpd # II-11

N4-benzyl-N2-(2-methoxyphenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 10.43 (s, br. 1H), 9.63 (s, br. 1H), 8.46 (d, J = 7.6 Hz, 1H), 7.87 (t, J = 7.2 Hz, 1H), 7.66 (s, br. 1H), 7.58 (d, J = 8.1 Hz, 1H), 7.51 (t, J = 7.7 Hz, 1H), 7.38 – 7.21 (m, 6H), 7.16 (d, J = 7.2 Hz, 1H), 6.96 (t, J = 7.6 Hz, 1H), 4.76 (d, J = 5.8 Hz, 2H), 3.84 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{21}N_4O$ (M+H) 357.1715; found 357.1709.



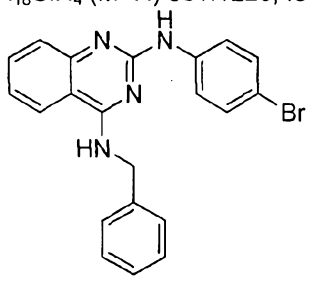
KSC-1-247 Cpd # II-9

N4-benzyl-N2-(2-fluorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 10.49 (s, br. 1H), 10.11 (s, br. 1H), 8.46 (d, J = 7.5 Hz, 1H), 7.88 (t, J = 7.2 Hz, 1H), 7.67 – 7.61 (m, 2H), 7.52 (t, J = 7.7 Hz, 1H), 7.45 – 7.11 (m, 8H), 4.68 (d, J = 5.7 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{18}FN_4$ (M+H) 345.1515; found 345.1516.



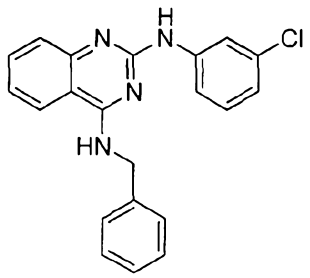
KSC-1-246 Cpd # II-3

N4-benzyl-N2-(4-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 10.46 (s, 1H), 10.37 (s, br. 1H), 8.45 (d, J = 7.8 Hz, 1H), 7.87 (t, J = 7.8 Hz, 1H), 7.61 (d, J = 7.8 Hz, 1H), 7.54 – 7.48 (m, 3H), 7.41 (d, J = 8.9 Hz, 2H), 7.36 – 7.34 (m, 4H), 7.32 – 7.24 (m, 1H), 4.79 (d, J = 5.8 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{18}ClN_4$ (M+H) 361.1220; found 361.1211.



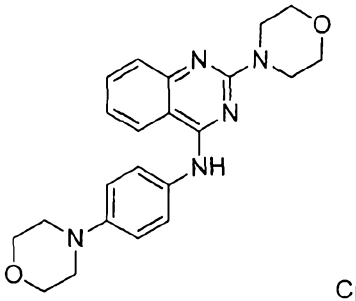
KSC-1-245 Cpd # II-5

N4-benzyl-N2-(4-bromophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 10.26 (s, br. 2H), 8.42 – 8.35 (m, 1H), 7.90 – 7.82 (m, 1H), 7.63 – 7.61 (m, 1H), 7. 7.56 – 7.47 (m, 3H), 7.46 – 7.42 (m, 2H), 7.37 – 7.26 (m, 5H), 4.80 (d, J = 5.9 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{18}BrN_4$ (M+H) 405.0715 and 407.0694; found 407.0687.



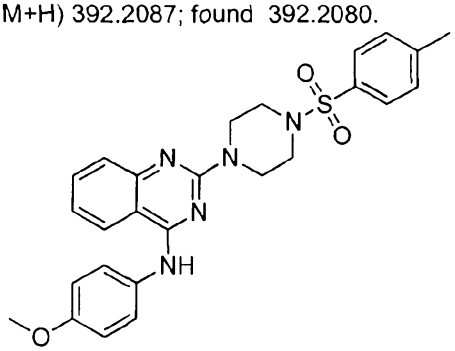
KSC-1-244 Cpd # II-13

N4-benzyl-N2-(3-chlorophenyl)quinazoline-2,4-diamine. ^{1}H NMR (400 MHz, DMSO) δ 10.58 (s, br. 1H), 10.46 (s, br. 1H), 8.47 (d, J = 8.0 Hz, 1H), 7.88 (t, J = 7.2 Hz, 1H), 7.74 (s, 1H), 7.62 (d, J = 7.8 Hz, 1H), 7.52 (t, J = 7.7 Hz, 1H), 7.44 – 7.31 (m, 5H), 7.31 – 7.22 (m, 2H), 4.82 (d, J = 5.9 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{18}ClN_4$ (M+H) 361.1220; found 361.1213.



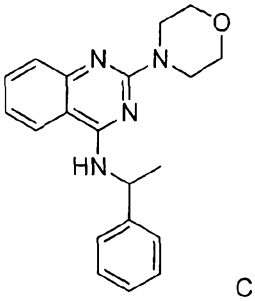
KSC-1-242 Cpd # L

2-morpholino-N-(4-morpholinophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 9.41 (s, 1H), 8.29 (d, J = 7.5 Hz, 1H), 7.66 (d, J = 9.1 Hz, 2H), 7.59 (t, J = 7.6 Hz, 1H), 7.35 (d, J = 7.5 Hz, 1H), 7.18 (t, J = 7.0 Hz, 1H), 6.98 (d, J = 9.1 Hz, 2H), 3.82 – 3.61 (m, 12H), 3.16 – 3.05 (m, 4H). HRMS (m/z): calcd for $C_{22}H_{26}N_5O_2$ (M+H) 392.2087; found 392.2080.



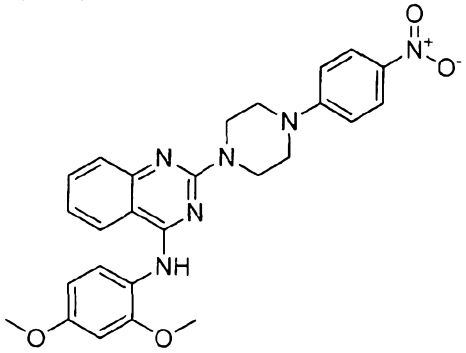
KSC-1-241 Cpd # XLVIII

N-(4-methoxyphenyl)-2-(4-tosylpiperazin-1-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 9.47 (s, 1H), 8.26 (d, J = 7.5 Hz, 1H), 7.63 (dd, J = 6.8, 8.7 Hz, 4H), 7.58 (t, J = 7.7 Hz, 1H), 7.43 (d, J = 8.0 Hz, 2H), 7.32 (d, J = 7.6 Hz, 1H), 7.17 (t, J = 7.6 Hz, 1H), 6.97 (d, J = 9.1 Hz, 2H), 3.84 (s, br. 4H), 3.79 (s, 3H), 2.92 (s, br. 4H), 2.37 (s, 3H). HRMS (m/z): calcd for $C_{26}H_{28}N_5O_3S$ (M+H) 490.1913; found 490.1901.



KSC-1-240 Cpd # XLVI

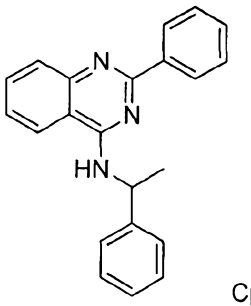
2-morpholino-N-(1-phenylethyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 8.22 (d, J = 7.3 Hz, 2H), 7.52 (ddd, J = 1.4, 6.9, 8.3 Hz, 1H), 7.43 (d, J = 7.2 Hz, 2H), 7.35 – 7.23 (m, 3H), 7.20 (t, J = 7.3 Hz, 1H), 7.15 – 7.05 (m, 1H), 5.40 (t, J = 7.1 Hz, 1H), 3.77 – 3.45 (m, 8H), 1.58 (d, J = 7.1 Hz, 3H). HRMS (m/z): calcd for $C_{20}H_{23}N_4O$ (M+H) 335.1872; found 335.1868.



KSC-1-239 Cpd # XLIX

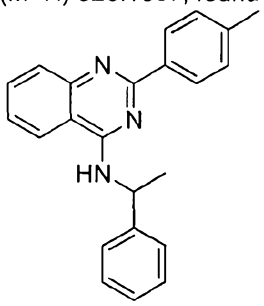
N-(2,4-dimethoxyphenyl)-2-(4-(4-nitrophenyl)piperazin-1-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 9.04 (s, 1H), 8.21 (d, J = 7.6 Hz, 1H), 8.07 (d, J = 9.5 Hz, 2H), 7.59 (t, J = 7.1 Hz, 1H), 7.50 (d, J = 8.6 Hz, 1H), 7.37 (d, J = 7.9 Hz, 1H), 7.16 (t, J = 7.1 Hz, 1H), 7.06 (d, J = 9.6 Hz, 2H), 6.71 (d, J = 2.7 Hz, 1H),

6.60 (dd, J = 2.7, 8.7 Hz, 1H), 3.83 – 3.78 (m, 10H), 3.54 – 3.52 (m, 4H). HRMS (m/z): calcd for $C_{26}H_{27}N_6O_4$ (M+H) 487.2094; found 487.2084.



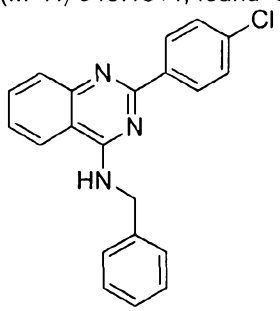
KSC-1-238 Cpd # I-29

2-phenyl-N-(1-phenylethyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.46 – 8.35 (m, 2H), 7.85 (d, J = 8.2 Hz, 1H), 7.70 – 7.60 (m, 2H), 7.43 (d, J = 10.9 Hz, 2H), 7.41 – 7.30 (m, 4H), 7.34 – 7.27 (m, 2H), 7.22 (t, J = 7.3 Hz, 1H), 5.79 (d, J = 6.6 Hz, 1H), 5.78 – 5.68 (m, 1H), 1.68 (d, J = 6.8 Hz, 3H). HRMS (m/z): calcd for $C_{22}H_{20}N_3$ (M+H) 326.1657; found 326.1653.



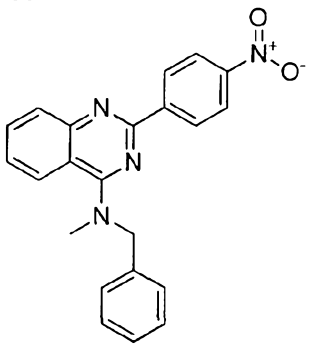
KSC-1-237 Cpd # I-30

N-(1-phenylethyl)-2-(p-tolyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.31 (d, J = 8.2 Hz, 2H), 7.87 – 7.79 (m, 1H), 7.69 – 7.58 (m, 2H), 7.47 – 7.39 (m, 2H), 7.36 – 7.25 (m, 3H), 7.22 (dt, J = 3.7, 8.1, 3H), 5.76 (d, J = 6.8 Hz, 1H), 5.69 (p, J = 6.8 Hz, 1H), 2.35 (s, 3H), 1.68 (d, J = 6.7 Hz, 3H). HRMS (m/z): calcd for $C_{23}H_{22}N_3$ (M+H) 340.1814; found 340.1807.



KSC-1-236 Cpd # I-6

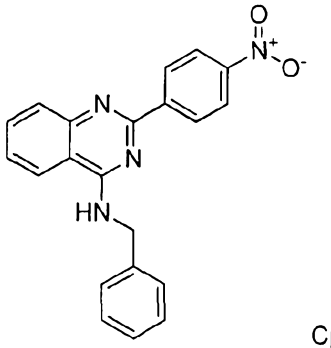
N-benzyl-2-(4-chlorophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 8.84 – 8.72 (m, 1H), 8.64 (d, J = 8.8 Hz, 2H), 8.36 – 8.17 (m, 2H), 7.99 – 7.93 (m, 3H), 7.71 (d, J = 7.1 Hz, 2H), 7.59 (t, J = 7.4 Hz, 2H), 7.51 (d, J = 7.3 Hz, 1H), 5.25 (d , J = 6.0 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}ClN_3$ (M+H) 346.1111; found 346.1103.



KSC-1-235 Cpd # I-28

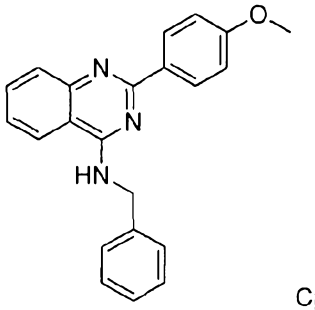
N-benzyl-N-methyl-2-(4-nitrophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 8.73 – 8.63 (m, 2H), 8.38 – 8.29 (m, 2H), 8.16 (d, J = 7.8 Hz, 1H), 7.96 – 7.88 (m, 1H), 7.88 – 7.79 (m, 1H), 7.55 – 7.36 (m,

5H), 7.32 (t, J = 7.0 Hz, 1H), 5.16 (s, 2H), 3.46 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{19}N_4O_2$ (M+H) 371.1508; found 371.1500.



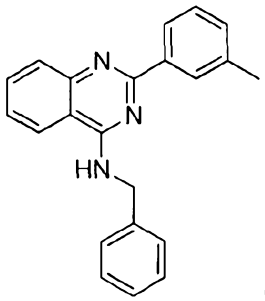
KSC-1-234 Cpd # I-8

N-benzyl-2-(4-nitrophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 9.12 (s, br. 1H), 8.71 – 8.64 (m, 2H), 8.41 – 8.30 (m, 3H), 7.85 (d, J = 3.6 Hz, 2H), 7.63 – 7.54 (m, 1H), 7.48 (t, J = 8.9 Hz, 2H), 7.35 (t, J = 7.5 Hz, 2H), 7.25 (t, J = 7.3 Hz, 1H), 4.95 (d, J = 5.8 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}N_4O_2$ (M+H) 357.1352; found 357.1342.



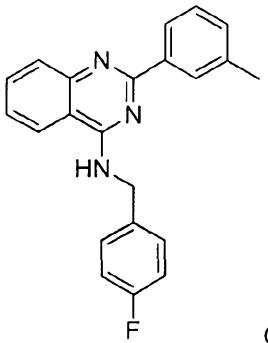
KSC-1-227 Cpd # I-9

N-benzyl-2-(4-methoxyphenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.57 (d, J = 8.9 Hz, 2H), 7.94 (d, J = 8.3 Hz, 1H), 7.79 – 7.65 (m, 2H), 7.50 (d, J = 7.1 Hz, 2H), 7.43 – 7.33 (m, 4H), 7.03 (d, J = 8.9 Hz, 2H), 5.94 (s, br. 1H), 5.05 (d, J = 5.4 Hz, 2H), 3.91 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{20}N_3O$ (M+H) 342.1606; found 342.1602.



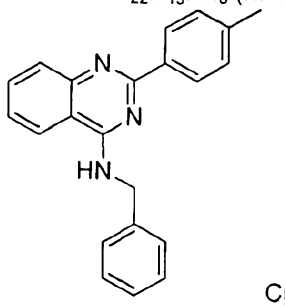
KSC-1-226 Cpd # I-5

N-benzyl-2-(m-tolyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.40 (d, J = 6.6 Hz, 2H), 7.98 (d, J = 8.0 Hz, 1H), 7.80 – 7.74 (m, 1H), 7.72 (d, J = 8.2 Hz, 1H), 7.51 (d, J = 7.1 Hz, 2H), 7.48 – 7.29 (m, 6H), 5.96 (s, br. 1H), 5.06 (d, J = 5.4 Hz, 2H), 2.49 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{20}N_3$ (M+H) 326.1657; found 326.1653.



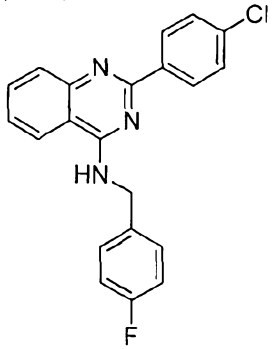
KSC-1-225 Cpd # I-24

N-(4-fluorobenzyl)-2-(m-tolyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.34 (d, J = 7.4 Hz, 2H), 7.94 (d, J = 7.8 Hz, 1H), 7.73 (t, J = 7.7 Hz, 1H), 7.68 (d, J = 8.3 Hz, 1H), 7.46 – 7.38 (m, 3H), 7.35 (d, J = 8.5 Hz, 1H), 7.26 (d, J = 9.8 Hz, 1H), 7.05 (t, J = 8.7 Hz, 2H), 5.89 (s, br.1H), 4.98 (d, J = 5.4 Hz, 2H), 2.45 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{19}FN_3$ (M+H) 344.1563; found 344.1559.



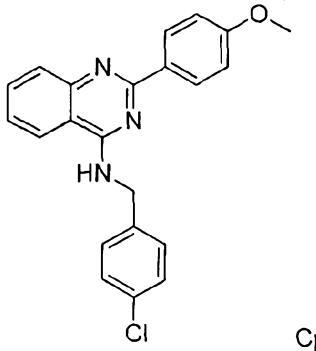
KSC-1-224 Cpd # I-10

N-benzyl-2-(p-tolyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, CDCl3) δ 8.50 (d, J = 8.2 Hz, 2H), 7.96 (d, J = 7.8 Hz, 1H), 7.75 (ddd, J = 1.3, 7.0, 8.4 Hz, 1H), 7.71 (d, J = 8.3 Hz, 1H), 7.51 (d, J = 7.3 Hz, 2H), 7.46 – 7.34 (m, 4H), 7.32 (d, J = 8.0 Hz, 2H), 5.94 (s, br. 1H), 5.05 (d, J = 5.4 Hz, 2H), 2.46 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{20}N_3$ (M+H) 326.1657; found 326.1656.



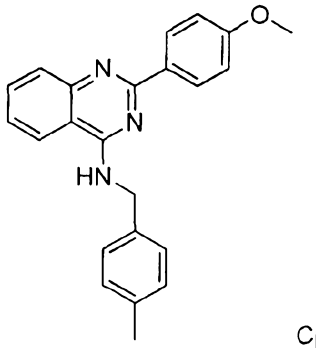
KSC-1-223 Cpd # I-23

2-(4-chlorophenyl)-N-(4-fluorobenzyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.59 – 8.48 (m, 2H), 7.96 (d, J = 8.1 Hz, 1H), 7.82 – 7.75 (m, 1H), 7.72 (d, J = 8.2 Hz, 1H), 7.51 – 7.42 (m, 5H), 7.09 (t, J = 8.7 Hz, 2H), 5.97 (s, br. 1H), 5.01 (d, J = 5.5 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{16}ClFN_3$ (M+H) 364.1017; found 364.1009. KSC-1-222



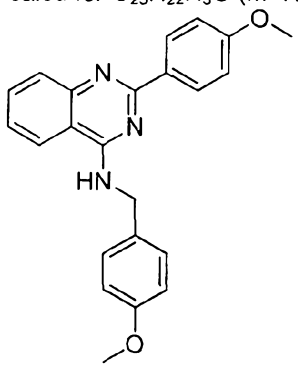
Cpd # I-22

N-(4-chlorobenzyl)-2-(4-methoxyphenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.58 – 8.48 (m, 2H), 7.95 (d, J = 8.3 Hz, 1H), 7.75 (t, J = 7.7 Hz, 1H), 7.71 (d, J = 7.8 Hz, 1H), 7.45 – 7.41 (m, 3H), 7.39 – 7.33 (m, 2H), 7.02 (d, J = 9.0 Hz, 2H), 5.95 (s, br. 1H), 5.02 (d, J = 5.6 Hz, 2H), 3.91 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{19}ClN_3O$ (M+H) 376.1217; found 376.1209.



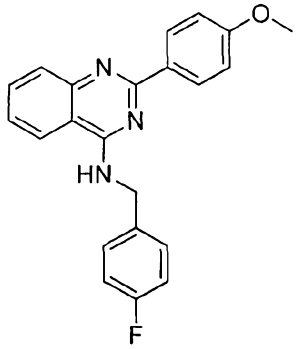
KSC-1-221 Cpd # I-21

2-(4-methoxyphenyl)-N-(4-methylbenzyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.59 (d, J = 8.9 Hz, 2H), 8.03 – 7.88 (m, 1H), 7.73 (t, J = 7.7 Hz, 1H), 7.69 (d, J = 7.9 Hz, 1H), 7.43 – 7.39 (m, 3H), 7.22 (d, J = 7.8 Hz, 2H), 7.03 (d, J = 9.0 Hz, 2H), 5.91 (s, br. 1H), 5.00 (d, J = 5.3 Hz, 2H), 3.92 (s, 3H), 2.39 (s, 3H). HRMS (m/z): calcd for $C_{23}H_{22}N_3O$ (M+H) 356.1763; found 356.1757.



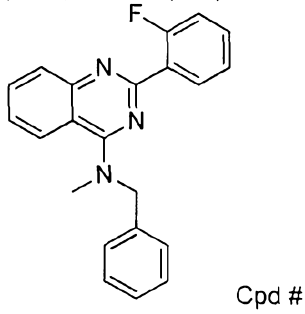
KSC-1-220 Cpd # I-20

N-(4-methoxybenzyl)-2-(4-methoxyphenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.60 (d, J = 8.7 Hz, 2H), 8.00 (s, br. 1H), 7.74 – 7.70 (m, 2H), 7.45 – 7.37 (m, 3H), 7.04 (d, J = 8.9 Hz, 2H), 6.94 (d, J = 8.7 Hz, 2H), 4.97 (d, J = 5.3 Hz, 2H), 3.92 (s, 3H), 3.85 (s, 3H). HRMS (m/z): calcd for $C_{23}H_{22}N_3O_2$ (M+H) 372.1712; found 372.1708.



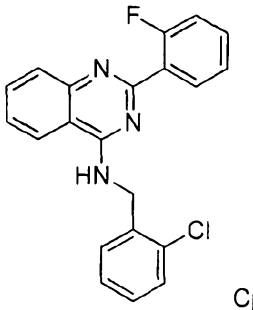
KSC-1-219 Cpd # I-17

N-(4-fluorobenzyl)-2-(4-methoxyphenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.55 (d, J = 9.0 Hz, 2H), 7.94 (d, J = 8.4 Hz, 1H), 7.75 (t, J = 7.7 Hz, 1H), 7.70 (d, J = 8.2 Hz, 1H), 7.47 (dd, J = 5.4, 8.7 Hz, 2H), 7.42 (t, J = 7.6 Hz, 1H), 7.08 (t, J = 8.7 Hz, 2H), 7.03 (d, J = 9.0 Hz, 2H), 5.94 (s, br. 1H), 5.01 (d, J = 5.5 Hz, 2H), 3.91 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{19}FN_3O$ (M+H) 360.1512; found 360.1505.



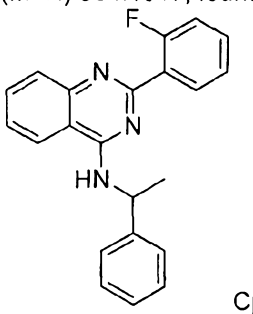
KSC-1-218 Cpd # I-26

N-benzyl-2-(2-fluorophenyl)-N-methylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.16 (td, J = 1.8, 7.7 Hz, 1H), 8.05 – 7.94 (m, 2H), 7.74 (t, J = 7.1 Hz, 1H), 7.51 – 7.39 (m, 5H), 7.37 (t, J = 7.7 Hz, 2H), 7.27 – 7.11 (m, 2H), 5.08 (s, 2H), 3.38 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{19}FN_3$ (M+H) 344.1563; found 344.1561.



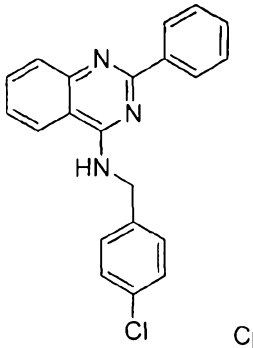
KSC-1-217 Cpd # I-16

N-(2-chlorobenzyl)-2-(2-fluorophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.14 (td, J = 1.9, 7.7 Hz, 1H), 7.97 (d, J = 8.4 Hz, 1H), 7.80 – 7.75 (m, 2H), 7.63 (dd, J = 3.5, 5.8 Hz, 1H), 7.53 – 7.48 (m, 1H), 7.48 – 7.41 (m, 2H), 7.29 – 7.20 (m, 4H), 6.25 (s, br. 1H), 5.10 (d, J = 5.9 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{16}ClFN_3$ (M+H) 364.1017; found 364.1012.



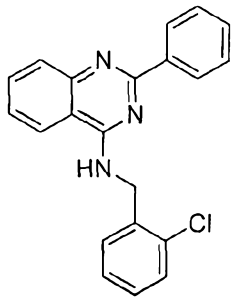
KSC-1-216 Cpd # I-31

2-(2-fluorophenyl)-N-(1-phenylethyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.03 (td, J = 1.8, 7.7 Hz, 1H), 7.97 (d, J = 8.2 Hz, 1H), 7.83 – 7.70 (m, 2H), 7.53 – 7.47 (m, 3H), 7.43 – 7.39 (m, 3H), 7.32 (t, J = 7.3 Hz, 1H), 7.28 – 7.16 (m, 2H), 5.91 (d, J = 7.1 Hz, 1H), 5.81 – 5.68 (m, 1H), 1.77 (d, J = 6.8 Hz, 3H). HRMS (m/z): calcd for $C_{22}H_{19}FN_3$ (M+H) 344.1563; found 344.1561.



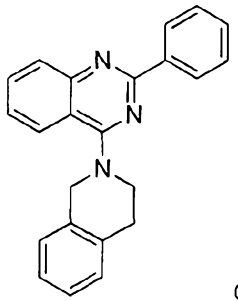
KSC-1-215 Cpd # I-15

N-(4-chlorobenzyl)-2-phenylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.62 – 8.53 (m, 2H), 7.98 (d, J = 7.8 Hz, 1H), 7.78 (ddd, J = 1.3, 7.0, 8.4 Hz, 1H), 7.73 (d, J = 8.2 Hz, 1H), 7.55 – 7.48 (m, 3H), 7.48 – 7.40 (m, 3H), 7.40 – 7.33 (m, 2H), 5.98 (s, br. 1H), 5.03 (d, J = 5.6 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}ClN_3$ (M+H) 346.1111; found 346.1104.



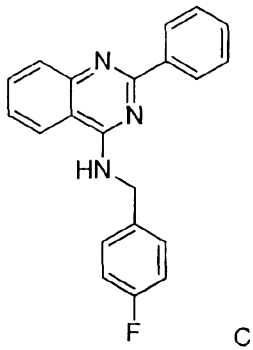
KSC-1-214 Cpd # I-14

N-(2-chlorobenzyl)-2-phenylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.60 (dd, J = 1.7, 8.0 Hz, 2H), 7.97 (d, J = 8.5 Hz, 1H), 7.80 – 7.71 (m, 2H), 7.64 – 7.61 (m, 1H), 7.57 – 7.41 (m, 5H), 7.28 – 7.26(m, 2H), 6.19 (s, br. 1H), 5.17 (d, J = 5.9 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}ClN_3$ (M+H) 346.1111; found 346.1105.



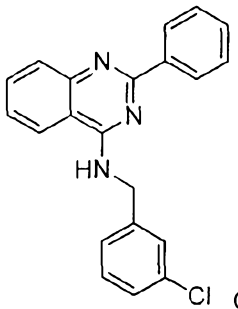
KSC-1-213 Cpd # I-35

4-(3,4-dihydroisoquinolin-2(1H)-yl)-2-phenylquinazoline. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.52 (dd, J = 1.6, 8.1 Hz, 2H), 7.92 (t, J = 9.4 Hz, 2H), 7.70 – 7.62 (m, 1H), 7.47 – 7.34 (m, 4H), 7.16 (s, 4H), 4.99 (s, 2H), 4.06 (t, J = 5.8 Hz, 2H), 3.16 (t, J = 5.8 Hz, 2H). HRMS (m/z): calcd for $C_{23}H_{20}N_3$ (M+H) 338.1657; found 338.1650.



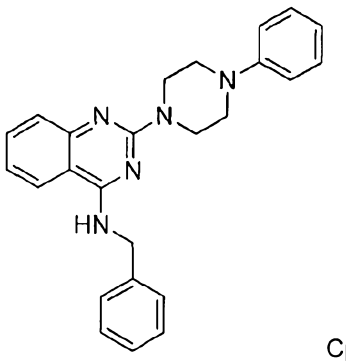
KSC-1-212 Cpd # I-13

N-(4-fluorobenzyl)-2-phenylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.62 – 8.55 (m, 2H), 7.98 (d, J = 7.8 Hz, 1H), 7.78 (ddd, J = 1.3, 7.0, 8.4 Hz, 1H), 7.72 (d, J = 8.2 Hz, 1H), 7.58 – 7.39 (m, 6H), 7.13 – 7.04 (m, 2H), 5.95 (s, br. 1H), 5.03 (d, J = 5.5 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}FN_3$ (M+H) 330.1407; found 330.1400.



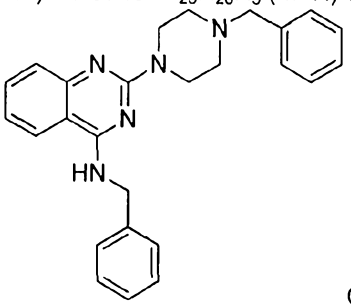
KSC-1-211 Cpd # I-12

N-(3-chlorobenzyl)-2-phenylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.60 – 8.52 (m, 2H), 7.99 (d, J = 7.8 Hz, 1H), 7.82 – 7.76 (m, 1H), 7.75 (d, J = 8.2 Hz, 1H), 7.57 – 7.43 (m, 5H), 7.40 – 7.37 (m, 1H), 7.35 – 7.30 (m, 2H), 6.00 (s, br. 1H), 5.04 (d, J = 5.6 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}ClN_3$ (M+H) 346.1111; found 346.1105.



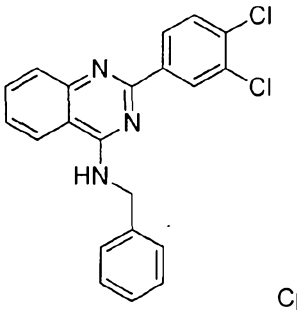
KSC-1-208 Cpd # XLVII

N-benzyl-2-(4-phenylpiperazin-1-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, DMSO) δ 10.28 – 10.15 (m, 1H), 8.37 (d, J = 8.2 Hz, 1H), 7.84 (d, J = 5.6 Hz, 2H), 7.54 – 7.41 (m, 3H), 7.38 (t, J = 7.4 Hz, 2H), 7.32 – 7.20 (m, 3H), 7.01 (d, J = 7.9 Hz, 2H), 6.85 (d, J = 7.3 Hz, 1H), 4.84 (d, J = 5.7 Hz, 2H), 4.03 (s, br. 4H), 3.29 (s, br. 4H). HRMS (m/z): calcd for $C_{25}H_{26}N_5$ (M+H) 396.2188; found 396.2177.



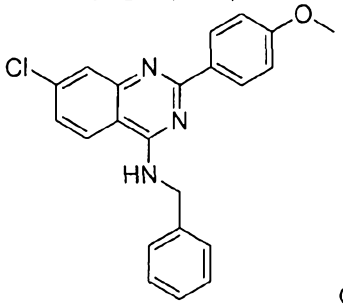
KSC-1-203 Cpd # XXIII

N-benzyl-2-(4-benzylpiperazin-1-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.45 – 7.38 (m, 12.7, 3H), 7.35 – 7.19 (m, 10H), 6.99 – 6.89 (m, 1H), 5.76 (s, br. 1H), 4.70 (d, J = 5.4 Hz, 2H), 3.91 – 3.76 (m, 4H), 3.69 – 3.65 (m, 2H), 2.44 – 2.40 (m, 4H). HRMS (m/z): calcd for $C_{26}H_{28}N_5$ (M+H) 410.2345; found 410.2339.



KSC-1-200 Cpd # I-11

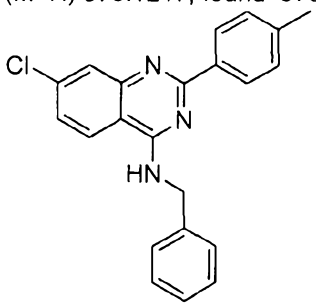
N-benzyl-2-(3,4-dichlorophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.69 (d, J = 2.0 Hz, 1H), 8.44 (dd, J = 2.0, 8.4 Hz, 1H), 7.96 (d, J = 7.8 Hz, 1H), 7.83 – 7.75 (m, 1H), 7.73 (d, J = 8.2 Hz, 1H), 7.57 (d, J = 8.4 Hz, 1H), 7.53 – 7.47 (m, 3H), 7.47 – 7.32 (m, 3H), 6.01 (s, br. 1H), 5.03 (d, J = 5.4 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{16}Cl_2N_3$ (M+H) 380.0721; found 380.0714.



KSC-1-195 Cpd # I-34

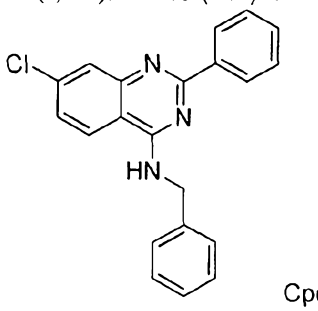
N-benzyl-7-chloro-2-(4-methoxyphenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.50 – 8.41 (m, 2H), 7.83 (s, 1H), 7.52 (d, J = 8.7 Hz, 1H), 7.39 (d, J = 6.8 Hz, 2H), 7.35 – 7.28 (m, 2H), 7.28 – 7.21 (m, 2H),

6.97 – 6.87 (m, 2H), 5.91 – 5.70 (m, 1H), 4.93 (d, J = 5.4 Hz, 2H), 3.81 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{19}ClN_3O$ (M+H) 376.1217; found 376.1213.



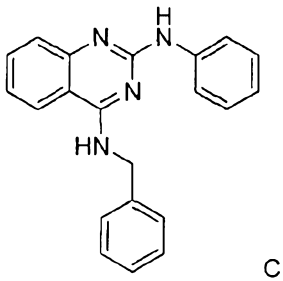
KSC-1-194 Cpd # I-33

N-benzyl-7-chloro-2-(p-tolyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.38 (d, J = 8.2 Hz, 2H), 7.85 (s, 1H), 7.53 (d, J = 8.7 Hz, 1H), 7.39 (d, J = 7.3 Hz, 2H), 7.34 – 7.20 (m, 6H), 5.81 (s, br. 1H), 4.93 (d, J = 5.4 Hz, 2H), 2.36 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{19}ClN_3$ (M+H) 360.1268; found 360.1261.



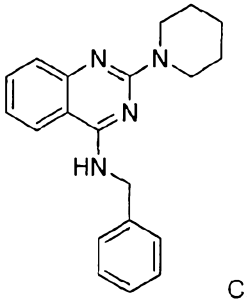
KSC-1-193 Cpd # I-32

N-benzyl-7-chloro-2-phenylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.63 – 8.54 (m, 2H), 7.96 (d, J = 2.1 Hz, 1H), 7.64 (d, J = 8.7 Hz, 1H), 7.57 – 7.46 (m, 5H), 7.46 – 7.32 (m, 4H), 5.93 (s, br. 1H), 5.04 (d, J = 5.4 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}ClN_3$ (M+H) 346.1111; found 346.1108.



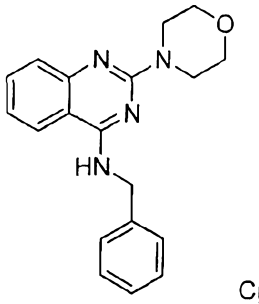
KSC-1-153 Cpd # II-1

N4-benzyl-N2-phenylquinazoline-2,4-diamine. ^{1}H NMR (400 MHz, MeOD) δ 8.23 (dd, J = 0.8, 8.3 Hz, 1H), 7.87 (ddd, J = 1.3, 7.3, 8.5 Hz, 1H), 7.58 (d, J = 8.4 Hz, 1H), 7.53 (ddd, J = 1.1, 7.3, 8.3 Hz, 1H), 7.47 – 7.42 (m, 4H), 7.39 – 7.25 (m, 6H), 4.87 (s, 2H).



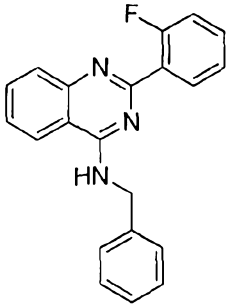
KSC-1-152 Cpd # XXII

N-benzyl-2-(piperidin-1-yl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 9.42 (s, br. 1H), 8.20 (d, J = 8.1 Hz, 1H), 8.10 (d, J = 8.4 Hz, 1H), 7.46 (d, J = 6.7 Hz, 2H), 7.33 – 7.30 (m, 2H), 7.27 – 7.24 (m, 2H), 7.00 (t, J = 7.4 Hz, 1H), 4.80 (d, J = 5.7 Hz, 2H), 3.92 (s, br. 4H), 1.73 (s, br. 4H). HRMS (m/z): calcd for $C_{20}H_{23}N_4$ (M+H) 319.1923; found 319.1921.



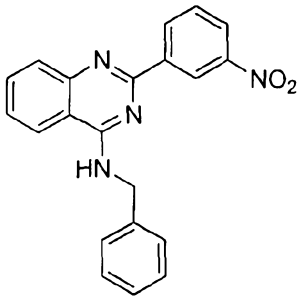
KSC-1-151 Cpd # XLIV

N-benzyl-2-morpholinoquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 9.26 (s, br. 1H), 8.22 – 8.18 (m, 2H), 7.44 – 7.29 (m, 6H), 7.11 (t, J = 7.3 Hz, 1H), 4.82 (d, J = 5.8 Hz, 2H), 4.06 (s, br. 4H), 3.80 (s, br. 4H). HRMS (m/z): calcd for $C_{19}H_{21}N_4O$ (M+H) 321.1715; found 321.1716.



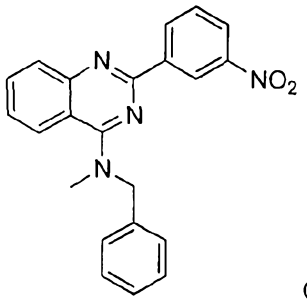
KSC-1-150 Cpd # I-1

N-benzyl-2-(2-fluorophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.15 (td, J = 1.9, 7.7 Hz, 1H), 7.99 (d, J = 7.8 Hz, 1H), 7.79 (ddd, J = 1.3, 7.0, 8.4 Hz, 1H), 7.74 (d, J = 8.2 Hz, 1H), 7.52 – 7.32 (m, 7H), 7.26 – 7.19 (m, 2H), 5.97 (s, br. 1H), 5.00 (d, J = 5.4 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}FN_4$ (M+H) 330.1407; found 330.1408.



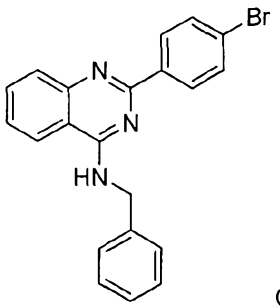
KSC-1-149 Cpd # I-4

N-benzyl-2-(3-nitrophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 9.34 – 9.24 (m, 1H), 8.86 – 8.75 (m, 1H), 8.19 (ddd, J = 1.1, 2.4, 8.1 Hz, 1H), 7.86 (d, J = 7.8 Hz, 1H), 7.68 (ddd, J = 1.3, 7.0, 8.4 Hz, 1H), 7.63 (d, J = 8.3 Hz, 1H), 7.53 (t, J = 8.0 Hz, 1H), 7.37 (td, J = 1.3, 7.0 Hz, 3H), 7.33 – 7.26 (m, 2H), 7.23 (t, J = 7.3 Hz, 1H), 5.97 (s, br. 1H), 4.91 (d, J = 5.4 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}N_4O_2$ (M+H) 357.1352; found 357.1350.



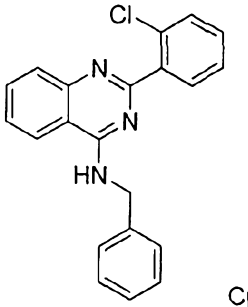
KSC-1-148 Cpd # I-27

N-benzyl-N-methyl-2-(3-nitrophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 9.35 – 9.27 (m, 1H), 8.85 – 8.76 (m, 1H), 8.22 (ddd, J = 1.1, 2.4, 8.1 Hz, 1H), 7.91 (d, J = 8.9 Hz, 2H), 7.66 (ddd, J = 1.4, 6.9, 8.3 Hz, 1H), 7.55 (t, J = 8.0 Hz, 1H), 7.41 – 7.32 (m, 4H), 7.28 (ddd, J = 1.3, 5.7, 8.5 Hz, 2H), 5.01 (s, 2H), 3.36 (s, 3H). HRMS (m/z): calcd for $C_{22}H_{19}N_4O_2$ (M+H) 371.1508; found 371.1512.



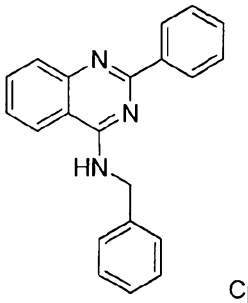
KSC-1-147 Cpd # I-7

N-benzyl-2-(4-bromophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.52 – 8.42 (m, 2H), 7.95 (d, J = 7.8 Hz, 1H), 7.78 (ddd, J = 1.3, 7.0, 8.4 Hz, 1H), 7.72 (d, J = 8.2 Hz, 1H), 7.67 – 7.59 (m, 2H), 7.52 – 7.33 (m, 6H), 5.98 (s, br. 1H), 5.04 (d, J = 5.4 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}BrN_3$ (M+H) 390.0606 and 392.0585; found 390.0599.



KSC-1-146 Cpd # I-3

N-benzyl-2-(2-chlorophenyl)quinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.88 (d, J = 7.8 Hz, 1H), 7.77 – 7.72 (m, 1H), 7.69 (ddd, J = 1.3, 7.0, 8.4 Hz, 1H), 7.65 (d, J = 8.3 Hz, 1H), 7.44 – 7.21 (m, 9H), 5.90 (s, br. 1H), 4.88 (d, J = 5.4 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{17}ClN_3$ (M+H) 346.1111; found 346.1112.



KSC-1-145 Cpd # I-2

N-benzyl-2-phenylquinazolin-4-amine. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.61 (ddd, J = 2.4, 4.2, 6.0 Hz, 2H), 7.98 (dd, J = 0.6, 8.4 Hz, 1H), 7.77 (ddd, J = 1.3, 7.0, 8.4 Hz, 1H), 7.72 (d, J = 8.2 Hz, 1H), 7.58 – 7.32 (m, 9H), 5.98 (s, br. 1H), 5.06 (d, J = 5.4 Hz, 2H). HRMS (m/z): calcd for $C_{21}H_{18}N_3$ (M+H) 312.1501; found 312.1504.

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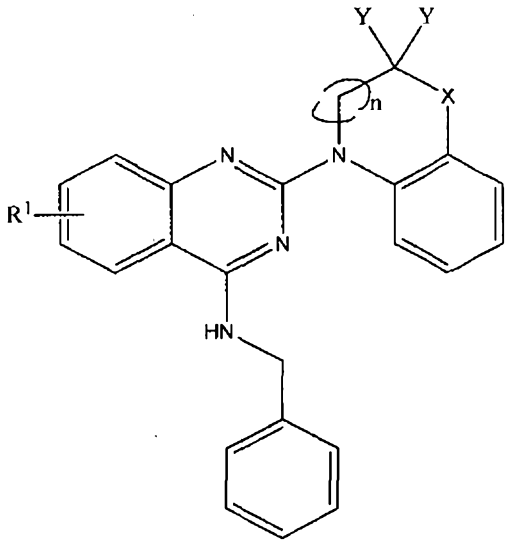
Throughout this specification and the claims which follow, unless the context requires otherwise, the word "comprise", and variations such as "comprises" and "comprising", will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

The reference in this specification to any prior publication (or information derived from it), or to any matter which is known, is not, and should not be taken as an acknowledgment or admission or any form of suggestion that that prior publication (or information derived from it) or known matter forms part of the common general knowledge in the field of endeavour to which this specification relates.

WHAT IS CLAIMED IS:

1. A composition comprising: a compound of Formula VII, IX, XI, XII, XX, XXI or XLIII, or a pegylated, biotinylated or fluorescently labeled analog of the compound, a pharmaceutically acceptable salt of the compound or the analog, or any regioisomer or stereoisomer of the compound, the analog or the salt:



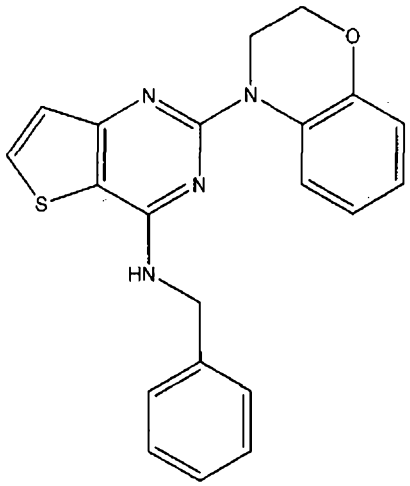
Formula VII

wherein for Formula VII, R^1, n, X, and Y are selected from the group consisting of combinations listed in Table 7:

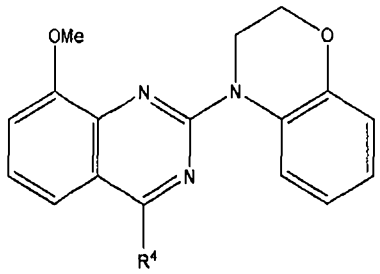
TABLE 7

Cpd#	RI	n	X	Y,Y
VII-3	H	1	O	H,H
VII-4	H	1	NH	H,H
VII-5	8-OMe	1	NH	H,H
VII-6	8-OMe	1	O	H,H
VII-7	8-OH	1	O	H,H
VII-8	8-Ph	1	O	H,H
VII-9	8-OCH_2CH_2OH	1	O	H,H

VII-10	8$OCH_2CH_2NEt_2$	1	O	H,H
VII-11	8-p-OMePh	1	O	H,H
VII-12	8-OMe	1	NMe	H,H
VII-13	8-OMe	1	NCOMe	H,H
VII-14	8-OCH_2CH_2OMe	1	O	H,H
VII-16	8-OMe	0	NH	NH
VII-17	8-OMe	0	O	Y,Y together form one O as oxygen of carbonyl incorporating both Y's
VII-15	8-n-Butyl	1	O	H,H



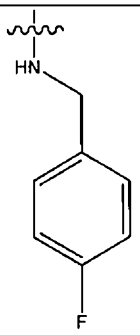
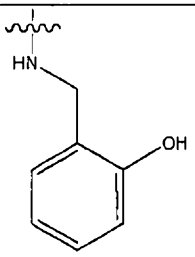
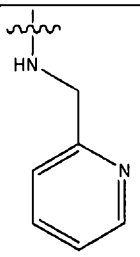
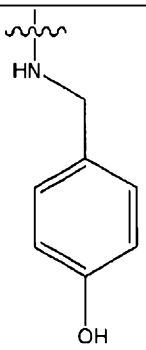
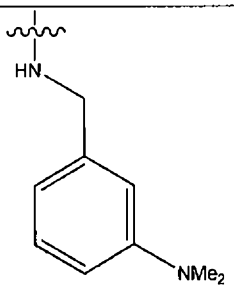
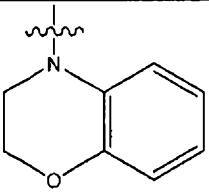
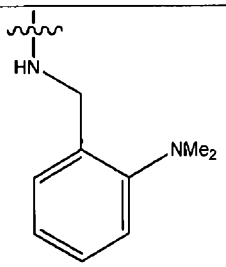
Formula IX,

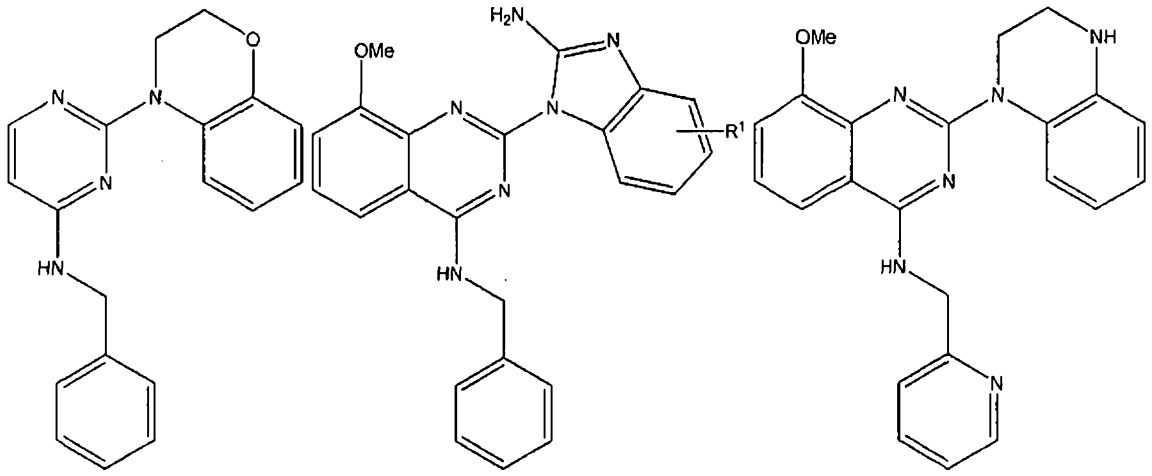


Formula XII

wherein, for Formula XII, R^4 is selected from the group consisting of the moieties listed in Table 10:

TABLE 10

Cpd #	R4	Cpd #	R4
XII-4		XII-8	
XII-7		XII-10	
XII-2		XII-11	
XII-9			



Formula XX **Formula XXI** **Formula XLII**

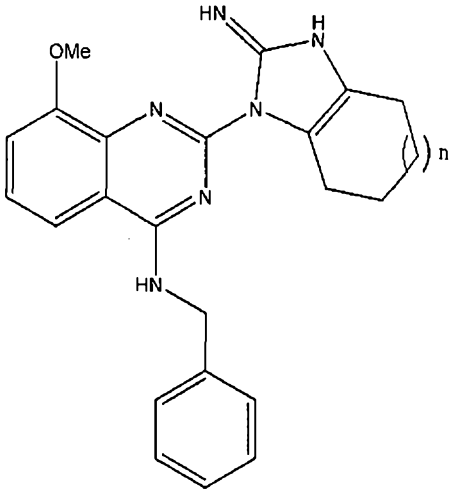
wherein for Formula XXI, R^1 is 5,6-dimethyl.

2. A composition of claim 1, further comprising a pharmaceutically acceptable carrier.

3. A composition of claim 1 or claim 2, wherein the compound is represented by Formula VII or XXI.

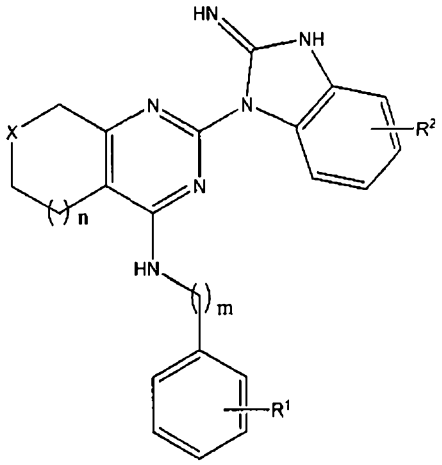
4. A composition of any one of claims 1 to 3, wherein the compound is represented by Formula VII.

5. A composition comprising: a compound of Formula LII, LVII, LVIII, LIX, LX, LXI, LXII or a pegylated, biotinylated or fluorescently labeled analog of the compound, a pharmaceutically acceptable salt of the compound or the analog, or any regioisomer or stereoisomer of the compound, the analog or the salt:



Formula LII

wherein N is 0, 1 or 2;



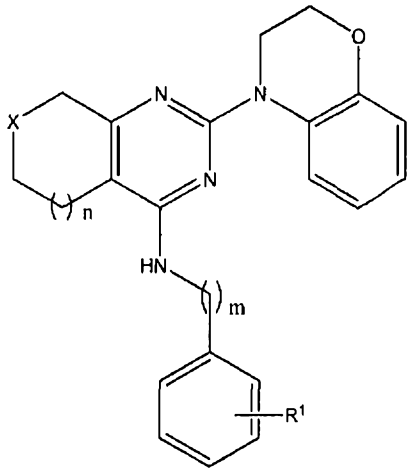
Formula LVII

wherein X is oxygen or N-R' wherein R' is methyl, ethyl or phenyl,

n is -1, 0, 1 or 2,

m is 1, 2, 3 or 4, and

R^1 and R^2 are independently selected from the group consisting of hydrogen, methyl, fluoro, chloro, bromo and methoxy;



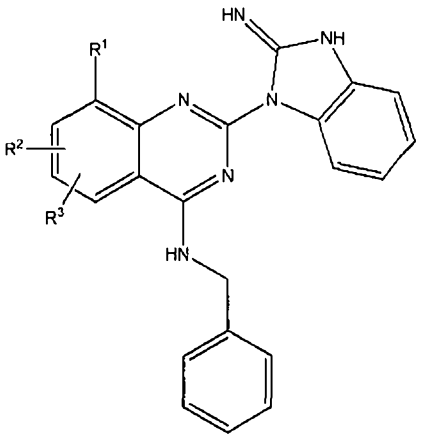
Formula LVIII

wherein X is oxygen or NR', wherein R' is methyl, ethyl or phenyl

n is -1, 0, 1 or 2,

m is 1, 2, 3 or 4,

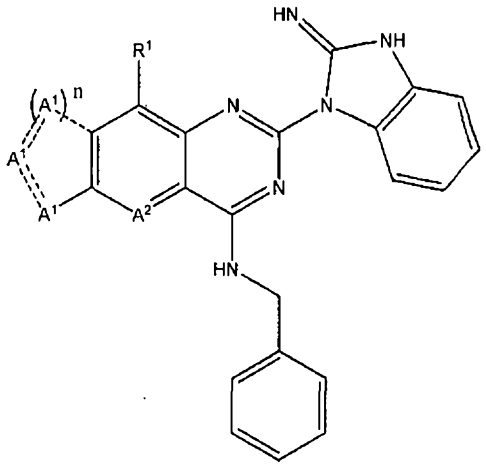
R^1 is hydrogen, methyl fluoro, chloro, bromo or methoxy;



Formula LIX

wherein R^1, R^2, R^3 are independently selected from the group consisting of hydrogen, $A(CH_2)_nCH_3$ and $A(CH_2)_nX$,

and wherein n is 0, 1, 2, 3, 4 or 5, A is O, S or NH, and X is heteroaryl, O-alkyl, S-alkyl, $(O\text{-alkyl})_2$ or $(S\text{-alkyl})_2$;



Formula LX

wherein A^1 is O, S, Se, N, NH, CH, CH_2, CHalkyl, or Calkyl,

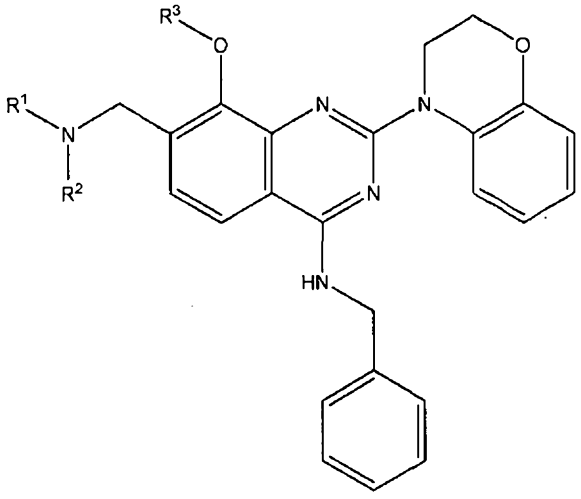
n is 1 or 2,

A^2 is N, NH, CH, or Calkyl,

and R^1 is selected from the group consisting of H, $A(CH_2)_mCH_3$, and $A(CH_2)_nX$,

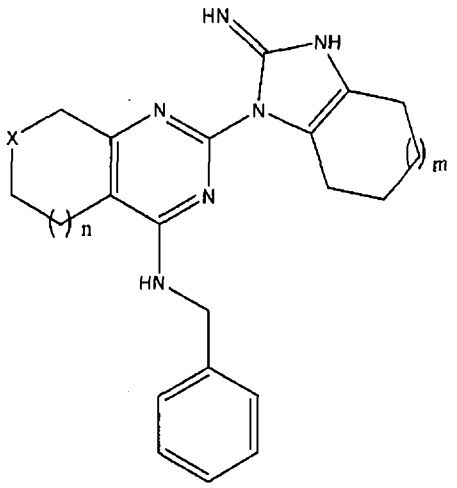
wherein A is O, S or NH and X is heteroaryl, O(alkyl), S(alkyl), $(O\text{-alkyl})_2$, or $(S\text{-alkyl})_2$, and

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



Formula LXI,

wherein R^1, R^2, R^3 are independently selected from the group consisting of alkyl, alkoxyalkyl and aminoalkyl;



Formula LXII

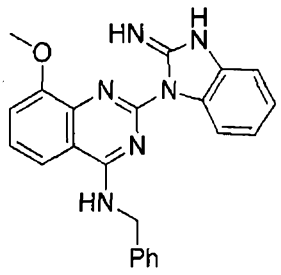
wherein n is -1, 0, 1 or 2, m is 0, 1 or 2, and X is CH_2, O or NR', and R' is methyl, ethyl or phenyl.

6. A composition of claim 5, further comprising a pharmaceutically acceptable carrier.

7. A composition of claim 5 or claim 6, wherein the compound is represented by Formula LII, LVII, LVIII or LXII.

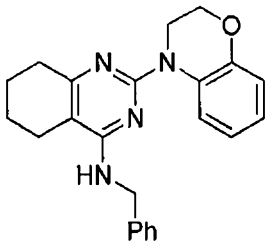
8. A composition of any one of claims 5-7, wherein the compound is represented by Formula LVII, LVIII or LXII.

9. A composition of claim 5, wherein the compound has a structure according to Formula LIX-A:



Formula LIX-A.

10. A composition suitable for decreasing p97 ATPase activity and/or degradation of a p97 dependent ubiquitin-proteasome substrate, comprising: a compound of Formula VIII or a pegylated, biotinylated or fluorescently labeled analog of the compound, a pharmaceutically acceptable salt of the compound or the analog, or any regioisomer or stereoisomer of the compound, the analog or the salt:



Formula VIII.

11. A composition of any one of claims 1-10, substantially as hereinbefore described with reference to the figures and/or examples.