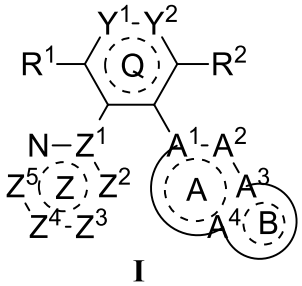
What is claimed is:

1. A nitrogenous aromatic heterocyclic compound represented by formula **I** or a pharmaceutically acceptable salt thereof:



I

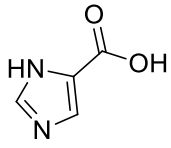
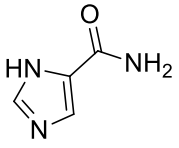
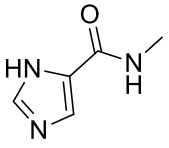
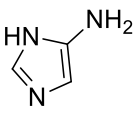
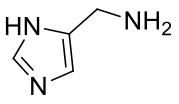
wherein,

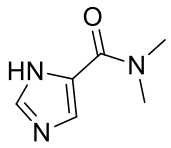
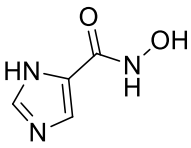
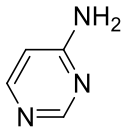
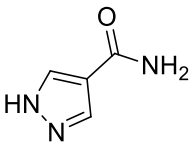
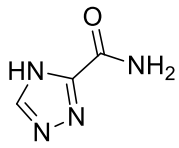
ring Z is a 5-6 membered heteroaromatic ring having at least one N;

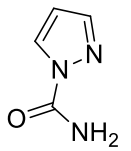
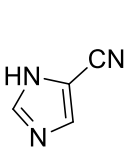
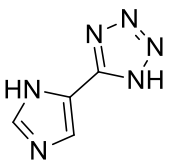
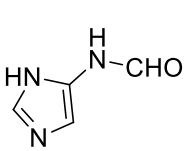
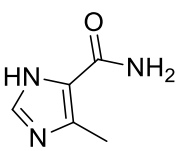
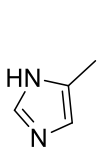
ring Q is a benzene ring or a 5-6 membered heteroaromatic ring;

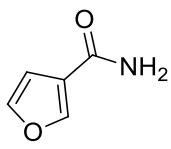
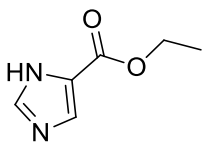
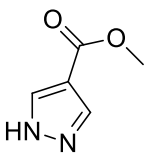
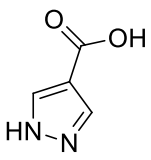
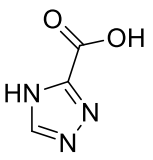
ring A is pyridine ring, pyridazine ring or benzene ring;

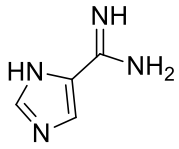
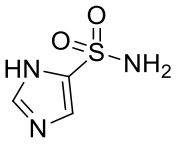
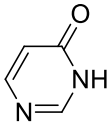
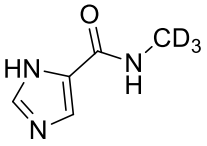
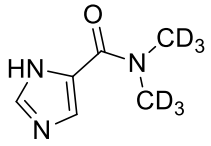
ring B is a substituted or unsubstituted 5-6 membered heteroaromatic ring; in the definition of ring B, the unsubstituted 5-6 membered heteroaromatic ring is unsubstituted imidazole ring, unsubstituted pyrimidine ring, unsubstituted pyridazine ring, unsubstituted pyrazine ring, unsubstituted pyrazole ring, unsubstituted triazole ring or unsubstituted furan ring; the substituted 5-6 membered heteroaromatic ring is

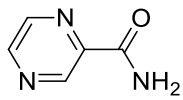
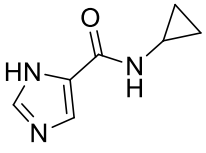
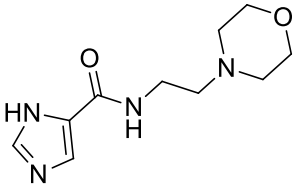
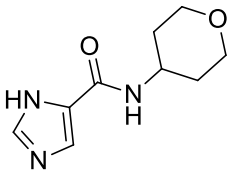
 ,  ,  ,  ,  ,

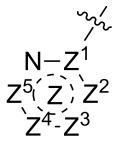
 ,  ,  ,  ,  ,

 ,  ,  ,  ,  ,  ,

 ,  ,  ,  ,  ,

 ,  ,  ,  ,  ,

 ,  ,  or 

in the moiety  , Z^1 is N or C; Z^2 is S, O, N or $CR^{2'}$; $R^{2'}$ is H or halogen; Z^3 is S, N or $CR^{3'}$, $R^{3'}$ is H; Z^4 is S, N, NR^{a3} or $CR^{4'}$, R^{a3} is hydrogen or C_{1-6} alkyl, $R^{4'}$ is hydrogen, C_{1-6} alkyl or halogen; Z^5 is $CR^{5'}$ or a single bond, $R^{5'}$ is hydrogen, substituted or unsubstituted C_{1-6} alkyl or $-R^{11}$, wherein the substituent in the substituted C_{1-6} alkyl is selected from the group consisting of deuterium and halogen; R^{11} is $-OR^{c1}$, R^{c1} is C_{1-6} alkyl;

when Z^1 is N, Z^5 is a single bond;

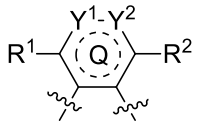
when Z^2 is S or O, or Z^3 is S, or Z^4 is S or NR^{a3}, Z^1 is C and Z^5 is a single bond;

when Z^2 is S or O, Z^3 is N or $CR^{3'}$, Z^4 is N or $CR^{4'}$, Z^3 and Z^4 are not N simultaneously;

when Z^3 is S, Z^2 is N or $CR^{2'}$, Z^4 is N or $CR^{4'}$, Z^2 and Z^4 are not N simultaneously;

when Z^4 is S, Z^2 is N or $CR^{2'}$, Z^3 is N or $CR^{3'}$, Z^2 and Z^3 are not N simultaneously;

when Z^5 is not a single bond, Z^1 is C, at most one of Z^2, Z^3, and Z^4 is N;

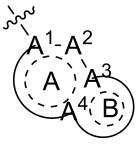
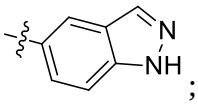
in the moiety  , Y^1 is S or CR^4; R^4 is hydrogen or halogen; Y^2 is N, CR^5 or a single bond, R^5 is hydrogen, halogen, cyano or $-R^{100}$; $-R^{100}$ is $-OR^{c1}$, $-C(O)OR^{c5}$, $-C(O)NR^{c6}R^{c7}$ or $-C(O)R^{c10}$, R^{c1} is substituted or unsubstituted C_{1-6} alkyl, or substituted or unsubstituted C_{6-10} aryl; R^{c5} is C_{1-6} alkyl; R^{c6} and R^{c7} are hydrogen; R^{c10} is C_{1-6} alkyl; the substituent in the substituted C_{1-6} alkyl is selected from the group consisting of aryl or aryl substituted by halogen; the substituent in the substituted C_{6-10} aryl is one or more than one halogen; R^1 is hydrogen or halogen; R^2 is hydrogen;

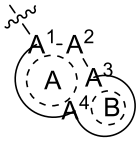
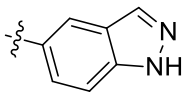
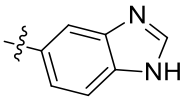
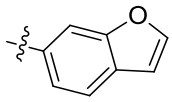
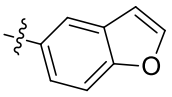
when Y^1 is S, Y^2 is a single bond;

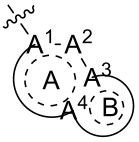
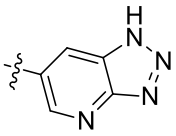
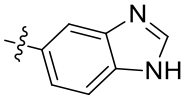
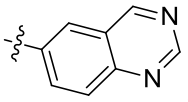
when Y^1 is CR^4, Y^2 is N or CR^5;

or, Y^1 is CR^4 and Y^2 is NR^{5y1}, R^4 and R^{5y1} together with the atom to which they

are attached form a 5-6 membered aromatic ring having 1 to 3 heteroatoms selected from the group consisting of O, S and N;

when ring Z is pyridine ring, $R^{2'}$, $R^{4'}$ and $R^{5'}$ are hydrogen, $R^{3'}$ is hydrogen, R^1, R^2 and R^4 are hydrogen, and R^5 is hydrogen, the moiety  is not  ;

when ring Q is benzene ring, and ring Z is tetrazole ring, ring B is not substituted by $-CF_3$ or the moiety  is not  ,  ,  or  ;

when Z^1 is N, Z^2 is $CR^{2'}$, Z^3 is $CR^{3'}$, Z^4 is $CR^{4'}$, and ring Q is benzene ring, the moiety  is not  ,  or  .

2. The nitrogenous aromatic heterocyclic compound represented by formula **I** or the pharmaceutically acceptable salt thereof as defined in claim 1, wherein,

the aryl are each independently C_6-C_{10} aryl;

and/or, the halogen is F, Cl, Br or I;

and/or, the C_{1-6} alkyl are each independently methyl, ethyl, *n*-propyl, isopropyl, *n*-butyl, isobutyl, *tert*-butyl, *n*-pentyl, isopentyl, neopentyl, *n*-hexyl, 2-methylpentyl, 3-methylpentyl, 2,2-dimethylbutyl or 2,3-dimethylbutyl;

3. The nitrogenous aromatic heterocyclic compound represented by formula **I** or the pharmaceutically acceptable salt thereof as defined in claim 1 or 2, wherein,

in the definition of ring Z, the 5-6 membered heteroaromatic ring having at least one N is a 5-6 membered heteroaromatic ring having 1-3 heteroatoms wherein the heteroatom is N, or selected from the group consisting of N and S;

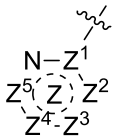
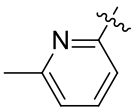
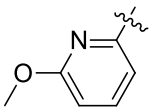
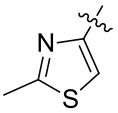
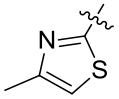
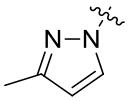
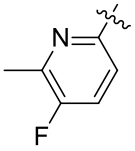
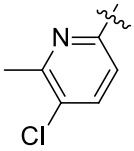
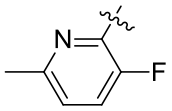
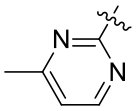
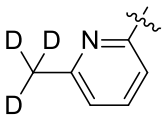
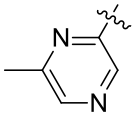
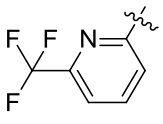
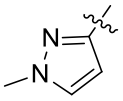
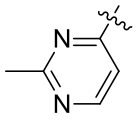
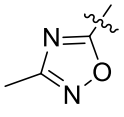
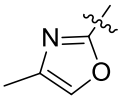
and/or, in the definition of ring Q, the 5-6 membered heteroaromatic ring is a 5-6 membered heteroaromatic ring having 1 to 2 heteroatoms selected from the group consisting of N, O and S.

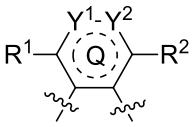
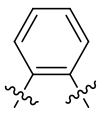
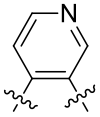
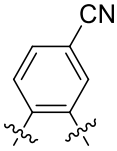
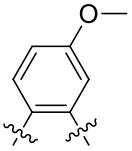
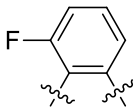
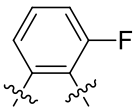
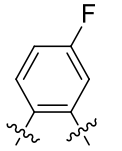
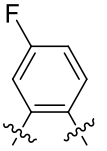
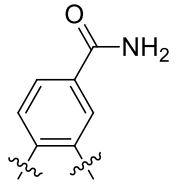
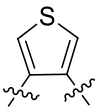
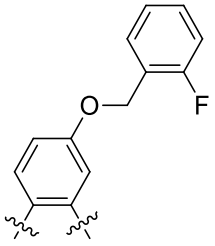
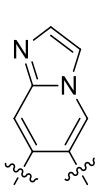
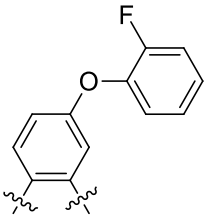
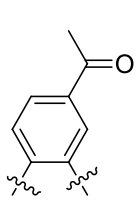
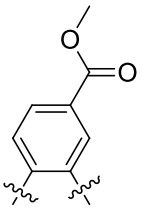
4. The nitrogenous aromatic heterocyclic compound represented by formula **I** or the pharmaceutically acceptable salt thereof as defined in at least one of claims 1-3, wherein,

in the definition of ring Z, the 5-6 membered heteroaromatic ring having at least one N is pyridine ring, pyrazole ring, thiazole ring, pyridine ring, pyrazine ring, oxazole ring or 1,2,4-oxadiazole ring;

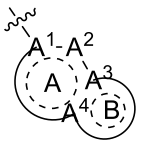
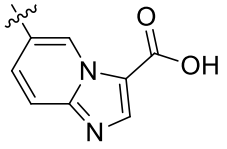
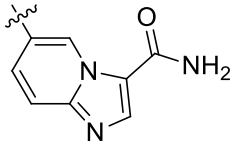
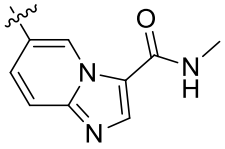
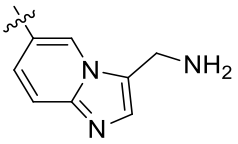
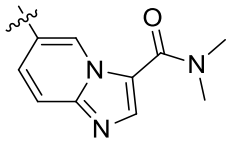
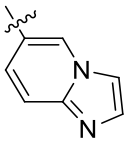
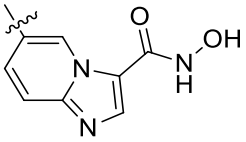
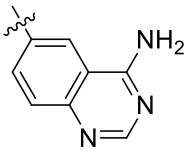
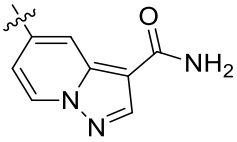
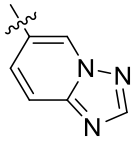
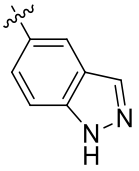
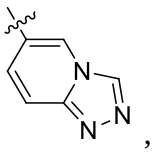
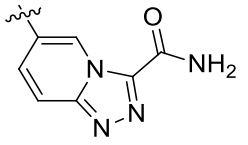
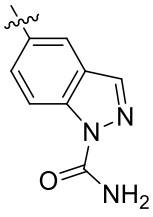
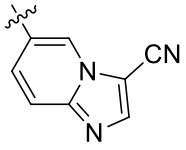
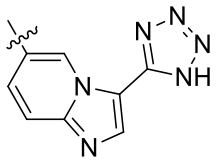
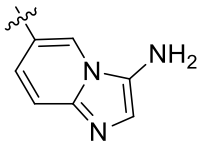
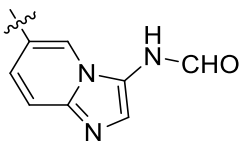
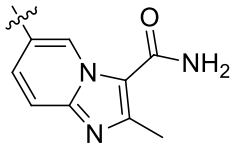
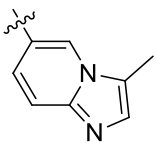
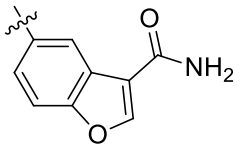
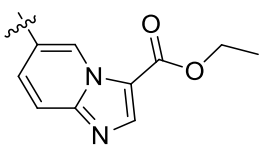
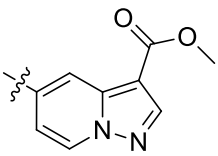
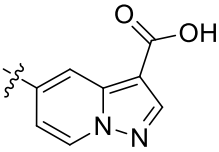
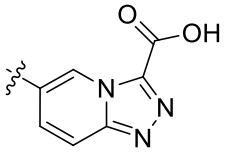
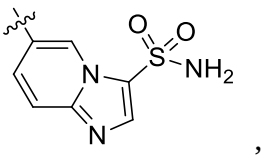
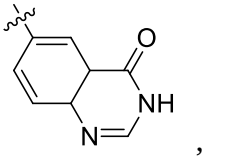
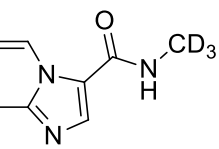
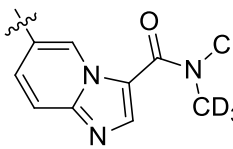
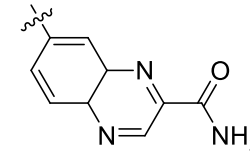
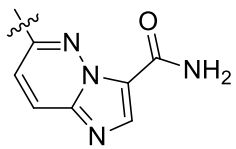
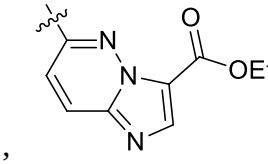
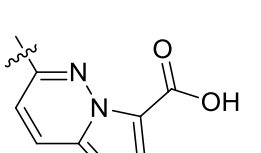
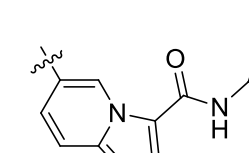
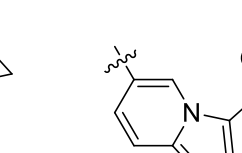
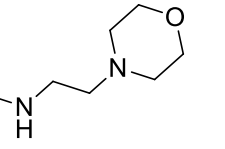
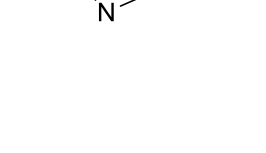
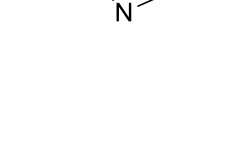
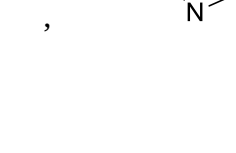
and/or, in the definition of ring Q, the 5-6 membered heteroaromatic ring is pyridine ring.

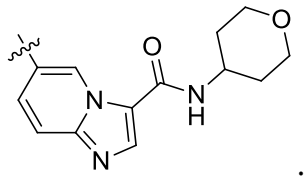
5. The nitrogenous aromatic heterocyclic compound represented by formula **I** or the pharmaceutically acceptable salt thereof as defined in at least one of claims 1-4, wherein,

the moiety  is  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  or  ;

and/or, the moiety  is  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  or  .

6. The nitrogenous aromatic heterocyclic compound represented by formula **I** or the pharmaceutically acceptable salt thereof as defined in at least one of claims 1-5, wherein,

the moiety  is  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  ,  , , , , , or



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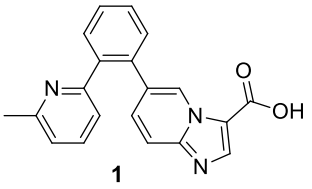
7. A nitrogenous aromatic heterocyclic compound represented by formula **I** or a pharmaceutically acceptable salt thereof selected from the group consisting of



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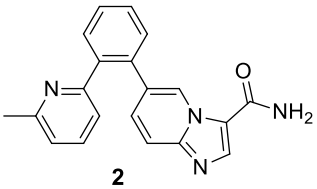

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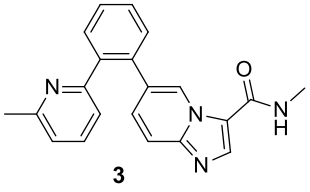

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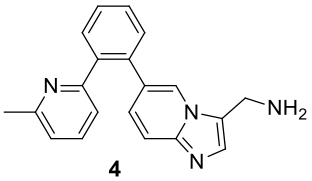

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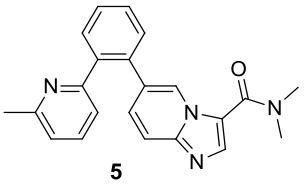

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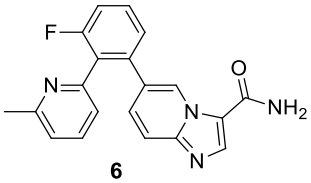

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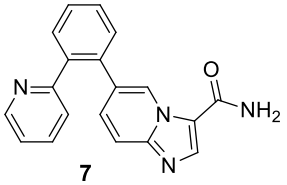

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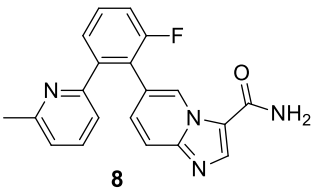

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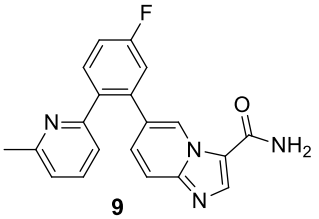

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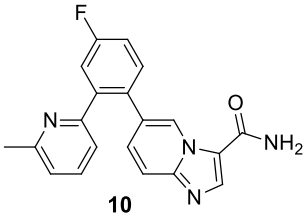

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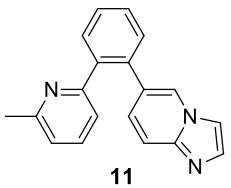

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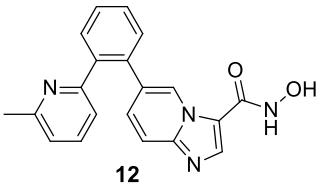

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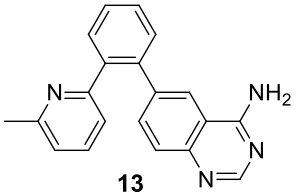

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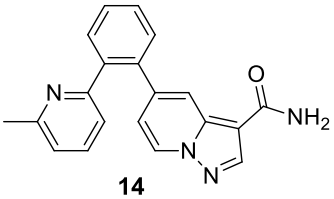

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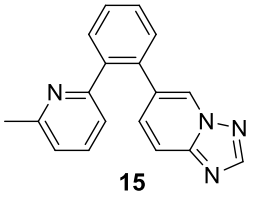

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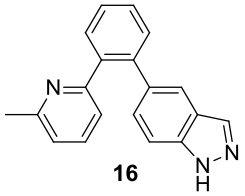

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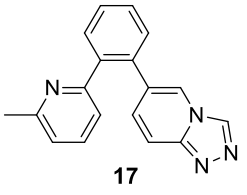

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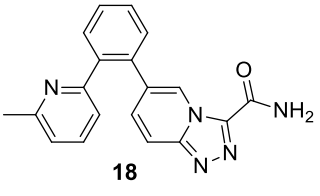

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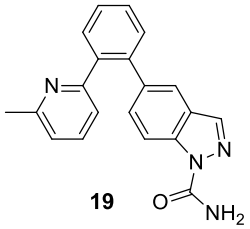

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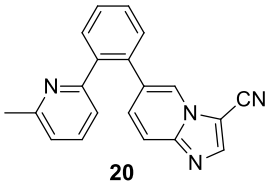

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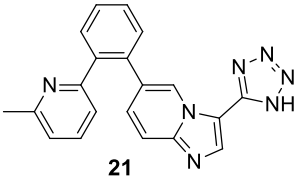

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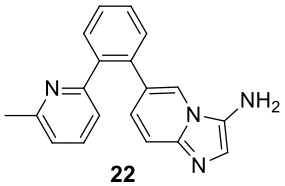

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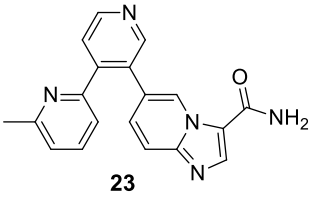

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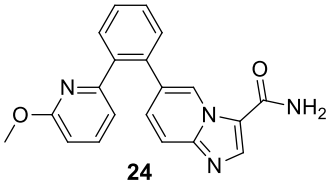

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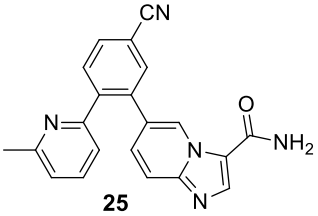

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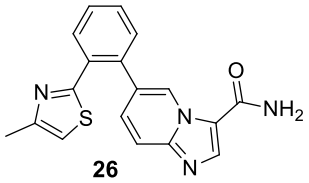

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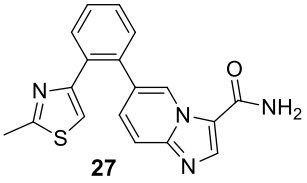

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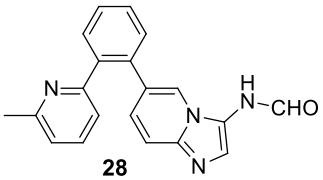

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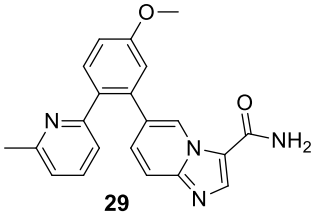

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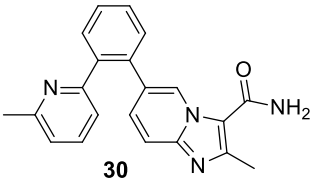

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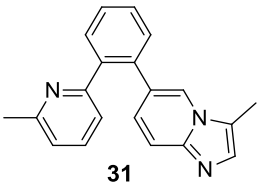

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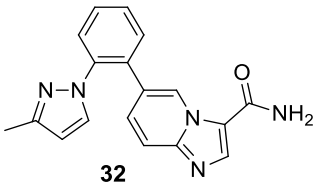

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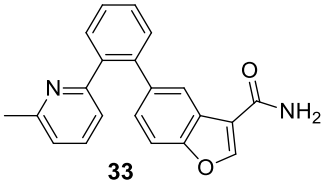

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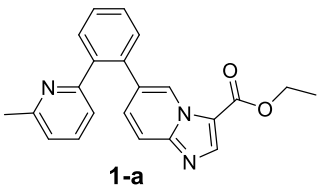

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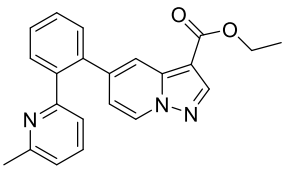
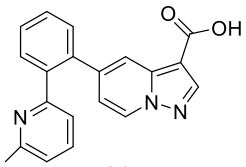


14-a1



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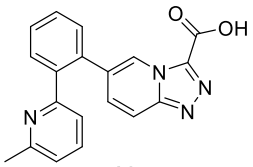

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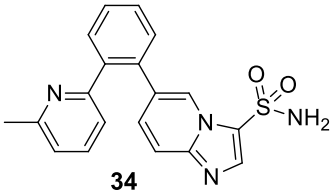

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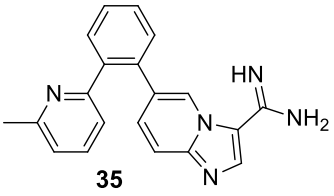

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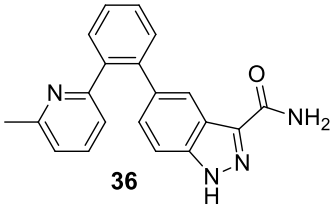

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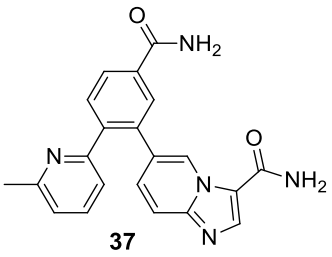

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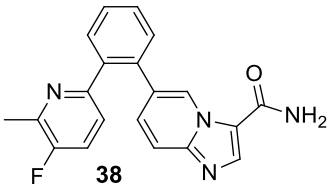

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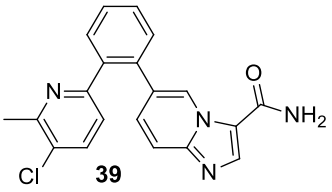

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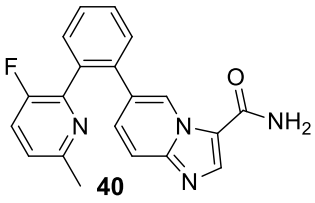

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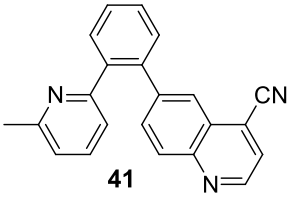

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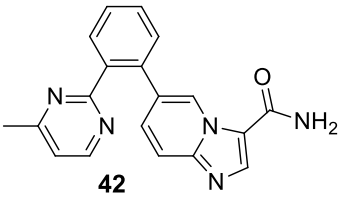

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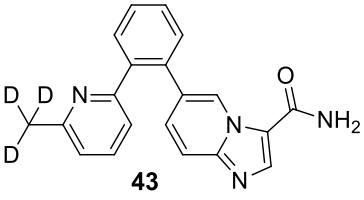

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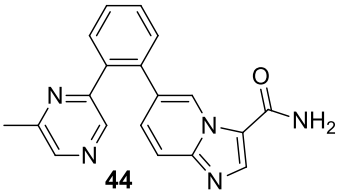

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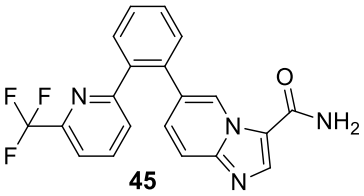

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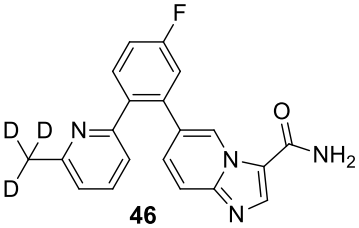

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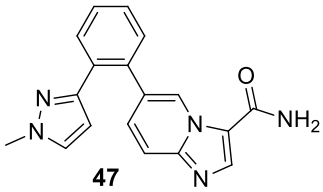

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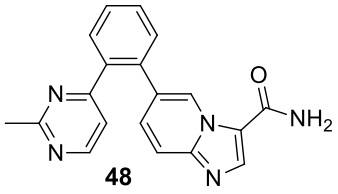

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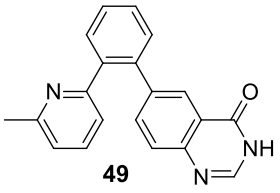

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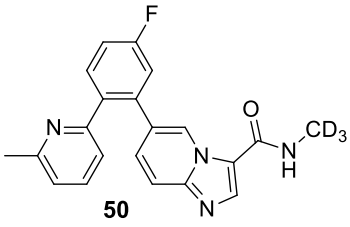

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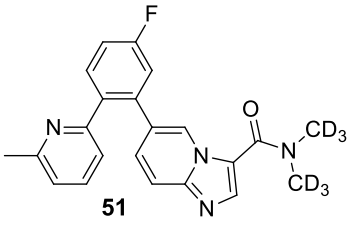

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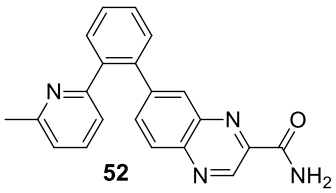

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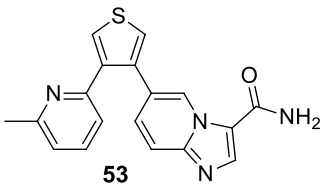

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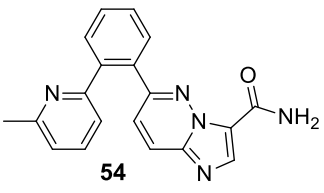

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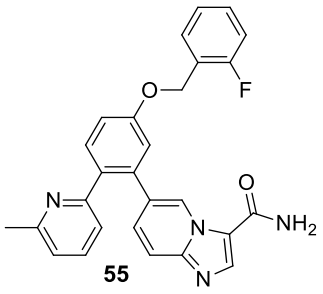

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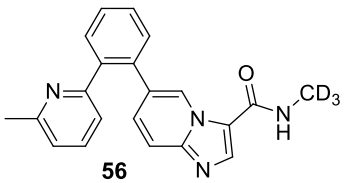

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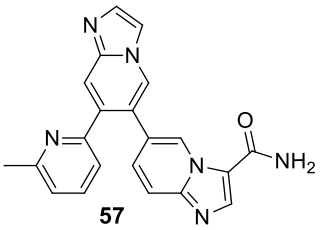

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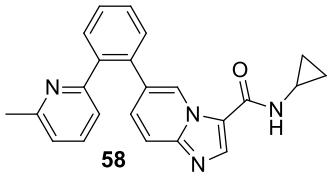

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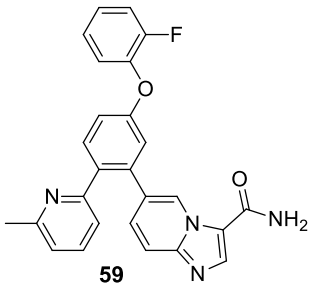

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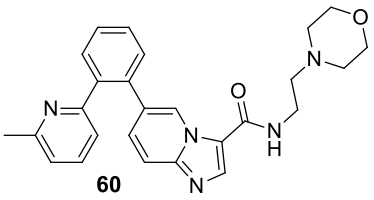

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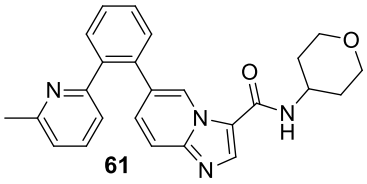

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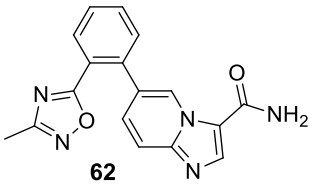

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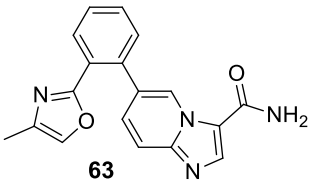

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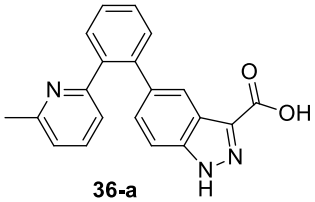
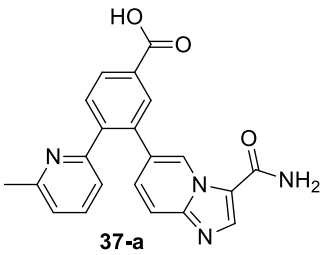
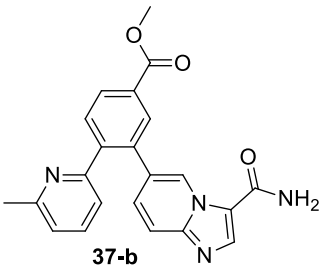


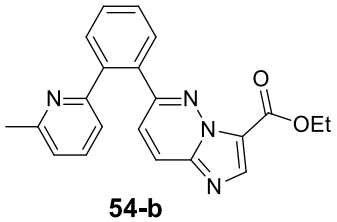
36-a



37-a

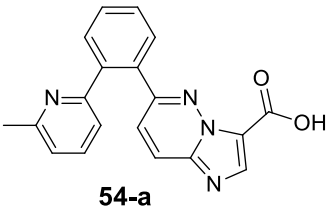


37-b



54-b

and



54-a

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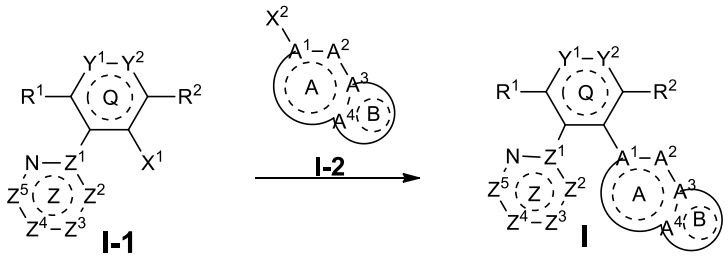
8. A process for preparing the nitrogenous aromatic heterocyclic compound represented by formula **I** as defined in at least one of claims 1-7, which is process 1 or process 2;

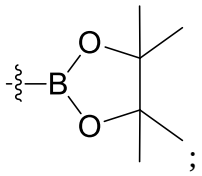
the process 1 comprises conducting a coupling reaction of a compound represented by formula **I-1** with a compound represented by formula **I-2** as shown below;



wherein X^1 is Cl, Br, I or $-OSO_2CF_3$, X^2 is $-BF_3K$ or $-B(OR^{35})_2$;

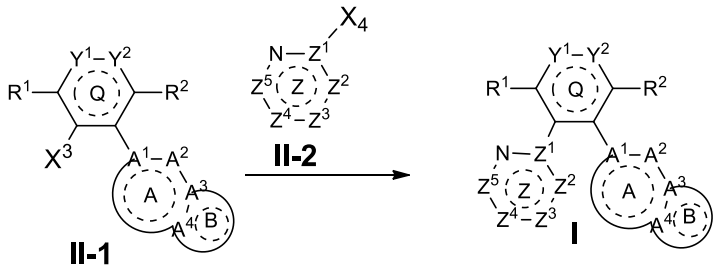
or, X^2 is Cl, Br, I or $-OSO_2CF_3$, X^1 is $-BF_3K$ or $-B(OR^{35})_2$;

wherein R^{35} is hydrogen or C_1-C_6 alkyl, or two OR^{35} together with the boron atom to which they are attached form



;

the process 2 comprises conducting a coupling reaction of a compound represented by formula **II-1** with a compound represented by formula **II-2** as shown below;



wherein, X^3 is Cl, Br, I or $-OSO_2CF_3$; X^4 is $SnBu_3$;

or X^4 is Cl, Br, I or $-OSO_2CF_3$; X^3 is $SnBu_3$;

R^1, R^2, Z^1, Z^2, Z^3, Z^4, Z^5, Y^1, Y^2, A^1, A^2, A^3, A^4, ring Z, ring Q, ring A and ring B are defined as at least one of claims 1-7.

9. A use of the nitrogenous aromatic heterocyclic compound represented by formula **I** or the pharmaceutically acceptable salt thereof as defined in at least one of claims 1-7 in manufacturing a medicament for treating or preventing an ALK5 mediated disease, the ALK5 mediated disease is selected from the group consisting of cancer, organ fibrosis, viral infection, chronic nephritis, acute nephritis, diabetic nephropathy, osteoporosis, arthritis, wound healing, ulceration, corneal trauma, heart valve stenosis, congestive cardiac necrosis, neurologic impairment, Alzheimer's

syndrome, peritoneal or subcutaneous adhesions, atherosclerosis and tumor metastasis.

10. The use as defined in claim 9, wherein, the cancer is selected from the group consisting of colon cancer, pancreatic cancer, breast cancer, prostate cancer, lung cancer, brain cancer, ovarian cancer, cervical cancer, testicular cancer, kidney cancer, head or neck cancer, bone cancer, skin cancer, rectal cancer, liver cancer, colon cancer, esophagus cancer, stomach cancer, pancreatic cancer, thyroid cancer, bladder cancer, lymphoma, leukemia and melanoma; and/or, the organ fibrosis is selected from the group consisting of renal fibrosis, liver fibrosis and pulmonary fibrosis.

11. A pharmaceutical composition comprising a prophylactically and/or therapeutically effective amount of one or more than one of the nitrogenous aromatic heterocyclic compound represented by formula **I** and the pharmaceutically acceptable salt thereof as defined in at least one of claims 1-7, and a pharmaceutically acceptable carrier.