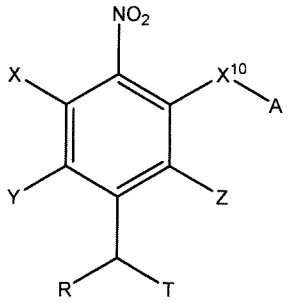
CLAIMS

1. A compound of formula I:



I

or a pharmaceutically acceptable salt, or a solvate of each thereof, wherein

X^{10} is O, S, SO, or SO_2;

A is C_6-C_{10} aryl, 5-15 membered heteroaryl, or -N=CR^1R^2;

each R^1 and R^2 independently is hydrogen, C_1-C_6 alkyl, C_3-C_8 cycloalkyl, C_6-C_{10} aryl, 4-15 membered heterocycle, 5-15 membered heteroaryl, ether, -$CONR^{13}R^{14}$, or -$NR^{13}COR^{14}$;

each X, Y, and Z independently is hydrogen, CN, halo, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_3-C_8 cycloalkyl, C_6-C_{10} aryl, 4-15 membered heterocycle, 5-15 membered heteroaryl, ether, -$CONR^{13}R^{14}$, or -$NR^{13}COR^{14}$;

R is hydrogen, C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_3-C_8 cycloalkyl, C_6-C_{10} aryl, 4-15 membered heterocycle, 5-15 membered heteroaryl, ether, -$CONR^{13}R^{14}$, or -$NR^{13}COR^{14}$;

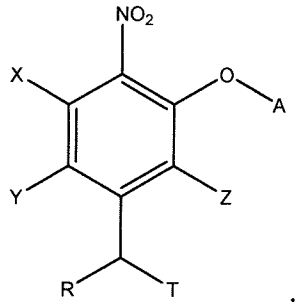
each R^{13} and R^{14} independently is hydrogen, C_1-C_6 alkyl, C_3-C_8 cycloalkyl, C_6-C_{10} aryl, 4-15 membered heterocycle, 5-15 membered heteroaryl, or ether;

T comprises a phosphoramidate alkylating agent; and

wherein the alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heterocycle, heteroaryl, ether groups are optionally substituted with a substituent selected from the group consisting of oxo, halo, -CN, NO_2, -N_2^+, -CO_2R^{100}, -OR^{100}, -SR^{100}, -SOR^{100}, -SO_2R^{100}, -$NR^{100}SO_2R^{100}$, -$NR^{101}R^{102}$, -$CONR^{101}R^{102}$, -$SO_2NR^{101}R^{102}$, C_1-C_6 alkyl, C_1-C_6 alkoxy, -CR^{100}=$C(R^{100})_2$, -CCR^{100}, C_3-C_{10} cycloalkyl, C_3-C_{10} heterocyclyl, C_6-C_{12} aryl and C_2-C_{12} heteroaryl, or with a divalent substituent comprising - O-(CH_2)-O-, –O-$(CH_2)_2$-O-, –O-(CH_2)-O- substituted with at least one methyl, or –O-$(CH_2)_2$-O- substituted with at least one methyl,

wherein each R^{100}, R^{101}, and R^{102} independently is hydrogen, C_1-C_8 alkyl, C_3-C_{12} cycloalkyl, C_3-C_{10} heterocyclyl, C_6-C_{12} aryl, or C_2-C_{12} heteroaryl; or R^{101} and R^{102} together with the nitrogen atom they are attached to form a 5-7 membered heterocycle.

2. The compound of claim 1 of formula I-A:



I-A

wherein the remaining variables are defined as in claim 1 above.

3. The compound of claim 1 or 2, wherein T is $OP(Z^1)(NR^{30}CH_2CH_2Cl)_2$, $OP(Z^1)(NR^{30}CH_2CH_2Br)2$, $OP(Z^1)(NR^{30}{}_2)(N(CH_2CH_2X^1)_2)$, $OP(Z^1)(N(CH_2)_2)_2$, or $OP(Z^1)(N(CH_2CH_2Cl)_2)_2$, wherein each R^{30} independently is hydrogen or C_1-C_6 alkyl or 2 R^{30} groups together with the nitrogen atom they are bound to form 5-7 membered heterocyclyl group, Z^1 is O or S, and X^1 is Cl, Br, or OMs.

4. The compound of any one of claims 1-3, wherein T is $OP(Z^1)(NHCH_2CH_2Cl)_2$, $OP(Z^1)(NHCH_2CH_2Br)2$, $OP(Z^1)(NH_2)(N(CH_2CH_2X^1)_2)$, $OP(Z^1)(N(CH_2)_2)_2$, or $OP(Z^1)(N(CH_2CH_2Cl)_2)_2$, wherein X^1 is defined as in claim 3.

5. The compound of claims 3 or 4, wherein Z^1 is O.

6. The compound of any one of claims 1-5, wherein T is $OP(O)(N(CH_2CH_2))_2$, $OP(O)(NHCH_2CH_2Cl)_2$, $OP(O)(NHCH_2CH_2Br)_2$, or $OP(O)(NH_2)(N(CH_2CH_2Cl)_2)$.

7. The compound of any one of claims 1-6, wherein Z is hydrogen.

8. The compound of any one of claims 1-7, wherein X is hydrogen.

9. The compound of any one of claims 1-8, wherein Y is hydrogen or halo.

10. The compound of any one of claims 1-9, wherein A is optionally substituted C_6-C_{10} aryl.

11. The compound of any one of claims 1-10, wherein A is optionally substituted phenyl.

12. The compound of any one of claims 1-9, wherein A is optionally substituted 5-15 membered heteroaryl.

13. The compound of any one of claims 1-9 and 12, wherein A is optionally substituted pyridyl.

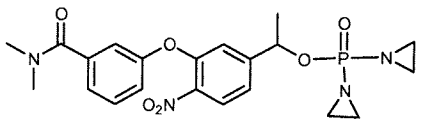
14. The compound of any one of claims 1-9, wherein A is -N=CR^{1}R^2 where R^1 and R^2 are defined as in claim 1.

15. The compound of any one of claims 1-14, wherein R is hydrogen.

16. The compound of any one of claims 1-14, wherein R is C_1-C_6 alkyl.

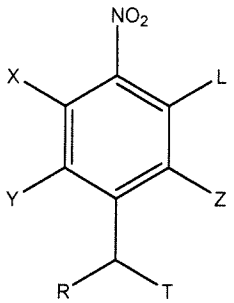
17. The compound of any one of claims 1-14 and 15, wherein R is methyl.

18. The compound of claim 1 of formula of TH 2870:



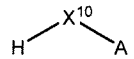
19. A pharmaceutically acceptable composition comprising a compound of any one of claims 1-18 and at least a pharmaceutically acceptable excipient or carrier.

20. A process of making the compound of formula I of claim 1 comprising contacting a compound of formula II:



II

wherein L is a leaving group, and the remaining variables are defined as in claim 1, with a compound of formula III:



III

wherein X^{10} is defined as in claim 1, and optionally a base, to provide a compound of formula I.