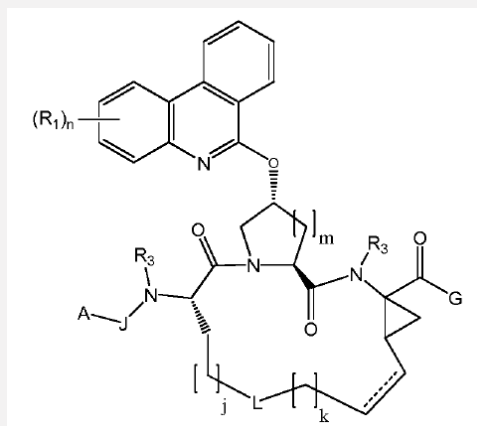


WHAT IS CLAIMED:

1. A compound of formula I:



(I)

or a pharmaceutically acceptable salt, ester or prodrug thereof,

wherein:

J is absent, optionally substituted alkylene, optionally substituted alkenylene, optionally substituted alkynylene, $-C(O)-$, ~~$-O-C(O)-$~~ , $-N(R_3)-C(O)-$, $-C(S)-$, $-C(=NR_4)-$, $-S(O)-$, $-S(O_2)-$, or $-N(R_3)-$;

A is optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl, optionally substituted arylalkyl, optionally substituted alkoxy, optionally substituted heteroaryl, optionally substituted heterocyclic, or optionally substituted carbocyclic;

each R_1 is independently selected from

- (i) halogen, hydroxy, amino, $-CN$, $-CF_3$, $-N_3$, $-NO_2$, $-OR_4$, $-SR_4$, $-SOR_4$, $-SO_2R_4$, $-N(R_3)S(O)_2-R_4$, $-N(R_3)(SO_2)NR_3R_4$, $-NR_3R_4$, $-C(O)-O-R_4$, $-C(O)R_4$, $-C(O)NR_3R_4$, or $-N(R_3)C(O)R_4$;
- (ii) optionally substituted aryl;
- (iii) optionally substituted heteroaryl;
- (iv) optionally substituted heterocyclic;
- (v) optionally substituted carbocyclic; or
- (vi) optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N;

wherein at least one of R_1 is halogen or $-OR_4$;

G is $-E-R_5$;

wherein E is absent; optionally substituted alkylene, optionally substituted alkenylene, optionally substituted alkynylene, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; or $-O-$, $-S-$, $-N(R_3)-$, $-N(R_3)S(O_p)-$, $-N(R_3)C(O)-$, $-N(R_3)C(O)S(O_p)-$, $-OS(O_p)-$, $-C(O)S(O_p)-$, or $-C(O)N(R_3)S(O_p)-$;

each p is independently 0, 1, or 2;

R_5 is H; optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted carbocyclic, optionally substituted heterocyclic, optionally substituted aryl, or optionally substituted heteroaryl;

R_3 and R_4 are each independently selected at each occurrence from the following: optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl; optionally substituted heteroaryl; optionally substituted heterocyclic; optionally substituted carbocyclic; or hydrogen;

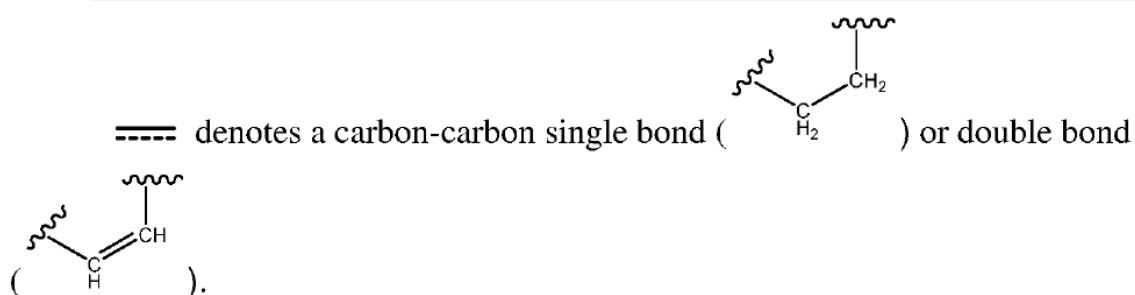
L is absent or is selected from optionally substituted alkylene, optionally substituted alkenylene or optionally substituted alkynylene, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N;

j = 0, 1, 2, 3, or 4;

k = 0, 1, 2, or 3;

m = 0, 1, or 2;

n is 1, 2, 3, or 4; and



2. The compound of claim 1, or a pharmaceutically acceptable salt, ester or prodrug thereof, wherein E is $-NHS(O)-$ or $-NHS(O_2)-$, and R_5 is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, pyridinyl, pyrimidinyl, furanyl, thienyl, pyrrolyl,

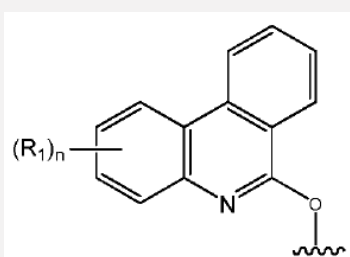
pyrazolyl, pyrrolidinyl, morpholinyl, piperidinyl, piperazinyl, or imidazolyl, each of which is optionally substituted.

3. The compound of claim 1, or a pharmaceutically acceptable salt, ester or prodrug thereof, wherein J is -C(O)- and A is optionally substituted -C₁-C₈ alkyl, containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl, optionally substituted -C₁-C₈ alkoxy, optionally substituted heteroaryl, optionally substituted -C₃-C₁₂ cycloalkyl, or optionally substituted -C₃-C₁₂ heterocycloalkyl.

4. The compound of claim 1, or a pharmaceutically acceptable salt, ester or prodrug thereof, wherein each R₁ is independently selected from halogen, hydroxy, amino, -CN, -CF₃, -N₃, -NO₂, -OR₄, -SR₄, -SOR₄, -SO₂R₄, -N(R₃)S(O₂)-R₄, -N(R₃)S(O₂)NR₃R₄, -NR₃R₄, -C(O)OR₄, -C(O)R₄, -C(O)NR₃R₄, or -N(R₃)C(O)R₄; optionally substituted aryl; optionally substituted heteroaryl; optionally substituted heterocyclic; optionally substituted carbocyclic; or optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; wherein at least one R₁ is halogen or -OR₄[\[1-1\]](#).

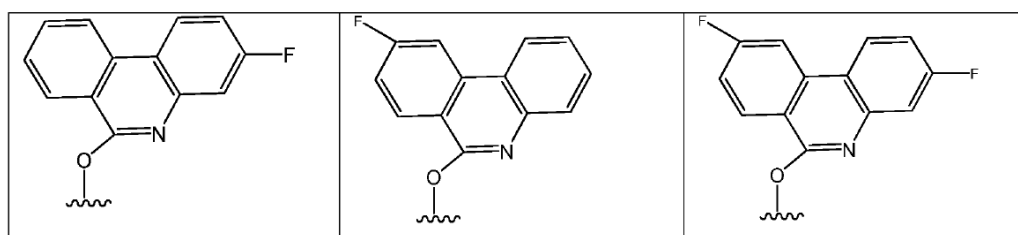
5. The compound of claim 1, or a pharmaceutically acceptable salt, ester or prodrug thereof, wherein each R₁ is independently halogen or -OR₄.

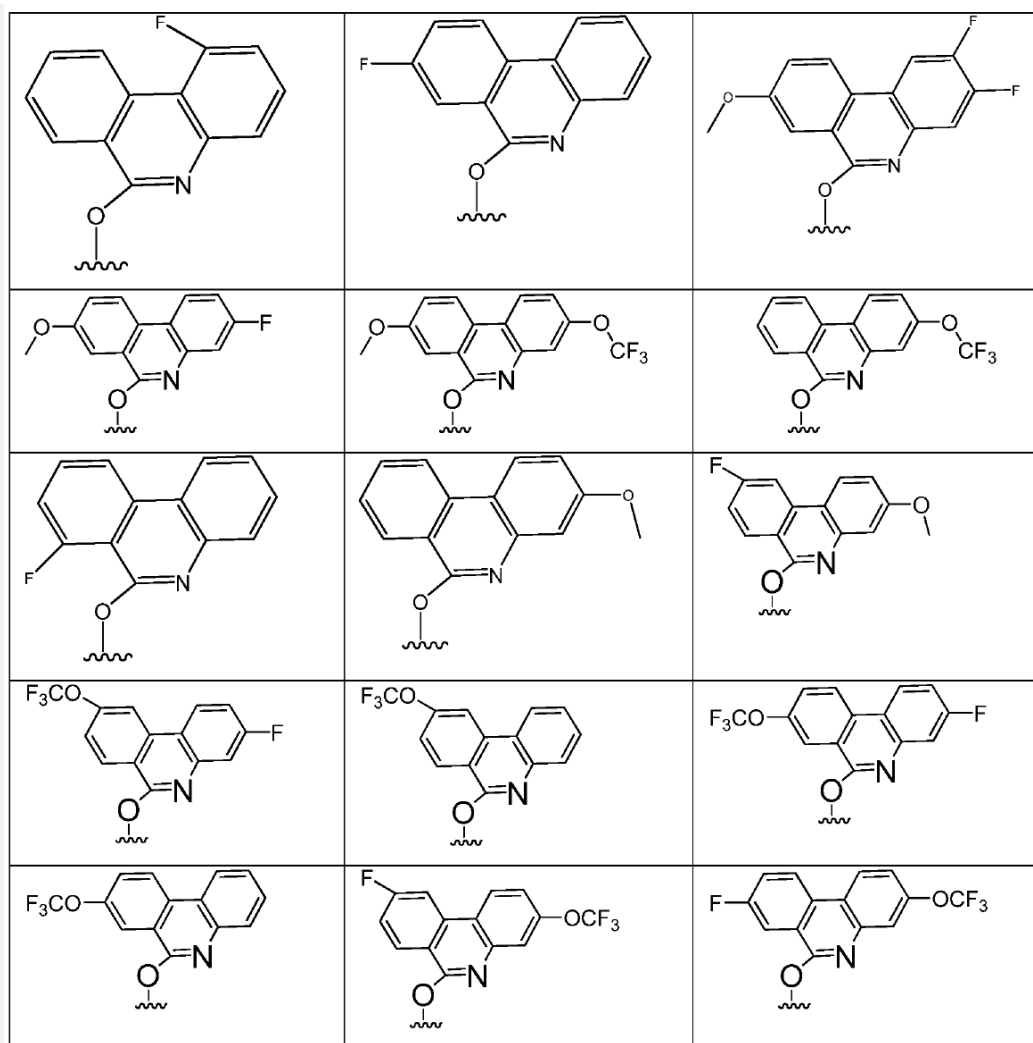
6. The compound of claim 1, or a pharmaceutically acceptable salt, ester or prodrug



thereof, wherein

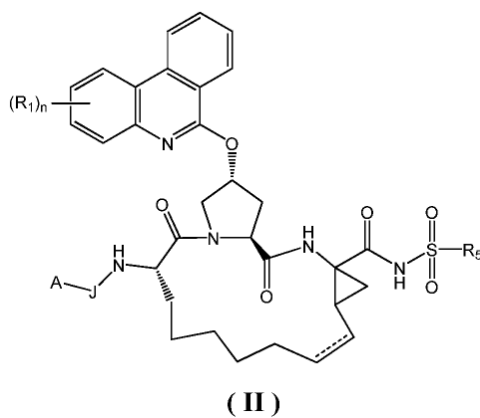
is selected from the following:





7. The compound of claim 1, or a pharmaceutically acceptable salt, ester or prodrug thereof, wherein $k=3$, $j=1$ and L is absent.

8. The compound of claim 1, of formula II,



or a pharmaceutically acceptable salt, ester or prodrug thereof,

wherein:

J is absent, -C(O)-, -N(R₃)-C(O)-, -C(S)-, -C(=NR₄)-, -S(O)-, -S(O₂)-, or -N(R₃)-;

A is optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl, optionally substituted arylalkyl, optionally substituted alkoxy, optionally substituted heteroaryl, optionally substituted heterocyclic, or optionally substituted carbocyclic;

each R₁ is independently selected from

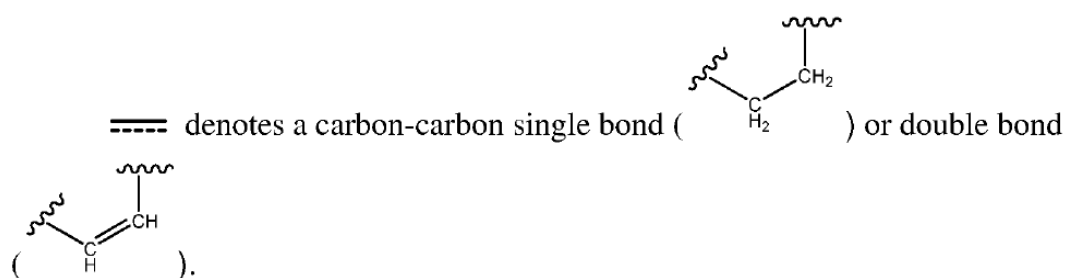
- (i) halogen, hydroxy, amino, -OR₄, -N(R₃)S(O)₂-R₄, -N(R₃)(SO₂)NR₃R₄, -NR₃R₄, -C(O)-O-R₄, -C(O)R₄, -C(O)NR₃R₄, or -N(R₃)C(O)R₄;
- (ii) optionally substituted aryl;
- (iii) optionally substituted heteroaryl;
- (iv) optionally substituted heterocyclic;
- (v) optionally substituted carbocyclic; or
- (vi) optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N;

wherein at least one of R₁ is halogen or -OR₄;

R₅ is H; optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted carbocyclic, optionally substituted heterocyclic, optionally substituted aryl, or optionally substituted heteroaryl;

R₃ and R₄ are each independently selected at each occurrence from the following: optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl; optionally substituted heteroaryl; optionally substituted heterocyclic; optionally substituted carbocyclic; or hydrogen;

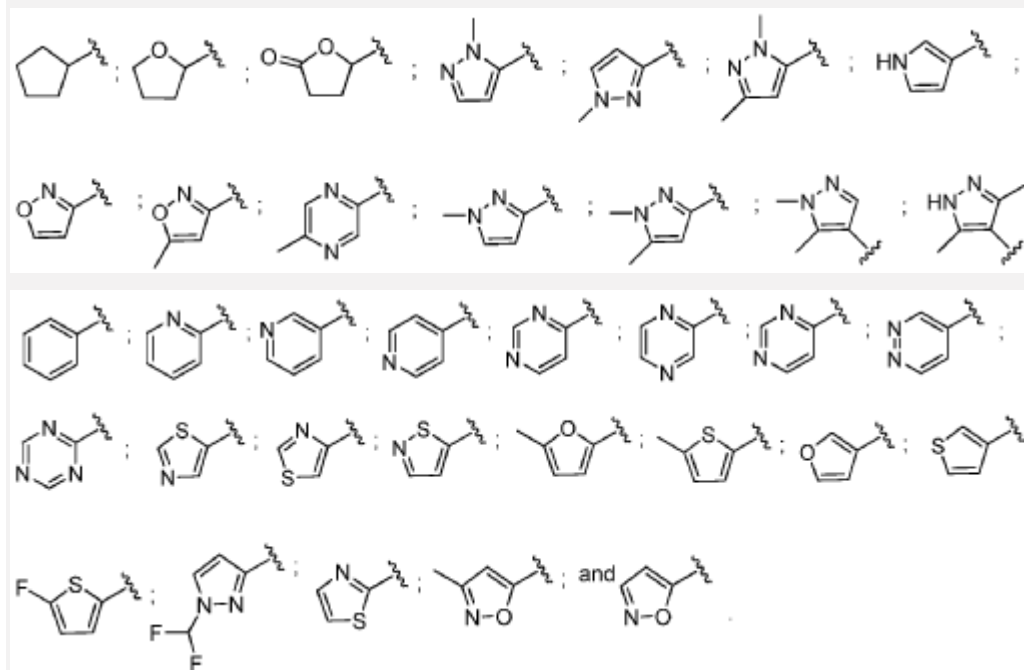
n is 1, 2, 3, or 4; and



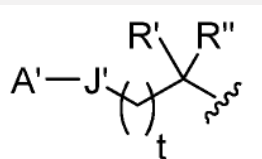
9. The compound of claim 8, or a pharmaceutically acceptable salt, ester or prodrug thereof, wherein R₅ is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, pyridinyl, pyrimidinyl, furanyl, thienyl, pyrrolyl, pyrazolyl, pyrrolidinyl, morpholinyl, piperidinyl, piperazinyl, or imidazolyl, each of which is optionally substituted.

10. The compound of claim 8, or a pharmaceutically acceptable salt, ester or prodrug thereof, wherein J is -C(O)- and A is optionally substituted -C₁-C₈ alkyl, containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl, optionally substituted -C₁-C₈ alkoxy, optionally substituted heteroaryl, optionally substituted -C₃-C₁₂ cycloalkyl, or optionally substituted -C₃-C₁₂ heterocycloalkyl.

11. The compound of claim 8, or a pharmaceutically acceptable salt, ester or prodrug thereof, wherein A is selected from Me, Et, Pr, i-Pr, Bu, s-Bu, t-Bu,



12. The compound of claim 8, or a pharmaceutically acceptable salt, ester or prodrug



thereof, wherein A is , wherein

J' is -NHC(O)-, -NHC(O)O-, -C(O)-, -O-C(O)-, -C(S)-, -S(O)-, -S(O₂)-;

A' is optionally substituted -C₁-C₈ alkyl, containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted -C₁-C₈ haloalkyl, optionally substituted aryl, optionally substituted -C₁-C₈ alkoxy, optionally substituted heteroaryl, optionally substituted -C₃-C₁₂ cycloalkyl, or optionally substituted -C₃-C₁₂ heterocyclyl;

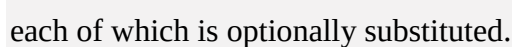
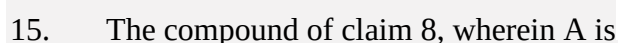
R' is H, optionally substituted -C₁-C₈ alkyl, optionally substituted -C₃-C₁₂ cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or optionally substituted -C₃-C₁₂ heterocyclyl;

R'' is H, optionally substituted -C₁-C₈ alkyl, optionally substituted -C₃-C₁₂ cycloalkyl, optionally substituted aryl, optionally substituted heteroaryl, or optionally substituted -C₃-C₁₂ heterocyclyl; and

t is 0 or 1.

13. The compound of claim 12, wherein J' is -NHC(O)-, or -NHC(O)O-; A' is optionally substituted -C₁-C₈ alkyl, containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl, or optionally substituted heteroaryl; R' is H, optionally substituted -C₁-C₈ alkyl or optionally substituted -C₃-C₁₂ cycloalkyl; R'' is H, and t is 0 or 1.

14. The compound of claim 13, wherein A' is Me, Et, Pr, i-Pr, Bu, s-Bu, t-Bu, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, pyridinyl, pyrimidinyl, furanyl, thienyl, pyrrolyl, pyrazolyl, pyrrolidinyl, morpholinyl, piperidinyl, piperazinyl, imidazolyl,



J' is -NC(O)-, -NC(O)O-, -C(O)-, -O-C(O)-, -C(S)-, -C(=NR₄)-, -S(O)-, -S(O₂)-; and

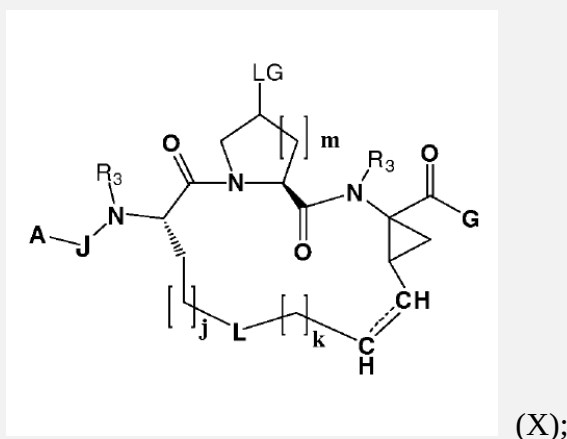
16. The compound of claim 8, wherein A is $-\text{CHRz}(\text{OH})-$, wherein Rz is cyclohexyl, i-Pr, i-Bu, t-Bu, or CF_3 .

17. The compound of claim 8, wherein, A is CHF₂-R_Y, wherein R_Y is Ph or Et.

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19. A method of treating a viral infection in a subject, comprising administering to the subject a therapeutically effective amount of a compound of claim 1 or a pharmaceutically acceptable salt, ester or prodrug thereof.

20. A method of producing a compound of ~~formula I~~ [claim 1](#), or a pharmaceutically acceptable salt, ester or prodrug thereof, comprising the step of reacting a compound of formula X:



wherein,

J is absent, optionally substituted alkylene, optionally substituted alkenylene, optionally substituted alkynylene, -C(O)-, ~~-C(O)-~~, -N(R₃)-C(O)-, -C(S)-, -C(=NR₄)-, -S(O)-, -S(O₂)-, or -N(R₃)-;

A is optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl, optionally substituted arylalkyl, optionally substituted alkoxy, optionally substituted heteroaryl, optionally substituted heterocyclic, or optionally substituted carbocyclic;

G is -E-R₅;

wherein E is absent; optionally substituted alkylene, optionally substituted alkenylene, optionally substituted alkynylene, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; or -O-, -S-, -N(R₃)-, -N(R₃)S(O_p)-, -N(R₃)C(O)-, -N(R₃)C(O)S(O_p)-, -OS(O_p)-, -C(O)S(O_p)-, or -C(O)N(R₃)S(O_p)-;

each p is independently 0, 1, or 2;

R₅ is H; optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from

O, S, or N; optionally substituted carbocyclic, optionally substituted heterocyclic, optionally substituted aryl, or optionally substituted heteroaryl;

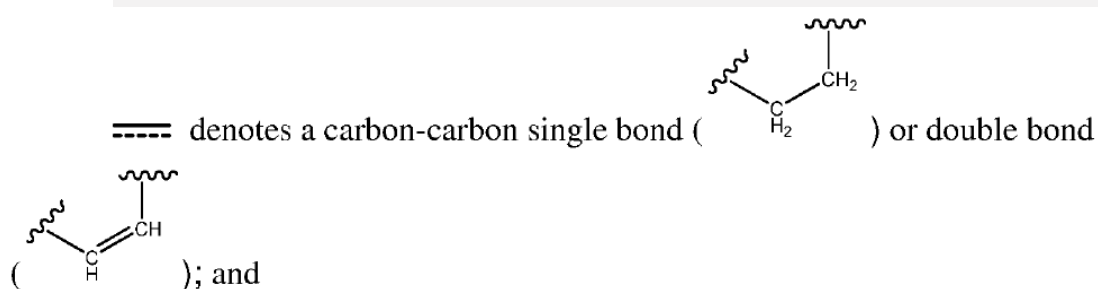
R₃ and R₄ are each independently selected at each occurrence from the following: optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N; optionally substituted aryl; optionally substituted heteroaryl; optionally substituted heterocyclic; optionally substituted carbocyclic; or hydrogen;

L is absent or is selected from optionally substituted alkylene, optionally substituted alkenylene or optionally substituted alkynylene, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N;

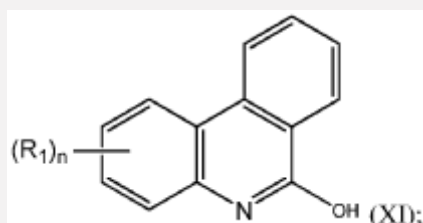
j = 0, 1, 2, 3, or 4;

k = 0, 1, 2, or 3;

m = 0, 1, or 2;



LG is a leaving group;
with a compound of formula XI:



wherein:

each R₁ is independently selected from

- (i) halogen, hydroxy, amino, -CN, -CF₃, -N₃, -NO₂, -OR₄, -SR₄, -SOR₄, -SO₂R₄, -N(R₃)S(O)₂-R₄, -N(R₃)(SO₂)NR₃R₄, -NR[^], -C(O)-O-R₄, -C(O)R₄, -C(O)NR₃R₄, or -N(R₃)C(O)R₄;
- (ii) optionally substituted aryl;
- (iii) optionally substituted heteroaryl;
- (iv) optionally substituted heterocyclic;

- (v) optionally substituted carbocyclic; or
- (vi) optionally substituted alkyl, optionally substituted alkenyl, or optionally substituted alkynyl, each containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N;

wherein at least one of R₁ is halogen or –OR₄; and

n is 1, 2, 3, or 4;

to thereby produce a compound of formula I.