Z is absent or selected from substituted or unsubstituted alkyl, heteroalkyl, alkenyl, or alkynyl;

R^4 is absent or selected from substituted or unsubstituted aryl (e.g., phenyl) and heteroaryl; and

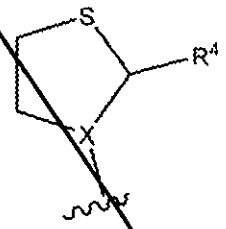
R^5 and R^6 are each independently absent or lower alkyl.

10. The compound of claim 9, wherein G is N and R^4 is selected from phenyl, 4-fluorophenyl and 3-chlorophenyl.

11. The compound of any one of claims 6-10, wherein Z is absent.

12. The compound of any one of claims 6-10, wherein Z is prop-2-en-1-yl and R^4 is phenyl.

13. The compound of claim 6, wherein Y^1 and Y^2 taken together with X form:



wherein X is -C(H)-, and

R^4 is absent or selected from substituted or unsubstituted aryl (e.g., phenyl) and heteroaryl, such as a halogen-substituted phenyl group, e.g., 4-fluorophenyl or 3-chlorophenyl.

14. A pharmaceutical composition comprising a compound of any preceding claim and a pharmaceutically acceptable excipient or solvent.

15. A method of mitigating an effect of ionizing radiation on a cell, organ, tissue, or organism, comprising contacting the cell, organ, tissue, or organism with at least one compound or composition of any preceding claim.

16. The method of claim 15, wherein the compound or composition is administered before, during, or after exposure to ionizing radiation.

17. A method of treating inflammation in an organism, comprising administering to the organism a compound or composition of any one of claims 1-14.

18. A method of treating cancer in an organism, comprising administering to the organism a compound or composition of any one of claims 1-14.

19. The method of any one of claims 15-18, wherein the organism is a mammal.

Z is absent or selected from substituted or unsubstituted alkyl, heteroalkyl, alkenyl, or alkynyl;

R^4 is absent or selected from substituted or unsubstituted aryl (e.g., phenyl) and heteroaryl; and

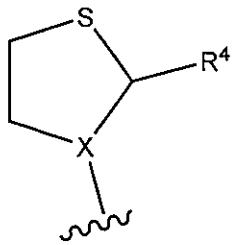
R^5 and R^6 are each independently absent or lower alkyl.

10. The compound of claim 9, wherein G is N and R^4 is selected from phenyl, 4-fluorophenyl and 3-chlorophenyl.

11. The compound of any one of claims 6-10, wherein Z is absent.

12. The compound of any one of claims 6-10, wherein Z is prop-2-en-1-yl and R^4 is phenyl.

13. The compound of claim 6, wherein Y^1 and Y^2 taken together with X form:



wherein X is -C(H)-, and

R^4 is absent or selected from substituted or unsubstituted aryl (e.g., phenyl) and heteroaryl, such as a halogen-substituted phenyl group, e.g., 4-fluorophenyl or 3-chlorophenyl.

14. A pharmaceutical composition comprising a compound of any preceding claim and a pharmaceutically acceptable excipient or solvent.

15. The use of at least one compound or composition of any preceding claim in the manufacture of a medicament for mitigating an effect of ionizing radiation on a cell, organ, tissue, or organism.

16. The use of claim 15, wherein the medicament is to be administered before, during, or after exposure to ionizing radiation.

17. The use of a compound or composition of any one of claims 1-14 in the manufacture of a medicament for the treatment of inflammation in an organism.

18. The use of a compound or composition of any one of claims 1-14 in the manufacture of a medicament for the treatment of cancer in an organism.

19. The use of any one of claims 15-18, wherein the organism is a mammal.