CLAIMS

1. A pharmaceutical composition comprising an anticancer agent and a protective agent, wherein the protective agent is myricetin, wherein the anticancer agent is an anthracycline or salt thereof, a protein kinase inhibitor, or a proteasome inhibitor, and wherein the pharmaceutical composition is for intravenous administration.
2. The pharmaceutical composition of claim 1, wherein the molar ratio of the protective agent to the anticancer agent is from about 1:1 to about 1000:1, from about 1:1 to about 200:1, from about 1:1 to about 30:1, from about 1:1 to about 10:1, or from about 1:1 to about 5:1, or wherein the weight ratio of the protective agent to the anticancer agent is from about 1:1 to about 1000:1, from about 1:1 to about 200:1, from about 1:1 to about 100:1, from about 1:1 to about 20:1, from about 1:1 to about 10:1, from about 1:1 to about 5:1, or from about 1:1 to about 2:1.
3. The pharmaceutical composition of claim 1 or 2, wherein the anticancer agent is an anthracycline or salt thereof.
4. The pharmaceutical composition of claim 3, wherein the anthracycline is selected from the group consisting of doxorubicin, daunorubicin, epirubicin, idarubicin, mitoxantrone, and valrubicin.
5. The pharmaceutical composition of claim 3 or 4, wherein the anticancer agent is doxorubicin, epirubicin, or idarubicin.
6. The pharmaceutical composition of claim 1 or 2, wherein the anticancer agent is a protein kinase inhibitor.
7. The pharmaceutical composition of claim 6, wherein the protein kinase inhibitor is selected from the group consisting of afatinib, axitinib, bosutinib, cabozantinib, carfilzomib, ceritinib, cobimetanib, crizotinib, dabrafenib, dasatinib, erlotinib, everolimus, gefitinib, ibrutinib, imatinib, lapatinib, lenvatinib, nilotinib, nintedanib, osimertinib, palbociclib, pazopanib, pegaptanib, ponatinib, regorafenib, ruxolitinib, sirolimus, sorafenib, sunitinib, tofacitinib, tofacitinib, temsirolimus, trametinib, vandetanib, vemurafenib, and vismodegib.
8. The pharmaceutical composition of claim 6 or 7, wherein the protein kinase inhibitor is a tyrosine kinase inhibitor.

9. The pharmaceutical composition of claim 8, wherein the tyrosine kinase inhibitor is selected from the group consisting of sorafenib, sunitinib, bosutinib, gefitinib, dasatinib, dabrafenib, vemurafenib, imatinib, lapatinib, mesylate, and nilotinib.
10. The pharmaceutical composition of claim 8 or 9, wherein the tyrosine kinase inhibitor is sorafenib or sunitinib.
11. The pharmaceutical composition of claim 1 or 2, wherein the anticancer agent is a proteasome inhibitor, such as bortezomib.
12. The pharmaceutical composition of any one of claims 1-11, further comprising a second protective agent.
13. The pharmaceutical composition of claim 12, wherein the second protective agent is dexrazoxane.
14. The pharmaceutical composition of any one of claims 1-13 for use in the treatment of cancer in a subject.
15. Use of an effective amount of a protective agent in the manufacture of a medicament for preventing, reducing, or eliminating cardiotoxicity induced by an anticancer agent in a subject suffering from cancer, wherein the protective agent is myricetin, wherein the anticancer agent is an anthracycline or salt thereof, a protein kinase inhibitor, or a proteasome inhibitor, and wherein the medicament is for administration prior to or simultaneously with the anticancer agent, thereby preventing, reducing, or eliminating the cardiotoxicity induced by the anticancer agent.
16. Use of an effective amount of a protective agent in the manufacture of a medicament for treating cancer in a subject, wherein the treatment comprises administration of said medicament prior to or simultaneously with an effective amount of an anticancer agent, wherein the protective agent is myricetin, wherein the anticancer agent is an anthracycline or salt thereof, a protein kinase inhibitor, or a proteasome inhibitor, and wherein the medicament prevents, reduces, or eliminates cardiotoxicity induced by the anticancer agent in the subject during cancer treatment.
17. The use of claim 15 or 16, wherein the medicament is for administration to the subject prior to the anticancer agent.
18. The use of claim 17, wherein the medicament is for administration to the subject at least about any of 5 minutes, 10 minutes, 30 minutes, or 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, or 48 hours prior to the administration of the anticancer agent.

19. The use of claim 15 or 16, wherein the medicament is for administration to the subject simultaneously with the anticancer agent.

20. The use of claim 19, wherein the medicament and the anticancer agent are for co-formulation in a liquid composition.

21. The use of any one of claims 15-20, wherein the medicament is for intravenous administration.

22. The use of any one of claims 15-21, wherein the cancer is selected from the group consisting of bladder cancer, bone cancer, a brain tumor, breast cancer, esophageal cancer, colorectal cancer, leukemia, liver cancer, lung cancer, lymphoma, myeloma, ovarian cancer, prostate cancer, a sarcoma, stomach cancer, and thyroid cancer.

23. The use of any one of claims 15-22, wherein the anticancer agent is an anthracycline or salt thereof.

24. The use of claim 23, wherein the anthracycline is selected from the group consisting of doxorubicin, daunorubicin, epirubicin, idarubicin, mitoxantrone, and valrubicin.

25. The use of claim 23 or 24, wherein the anthracycline is doxorubicin, epirubicin, or idarubicin.

26. The use of any one of claims 15-22, wherein the anticancer agent is a protein kinase inhibitor.

27. The use of claim 26, wherein the protein kinase inhibitor is selected from the group consisting of afatinib, axitinib, bosutinib, cabozantinib, carfilzomib, ceritinib, cobimetanib, crizotinib, dabrafenib, dasatinib, erlotinib, everolimus, gefitinib, ibrutinib, imatinib, lapatinib, lenvatinib, nilotinib, nintedanib, osimertinib, palbociclib, pazopanib, pegaptanib, ponatinib, regorafenib, ruxolitinib, sirolimus, sorafenib, sunitinib, tofacitinib, tofacitinib, temsirolimus, trametinib, vandetanib, vemurafenib, and vismodegib.

28. The use of claim 26 or 27, wherein the protein kinase inhibitor is a tyrosine kinase inhibitor.

29. The use of claim 28, wherein the tyrosine kinase inhibitor is selected from the group consisting of sorafenib, sunitinib, bosutinib, gefitinib, dasatinib, dabrafenib, vemurafenib, imatinib, lapatinib, and nilotinib.

30. The use of claim 28 or 29, wherein the tyrosine kinase inhibitor is sorafenib or sunitinib.

31. The use of any one of claims 15-22, wherein the anticancer agent is a proteasome inhibitor, such as bortezomib.

32. The use of any one of claims 15-31, wherein the molar ratio of the medicament to the anticancer agent for administration is from about 1:1 to about 1000:1, from about 1:1 to about 200:1, from about 1:1 to about 30:1, from about 1:1 to about 10:1, or from about 1:1 to about 5:1, or wherein the weight ratio of the medicament to the anticancer agent for administration is from about 1:1 to about 1000:1, from about 1:1 to about 200:1, from about 1:1 to about 100:1, from about 1:1 to about 20:1, from about 1:1 to about 10:1, from about 1:1 to about 5:1, or from about 1:1 to about 2:1.

33. The use of any one of claims 15-32, wherein the medicament is for use in further combination with an effective amount of a second protective agent, and wherein the second protective agent is for administration prior to or simultaneously with the anticancer agent.

34. The use of claim 33, wherein the second protective agent is dexrazoxane.

35. The use of any one of claims 15-34, wherein the cardiotoxicity comprises one or more of cardiac tissue damage, electrophysiological dysfunction such as QT prolongation or QTc prolongation, contractile dysfunction such as reduced cardiac ejection fraction or reduced cardiac fractional shortening, DNA double strand break in cardiomyocytes, mitochondrial toxicity, apoptosis, and oxidative stress.

36. The use of any one of claims 15-35, wherein the administration of the medicament decreases QTc interval in the subject.