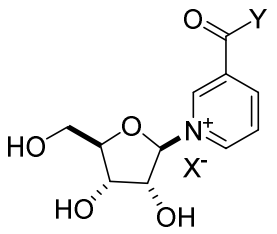
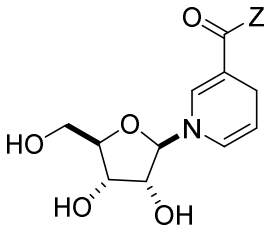
Claims

1. Use of a therapeutically effective amount of a compound of Formula (V) or Formula (VI):



(V)



(VI)

or pharmaceutically acceptable salts thereof and a therapeutically effective amount of a poly(ADP-ribose) polymerase (PARP) inhibitor or pharmaceutically acceptable salts thereof, in the manufacture of a pharmaceutical composition for increasing the level of nicotinamide adenine dinucleotide (NAD^+) in a cell type or tissue of a subject wherein:

Y and Z are -OH or $-NH_2$;

X^- is fluoride, chloride, bromide, iodide, nitrate, sulfate, sulfite, phosphate, bicarbonate, carbonate, thiocyanate, formate, acetate, trifluoroacetate, glycolate, lactate, gluconate, ascorbate, benzoate, oxalate, malonate, succinate, citrate, methanesulfonate, ethanesulfonate, propanesulfonate, benzenesulfonate, *p*-toluenesulfonate or trifluoromethanesulfonate; and

the therapeutically effective amount of the poly(ADP-ribose) polymerase (PARP) inhibitor is not more than 10% of the therapeutically effective amount of the poly(ADP-ribose) polymerase (PARP) inhibitor used in chemotherapy.

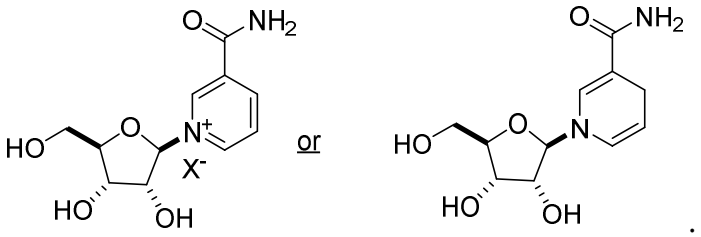
2. The use of claim 1, wherein the poly(ADP-ribose) polymerase (PARP) inhibitor is niraparib, olaparib, rucaparib, talazoparib, veliparib, 4-amino-1,8-naphthalimide, BGB290, CEP9722 or E7016.

3. The use of claim 1 wherein the therapeutically effective amount of the PARP inhibitor is no more than about 10%, about 5%, about 1%, about 0.5% or about 0.1% of the therapeutically effective amount of the poly(ADP-ribose) polymerase (PARP) inhibitor used in chemotherapy.

4. The use of claim 3, wherein the PARP inhibitor is olaparib and the therapeutically effective amount of olaparib is no more than about 10 mg, about 5 mg, about 1 mg, about 0.5 mg or about 0.1 mg.

5. The use of claim 1, wherein the therapeutically effective amount of the compound is about 100 mg, 150 mg, 200 mg, 250 mg, 300 mg, 400 mg or 500 mg.

6. The use of claim 1, wherein the compound is



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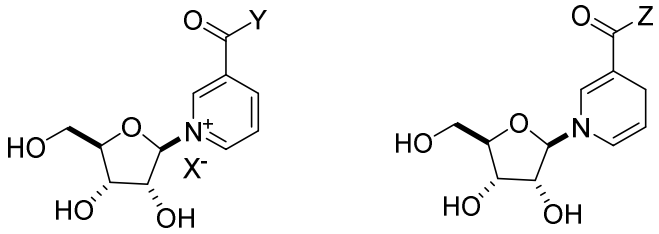
7. The use of claim 6, wherein the PARP inhibitor is olaparib and the therapeutically effective amount of olaparib is no more than about 10 mg, about 5 mg, about 1 mg, about 0.5 mg or about 0.1 mg.

8. A use of a therapeutically effective amount of a compound of Formula (V) or Formula (VI):



(V) (VI)

or pharmaceutically acceptable salts and a therapeutically effective amount of a poly(ADP-ribose) polymerase (PARP) inhibitor or pharmaceutically acceptable salts thereof in the manufacture of a pharmaceutical composition for increasing the level of cytoprotection in a cell type or tissue of a subject, wherein:

Y and Z are -OH or $-NH_2$;

X^- is fluoride, chloride, bromide, iodide, nitrate, sulfate, sulfite, phosphate, bicarbonate, carbonate, thiocyanate, formate, acetate, trifluoroacetate, glycolate, lactate, gluconate, ascorbate, benzoate, oxalate, malonate, succinate, citrate, methanesulfonate, ethanesulfonate, propanesulfonate, benzenesulfonate, *p*-toluenesulfonate or trifluoromethanesulfonate; and

the therapeutically effective amount of the poly(ADP-ribose) polymerase (PARP) inhibitor is not more than 10% of the therapeutically effective amount of the poly(ADP-ribose) polymerase (PARP) inhibitor used in chemotherapy.

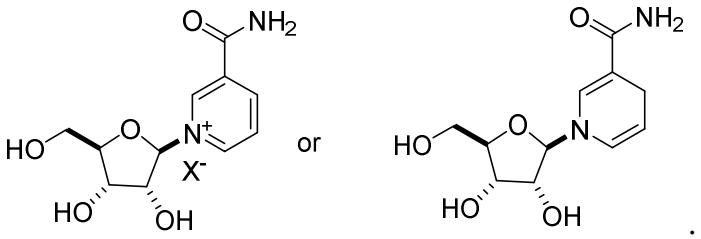
9. The compound of claim 8, wherein the poly(ADP-ribose) polymerase (PARP) inhibitor is niraparib, olaparib, rucaparib, talazoparib, veliparib, 4-amino-1,8-naphthalimide, BGB290, CEP9722 or E7016.

10. The use of claim 8, wherein the therapeutically effective amount of the PARP inhibitor is no more than about 10%, about 5%, about 1%, about 0.5% or about 0.1% of the therapeutically effective amount of the poly(ADP-ribose) polymerase (PARP) inhibitor used in chemotherapy.

11. The use of claim 10, wherein the PARP inhibitor is olaparib and the therapeutically effective amount of olaparib is no more than 10 mg, about 5 mg, about 1 mg, about 0.5 mg or about 0.1 mg.

12. The use of claim 8, wherein the therapeutically effective amount of the compound is about 100 mg, 150 mg, 200 mg, 250 mg, 300 mg, 400 mg or 500 mg.

13. The use of claim 8, wherein the compound is



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14. The use of claim 13, wherein the PARP inhibitor is olaparib and the therapeutically effective amount of olaparib is no more than about 10 mg, about 5 mg, about 1 mg, about 0.5 mg or about 0.1 mg.