6. The therapeutic composition of claim 3 wherein at least 15 lysine residues have been modified by an amino acid substitution.

7. The therapeutic composition of claim 3 wherein at least 20 lysine residues have been modified by an amino acid substitution.

8. The therapeutic composition of any one of claims 1-4 wherein the ADI is covalently bonded via a linker to at least one PEG molecule.

9. The therapeutic composition of claim 5 wherein the ADI is covalently bonded to more than one PEG molecule.

10. The therapeutic composition of claim 5 wherein the ADI is covalently bonded to 1 to 10 PEG molecules.

11. The therapeutic composition of claim 5 wherein the ADI is covalently bonded to 2 to 8 PEG molecules.

12. The therapeutic composition of claim 5 wherein the PEG molecules are straight chain or branch chain PEG molecules.

13. The therapeutic composition of claim 5 wherein the PEG has a total weight average molecular weight of from 1,000 to 40,000 or
from 10,000 to 30,000.

14. The therapeutic composition of claim 8 wherein the linker is a succinyl group, an amide group, an imide group, a carbamate group, an ester group, an epoxy group, a carboxyl group, a hydroxyl group, a carbohydrate, a tyrosine group, a cysteine group, a histidine group, a methylene group, or any combinations thereof.

15. The therapeutic composition of claim 14 wherein the source of the succinyl group is succinimidyl succinate.