CLAIMS

1. Use of a compound for the manufacture of a medicament for treating a disease or a condition susceptible to activation of AMP-activated protein kinase (AMPK), characterized in that the compound is adenine and/or a pharmaceutically acceptable salt thereof, wherein the medicament consists of the compound as an active ingredient, wherein the disease or the condition susceptible to activation of AMPK is selected from the group consisting of an inflammatory condition or disease, pre-diabetes, type 2 diabetes, metabolic syndrome, obesity, Alzheimer's disease, a neurodegenerative disease, scar formation during wound healing, wound, a disease or condition associated with excessive ROS, liver cancer, breast cancer, and a combination thereof.

2. The use of claim 1, characterized in that the medicament reduces pro-inflammatory cytokine secretion and COX-2 expression in a cell to treat the inflammatory condition or disease.

3. The use of claim 1, characterized in that the medicament increases glucose uptake into a cell to treat a disease pre-diabetes, type 2 diabetes, metabolic syndrome or a combination thereof.

4. The use of claim 1, characterized in that the medicament decreases plasma triglyceride in a mammal and decreases body weight to treat obesity.

5. The use of claim 1, characterized in that the medicament inhibits Aβ accumulation in a cell to treat Alzheimer's disease.

6. The use of claim 1, characterized in that the medicament enhances autophagy activity in a cell to treat the neurodegenerative disease.

7. The use of claim 1, characterized in that the medicament suppresses fibroblast proliferation to prevent scar formation during wound healing or to enhance wound healing.

8. The use of claim 1, characterized in that the medicament inhibits ROS production in a cell to treat the disease or condition associated with excessive ROS, wherein the medicament is used to protect and treat cells from ROS injury in a mammal.

9. The use of claim 1, characterized in that the medicament inhibits proliferation of a cancer cell to treat liver cancer or breast cancer, wherein the cancer cell is a hepatocellular carcinoma cell or a breast adenocarcinoma cell.

10. Use of a compound for the manufacture of a medicament for treating a disease or a condition susceptible to amelioration by AMPK activators, characterized in that the compound is adenine and/or a pharmaceutically acceptable salt thereof wherein the medicament consists of the compound as an active ingredient, wherein the disease or the condition susceptible to activation of AMPK is selected from the group consisting of an inflammatory condition or disease, pre-diabetes, type 2 diabetes, metabolic syndrome, obesity, Alzheimer's disease, a neurodegenerative disease, scar formation during wound healing, wound, a disease or condition associated with excessive ROS, liver cancer, breast cancer, and a combination thereof.

11. The use of claim 10 wherein the disease or the condition is the inflammatory condition or disease.

12. The use of claim 10 wherein the disease or the condition is pre-diabetes, type 2 diabetes, metabolic syndrome or a combination thereof.

13. The use of claim 10 wherein the disease or the condition is obesity.

14. The use of claim 10 wherein the disease or the condition is Alzheimer's disease.

15. The use of claim 10 wherein the disease or the condition is a disease or a condition susceptible to amelioration by autophagy, wherein the disease or condition is the neurodegenerative disease.

16. The use of claim 10 to wherein the medicament is used to prevent scar formation during wound healing.

17. The use of claim 10 wherein the medicament is used to enhance wound healing.

18. The use of claim 10 wherein the disease or condition is the disease or condition associated with excessive ROS, wherein the medicament is used to protect and treat cells from ROS injury in a mammal.

19. The use of claim 10 wherein the disease or the condition is liver cancer or breast cancer.

20. A method for activating AMP-activated protein kinase (AMPK) by contacting a compound with AMPK, characterized in that the compound consists of adenine and/or a pharmaceutically acceptable salt thereof, wherein the contacting is performed *in vitro*.

21. The method of claim 20, characterized in that the compound reduces pro-inflammatory cytokine secretion and COX-2 expression in a cell.

22. The method of claim 20, characterized in that the compound increases glucose uptake into a cell.

23. The method of claim 20, characterized in that the compound decreases plasma triglyceride in a mammalian cell.

24. The method of claim 20, characterized in that the compound inhibits Aβ accumulation in a cell.

25. The method of claim 20, characterized in that the compound enhances autophagy activity in a cell.

26. The method of claim 20, characterized in that the compound suppresses fibroblast proliferation in a cell.

27. The method of claim 20, characterized in that the compound inhibits ROS production in a cell.

28. The method of claim 20, characterized in that the compound inhibits proliferation of a cancer cell, wherein the cancer cell is a hepatocellular carcinoma cell or a breast adenocarcinoma cell.