

Claims

1. A synthetic isolated small activating RNA (saRNA) which up-regulates the expression of a target gene, wherein the target gene is TMEM173,
wherein the saRNA comprises an antisense strand that is at least 80% complementary to a targeted sequence of the target gene, wherein the targeted sequence is selected from the group consisting of SEQ ID NO:2-15, and
wherein the antisense strand has 14-30 nucleotides.
2. The saRNA of claim 1, wherein the antisense strand comprises a sequence selected from SEQ ID NO: 30-43.
3. The saRNA of claim 2, wherein the antisense strand comprises a 3' overhang.
4. The saRNA of claim 3, wherein the 3' overhang is uu, UU, or UUU.
5. The saRNA of claim 4, wherein the antisense strand comprises a sequence selected from SEQ ID NO: 69-82.
6. The saRNA of any of claims 1-5, wherein the saRNA is double stranded and further comprises a sense strand.
7. The saRNA of claim 6, wherein the sense strand comprises a sequence selected from SEQ ID NO:16-29.
8. The saRNA of claim 7, wherein the sense strand comprises a 3' overhang and/or a 5' overhang.
9. The saRNA of claim 8, wherein the 3' overhang is uu, UU, or UUU.
10. The saRNA of claim 8, wherein the 5' overhang is dT, ddT, inv ddT or invAb.
11. The saRNA of claim 8, wherein the sense strand comprises a sequence selected from SEQ ID NO: 44-68.

12. The saRNA of any of claims 1-11, wherein the saRNA comprises at least one modification.
13. The saRNA of claim 1, wherein the saRNA is TMEM173-Pr-70-invAb-Se-m1 or TMEM173-Pr-70-m1-emod51.
14. A pharmaceutical composition comprising the saRNA of any of claims 1-13 and at least one pharmaceutically acceptable excipient.
15. A method of up-regulating the expression of a target gene *in vitro*, wherein the target gene is TMEM173, comprising administering the saRNA of any of claims 1-13.
16. Use of the saRNA of any of claims 1-13 in the manufacture of a medicament for up-regulating the expression of a target gene, wherein the target gene is TMEM173.
17. The method of claim 15 or the use of claim 16, wherein the expression of the target gene is increased by at least 30%, 40%, or 50%.
18. Use of the saRNA of any of claims 1-13 or the pharmaceutical composition of claim 14 in the manufacture of a medicament for treating cancer of a subject in need thereof.
19. The use of claim 18, wherein the cancer is a solid tumor.
20. The use of claim 19, wherein the cancer is hepatocellular carcinoma, pancreatic cancer, or ovarian cancer.