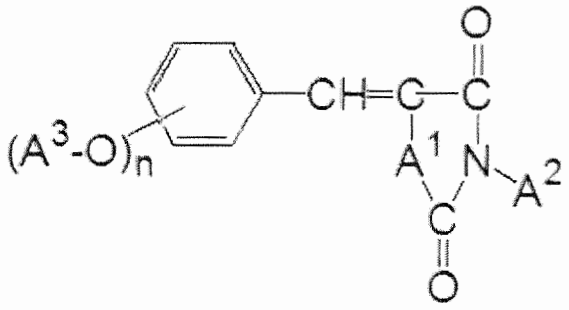
CLAIMS

1. A benzylidene azolidine derivative represented by structural formula (I) or salt thereof:

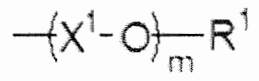
~~[Formula 1]~~



(I)

wherein n is an integer of 1 to 5, A^1 is O, S, or N-A^4, A^2, A^3, and A^4 are each independently a hydrogen atom, an optionally hydroxyl-substituted alkyl group of 1 to 8 carbon atoms, a functional group (1) represented by structural formula (1):

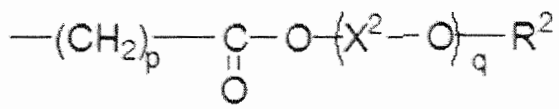
~~[Formula 2]~~



(1)

wherein X^1 is an alkylene group of 2 to 4 carbon atoms, R^1 is a hydroxyalkyl group of 2 to 4 carbon atoms, and m is an integer of 1 to 4, provided that when m is an integer of 2 to 4, two or more occurrences of X^1 may be the same or different, a functional group (2) represented by structural formula (2):

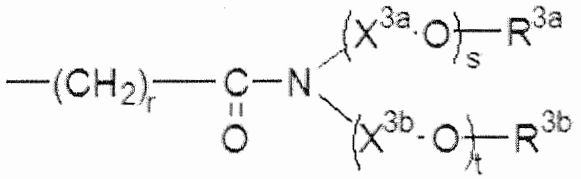
~~[Formula 3]~~



(2)

wherein X^2 is an alkylene group of 2 to 4 carbon atoms, R^2 is a hydroxyalkyl group of 2 to 4 carbon atoms, p is 1 or 2, and q is an integer of 0 to 4, provided that when q is an integer of 2 to 4, two or more occurrences of X^2 may be the same or different, or a functional group (3) represented by structural formula (3):

~~[Formula 4]~~



(3)

wherein X^{3a} and X^{3b} are each independently an alkylene group of 2 to 4 carbon atoms, R^{3a} and R^{3b} are each independently a hydroxyalkyl group of 2 to 4 carbon atoms, r is 1 or 2, s and t are each independently an integer of 0 to 4, provided that when s is an integer of 2 to 4, two or more occurrences of X^{3a} may be the same or different and when t is an integer of 2 to 4, two or more occurrences of X^{3b} may be the same or different, provided that at least one of A^2, A^3, and A^4 has at least one hydroxyl group and provided that when n is an integer of 2 to 5, two or more occurrences of A^3O- may be the same or different, or a salt thereof~~.~~

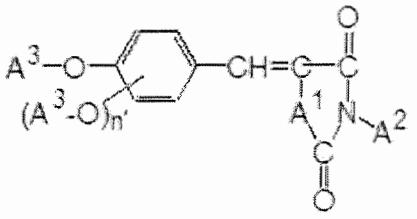
~~2. The benzylidene azolidine derivative or salt thereof according to claim 1~~,

~~wherein~~ at least one of A^2, A^3, and A^4 in structural formula (I) is the functional group (1), (2), or (3).

~~3. The benzylidene azolidine derivative or salt thereof according to claim 1 or 2, wherein A^2 and/or A^3 in structural formula (I) is a hydrogen atom, a hydroxyl-substituted alkyl group of 1 to 8 carbon atoms, or the functional group (1), (2), or (3).~~

24. The benzylidene azolidine derivative or salt thereof according to ~~any one of~~ claims ~~1 to 3~~, which is a benzylidene azolidine~~hydantoin~~ derivative represented by structural formula (II):

~~[Formula 5]~~

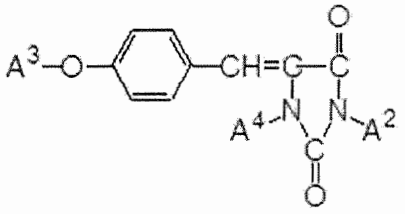


(II)

wherein n' is an integer of 0 to 4, provided that n' is an integer of 1 to 4, two or more occurrences of A^3-O- may be the same or different, or a salt thereof.

35. The benzylidene azolidine derivative or salt thereof according to ~~any one of~~ claims ~~1 to 4~~, which is a benzylidene hydantoin derivative represented by structural formula (III):

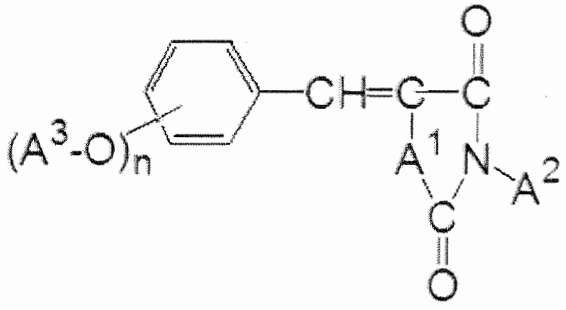
~~[Formula 6]~~



(III)

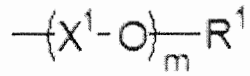
or a salt thereof.

~~46~~. An ultraviolet-absorbing agent comprising the benzylidene azolidine derivative represented by structural formula (I) or salt thereof:



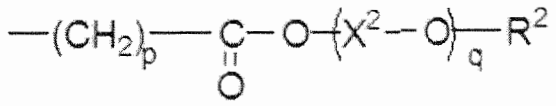
(I)

wherein n is an integer of 1 to 5, A^1 is O, S, or N-A^4, A^2, A^3, and A^4 are each independently a hydrogen atom, an optionally hydroxyl-substituted alkyl group of 1 to 8 carbon atoms, a functional group (1) represented by structural formula (1):



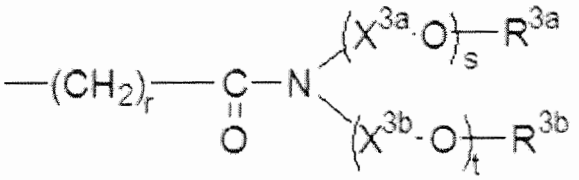
(1)

wherein X^1 is an alkylene group of 2 to 4 carbon atoms, R^1 is a hydroxyalkyl group of 2 to 4 carbon atoms, and m is an integer of 1 to 4, provided that when m is an integer of 2 to 4, two or more occurrences of X^1 may be the same or different, a functional group (2) represented by structural formula (2):



(2)

wherein X^2 is an alkylene group of 2 to 4 carbon atoms, R^2 is a hydroxyalkyl group of 2 to 4 carbon atoms, p is 1 or 2, and q is an integer of 0 to 4, provided that when q is an integer of 2 to 4, two or more occurrences of X^2 may be the same or different, or a functional group (3) represented by structural formula (3):



(3)

wherein X^{3a} and X^{3b} are each independently an alkylene group of 2 to 4 carbon atoms, R^{3a} and R^{3b} are each independently a hydroxyalkyl group of 2 to 4 carbon atoms, r is 1 or 2, s and t are each independently an integer of 0 to 4, provided that when s is an integer of 2 to 4, two or more occurrences of X^{3a} may be the same or different and when t is an integer of 2 to 4, two or more occurrences of X^{3b} may be the same or different, provided that at least one of A^2, A^3, and A^4 has at least one hydroxyl group and provided that when n is an integer of 2 to 5, two or more occurrences of A^3O- may be the same or different, or a salt thereof~~or salt thereof according to any one of claims 1 to 5~~.

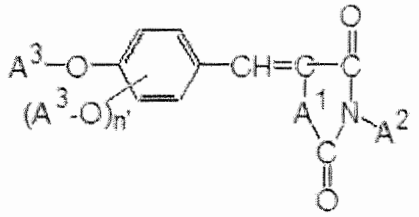
5. An ultraviolet-absorbing agent according to claim 4:

wherein at least one of A^2, A^3, and A^4 in structural formula (I) is the functional group (1), (2), or (3).

6. An ultraviolet-absorbing agent according to claim 4:

wherein at least one of A^2 and A^3 in structural formula (I) is a hydrogen atom, a hydroxyl-substituted alkyl group of 1 to 8 carbon atoms, or the functional group (1), (2), or (3).

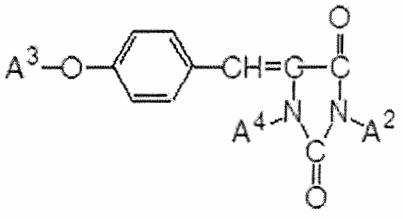
7. An ultraviolet-absorbing agent according to claim 4, which is the benzylidene azolidine derivative represented by structural formula (II):



(II).

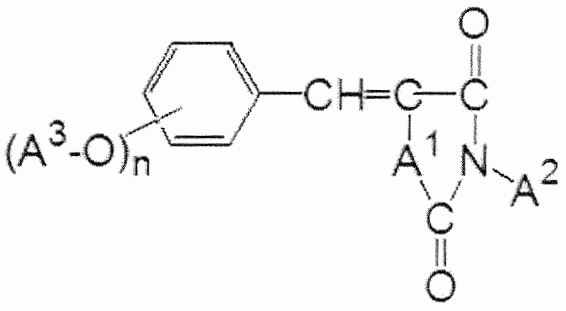
8. An ultraviolet-absorbing agent according to claim 4:

wherein the benzylidene azolidine derivative is a benzylidene hydantoin derivative represented by structural formula (III):



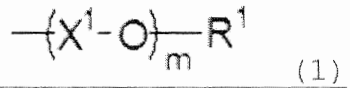
(III).

97. A composition for external use to skin, comprising the benzylidene azolidine derivative represented by structural formula (I) or salt thereof: ~~according to any one of claims 1 to 5~~



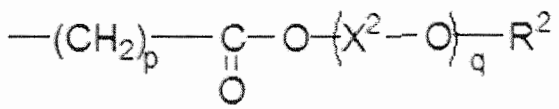
(I)

wherein n is an integer of 1 to 5, A^1 is O, S, or N-A^4, A^2, A^3, and A^4 are each independently a hydrogen atom, an optionally hydroxyl-substituted alkyl group of 1 to 8 carbon atoms, a functional group (1) represented by structural formula (1):



(1)

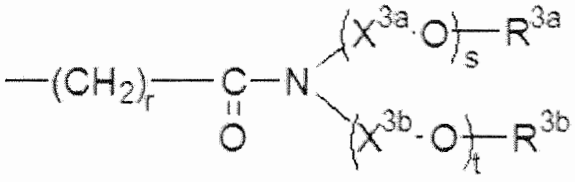
wherein X^1 is an alkylene group of 2 to 4 carbon atoms, R^1 is a hydroxyalkyl group of 2 to 4 carbon atoms, and m is an integer of 1 to 4, provided that when m is an integer of 2 to 4, two or more occurrences of X^1 may be the same or different, a functional group (2) represented by structural formula (2):



(2)

wherein X^2 is an alkylene group of 2 to 4 carbon atoms, R^2 is a hydroxyalkyl group of 2 to 4 carbon atoms, p is 1 or 2, and q is an integer of 0 to 4, provided that when q is

an integer of 2 to 4, two or more occurrences of X^2 may be the same or different, or a functional group (3) represented by structural formula (3):



(3)

wherein X^{3a} and X^{3b} are each independently an alkylene group of 2 to 4 carbon atoms, R^{3a} and R^{3b} are each independently a hydroxyalkyl group of 2 to 4 carbon atoms, r is 1 or 2, s and t are each independently an integer of 0 to 4, provided that when s is an integer of 2 to 4, two or more occurrences of X^{3a} may be the same or different and when t is an integer of 2 to 4, two or more occurrences of X^{3b} may be the same or different, provided that at least one of A^2, A^3, and A^4 has at least one hydroxyl group and provided that when n is an integer of 2 to 5, two or more occurrences of A^3O- may be the same or different, or a salt thereof.

10. A composition for external use to skin according to claim 9:

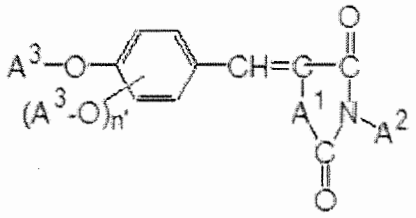
wherein at least one of A^2, A^3, and A^4 in structural formula (I) is the functional group (1), (2), or (3).

11. A composition for external use to skin according to claim 9:

wherein at least one of A^2 and A^3 in structural formula (I) is a hydrogen atom, a hydroxyl-substituted

alkyl group of 1 to 8 carbon atoms, or the functional group (1), (2), or (3).

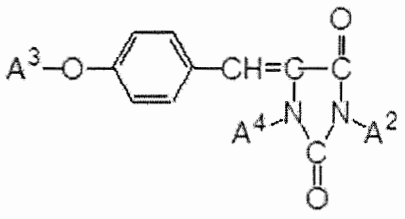
12. A composition for external use to skin according to claim 9, which is the benzylidene azolidine derivative represented by structural formula (II):



(II).

13. A composition for external use to skin according to claim 9:

wherein the benzylidene azolidine derivative is a benzylidene hydantoin derivative represented by structural formula (III):



(III).