WHAT IS CLAIMED IS:

1. A screening method for identifying candidate therapeutics for treating or preventing age-related macular degeneration (AMD), comprising:

a) Culturing a microorganism in a suitable culture medium in the presence of a test compound;

b) Measuring the growth of the microorganism in the culture medium in the presence of the test compound; and

c) Identifying a candidate therapeutics that inhibits the growth of the microorganism compared to a control,

wherein the microorganism comprises a species that is enriched in the intraocular space in a subject having age-related macular degeneration (AMD) compared to a healthy subject.

2. The screening method of claim 1 , wherein the microorganism comprises one or more species selected from *Staphylococcus epidermidis,Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Staphylococcus haemolyticus*, *Pseudomonas putida*, *Stenotrophomonas maltophilia*, *Bacillus cereus*, *Bacillus megaterium*, *Lactobacillus reuteri*, *Gardnerella vaginalis*, *Enterococcus faecium*, *Cytophaga hutchinsonii*, *Bacillus licheniformis*, and *Xanthomonas oryzae*.

3. The screening method of claim 1, wherein the intraocular space is aqueous humor in anterior chamber, a suspensory ligament, ciliary body, ciliary body and muscle, vitreous humor in posterior chamber, retina, choroid, optic nerve, lens, or iris.

4. The screening method of claim 1, wherein the microorganism comprises *Bacillus megaterium* and/or *Pseudomonas putida*.

5. The screening method of claim 1, wherein the microorganism comprises a mixture of microbial species substantially similar to those observed from an aqueous humor, vitreous humor, and/or soft drusen of a subject having age-related macular degeneration.

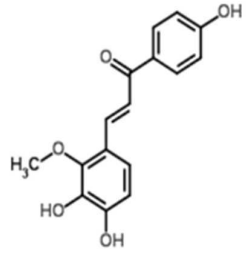
6. The screening method of claim 1, wherein the microorganism is derived, in part or in whole, from an aqueous humor and/or vitreous humor of a subject having age-related macular degeneration.

7. The screening method of any one of claims 1-6, wherein a plurality of test compounds are screened, and wherein the plurality of test compounds comprise at least one test compound that is not a known broad spectrum antibiotic or a known antibiotic having efficacy against one or more species of the microorganism.

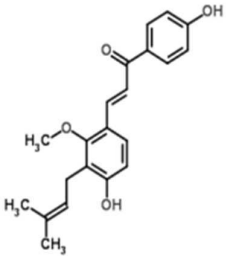
8. The screening method of claim 7, wherein the test compound is not ampicillin, vancomycin, neomycin, metronidazole, or tetracycline.

9. The screening method of any one of claims 1-6, wherein the test compound is selected from Formula I (e.g., Formula I-1, Formula I-2, Formula I-3, Formula I-4, Formula I-5), Formula II (e.g., Formula II-1, Formula II-2, Formula II-3, Formula II-4, Formula II-5, Formula II-6, Formula II-7, Formula II-8, Formula II-9, Formula II-10), Formula III (e.g., Formula III-1, Formula III-2, Formula III-3), Formula IV-1 or IV-2 (e.g., Formula IV-3, Formula IV-4, Formula IV-5, Formula IV-6), a glycoside (e.g., Formula V), wherein the aglycone of the glycoside is a phenolic compound, a flavonoid, a coumarin, a benzoic acid, or a sterol,or a pharmaceutically acceptable salt or ester thereof, or a pharmaceutical composition comprising the compound or pharmaceutically acceptable salt or ester thereof, wherein the Formula I, II, III, IV-1, IV-2, V, and subformulae thereof are defined herein.

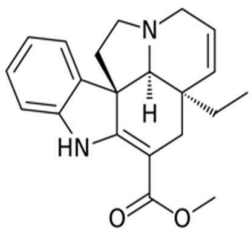
10. The screening method of any one of claims 1-6, wherein the test compound is selected from compounds 1-8 or a pharmaceutically acceptable salt or ester thereof, or a pharmaceutical composition comprising the compound or pharmaceutically acceptable salt or ester thereof, wherein compounds 1-8 have the following chemical structure:



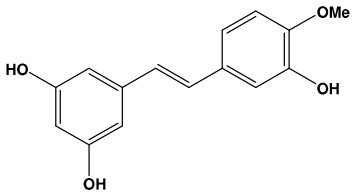
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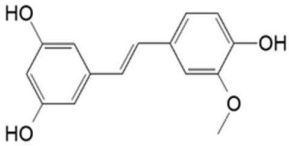
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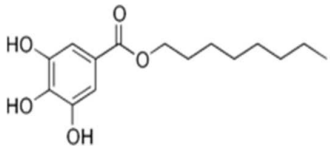
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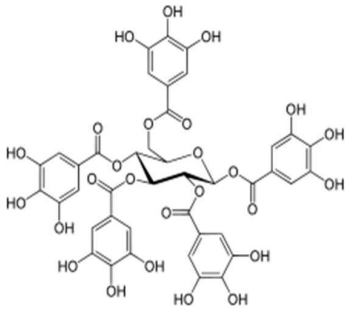
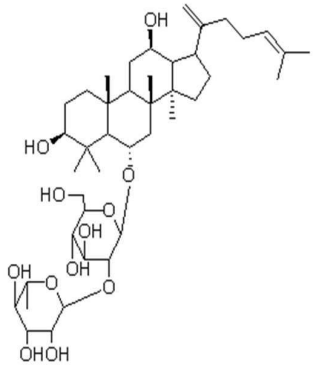
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7, and 8.

11. The screening method of any one of claims 1-6, wherein the test compound is an extract, wherein the extract is an extract from one or more TCMs selected from Licorice*(e.g., Glycyrrhiza uralensis)*, White Peony Root *(e.g., Cynanchum otophyllum)*, Forsythia *(e.g., Forsythia suspense)*, Fructus Aurantii *(e.g., Citrus aurantium L.)*, Rehmannia glutinosa *(e.g., Rehmannia glutinosa Libosch)*, Tangerine Peel *(e.g., Citrus reticulata Blanco)*, and Notoginseng *(e.g., Panax notoginseng*).

12. The screening method of any one of claims 1-11, wherein the identifying comprises identifying a candidate therapeutics that prevents visible growth of the microorganism at or below the maximum tested concentration.

13. The screening method of any one of claims 1-11, wherein the identifying comprises identifying a candidate therapeutics that prevents visible colony formation of the microorganism at or below the maximum tested concentration.

14. A screening method for identifying candidate therapeutics for treating or preventing age-related macular degeneration (AMD), comprising:

a) Determining one or more microbial species as enriched in the intraocular space in a subject having age-related macular degeneration (AMD) compared to a healthy subject;

b) Culturing a microorganism comprising at least one of the enriched microbial species in a suitable culture medium in the presence of a test compound;

c) Measuring the growth of the microorganism in the culture medium in the presence of the test compound; and

d) Identifying a candidate therapeutics that inhibits the growth of the microorganism compared to a control.

15. The screening method of claim 14, wherein the microorganism comprises one or more species selected from *Staphylococcus epidermidis,Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Staphylococcus haemolyticus*, *Pseudomonas putida*, *Stenotrophomonas maltophilia*,

Bacillus cereus, *Bacillus megaterium*, *Lactobacillus reuteri*, *Gardnerella vaginalis*, *Enterococcus faecium*, *Cytophaga hutchinsonii*, *Bacillus licheniformis*, and *Xanthomonas oryzae*.

16. The screening method of claim 14, wherein the microorganism comprises a mixture of microbial species substantially similar to those observed from an aqueous humor, vitreous humor and/or soft drusen of a subject having age-related macular degeneration.

17. The screening method of any one of claims 1-16, wherein the subject is a human subject.

18. A method for screening a compound or combination of compounds for efficacy in treating or preventing age-related macular degeneration (AMD), comprising:

obtaining a sample taken from aqueous humor or vitreous humor of a subject selected from a subject having the ocular disease, a family member or close genetic relation of a subject having the ocular disease, or a deceased subject known to have had the ocular disease; culturing one or more organisms in the sample under conditions that mimic human intraocular space or in cooked meat medium to produce one or more cultures; adding the compound or combination of compounds to the one or more cultures; and determining whether the compound or combination of compounds reduces growth or reduces population of the one or more cultures.

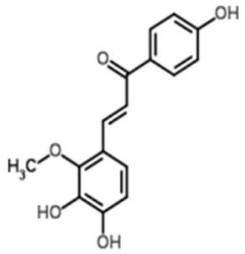
19. The method of claim 18, wherein the one or more organisms are selected from the group consisting of *Staphylococcus epidermidis,Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Staphylococcus haemolyticus*, *Pseudomonas putida*, *Stenotrophomonas maltophilia*, *Bacillus cereus*, *Bacillus megaterium*, *Lactobacillus reuteri*, *Gardnerella vaginalis*, *Enterococcus faecium*, *Cytophaga hutchinsonii*, *Bacillus licheniformis*, and *Xanthomonas oryzae* thereof.

20. The method of claim 18, further comprising identifying, based on the determining, a compound or combination of compounds that reduces growth or reduces population of the one or more cultures in vitro.

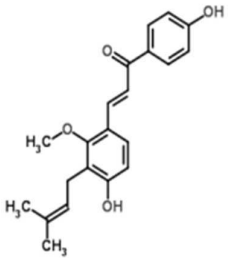
21. The method of claim 18, wherein the compound is selected from Formula I (e.g., Formula I-1, Formula I-2, Formula I-3, Formula I-4, Formula I-5), Formula II (e.g., Formula II-1, Formula II-2, Formula II-3, Formula II-4, Formula II-5, Formula II-6, Formula II-7, Formula II-8, Formula II-9, Formula II-10), Formula III (e.g., Formula III-1, Formula III-2, Formula III-3), Formula IV-1 or IV-2 (e.g., Formula IV-3, Formula IV-4, Formula IV-5, Formula IV-6), a glycoside (e.g., Formula V), wherein the aglycone of the glycoside is a phenolic compound, a flavonoid, a coumarin, a benzoic acid, or a sterol,or a pharmaceutically acceptable salt or ester thereof, or a pharmaceutical composition comprising the compound or pharmaceutically

acceptable salt or ester thereof, wherein the Formula I, II, III, IV-1, IV-2, V, and subformulae thereof are defined herein.

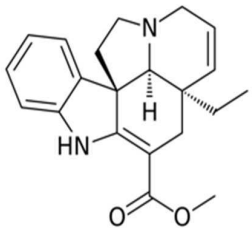
22. The method of claim 18, wherein the compound is selected from compounds 1-8 or a pharmaceutically acceptable salt or ester thereof, or a pharmaceutical composition comprising the compound or pharmaceutically acceptable salt or ester thereof, wherein compounds 1-8 have the following chemical structure:



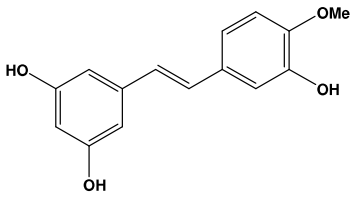
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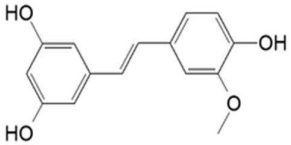
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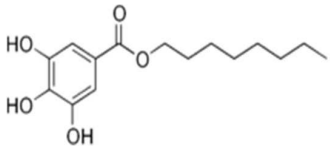
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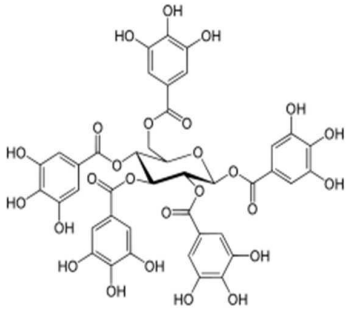
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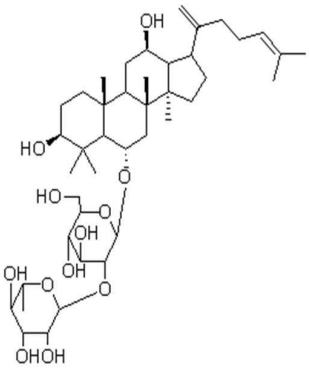
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23. The method of claim 18, wherein the compound is an extract, wherein the extract is an extract from one or more TCMs selected from Licorice*(e.g., Glycyrrhiza uralensis)*, White Peony Root *(e.g., Cynanchum otophyllum)*, Forsythia *(e.g., Forsythia suspense)*, Fructus Aurantii *(e.g., Citrus aurantium L.)*, Rehmannia glutinosa *(e.g., Rehmannia glutinosa Libosch)*, Tangerine Peel *(e.g., Citrus reticulata Blanco)*, and Notoginseng *(e.g., Panax notoginseng*).