

WHAT IS CLAIMED IS:

1. *Arthrospira maxima* extract (AM extract), comprising at least 25% (wt%) of total sugar in the AM extract.
2. The AM extract according to the claim 1, wherein the content of the total sugar in the AM extract is 25-75% (wt%).
3. The AM extract according to the claim 1, wherein the AM extract is derived from a high-molecular-weight fraction obtainable using a filter membrane having a molecular weight cut-off (MWCO) of 100 KD.
4. The AM extract according to the claim 1, wherein the AM extract comprises at least 60% (wt%) of neutral and/or positively charged polysaccharides based on the total sugars in the extract.
5. The AM extract according to the claim 4, wherein the content of neutral and/or positively charged polysaccharides based on the total sugars in the extract is 60-100% (wt%).
6. The AM extract according to the claim 1, wherein the AM extract comprises rhamnose as the major glycosyl component.
7. The AM extract according to the claim 6, wherein the AM extract comprises at least 30 mol% of rhamnose.
8. The AM extract according to the claim 1, wherein the AM extract comprises at least 60% (wt%) of neutral and/or positively charged polysaccharides based on the total sugars in the extract and at least 30 mol% of rhamnose.
9. The AM extract according to the claim 1, wherein the most abundant glycosyl linkage is 3-rhap.
10. The AM extract according to claim 1, wherein the AM extract is derived from a high-molecular-weight fraction obtainable using a filter membrane having a molecular weight cut-off (MWCO) of 100 KD, and comprises at least 60% (wt%) of neutral and/or positively charged polysaccharides based on the total sugars in the extract.
11. A process for preparing the AM extract according to the claim 1, comprising the steps of,
 - extracting *Arthrospira maxima* biomass in hot water of 80-120°C to obtain a crude extract;
 - removing solid residues from the crude extract to obtain a hot-water extract; and
 - optionally, drying the hot-water extract to obtain hot-water extract powder.
12. The process according to the claim 11, further comprising the steps of,

subjecting the hot-water extract or a solution comprising the hot-water extract powder to filtration using a filter membrane having a molecular weight cut-off value of 100 KD to obtain a high-molecular-weight fraction; and

optionally, drying the high-molecular-weight fraction to obtain high-molecular-weight extract powder.

13. The process according to the claim 12, further comprising the steps of,

subjecting the high-molecular-weight fraction or a solution comprising the high-molecular-weight extract powder to an anion-exchange chromatography using an anion-exchange column;

collecting the effluent flowing through the anion exchange column, wherein the effluent comprises AM extract rich in positively-charged and/or neutral polysaccharides;

eluting the anion exchange column with a salt solution and collecting the elution, wherein the elution comprises AM extract rich in negatively-charged polysaccharides; and

optionally, drying the effluent or the elution respectively to obtain extract powder rich in positively-charged or neutral polysaccharides and extract powder rich in negatively-charged polysaccharides.

14. The process according to the claim 13, wherein the anion exchange column is a diethyl aminoethyl (DEAE)-based column, quaternary aminoethyl (QAE)-based column or a trimethylamino ethane (TMAE)-based column.

15. Use of AM extract according to any of claims 1 to 10 in the manufacture of a medicament for use in the treatment of a viral infection caused by Enterovirus virus (EV), respiratory syncytial virus (RSV), Human Herpesvirus (HHV), Ebola virus, porcine epidemic diarrhea virus (PEDV), or porcine reproductive and respiratory syndrome virus (PRRSV), or a disorder caused by the viral infection.

16. AM extract according to any of claims 1 to 10 for use in the treatment of a viral infection caused by Enterovirus virus (EV), respiratory syncytial virus (RSV), Human Herpesvirus (HHV), Ebola virus, porcine epidemic diarrhea virus (PEDV), or porcine reproductive and respiratory syndrome virus (PRRSV), or a disorder caused by the viral infection.

17. A nutraceutical composition, comprising a nutraceutically-acceptable excipient and AM extract according to any of claims 1 to 10.

18. A pharmaceutical composition for treating a viral infection caused by Enterovirus virus (EV), respiratory syncytial virus (RSV), Human Herpesvirus (HHV), Ebola virus,

porcine epidemic diarrhea virus (PEDV), or porcine reproductive and respiratory syndrome virus (PRRSV), or a disorder caused by the viral infection, wherein the pharmaceutical composition comprises AM extract according to any of claims 1 to 10 and a pharmaceutically acceptable excipient.

19. A biocompatible dressing, comprising a solid support and an adhesive layer coated onto one surface of the solid support, wherein the adhesive layer comprise AM extract according to any of claims 1 to 10.
20. A method for treating a viral infection in a subject in need thereof or a disorder caused by the viral infection, wherein the viral infection is caused by Enterovirus virus (EV), respiratory syncytial virus (RSV), Human Herpesvirus (HHV), Ebola virus, porcine epidemic diarrhea virus (PEDV), or porcine reproductive and respiratory syndrome virus (PRRSV), and the method comprising the step of administering to the subject an effective amount of AM extract according to any of claims 1 to 10.
21. The method according to the claim 20, wherein the subject is a mammal.
22. The method according to the claim 21, wherein the subject is a human.
23. The method according to the claim 20, wherein the AM extract is administered systemically.
24. The method according to the claim 20, wherein the AM extract is administered topically.
25. A method for inhibiting viral replication of a virus in a host cell, wherein the virus is Enterovirus virus (EV), respiratory syncytial virus (RSV), Human Herpesvirus (HHV), Ebola virus, porcine epidemic diarrhea virus (PEDV), or porcine reproductive and respiratory syndrome virus (PRRSV), and the method comprises the step of exposing the host cell to an effective amount of the AM extract according to any of claims 1 to 10.
26. The method according to the claim 25, wherein the host cell is a mammalian host cell.
27. The method according to the claim 25. Wherein the host cell is in a living subject.
28. The method according to the claim 27, wherein the subject is a mammal.
29. The method according to the claim 28, wherein the subject is a human.