ALLNAMES:("ENTEROME")

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1. **3827003** PROCESS FOR PREPARING MANNOSE DERIVATIVES EP - 02.06.2021

Int.Class C07D 405/14 **Appl.No** 19746466 **Applicant** ENTEROME **Inventor** AREFYEV DENIS VIKTOROVICH

The invention relates to a process to prepare a compound of the following formula (I): (I), in which P represents a protective group of a hydroxyl function which is a -COR1 group with R1 representing an aryl or a (C1C6)alkyl, R represents a hydrogen atom or a protective group of a terminal alkyne, from mannose, comprising the following steps: (a) protecting the 5 hydroxyl groups of the mannose by a protective group P; (b) coupling the protected mannose obtained at step (a) with a compound of the following formula (II). The present invention also relates to a compound of formula (IIIa).

2. **20210309682** PROCESS FOR PREPARING MANNOSE DERIVATIVES US - 07.10.2021

Int.Class C07H 1/06 **Appl.No** 17263012 **Applicant** ENTEROME **Inventor** Denis Viktorovich AREFYEV

The invention relates to a process to prepare a compound of the following formula (I): (I), in which P represents a protective group of a hydroxyl function which is a —COR^1 group with R^1 representing an aryl or a (C_1C_6)alkyl, R represents a hydrogen atom or a protective group of a terminal alkyne, from mannose, comprising the following steps: (a) protecting the 5 hydroxyl groups of the mannose by a protective group P; (b) coupling the protected mannose obtained at step (a) with a compound of the following formula (II). The present invention also relates to a compound of formula (IIIa).

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3. **WO/2020/021113** PROCESS FOR PREPARING MANNOSE DERIVATIVES WO - 30.01.2020

Int.Class C07D 405/14 **Appl.No** PCT/EP2019/070276 **Applicant** ENTEROME **Inventor** AREFYEV, Denis Viktorovich

The invention relates to a process to prepare a compound of the following formula (I): (I), in which P represents a protective group of a hydroxyl function which is a -COR1 group with R1 representing an aryl or a (C1C6)alkyl, R represents a hydrogen atom or a protective group of a terminal alkyne, from mannose, comprising the following steps: (a) protecting the 5 hydroxyl groups of the mannose by a protective group P; (b) coupling the protected mannose obtained at step (a) with a compound of the following formula (II). The present invention also relates to a compound of formula (IIIa).

4. **20200025774** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES US - 23.01.2020

Int.Class G01N 33/68 **Appl.No** 16338954 **Applicant** ENTEROME S.A. **Inventor** Laurent CHENE

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments are provided.

5. **WO/2018/065628** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES WO - 12.04.2018

Int.Class A61K 39/00 **Appl.No** PCT/EP2017/075683 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments are provided.

6. **20210106652** IMMUNOGENIC COMPOUNDS FOR TREATMENT OF FIBROSIS, AUTOIMMUNE DISEASES AND INFLAMMATION US - 15.04.2021

Int.Class A61K 38/17 **Appl.No** 17043197 **Applicant** ENTEROME S.A. **Inventor** Laurent CHENE

The present invention relates to antigen-based immunotherapy targeting interleukin 13 receptor alpha 2 (I LI 3RA2) for prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease. In particular, the present invention provides the use of a (poly)peptide comprising an epitope of IL13RA2 or a sequence variant thereof for prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease. Moreover, the present invention also provides an immunogenic compound, a nanoparticle and a pharmaceutical composition comprising such a (poly)peptide and a nucleic acid encoding such a (poly)peptide for use in prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease.

7. **112022007203** COMPOSTOS IMUNOGÊNICOS PARA TRATAMENTO DE CÂNCER ADRENAL BR - 05.07.2022

Int.Class A61P 35/00 **Appl.No** EP2020079226 **Applicant** ENTEROME S.A. **Inventor** LAURENT CHENE

COMPOSTOS IMUNOGÊNICOS PARA TRATAMENTO DE CÂNCER ADRENAL. A presente invenção refere-se a imunoterapia baseada em antígeno direcionando o receptor alfa 2 de interleucina 13 (IL13RA2), BIRC5 e/ou FOXM1 para o tratamento de cânceres adrenais. Em particular, a presente invenção fornece o uso de um (poli)peptídeo compreendendo um epítopo de IL13RA2, BIRC5 e/ou FOXM1 ou uma variante de sequência dos mesmos para o tratamento de um câncer adrenal. Além disso, a presente invenção também fornece combinações do (poli)peptídeo compreendendo um epítopo de IL13RA2, BIRC5 e/ou FOXM1 ou uma variante de sequência dos mesmos com (poli)peptídeos compreendendo outros epítopos ou sequências variantes dos mesmos para tratamento de cânceres adrenais.

8. **WO/2019/197563** IMMUNOGENIC COMPOUNDS FOR TREATMENT OF FIBROSIS, AUTOIMMUNE DISEASES AND INFLAMMATION — WO - 17.10.2019

Int.Class A61K 38/17 **Appl.No** PCT/EP2019/059319 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The present invention relates to antigen-based immunotherapy targeting interleukin 13 receptor alpha 2 (I LI 3RA2) for prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease. In particular, the present invention provides the use of a (poly)peptide comprising an epitope of IL13RA2 or a sequence variant thereof for prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease. Moreover, the present invention also provides an immunogenic compound, a nanoparticle and a pharmaceutical composition comprising such a (poly)peptide and a nucleic acid encoding such a (poly)peptide for use in prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease.

9. **WO/2021/074389** IMMUNOGENIC COMPOUNDS FOR TREATMENT OF ADRENAL CANCER — WO - 22.04.2021

Int.Class A61P 35/00 **Appl.No** PCT/EP2020/079226 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The present invention relates to antigen-based immunotherapy targeting interleukin 13 receptor alpha 2 (IL13RA2), BIRC5 and/or FOXM1 for treatment of adrenal cancers. In particular, the present invention provides the use of a (poly)peptide comprising an epitope of IL13RA2, BIRC5 and/or FOXM1 or a sequence variant thereof for treatment of an adrenal cancer. Moreover, the present invention also provides combinations of the (poly)peptide comprising an epitope of IL13RA2, BIRC5 and/or FOXM1 or a sequence variant thereof with (poly)peptides comprising other epitopes or sequence variants thereof for treatment of adrenal cancers.

10. **20160258017** HOST DNA AS A BIOMARKER OF CROHN'S DISEASE — US - 08.09.2016

Int.Class C12Q 1/68 **Appl.No** 15011314 **Applicant** ENTEROME **Inventor** Alessandra Cristina L. Cervino

The invention relates to methods of analyzing a sample from a subject having or suspected of having Crohn's disease for the abundance of the subject's nucleic acid (e.g., DNA) in the sample. The invention also relates to methods for measuring abundance of nucleic acid (e.g., DNA) in stool from a human subject having or suspected of having Crohn's Disease (CD). In various embodiments, an in vitro method includes analyzing the relative abundance of the host (human) DNA in said sample of stool or nucleic acid extracted or isolated from a stool sample from the host (human); determining the relative abundance of the host (human's) DNA in the sample; and associating the abundance of the host (human) DNA with the host (human) providing the stool sample, or the host (human) providing the stool sample from which the nucleic acid was extracted.

11. **201717023697** HOST DNA AS A BIOMARKER OF CROHN S DISEASE — IN - 06.10.2017

Int.Class C12Q 1/68 **Appl.No** 201717023697 **Applicant** ENTEROME **Inventor** CERVINO Alessandra

The present invention relates to an in vitro method for diagnosing Crohn disease in a subject comprising: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject suffers from Crohn disease if said relative abundance is higher than a reference value. The present invention also relates to an in vitro method for diagnosing the state (stable or unstable) of the Crohn disease in a subject, comprising the steps of: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject has a Crohn disease in an unstable state if said relative abundance is higher than another reference value.

12. **20180251844** HOST DNA AS A BIOMARKER OF CROHN'S DISEASE — US - 06.09.2018

Int.Class C12Q 1/68 **Appl.No** 15877336 **Applicant** ENTEROME **Inventor** Alessandra Cristina L Cervino

The invention relates to methods of analysing a sample from a subject having or suspected of having Crohn's disease for the abundance of the subject's nucleic acid (e.g., DNA) in the sample. The invention also relates to methods for measuring abundance of nucleic acid (e.g., DNA) in stool from a human subject having or suspected of having Crohn's Disease (CD). In various embodiments, an in vitro method includes analysing the relative abundance of the host (human) DNA in said sample of stool or nucleic acid extracted or isolated from a stool sample from the host (human); determining the relative abundance of the host (human's) DNA in the sample; and associating the abundance of the host (human) DNA with the host (human) providing the stool sample, or the host (human) providing the stool sample from which the nucleic acid was extracted.

13. **734710** HOST DNA AS A BIOMARKER OF CROHN'S DISEASE — NZ - 25.08.2017

Int.Class C12Q 1/68 **Appl.No** 734710 **Applicant** ENTEROME **Inventor** CERVINO, Alessandra

The present invention relates to an in vitro method for diagnosing Crohn disease in a subject comprising: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject suffers from Crohn disease if said relative abundance is higher than a reference value. The present invention also relates to an in vitro method for diagnosing the state (stable or unstable) of the Crohn disease in a subject, comprising the steps of: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject has a Crohn disease in an unstable state if said relative abundance is higher than another reference value.

14. **2016211113** HOST DNA AS A BIOMARKER OF CROHN'S DISEASE — AU - 04.08.2016

Int.Class C12Q 1/68 **Appl.No** 2016211113 **Applicant** Enterome **Inventor** Cervino, Alessandra

The present invention relates to an in vitro method for diagnosing Crohn disease in a subject comprising: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject suffers from Crohn disease if said relative abundance is higher than a reference value. The present invention also relates to an in vitro method for diagnosing the state (stable or unstable) of the Crohn disease in a subject, comprising the steps of: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject has a Crohn disease in an unstable state if said relative abundance is higher than another reference value.

15. **2973307** HOST DNA AS A BIOMARKER OF CROHN'S DISEASE — CA - 04.08.2016

Int.Class C12Q 1/6809 **Appl.No** 2973307 **Applicant** ENTEROME **Inventor** CERVINO, ALESSANDRA

The present invention relates to an in vitro method for diagnosing Crohn disease in a subject comprising: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject suffers from Crohn disease if said relative abundance is higher than a reference value. The present invention also relates to an in vitro method for diagnosing the state (stable or unstable) of the Crohn disease in a subject, comprising the steps of: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject has a Crohn disease in an unstable state if said relative abundance is higher than another reference value.

16. **112017014978** MÉTODO IN VITRO DE DIAGNÓSTICO DA ATIVIDADE DE DOENÇA DE CROHN E KIT — BR - 20.03.2018

Int.Class C12Q 1 **Appl.No** 112017014978 **Applicant** ENTEROME **Inventor** ALESSANDRA CERVINO

a presente invenção refere-se a um método in vitro de diagnóstico de doença de crohn em pacientes, que compreende: (a) obtenção de amostra biológica do mencionado paciente; (b) análise da abundância relativa do dna hospedeiro na mencionada amostra; e (c) diagnóstico de que o mencionado paciente sofre de doença de crohn se a mencionada abundância relativa for mais alta que um valor de referência.a presente invenção também se refere a um método in vitro de diagnóstico do estado (estável ou instável) da doença de crohn em pacientes, que compreende as etapas de: (a) obtenção de amostra biológica do mencionado paciente; (b) análise da abundância relativa do dna hospedeiro na mencionada amostra; e (c) diagnóstico de que o mencionado paciente sofre de doença de crohn em estado instável se a mencionada abundância relativa for mais alta que outro valor de referência.

17. **2693973** ADN HOSPEDADOR COMO UN BIOMARCADOR DE LA ENFERMEDAD DE CROHN — ES - 17.12.2018

Int.Class C12Q 1/6883 **Appl.No** 16702120 **Applicant** Enterome **Inventor** CERVINO, Alessandra

Método in vitro para diagnosticar la actividad de la enfermedad de Crohn (CD) en un sujeto que sufre de la misma, comprendiendo dicho método las etapas de: a) obtener una muestra de heces de dicho sujeto, b) determinar la abundancia relativa del ADN hospedador en dicha muestra, y c) diagnosticar que dicho sujeto presenta una enfermedad de Crohn en un estado inestable si dicha abundancia relativa es superior a un valor de referencia, siendo dicho valor de referencia preferentemente de aproximadamente 10%.

18. **2017009752** ADN HUESPED COMO BIOMARCADOR DE LA ENFERMEDAD DE CROHN. — MX - 07.12.2017

Int.Class C12Q 1/68 **Appl.No** 2017009752 **Applicant** ENTEROME **Inventor** Alessandra CERVINO

The present invention relates to an in vitro method for diagnosing Crohn disease in a subject comprising: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject suffers from Crohn disease if said relative abundance is higher than a reference value. The present invention also relates to an in vitro method for diagnosing the state (stable or unstable) of the Crohn disease in a subject, comprising the steps of: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject has a Crohn disease in an unstable state if said relative abundance is higher than another reference value.

19. **WO/2016/120475** HOST DNA AS A BIOMARKER OF CROHN'S DISEASE — WO - 04.08.2016

Int.Class C12Q 1/68 **Appl.No** PCT/EP2016/051989 **Applicant** ENTEROME **Inventor** CERVINO, Alessandra

The present invention relates to an in vitro method for diagnosing Crohn disease in a subject comprising: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject suffers from Crohn disease if said relative abundance is higher than a reference value. The present invention also relates to an in vitro method for diagnosing the state (stable or unstable) of the Crohn disease in a subject, comprising the steps of: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject has a Crohn disease in an unstable state if said relative abundance is higher than another reference value.

20. **3250710** HOST DNA AS A BIOMARKER OF CROHN'S DISEASE — EP - 06.12.2017

Int.Class C12Q 1/6883 **Appl.No** 16702120 **Applicant** ENTEROME **Inventor** CERVINO ALESSANDRA

The present invention relates to an in vitro method for diagnosing Crohn disease in a subject comprising: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject suffers from Crohn disease if said relative abundance is higher than a reference value. The present invention also relates to an in vitro method for diagnosing the state (stable or unstable) of the Crohn disease in a subject, comprising the steps of: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject has a Crohn disease in an unstable state if said relative abundance is higher than another reference value.

21. **107208159** HOST DNA AS BIOMARKER OF CROHN'S DISEASE — CN - 26.09.2017

Int.Class C12Q 1/68 **Appl.No** 201680007943.4 **Applicant** ENTEROME **Inventor** CERVINO ALESSANDRA

The present invention relates to an in vitro method for diagnosing Crohn disease in a subject comprising: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject suffers from Crohn disease if said relative abundance is higher than a reference value. The present invention also relates to an in vitro method for diagnosing the state (stable or unstable) of the Crohn disease in a subject, comprising the steps of: a) obtaining a biological sample from said subject, b) analysing the relative abundance of the host DNA in said sample, and, c) diagnosing that said subject has a Crohn disease in an unstable state if said relative abundance is higher than another reference value.

22. **253327** HOST DNA AS A BIOMARKER OF CROHN'S DISEASE — IL - 28.09.2017

Int.Class C12Q 01/68 **Appl.No** 253327 **Applicant** ENTEROME **Inventor**

23. **WO/2019/076931** NEW TOOLS FOR ASSESSING FIMH BLOCKERS THERAPEUTIC EFFICIENCY — WO - 25.04.2019

Int.Class C12Q 1/68 **Appl.No** PCT/EP2018/078297 **Applicant** ENTEROME **Inventor** CERVINO, Alessandra

The present invention relates to an in vitro method for identifying subjects hosting high amounts of Fim H expressing proteobacteria in their gut, said method comprising the step of detecting the expression of the fimH gene in a stool sample of said subjects.

24. **3079119** NEW TOOLS FOR ASSESSING FIMH BLOCKERS THERAPEUTIC EFFICIENCY CA - 25.04.2019

Int.Class C12Q 1/68 **Appl.No** 3079119 **Applicant** ENTEROME **Inventor**

The present invention relates to an in vitro method for identifying subjects hosting high amounts of Fim H expressing proteobacteria in their gut, said method comprising the step of detecting the expression of the fimH gene in a stool sample of said subjects.

25. **3697924** NEW TOOLS FOR ASSESSING FIMH BLOCKERS THERAPEUTIC EFFICIENCY EP - 26.08.2020

Int.Class C12Q 1/68 **Appl.No** 18785378 **Applicant** ENTEROME **Inventor** CERVINO ALESSANDRA

The present invention relates to an *in vitro* method for identifying subjects hosting high amounts of Fim H expressing proteobacteria in their gut, said method comprising the step of detecting the expression of the *fim*H gene in a stool sample of said subjects.

26. **20200277655** NEW TOOLS FOR ASSESSING FIMH BLOCKERS THERAPEUTIC EFFICIENCY US - 03.09.2020

Int.Class C12Q 1/689 **Appl.No** 16755829 **Applicant** ENTEROME **Inventor** Alessandra CERVINO

The present invention relates to an in vitro method for identifying subjects hosting high amounts of Fim H expressing proteobacteria in their gut, said method comprising the step of detecting the expression of the fimH gene in a stool sample of said subjects.

27. **2018351471** NEW TOOLS FOR ASSESSING FIMH BLOCKERS THERAPEUTIC EFFICIENCY AU - 25.04.2019

Int.Class C12Q 1/68 **Appl.No** 2018351471 **Applicant** Enterome **Inventor** BONNY, Christophe

The present invention relates to an *in vitro* method for identifying subjects hosting high amounts of Fim H expressing proteobacteria in their gut, said method comprising the step of detecting the expression of the *fim*H gene in a stool sample of said subjects.

28. **2017339577** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY AU - 12.04.2018

Int.Class C07K 14/715 **Appl.No** 2017339577 **Applicant** Enterome S.A. **Inventor** Chene, Laurent

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of sequences described in the specification.

29. **3039322** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY CA - 12.04.2018

Int.Class A61K 39/00 **Appl.No** 3039322 **Applicant** ENTEROME S.A. **Inventor**

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of sequences described in the specification.

30. **20200113983** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY US - 16.04.2020

Int.Class A61K 39/00 **Appl.No** 16338953 **Applicant** ENTEROME S.A. **Inventor** Laurent CHENE

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of sequences described in the specification.

31. **WO/2018/065623** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY WO - 12.04.2018

Int.Class A61K 39/00 **Appl.No** PCT/EP2017/075673 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of sequences described in the specification.

32. **201917013678** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY IN - 28.06.2019

Int.Class A61K 39/00A **Appl.No** 201917013678 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen which antigenic peptide is selected in the group consisting of sequences described in the specification.

33. **2022200872** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY AU - 24.02.2022

Int.Class C07K 14/715 **Appl.No** 2022200872 **Applicant** Enterome S.A. **Inventor** Chene, Laurent

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of sequences described in the specification.

34. **265751** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY IL - 30.05.2019

Int.Class A61K / **Appl.No** 265751 **Applicant** ENTEROME S.A. **Inventor**

35. **3153470** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF B-CELL MALIGNANCY CA - 20.05.2021

Int.Class A61K 39/00 **Appl.No** 3153470 **Applicant** ENTEROME S.A. **Inventor** CHENE, LAURENT

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, especially share the same core sequence with epitopes of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

36. **2020384926** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF B-CELL MALIGNANCY AU - 20.05.2021

Int.Class A61K 39/00 **Appl.No** 2020384926 **Applicant** Enterome S.A. **Inventor** CHENE, Laurent

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, especially share the same core sequence with epitopes of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

37. **WO/2021/148650** IDENTIFICATION AND SYNTHESIS OF DRUG CANDIDATES DERIVED FROM HUMAN MICROBIOME METASECRETOME PROTEINS WO - 29.07.2021

Int.Class G01N 33/569 **Appl.No** PCT/EP2021/051523 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The present invention relates to the treatment of diseases relating to proteins of the human microbiome metasecretome and, thus, to microbiome interactions, especially microbiome- host interactions. In particular the present invention relates to a method for identification of secreted peptides and proteins of the human microbiome. The present invention also relates to methods for generating a database of human microbiome metasecretome protein sequences. Furthermore, the present invention relates to a method for preparing a protein of the human microbiome metasecretome as well as to the use of such proteins in medicine.

38. **WO/2021/094562** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF B-CELL MALIGNANCY WO - 20.05.2021

Int.Class A61K 39/00 **Appl.No** PCT/EP2020/082101 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, especially share the same core sequence with epitopes of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

39. **WO/2019/197567** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF CANCER WO - 17.10.2019

Int.Class A61K 39/00 **Appl.No** PCT/EP2019/059329 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, fragments of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

40. **202017042535** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF CANCER IN - 22.01.2021

Int.Class A61K 39/00 **Appl.No** 202017042535 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, fragments of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

41. **112020020780** PEPTÍDEOS ANTIGÊNICOS PARA PREVENÇÃO E TRATAMENTO DO CÂNCER BR - 02.03.2021

Int.Class A61K 39 **Appl.No** 112020020780 **Applicant** ENTEROME S.A. **Inventor** CHRISTOPHE BONNY

a presente invenção se refere a imunoterapia baseada em antígeno, em particular imunoterapia contra o câncer. em particular, a presente invenção fornece peptídeos antigênicos, que são distintos, mas têm similaridade de aminoácidos com fragmentos de antígenos tumorais humanos. a presente invenção fornece ainda compostos imunogênicos, nanopartículas, células e composições farmacêuticas compreendendo tais peptídeos antigênicos e ácidos nucleicos que codificam tais peptídeos antigênicos.

42. **2019253217** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF CANCER AU - 17.10.2019

Int.Class A61K 39/00 **Appl.No** 2019253217 **Applicant** Enterome S.A. **Inventor** CHENE, Laurent

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, fragments of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

43. **20210113678** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF CANCER — US - 22.04.2021

Int.Class A61K 39/00 **Appl.No** 17043192 **Applicant** ENTEROME S.A. **Inventor** Laurent CHENE

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, fragments of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

44. **3094262** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF CANCER — CA - 17.10.2019

Int.Class A61K 39/00 **Appl.No** 3094262 **Applicant** ENTEROME S.A. **Inventor** CHENE, LAURENT

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, fragments of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

45. **3522917** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES — EP - 14.08.2019

Int.Class A61K 39/00 **Appl.No** 17788150 **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments are provided.

46. **3773673** IMMUNOGENIC COMPOUNDS FOR TREATMENT OF FIBROSIS, AUTOIMMUNE DISEASES AND INFLAMMATION — EP - 17.02.2021

Int.Class A61K 38/17 **Appl.No** 19718636 **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The present invention relates to antigen-based immunotherapy targeting interleukin 13 receptor alpha 2 (I LI 3RA2) for prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease. In particular, the present invention provides the use of a (poly)peptide comprising an epitope of IL13RA2 or a sequence variant thereof for prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease. Moreover, the present invention also provides an immunogenic compound, a nanoparticle and a pharmaceutical composition comprising such a (poly)peptide and a nucleic acid encoding such a (poly)peptide for use in prevention and/or treatment of fibrosis, an autoimmune disease and/or an inflammatory disease.

47. **3023614** SYSTEME DE COLLECTE D'ECHANTILLONS DE MATIERE FECALE — FR - 15.01.2016

Int.Class G01N 1/02 **Appl.No** 1456674 **Applicant** ENTEROME **Inventor** DORE JOEL

L'invention concerne un système de collecte (1) d'échantillons de matière fécale comprenant : - un récipient (10) adapté pour recevoir un fluide de conservation (2), ledit récipient (10) présentant un orifice d'entrée (12), - une cuillère de prélèvement (20), configurée pour être fixée de manière étanche sur le récipient (10), et - un manchon (40), fixé sur le récipient (10) de manière à entourer l'orifice d'entrée (12), la cuillère de prélèvement (20) étant configurée pour être introduite dans le récipient (10) à travers le manchon (40) et l'orifice d'entrée (12).

48. **WO/2018/065625** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY — WO - 12.04.2018

Int.Class A61K 39/00 **Appl.No** PCT/EP2017/075676 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of peptides having amino acid similarity with IL13RA2, the said antigenic peptide being selected in the group consisting of sequences described in the specification.

49. **20190388532** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY — US - 26.12.2019

Int.Class A61K 39/00 **Appl.No** 16338955 **Applicant** ENTEROME S.A. **Inventor** Laurent CHENE

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of peptides having amino acid similarity with IL13RA2, the said antigenic peptide being selected in the group consisting of sequences described in the specification.

50. **20200256877** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES — US - 13.08.2020

Int.Class G01N 33/68 **Appl.No** 16753657 **Applicant** ENTEROME S.A. **Inventor** Laurent CHENE

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments are provided.

51. **2018348432** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES — AU - 18.04.2019

Int.Class A61K 39/00 **Appl.No** 2018348432 **Applicant** Enterome S.A. **Inventor** BONNY, Christophe

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota

sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments are provided.

52. **3075363** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES CA - 18.04.2019

Int.Class A61K 39/00 **Appl.No** 3075363 **Applicant** ENTEROME S.A. **Inventor**

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments are provided.

53. **273648** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES IL - 31.05.2020

Int.Class A61K 39/00 **Appl.No** 273648 **Applicant** ENTEROME S.A. **Inventor**

54. **WO/2019/072871** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES WO - 18.04.2019

Int.Class A61K 39/00 **Appl.No** PCT/EP2018/077515 **Applicant** ENTEROME S.A. **Inventor** CHENE, Laurent

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments are provided.

55. **WO/2021/148646** MICRIBIOTA-DERIVED PROTEINS INDUCING IL-10 RELEASE FROM HUMAN CELLS AND USES THEREOF WO - 29.07.2021

Int.Class A61K 35/74 **Appl.No** PCT/EP2021/051519 **Applicant** ENTEROME S.A. **Inventor** CULTRONE, Antoinetta

The present invention relates to microbiota-derived proteins, which are capable of inducing and/or enhancing secretion of IL-10 from human cells. Accordingly, the present invention provides microbial proteins, and fragments and sequence variants thereof, which stimulate IL-10 release from human immune cells. The present invention also relates to nucleic acids encoding such proteins, cells expressing such proteins, respective pharmaceutical compositions and uses thereof.

56. **3522915** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY EP - 14.08.2019

Int.Class A61K 39/00 **Appl.No** 17787365 **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of sequences described in the specification.

57. **3855183** IDENTIFICATION AND SYNTHESIS OF DRUG CANDIDATES DERIVED FROM HUMAN MICROBIOME METASECRETOME PROTEINS EP - 28.07.2021

Int.Class G01N 33/569 **Appl.No** 20305060 **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The present invention relates to the treatment of diseases relating to proteins of the human microbiome metasecretome and, thus, to microbiome interactions, especially microbiome-host interactions. In particular the present invention relates to a method for identification of secreted peptides and proteins of the human microbiome. The present invention also relates to methods for generating a database of human microbiome metasecretome protein sequences. Furthermore, the present invention relates to a method for preparing a protein of the human microbiome metasecretome as well as to the use of such proteins in medicine.

58. **4021487** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF B-CELL MALIGNANCY EP - 06.07.2022

Int.Class A61K 39/00 **Appl.No** 20804279 **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, especially share the same core sequence with epitopes of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

59. **3773689** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF CANCER EP - 17.02.2021

Int.Class A61K 39/00 **Appl.No** 19716176 **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, fragments of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenic peptides and nucleic acids encoding such antigenic peptides.

60. **3522916** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY EP - 14.08.2019

Int.Class A61K 39/00 **Appl.No** 17788147 **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of peptides having amino acid similarity with IL13RA2, the said antigenic peptide being selected in the group consisting of sequences described in the specification.

61. **3854407** MICROBIOTA-DERIVED PROTEINS INDUCING IL-10 RELEASE FROM HUMAN CELLS AND USES THEREOF EP - 28.07.2021

Int.Class A61K 35/74 **Appl.No** 20305061 **Applicant** ENTEROME S A **Inventor** CULTRONE ANTONIETTA

The present invention relates to microbiota-derived proteins, which are capable of inducing and/or enhancing secretion of IL-10 from human cells. Accordingly, the present invention provides microbial proteins, and fragments and sequence variants thereof, which stimulate IL-10 release from human immune cells. The present invention also relates to nucleic acids encoding such proteins, cells expressing such proteins, respective pharmaceutical compositions and uses thereof.

62. **3694541** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES EP - 19.08.2020

Int.Class A61K 39/00 **Appl.No** 18782459 **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments are provided.

63. **110049774** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES CN - 23.07.2019

Int.Class A61K 39/00 **Appl.No** 201780075898.0 **Applicant** ENTEROME S.A. **Inventor** CHENE LAURENT

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments areprovided.

64. **110022893** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY CN - 16.07.2019

Int.Class A61K 39/00 **Appl.No** 201780074774.0 **Applicant** ENTEROME **Inventor** CHENE LAURENT

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of sequences described in the specification.

65. **20180251819** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER US - 06.09.2018

Int.Class C12Q 1/689 **Appl.No** 15972620 **Applicant** ENTEROME **Inventor** Matthieu Pichaud

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis). These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.

66. **112015008621** MÉTODOS E KIT DE DIAGNÓSTICO E/OU PROGNÓSTICO IN VITRO MICROCONJUNTO DE ÁCIDOS NUCLEICOS. BR - 28.08.2018

Int.Class C12Q 1 **Appl.No** 112015008621 **Applicant** ENTEROME **Inventor** MATTHIEU PICHAUD

67. **WO/2014/060555** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER WO - 24.04.2014

Int.Class C12Q 1/68 **Appl.No** PCT/EP2013/071793 **Applicant** ENTEROME **Inventor** PICHAUD, Matthieu

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis).These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.

68. **3796/DELNP/2015** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER IN - 02.10.2015

Int.Class C12Q 1/68 **Appl.No** 3796/DELNP/2015 **Applicant** ENTEROME **Inventor** PICHAUD Matthieu

This invention is related to the area of characterization of inflammation in relation with the gut microbiota in metabolic and autoimmune disorders. In particular it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases such as liver related metabolic disorders in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders in particular inflammatory bowel diseases (Crohn"s and Ulcerative Colitis). These gene signatures can therefore be used as a means of diagnosis prognosis stratification for drug studies for monitoring patient and for assigning an appropriate treatment.

69. **110022894** IMMUNOGENIC COMPOUNDS FOR CANCER THERAPY CN - 16.07.2019

Int.Class A61K 39/00 **Appl.No** 201780074779.3 **Applicant** ENTEROME **Inventor** CHENE LAURENT

The invention relates to an immunogenic compound comprising an antigenic peptide having amino acid similarity with a tumor antigen, which antigenic peptide is selected in the group consisting of peptides having amino acid similarity with IL13RA2, the said antigenic peptide being selected in the group consisting of sequences described in the specification.

70. **2886748** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER CA - 24.04.2014

Int.Class C12Q 1/6876 **Appl.No** 2886748 **Applicant** ENTEROME **Inventor** PICHAUD, MATTHIEU

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis).These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.

71. **2019210666** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER AU - 15.08.2019

Int.Class C12Q 1/68 **Appl.No** 2019210666 **Applicant** Enterome **Inventor** Ehrlich, Stanislav

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis).These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.

72. **238025** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER IL - 31.05.2015

Int.Class C12Q 01/68 **Appl.No** 238025 **Applicant** INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE **Inventor**

73. **WO/2021/148661** COMPOSITIONS FOR TREATING EPITHELIAL BARRIER FUNCTION DISORDERS WO - 29.07.2021

Int.Class C07K 14/195 **Appl.No** PCT/EP2021/051535 **Applicant** ENTEROME **Inventor** NEPELSKA, Malgorzata

The present disclosure relates to novel pharmaceutical compositions comprising recombinantly engineered probiotic bacteria that can be used, inter alia, in the treatment of gastrointestinal inflammatory diseases and epithelial barrier function disorders. The probiotic bacteria preferably contain a nucleic acid encoding the heterodimeric protein of SEQ ID NO:1 and 2, or homologous sequences thereof sharing at least 80% identity with said sequences. In some embodiments, the pharmaceutical compositions described herein have particular application in the treatment or prevention of disease states associated with abnormally permeable epithelial barriers as well as inflammatory bowel diseases or disorders.

74. **112118863** ANTIGENIC PEPTIDES FOR PREVENTION AND TREATMENT OF CANCER CN - 22.12.2020

Int.Class A61K 39/00 **Appl.No** 201980032574.8 **Applicant** ENTEROME S.A. **Inventor** CHENE LAURENT

The present invention relates to antigen-based immunotherapy, in particular cancer immunotherapy. In particular, the present invention provides antigenic peptides, which are distinct from, but have amino acid similarity to, fragments of human tumor antigens. The present invention further provides immunogenic compounds, nanoparticles, cells and pharmaceutical compositions comprising such antigenicpeptides and nucleic acids encoding such antigenic peptides.

75. **3331893** MANNOSE DERIVATIVES USEFUL FOR TREATING PATHOLOGIES ASSOCIATED WITH ADHERENT E. COLI EP - 13.06.2018

Int.Class C07D 309/10 **Appl.No** 16750780 **Applicant** ENTEROME **Inventor** GOUIN SÉBASTIEN

The present invention relates to mannose derivatives of formula (I): wherein R1 represents H, CO-(C1-C6)-alkyl or CO-alkylaryl, Y represents a single bond, CH2, O, NR3, S, A represents O, NH or S, X represents H and X' represents OH or X and X' taken together with the carbon atom bearing them form a CO group, R2 represents H, a linear or branched (C1-C6)-alkyl or CF3, R3 represents H, a C1-C6 alkyl, a CO-(C1-C6)-alkyl, CF3 or COCF3, and R is as described in claim 1. The mannose derivatives of formulae (I) are useful for treating pathologies associated with the presence of adherent Escherichia coli (AEC), in particular inflammatory bowel diseases (IBD), such as Crohn's disease and ulcerative colitis; a urinary tract infection, in particular painful bladder syndrome and cystitis, more particularly interstitial cystitis; irritable bowel syndrome; metabolic diseases such as metabolic obesity, diabetes, hypercholesterolemia; autoimmune inflammatory diseases; and colorectal cancer, in particular colon cancer.

76. **111201032** MICROBIOTA SEQUENCE VARIANTS OF TUMOR-RELATED ANTIGENIC EPITOPES CN - 26.05.2020

Int.Class A61K 39/00 **Appl.No** 201880065726.X **Applicant** ENTEROME S A **Inventor** CHENE LAURENT

The present invention relates to cancer immunotherapy, in particular to sequence variants of tumor-related antigenic epitope sequences. Namely, the present invention provides a method for identification of microbiota sequence variants of tumor-related antigenic epitope sequences. Such microbiota sequence variants are useful for the preparation of anticancer medicaments, since they differ from self-antigens and, thus, they may elicit a strong immune response. Accordingly, medicaments comprising microbiota sequence variants, methods of preparing such medicaments and uses of such medicaments areprovided.

77. **112771035** PROCESS FOR PREPARING MANNOSE DERIVATIVES CN - 07.05.2021

Int.Class C07D 405/14 **Appl.No** 201980063090.X **Applicant** ENTEROME **Inventor** AREFYEV DENIS VIKTOROVICH

The invention relates to a process to prepare a compound of the following formula (I): (I), in which P represents a protective group of a hydroxyl function which is a -COR1 group with R1 representing an aryl or a (C1-C6)alkyl, R represents a hydrogen atom or a protective group of a terminal alkyne, from mannose, comprising the following steps: (a) protecting the 5 hydroxyl groups of the mannose by a protective group P; (b) coupling the protected mannose obtained at step (a) with a compound of the following formula (II). The present invention also relates to a compound of formula (IIIa).

78. **2013333882** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER AU - 07.05.2015

Int.Class C12Q 1/68 **Appl.No** 2013333882 **Applicant** Enterome **Inventor**

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis).These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.

79. **707035** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER NZ - 30.11.2018

Int.Class C12Q 1/68 **Appl.No** 707035 **Applicant** INSTITUT NATIONAL DE RECHERCHE POUR L'AGRICULTURE, L'ALIMENTATION ET L'ENVIRONNEMENT **Inventor** PICHAUD, Matthieu

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis).These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.

80. **2909334** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER AND TO CROHN'S DISEASE EP - 26.08.2015

Int.Class C12Q 1/68 **Appl.No** 13779214 **Applicant** ENTEROME **Inventor** PICHAUD MATTHIEU

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis).These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.

81. **2909334** GENSIGNATURER AF INFLAMMATORISKE LIDELSER, SOM ER RELATERET TIL LEVEREN OG CROHNS SYGDOM DK - 28.09.2020

Int.Class C12Q 1/68 **Appl.No** 13779214 **Applicant** Enterome **Inventor** RIMBAUD, Pierre

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis).These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.

82. **2821383** FIRMAS GENÉTICAS DE TRASTORNOS INFLAMATORIOS RELACIONADOS CON EL HÍGADO Y LA ENFERMEDAD DE CROHN ES - 26.04.2021

Int.Class C12Q 1/68 **Appl.No** 13779214 **Applicant** Enterome **Inventor** PICHAUD, Matthieu

Método para el diagnóstico y/o pronóstico in vitro de esteatosis benigna, esteatohepatitis, fibrosis hepática NASH, o enfermedad de Crohn en un sujeto, que comprende las etapas siguientes: a) determinar a partir de una muestra biológica de dicho sujeto la abundancia relativa de por lo menos uno o dos genes bacterianos cuyas secuencias se seleccionan en el grupo que consiste en: SEC ID Nº: 1, SEC ID Nº: 6, SEC ID Nº: 11, SEC ID Nº: 16, SEC ID Nº: 21, SEC ID Nº: 26, SEC ID Nº: 31, SEC ID Nº: 36, SEC ID Nº: 41, SEC ID Nº: 46, SEC ID Nº: 51, SEC ID Nº: 56, SEC ID Nº: 61, SEC ID Nº: 66, SEC ID Nº: 71, SEC ID Nº: 76, SEC ID Nº: 81, SEC ID Nº: 86, SEC ID Nº: 96, SEC ID Nº: 101, o de por lo menos un gen covariante de los mismos, en el que los genes covariantes de la SEC ID Nº: 1 se seleccionan en el grupo que consiste en las SEC ID Nº: 2 a 5, los genes covariantes de la SEC ID Nº: 6 se seleccionan en el grupo que consiste en las SEC ID Nº: 7 a 10, los genes covariantes de la SEC ID Nº: 11 se seleccionan en el grupo que consiste en las SEC ID Nº: 12 a 15, los genes covariantes de la SEC ID Nº: 16 se seleccionan en el grupo que consiste en las SEC ID Nº: 17 a 20, los genes covariantes de la SEC ID Nº: 21 se seleccionan en el grupo que consiste en las SEC ID Nº: 22 a 25, los genes covariantes de la SEC ID Nº: 26 se seleccionan en el grupo que consiste en las SEC ID Nº: 27 a 30, los genes covariantes de la SEC ID Nº: 31 se seleccionan en el grupo que consiste en las SEC ID Nº: 32 a 35, los genes covariantes de la SEC ID Nº: 36 se seleccionan en el grupo que consiste en las SEC ID Nº: 37 a 40, los genes covariantes de la SEC ID Nº: 41 se seleccionan en el grupo que consiste en las SEC ID Nº: 42 a 45, los genes covariantes de la SEC ID Nº: 46 se seleccionan en el grupo que consiste en las SEC ID Nº: 47 a 50, los genes covariantes de la SEC ID Nº: 51 se seleccionan en el grupo que consiste en las SEC ID Nº: 52 a 55, los genes covariantes de la SEC ID Nº: 56 se seleccionan en el grupo que consiste en las SEC ID Nº: 57 a 60, los genes covariantes de la SEC ID Nº: 61 se seleccionan en el grupo que consiste en las SEC ID Nº: 62 a 65, los genes covariantes de la SEC ID Nº: 66 se seleccionan en el grupo que consiste en las SEC ID Nº: 67 a 70, los genes covariantes de la SEC ID Nº: 71 se seleccionan en el grupo que consiste en las SEC ID Nº: 72 a 75, los genes covariantes de la SEC ID Nº: 76 se seleccionan en el grupo que consiste en las SEC ID Nº: 77 a 80, los genes covariantes de la SEC ID Nº: 81 se seleccionan en el grupo que consiste en las SEC ID Nº: 82 a 85, los genes covariantes de la SEC ID Nº: 86 se seleccionan en el grupo que consiste en las SEC ID Nº: 87 a 90, los genes covariantes de la SEC ID Nº: 91 se seleccionan en el grupo que consiste en las SEC ID Nº: 92 a 95, los genes covariantes de la SEC ID Nº: 96 se seleccionan en el grupo que consiste en las SEC ID Nº: 97 a 100, los genes covariantes de la SEC ID Nº: 101 se seleccionan en el grupo que consiste en las SEC ID Nº: 102 a 105, b) comparar dicha abundancia relativa con por lo menos una firma de referencia, correspondiendo dicha firma de referencia a la abundancia relativa de los mismos genes bacterianos, que se determinó en muestras de referencia, c) diagnosticar a partir de dicha comparación que dicho sujeto presenta esteatosis benigna, esteatohepatitis, o una enfermedad de Crohn en un estado estable o inestable.

83. **20180235991** MANNOSE DERIVATIVES USEFUL FOR TREATING PATHOLOGIES ASSOCIATED WITH ADHERENT *E. COLI* US - 23.08.2018

Int.Class A61K 31/7056 **Appl.No** 15750471 **Applicant** ENTEROME **Inventor** Sebastien Gouin

The present invention relates to mannose derivatives of formula (I):

wherein

- ○ R_1 represents H, CO—(C_1-C_6)-alkyl or CO-alkylaryl,

- Y represents a single bond, CH_2, O, NR_3, S,
- A represents O, NH or S,
- X represents H and X′ represents OH or X and X′ taken together with the carbon atom bearing them form a CO group,
- R_2 represents H, a linear or branched (C_1-C_6)-alkyl or CF_3,
- R_3 represents H, a C_1-C_6 alkyl, a CO—(C_1-C_6)-alkyl, CF_3 or $COCF_3$, and
- R is as described in claim **1.**

The mannose derivatives of formulae (I) are useful for treating pathologies associated with the presence of adherent *Escherichia coli* (AEC), in particular inflammatory bowel diseases (IBD), such as Crohn's disease and ulcerative colitis; a urinary tract infection, in particular painful bladder syndrome and cystitis, more particularly interstitial cystitis; irritable bowel syndrome; metabolic diseases such as metabolic obesity, diabetes, hypercholesterolemia; autoimmune inflammatory diseases; and colorectal cancer, in particular colon cancer.

84. **WO/2017/021549** MANNOSE DERIVATIVES USEFUL FOR TREATING PATHOLOGIES ASSOCIATED WITH ADHERENT E. COLI WO - 09.02.2017

Int.Class C07H 7/06 **Appl.No** PCT/EP2016/068813 **Applicant** ENTEROME **Inventor** GOUIN, Sébastien

The present invention relates to mannose derivatives of formula (I): wherein R1 represents H, CO-(C1-C6)-alkyl or CO-alkylaryl, Y represents a single bond, CH2, O, NR3, S, A represents O, NH or S, X represents H and X' represents OH or X and X' taken together with the carbon atom bearing them form a CO group, R2 represents H, a linear or branched (C1-C6)-alkyl or CF3, R3 represents H, a C1-C6 alkyl, a CO-(C1-C6)-alkyl, CF3 or COCF3, and R is as described in claim 1. The mannose derivatives of formulae (I) are useful for treating pathologies associated with the presence of adherent Escherichia coli (AEC), in particular inflammatory bowel diseases (IBD), such as Crohn's disease and ulcerative colitis; a urinary tract infection, in particular painful bladder syndrome and cystitis, more particularly interstitial cystitis; irritable bowel syndrome; metabolic diseases such as metabolic obesity, diabetes, hypercholesterolemia; autoimmune inflammatory diseases; and colorectal cancer, in particular colon cancer.

85. **2994778** MANNOSE DERIVATIVES USEFUL FOR TREATING PATHOLOGIES ASSOCIATED WITH ADHERENT E. COLI CA - 09.02.2017

Int.Class C07H 7/06 **Appl.No** 2994778 **Applicant** ENTEROME **Inventor** GOUIN, SEBASTIEN

The present invention relates to mannose derivatives of formula (I): wherein R1 represents H, CO-(C1-C6)-alkyl or CO-alkylaryl, Y represents a single bond, CH2, O, NR3, S, A represents O, NH or S, X represents H and X' represents OH or X and X' taken together with the carbon atom bearing them form a CO group, R2 represents H, a linear or branched (C1-C6)-alkyl or CF3, R3 represents H, a C1-C6 alkyl, a CO-(C1-C6)-alkyl, CF3 or COCF3, and R is as described in claim 1. The mannose derivatives of formulae (I) are useful for treating pathologies associated with the presence of adherent Escherichia coli (AEC), in particular inflammatory bowel diseases (IBD), such as Crohn's disease and ulcerative colitis; a urinary tract infection, in particular painful bladder syndrome and cystitis, more particularly interstitial cystitis; irritable bowel syndrome; metabolic diseases such as metabolic obesity, diabetes, hypercholesterolemia; autoimmune inflammatory diseases; and colorectal cancer, in particular colon cancer.

86. **2019092522** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER JP - 20.06.2019

Int.Class C12Q 1/6813 **Appl.No** 2019039947 **Applicant** ENTEROME **Inventor** MATTHIEU PICHAUD

PROBLEM TO BE SOLVED: To develop prognosis tests to assess the risk of liver related morbidity, in particular, to predict the risk of progression from benign fatty liver towards NASH and advanced liver diseases.

SOLUTION: This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis), or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis). These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification, for studying drugs, monitoring patient, and assigning an appropriate treatment.

SELECTED DRAWING: None

87. **20160068890** GENE SIGNATURES OF INFLAMMATORY DISORDERS THAT RELATE TO THE LIVER US - 10.03.2016

Int.Class C12Q 1/68 **Appl.No** 14435750 **Applicant** ENTEROME **Inventor** Matthieu Pichaud

This invention is related to the area of characterization of inflammation in relation with the gut microbiota, in metabolic and autoimmune disorders. In particular, it relates to the identification of gene signatures which can be used as a marker predictive of inflammation associated diseases, such as liver-related metabolic disorders, in particular to the evolution of benign steatosis towards its most severe forms (steatohepatitis and cirrhosis) or autoimmune disorders, in particular inflammatory bowel diseases (Crohn's and Ulcerative Colitis). These gene signatures can therefore be used as a means of diagnosis, prognosis, stratification for drug studies, for monitoring patient and for assigning an appropriate treatment.