



## Méthodes et compositions pour protéines spike de coronavirus chimère

### Abstract

La présente invention concerne des compositions et des méthodes comprenant une protéine spike de coronavirus chimère.

### Classifications

■ **C07K14/005** Peptides having more than 20 amino acids; Gastrins; Somatostatins; Melanotropins; Derivatives thereof from viruses

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WO2015143335A1

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**Other languages:** [English](#)

**Inventor:** [Ralph BARIC](#), [Sudhakar AGNIHOTHRAM](#), [Boyd Yount](#)

### Worldwide applications

2015 [WO](#) [US](#)

**Application PCT/US2015/021773 events** ⓘ

2014-03-20 Priority to US201461968279P

2014-03-20 Priority to US61/968,279

2015-03-20 Application filed by The University Of North Carolina At Chapel Hill

2015-09-24 Publication of WO2015143335A1

**Info:** [Patent citations \(9\)](#), [Non-patent citations \(1\)](#), [Cited by \(19\)](#), [Legal events](#), [Similar documents](#), [Priority and Related Applications](#)

**External links:** [Espacenet](#), [Global Dossier](#), [PatentScope](#), [Discuss](#)

### Patent Citations (9)

Publication number	Priority date	Publication date	Assignee	Title
<a href="#">WO1993023422A1</a> *	1992-05-08	1993-11-25	Smithkline Beecham Corporation	Compositions et procedes de vaccination contre les coronavirus
<a href="#">WO2005002500A2</a> *	2003-04-14	2005-01-13	Merck & Co., Inc.	Inhibiteurs de coronavirus
<a href="#">WO2005081716A2</a> *	2003-11-24	2005-09-09	The Johns Hopkins University	Vaccins adn ciblant des antigenes du coronavirus du syndrome respiratoire aigu severe (sars-cov)
Family To Family Citations				
<a href="#">FR1601438A</a>	1968-10-17	1970-08-24		
<a href="#">US4474893A</a>	1981-07-01	1984-10-02	The University of Texas System Cancer Center	Recombinant monoclonal antibodies
<a href="#">US4816567A</a>	1983-04-08	1989-03-28	Genentech, Inc.	Recombinant immunoglobulin preparations
<a href="#">US5879881A</a>	1985-04-04	1999-03-09	Hybritech, Incorporated	Solid phase system for use in ligand-receptor assays
<a href="#">US4676980A</a>	1985-09-23	1987-06-30	The United States Of America As Represented By The Secretary Of The Department Of Health And Human Services	Target specific cross-linked heteroantibodies
<a href="#">US7291477B2</a>	2001-07-03	2007-11-06	Xenotope Diagnostics, Inc.	Method and device for trichomonas detection

\* Cited by examiner, † Cited by third party

### Non-Patent Citations (1)

Title
AGNIHOTHRAM S ET AL.: "Evaluation of serologic and antigenic relationships between middle eastern respiratory syndrome coronavirus and other coronaviruses to develop vaccine platforms for the rapid response to emerging coronaviruses", J INFECT DIS., vol. 209, no. 7, 18 November 2013 (2013-11-18), pages 995 - 1006, XP055227760, [retrieved on 20140401] *

\* Cited by examiner, † Cited by third party

### Cited By (19)

Publication number	Priority date	Publication date	Assignee	Title
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Publication number	Priority date	Publication date	Assignee	Title
<a href="#">CN106905434A</a> *	2017-02-28	2017-06-30	国药中生生物技术研究院有限公司	一种包含蹄蝠肝炎病毒核心蛋白的重组融合蛋白及其制备方法和应用
<a href="#">WO2018094241A1</a> *	2016-11-18	2018-05-24	New York Blood Center, Inc.	Composition immunogène pour l'infection par le coronavirus mers
Family To Family Citations				
<a href="#">US9458450B2</a>	2012-03-15	2016-10-04	Flodesign Sonics, Inc.	Acoustophoretic separation technology using multi-dimensional standing waves
<a href="#">US10322949B2</a>	2012-03-15	2019-06-18	Flodesign Sonics, Inc.	Transducer and reflector configurations for an acoustophoretic device
<a href="#">US10704021B2</a>	2012-03-15	2020-07-07	Flodesign Sonics, Inc.	Acoustic perfusion devices
<a href="#">US9950282B2</a>	2012-03-15	2018-04-24	Flodesign Sonics, Inc.	Electronic configuration and control for acoustic standing wave generation
<a href="#">US10967298B2</a>	2012-03-15	2021-04-06	Flodesign Sonics, Inc.	Driver and control for variable impedance load
<a href="#">US9745548B2</a>	2012-03-15	2017-08-29	Flodesign Sonics, Inc.	Acoustic perfusion devices
<a href="#">US10689609B2</a>	2012-03-15	2020-06-23	Flodesign Sonics, Inc.	Acoustic bioreactor processes
<a href="#">US9745569B2</a>	2013-09-13	2017-08-29	Flodesign Sonics, Inc.	System for generating high concentration factors for low cell density suspensions
<a href="#">US9752113B2</a>	2012-03-15	2017-09-05	Flodesign Sonics, Inc.	Acoustic perfusion devices
<a href="#">US10737953B2</a>	2012-04-20	2020-08-11	Flodesign Sonics, Inc.	Acoustophoretic method for use in bioreactors
<a href="#">WO2015105955A1</a>	2014-01-08	2015-07-16	Flodesign Sonics, Inc.	Dispositif d'acoustophorèse avec double chambre acoustophorétique
<a href="#">US9744483B2</a>	2014-07-02	2017-08-29	Flodesign Sonics, Inc.	Large scale acoustic separation device
<a href="#">WO2019118921A1</a>	2017-12-14	2019-06-20	Flodesign Sonics, Inc.	Circuit d'excitation et circuit de commande de transducteur acoustique
<a href="#">US10849972B2</a>	2018-11-27	2020-12-01	King Abdulaziz University	Trimeric S1-CD40L fusion protein vaccine against Middle East respiratory syndrome-coronavirus
<a href="#">WO2021045836A1</a> *	2020-04-02	2021-03-11	Regeneron Pharmaceuticals, Inc.	Anticorps anti-glycoprotéine spike du sars-cov 2 et fragments de liaison à l'antigène de ceux-ci
<a href="#">GB202004974D0</a> *	2020-04-03	2020-05-20	Treos Bio Ltd	Coronavirus vaccine
<a href="#">RU2723008C9</a> *	2020-05-19	2021-02-09	федеральное государственное бюджетное учреждение «Национальный исследовательский центр эпидемиологии и микробиологии имени почетного академика Н.Ф. Гамалеи» Министерства здравоохранения Российской Федерации	Способ получения штамма клеток яичника китайского хомячка, продуцента рекомбинантного белка RBD вируса SARS-CoV-2, штамм клеток яичника китайского хомячка, продуцент рекомбинантного белка RBD вируса SARS-CoV-2, способ получения рекомбинантного белка RBD вируса SARS-CoV-2, тест-система для иммуноферментного анализа сыворотки или плазмы крови человека и ее применение

\* Cited by examiner, † Cited by third party, ‡ Family to family citation

### Similar Documents

Publication	Publication Date	Title
<a href="#">Parren et al.</a>	2001	The antiviral activity of antibodies in vitro and in vivo
<a href="#">Casais et al.</a>	2003	Recombinant avian infectious bronchitis virus expressing a heterologous spike gene demonstrates that the spike protein is a determinant of cell tropism
<a href="#">Sánchez et al.</a>	1990	Antigenic homology among coronaviruses related to transmissible gastroenteritis virus
<a href="#">He et al.</a>	2004	Receptor-binding domain of SARS-CoV spike protein induces highly potent neutralizing antibodies: implication for developing subunit vaccine
<a href="#">Du et al.</a>	2007	Receptor-binding domain of SARS-CoV spike protein induces long-term protective immunity in an animal model
<a href="#">Schnitzler et al.</a>	1993	The genetic basis for the antigenicity of the VP2 protein of the infectious bursal disease virus
<a href="#">Tresnan et al.</a>	1996	Feline aminopeptidase N serves as a receptor for feline, canine, porcine, and human coronaviruses in serogroup I.
<a href="#">Sánchez et al.</a>	1992	Genetic evolution and tropism of transmissible gastroenteritis coronaviruses
<a href="#">Jiménez et al.</a>	1986	Critical epitopes in transmissible gastroenteritis virus neutralization.
<a href="#">Guirakhoo et al.</a>	1992	The Murray Valley encephalitis virus prM protein confers acid resistance to virus particles and alters the expression of epitopes within the R2 domain of E glycoprotein

Publication	Publication Date	Title
<a href="#">Laurent et al.</a>	1994	Recombinant rabbit hemorrhagic disease virus capsid protein expressed in baculovirus self-assembles into viruslike particles and induces protection.
<a href="#">Olsen et al.</a>	1992	Monoclonal antibodies to the spike protein of feline infectious peritonitis virus mediate antibody-dependent enhancement of infection of feline macrophages.
<a href="#">ES2337901T3</a>	2010-04-30	Vacuna de subunidad contra infeccion por el virus respiratorio sincicial.
<a href="#">Yang et al.</a>	2000	Characterization of stable, soluble trimers containing complete ectodomains of human immunodeficiency virus type 1 envelope glycoproteins
<a href="#">DK175500B1</a>	2004-11-15	Sammensætning til beskyttelse af et dyr eller et menneske mod en infektion fremkaldt af et respiratorisk syncytialt virus samt underenhedsvaccineformulering
<a href="#">US6875433B2</a>	2005-04-05	Monoclonal antibodies and complementarity-determining regions binding to Ebola glycoprotein
<a href="#">Wertz et al.</a>	1987	Expression of the fusion protein of human respiratory syncytial virus from recombinant vaccinia virus vectors and protection of vaccinated mice.
<a href="#">Wang et al.</a>	2020	Subunit vaccines against emerging pathogenic human coronaviruses
<a href="#">García et al.</a>	1994	Evolutionary pattern of human respiratory syncytial virus (subgroup A): cocirculating lineages and correlation of genetic and antigenic changes in the G glycoprotein.
<a href="#">US6022864A</a>	2000-02-08	Nucleic acid respiratory syncytial virus vaccines
<a href="#">RU2148587C1</a>	2000-05-10	Полипептид и способ его получения, реагент для иммуноанализа, способ определения присутствия антител и способ индукции иммунного ответа
<a href="#">Bastardo et al.</a>	1981	Preparation and characterization of antisera to electrophoretically purified SA11 virus polypeptides.
<a href="#">Delmas et al.</a>	1986	Antigenic structure of transmissible gastroenteritis virus. II. Domains in the peplomer glycoprotein
<a href="#">TWI232108B</a>	2005-05-11	Synthetic peptide vaccines for foot-and-mouth disease
<a href="#">Duarte et al.</a>	1994	Sequence analysis of the porcine epidemic diarrhea virus genome between the nucleocapsid and spike protein genes reveals a polymorphic ORF

**Priority And Related Applications**

**Priority Applications (2)**

Application	Priority date	Filing date	Title
US201461968279P	2014-03-20	2014-03-20	<i>US Provisional Application</i>
US61/968,279		2014-03-20	

**Applications Claiming Priority (1)**

Application	Filing date	Title
<a href="#">US15/124,992</a>	2015-03-20	Methods and compositions for chimeric coronavirus spike proteins



**Legal Events**

Date	Code	Title	Description
2015-11-11	121	Ep: the epo has been informed by wipo that ep was designated in this application	<b>Ref document number:</b> 15764930 <b>Country of ref document:</b> EP <b>Kind code of ref document:</b> A1
2016-09-09	WWE	Wipo information: entry into national phase	<b>Ref document number:</b> 15124992 <b>Country of ref document:</b> US
2016-09-20	NENP	Non-entry into the national phase in:	<b>Ref country code:</b> DE
2017-04-12	122	Ep: pct application non-entry in european phase	<b>Ref document number:</b> 15764930 <b>Country of ref document:</b> EP <b>Kind code of ref document:</b> A1

**Concepts**

machine-extracted

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Name	Image	Sections	Count	Query match
● Coronavirus Spike Glycoprotein		title,claims,abstract,description	168	0.000
● chimera		title,claims,abstract,description	152	0.000
● mixtures		title,claims,abstract,description	98	0.000
● Coronaviridae		claims,description	278	0.000
● antibodies		claims,description	102	0.000
● antibodies		claims,description	102	0.000
● nucleic acids		claims,description	62	0.000
● antigens		claims,description	57	0.000
● antigens		claims,description	57	0.000
● antigens		claims,description	57	0.000
● SARS coronavirus		claims,description	55	0.000
● Viruses		claims,description	42	0.000
● Middle East respiratory syndrome-related coronavirus		claims,description	40	0.000
● Corona virus infection		claims,description	38	0.000
● S6		claims,description	30	0.000
● immune response		claims,description	29	0.000
● particles		claims,description	28	0.000
● proteins and genes		claims,description	25	0.000
● proteins and genes		claims,description	25	0.000
● diseases		claims,description	24	0.000
● diseases by infectious agent		claims,description	23	0.000
● binding		claims,description	18	0.000
● severe acute respiratory syndrome		claims,description	16	0.000
● drug carriers		claims,description	15	0.000
● primary amino group		claims,description	14	0.000
● carboxy group		claims,description	13	0.000
● protecting		claims,description	13	0.000
● receptors		claims,description	11	0.000
● receptors		claims,description	11	0.000
● effects		claims,description	10	0.000
● biosynthetic process		claims,description	9	0.000
● formation reactions		claims,description	9	0.000
● Bat coronavirus		claims,description	8	0.000
● VRP		claims,description	8	0.000
● fusion proteins		claims,description	6	0.000
● fusion proteins		claims,description	6	0.000
● alpha amino acid group		claims,description	4	0.000
● mvp1		claims,description	3	0.000

Name	Image	Sections	Count	Query match
● Betacoronavirus		claims,description	2	0.000
● Encephalitis venezuelan equine		claims,description	2	0.000
● GCA		claims,description	2	0.000
● Human betacoronavirus 2c EMC/2012		claims,description	2	0.000
● Human betacoronavirus 2c Jordan-N3/2012		claims,description	2	0.000
● MTRX		claims,description	2	0.000
● Neoromicia		claims,description	2	0.000
● Pipistrellus		claims,description	2	0.000
● Pipistrellus bat coronavirus HKU5		claims,description	2	0.000
● Segment-8		claims,description	2	0.000
● Tylonycteris bat coronavirus HKU4		claims,description	2	0.000
● Venezuelan Equine Encephalomyelitis		claims,description	2	0.000
● Venezuelan equine encephalitis		claims,description	2	0.000
● Bat coronavirus Rhhar/CIL_KSA_002/Bisha/Saudi Arabia/2013		claims	1	0.000
● Bat coronavirus Rhhar/CIL_KSA_003/Bisha/Saudi Arabia/2013		claims	1	0.000
● Protein S		claims	1	0.000

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