

Study Finds Genetic Material Patented by Moderna Pre-Pandemic in COVID Spike Protein



The lab leak theory as the origin of COVID became even more plausible when scientists on Thursday [announced](#) they had found genetic material owned by Moderna in the virus' spike protein.

A team of scientists [identified](#) a 19-nucleotide-long RNA sequence found in the virus's furin cleavage site matching a 19-nucleotide sequence in a genetic segment owned and patented by Moderna in February 2016 – four years before the pandemic began. The research was published on Feb. 21, in [Frontiers in Virology](#).

The furin cleavage site is the part of the virus that makes it so good at infecting people and distinguishes it from other coronaviruses. It's the furin cleave site that have led some scientists to believe the virus could not have been acquired naturally.

According to [BioSpace](#), SARS-CoV-2 is the only coronavirus that carries 12 unique amino acids that can be activated by a protease enzyme called furin. The furin cleave site on the virus' spike protein can bind to human cells to enter those cells, so researchers sometimes add a furin site to viruses in virology labs to make them more infectious.

There are 30,000 letters of genetic code, known as RNA. SARS-CoV-2 shares a sequence of 19 specific letters with a genetic section owned by Moderna – who has made billions from their COVID vaccine. Twelve of the shared letters make up the structure of COVID's furin cleavage site.

The researchers said there is a one-in-three trillion chance the sequence, patented by Moderna, just randomly appeared naturally through evolution.

According to documents, Moderna [filed its patent](#) in Feb. 2016 and it was approved on March 7, 2017. The patented sequence is part of a gene called MSH3 known to influence how damaged cells repair themselves in the body.



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(12) United States Patent
Bancel et al.**(10) Patent No.: US 9,587,003 B2**
(45) Date of Patent: Mar. 7, 2017**(54) MODIFIED POLYNUCLEOTIDES FOR THE PRODUCTION OF ONCOLOGY-RELATED PROTEINS AND PEPTIDES****(71) Applicant: Moderna Therapeutics, Inc.,**
Cambridge, MA (US)**(72) Inventors: Stephane Bancel**, Cambridge, MA (US); **Tirtha Chakraborty**, Medford, MA (US); **Antonin de Fougerolles**, Waterloo (BE); **Sayda M. Elbashir**, Cambridge, MA (US); **Matthias John**, Cambridge, MA (US); **Atanu Roy**, Stoneham, MA (US); **Susan Whoriskey**, Belmont, MA (US); **Kristy M. Wood**, Wellesley, MA (US); **Paul Hatala**, Charlestown, MA (US); **Jason P. Schrum**, Philadelphia, PA (US); **Kenechi Ejebe**, New York, NY (US); **Jeff Lynn Ellsworth**, Lexington, MA (US); **Justin Guild**, Framingham, MA (US)**(73) Assignee: ModernaTX, Inc.,** Cambridge, MA (US)**(*) Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.**(21) Appl. No.: 15/015,684****(22) Filed: Feb. 4, 2016****(65) Prior Publication Data**

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Related U.S. Application Data**(63)** Continuation of application No. 14/106,988, filed on Dec. 16, 2013, now Pat. No. 9,301,993, which is a continuation of application No. PCT/US2013/030070, filed on Mar. 9, 2013.**(60)** Provisional application No. 61/681,742, filed on Aug. 10, 2012, provisional application No. 61/737,224, filed on Dec. 14, 2012, provisional application No. 61/618,862, filed on Apr. 2, 2012, provisional application No. 61/681,645, filed on Aug. 10, 2012, provisional application No. 61/737,130, filed on Dec. 14, 2012, provisional application No. 61/618,866, filed on Apr. 2, 2012, provisional application No. 61/681,647, filed on Aug. 10, 2012, provisional application No. 61/737,134, filed on Dec. 14, 2012, provisional application No. 61/618,868, filed on Apr. 2, 2012, provisional application No. 61/681,648, filed on Aug. 10, 2012, provisional application No. 61/737,135, filed on Dec. 14, 2012, provisional application No. 61/618,870, filed on Apr. 2, 2012, provisional application No. 61/681,648, filed on Aug. 10, 2012, provisional application No. 61/737,139, filed on Dec. 14, 2012, provisional application No.61/618,873, filed on Apr. 2, 2012, provisional application No. 61/681,650, filed on Aug. 10, 2012, provisional application No. 61/737,147, filed on Dec. 14, 2012, provisional application No. 61/618,878, filed on Apr. 2, 2012, provisional application No. 61/681,654, filed on Aug. 10, 2012, provisional application No. 61/737,152, filed on Dec. 14, 2012, provisional application No. 61/618,885, filed on Apr. 2, 2012, provisional application No. 61/681,658, filed on Aug. 10, 2012, provisional application No. 61/737,155, filed on Dec. 14, 2012, provisional application No. 61/618,896, filed on Apr. 2, 2012, provisional application No. 61/668,157, filed on Jul. 5, 2012, provisional application No. 61/681,661, filed on Aug. 10, 2012, provisional application No. 61/737,160, filed on Dec. 14, 2012, provisional application No. 61/618,911, filed on Apr. 2, 2012, provisional application No. 61/681,667, filed on Aug. 10, 2012, provisional application No. 61/737,168, filed on Dec. 14, 2012, provisional application No. 61/618,922, filed on Apr. 2, 2012, provisional application No. 61/681,675, filed on Aug. 10, 2012, provisional application No. 61/737,174, filed on Dec. 14, 2012, provisional application No. 61/618,935, filed on Apr. 2, 2012, provisional application No. 61/681,687, filed on Aug. 10, 2012, provisional
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None
See application file for complete search history.**(56) References Cited**

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(74) Attorney, Agent, or Firm — Clark & Elbing LLP**(57) ABSTRACT**

The invention relates to compositions and methods for the preparation, manufacture and therapeutic use of oncology-related polynucleotides, oncology-related primary transcripts and oncology-related mmRNA molecules.

19 Claims, 4 Drawing Sheets

Scientists in the study said the matching code could have been introduced to the COVID genome through infected human cells expressing the MSH3 gene. Other [scientists](#) say it's a coincidence.

President Donald Trump [suggested](#) from the beginning that SARS-CoV-2 escaped from the Wuhan Institute Virology, but his opinion was quickly dismissed by the mainstream media and U.S. public health officials, including Dr. Anthony Fauci. However, leaked Fauci emails showed top scientists in the UK and U.S. had concerns about the “official” narrative that SARS-CoV-2 came from a market in Wuhan.

Sir Jeremy Farrar, a British expert, publicly denounced the lab-leak theory as a ‘conspiracy’, yet admitted in a private email in February 2020 that a ‘likely explanation’ was that the virus was man-made. The narrative was suppressed as U.S. officials warned debate about the origins could damage ‘international harmony.’