

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 January 2022 (06.01.2022)



(10) International Publication Number
WO 2022/003719 A2

(51) International Patent Classification:

A61K 39/12 (2006.01) C07K 19/00 (2006.01)
A61K 39/215 (2006.01) A61P 31/14 (2006.01)
A61P 11/00 (2006.01)

(21) International Application Number:

PCT/IN2021/050631

(22) International Filing Date:

29 June 2021 (29.06.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

202041028428 03 July 2020 (03.07.2020) IN

(71) Applicants: **INDIAN INSTITUTE OF SCIENCE** [IN/IN]; INDIAN INSTITUTE OF SCIENCE, KARNATAKA, BANGALORE 560012 (IN). **MYNVAX PRIVATE LIMITED** [IN/IN]; 399, 17th MAIN ROAD, 4th T BLOCK, JAYANAGAR, 560041, BANGALORE (IN).

(72) Inventors: **VARADARAJAN, Raghavan**; Indian Institute of Science, Karnataka, Bangalore 560012 (IN). **MALLADI, Sameer Kumar**; Indian Institute of Science, Karnataka, Bangalore 560012 (IN). **AHMED, Shabbaz**; Indian Institute of Science, Karnataka, Bangalore 560012 (IN). **PANDEY, Suman**; Flat 706, Tower 16 Shriram Sameeksha Society, Naidu Layout, Kuvempu Nagar, Jalahalli East, Bangalore 560 015 (IN). **SINGH, Randhir**; HN193, GF, 6th Main Road, Canara Bank Layout, Vidyaranyapura Post, Bangalore 560 097 (IN).

(74) Agent: **LAKSHMIKUMARAN, Malathi** et al.; B6/10, Safdarjung Enclave, New Delhi 110029 (IN).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— without international search report and to be republished upon receipt of that report (Rule 48.2(g))
— in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE



WO 2022/003719 A2

(54) Title: POLYPEPTIDE FRAGMENTS, IMMUNOGENIC COMPOSITION AGAINST SARS-CoV-2, AND IMPLEMENTATIONS THEREOF

(57) Abstract: The present disclosure discloses the polypeptide fragment having an amino acid sequence with at least 95% identity to the amino acid sequence selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 4, and SEQ ID NO: 6. The present disclosure also discloses nucleic acid fragment encoding the polypeptide fragment as described herein. Moreover, the present disclosure also discloses recombinant construct, recombinant vector and recombinant host cells. Also disclosed herein is an immunogenic composition comprising the polypeptide fragment as described herein, and a method for preparing the said immunogenic composition. The immunogenic composition is in form of vaccine. The polypeptide fragment and/or immunogenic composition is capable of eliciting protection against severe acute respiratory syndrome coronavirus 2. A kit comprising the polypeptide, or the immunogenic composition as described herein is also disclosed.