

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

(19) World Intellectual Property  
Organization

International Bureau

(43) International Publication Date  
17 November 2022 (17.11.2022)



(10) International Publication Number  
**WO 2022/238585 A1**

(51) International Patent Classification:

A61K 39/12 (2006.01) C07K 14/165 (2006.01)

(21) International Application Number:

PCT/EP2022/063214

(22) International Filing Date:

16 May 2022 (16.05.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

21173941.2 14 May 2021 (14.05.2021) EP

(71) Applicant: **DOMPE' FARMACEUTICI SPA** [IT/IT];  
VIA SANTA LUCIA 6, 20121 MILANO (IT).

(72) Inventors: **ALLEGRETTI, Marcello**; C/O DOMPE' FARMACEUTICI SPA, Via Campo di Pile, snc, 67100 L'Aquila (IT). **CIMINI, Annamaria**; 67019 L'Aquila (IT). **BECCARI, Andrea Rosario**; Via Tommaso De Amicis, 95, 80131 Napoli NA (IT). **TALARICO, Carmine**; Via Tommaso De Amicis, 95, 80131 Napoli NA (IT). **MAURI, Elisabetta Maria Ester**; C/O DOMPE' FARMACEUTICI SPA, VIA SANTA LUCIA 6, 20121 MILANO (IT). **CATTANI, Franca**; Via Campo di Pile, 67100 L'Aquila (IT).

(74) Agent: **MAURI, Elisabetta Maria Ester**; C/O DOMPE' FARMACEUTICI SPA, VIA SANTA LUCIA 6, 20121 MILANO (IT).

(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, IQ, IR, IS, IT, JM, 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).

(54) Title: NOVEL PROTEIN AND NUCLEIC ACID SEQUENCES FOR COVID-19 VACCINES

(57) Abstract: The present invention relates to a mutated SARS-CoV-2 spike protein, a variant or fragment thereof or an mRNA or DNA encoding them for use in the prevention of COVID-19.

WO 2022/238585 A1