

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 February 2020 (06.02.2020)



(10) International Publication Number
WO 2020/025724 A1

(51) International Patent Classification:

C12N 7/00 (2006.01) A61K 39/12 (2006.01)
C07K 14/005 (2006.01)

(21) International Application Number:

PCT/EP2019/070722

(22) International Filing Date:

31 July 2019 (31.07.2019)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

18186731.8 31 July 2018 (31.07.2018) EP

(71) Applicant: **IMOPHORON LTD.** [GB/GB]; Unit DX, St
Phillips Central, Albert Road, Bristol Bristol BS2 0XJ
(GB).

(72) Inventor: **GARZONI, Frédéric**; Imophoron Ltd., Unit
DX, St Phillips Central, Albert Road, Bristol Bristol BS2
0XJ (GB).

(74) Agent: **HABERMANN, HRUSCHKA & SCHNABEL**;
Montgelasstr. 2, 81679 München (DE).

(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, 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, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(54) Title: MULTIMERIZING POLYPEPTIDES DERIVED FROM JELLY ROLL FOLD DOMAIN OF ADENOVIRUS PENTON
BASE

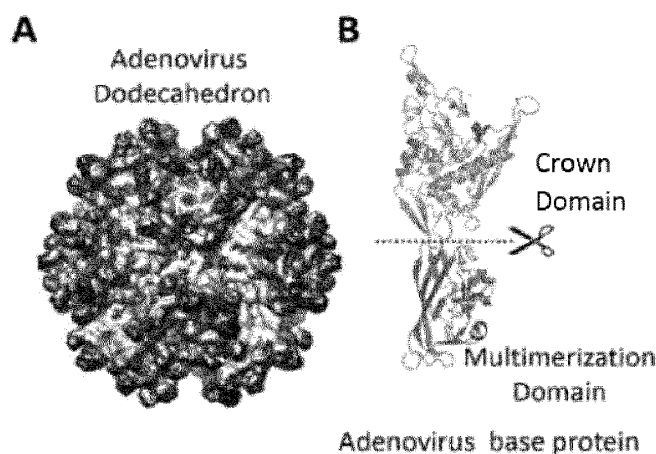


Fig. 1

(57) Abstract: The present invention relates to the design and the production of a novel polypeptide scaffolds for optimized presentation of oligopeptides, polypeptide sequences, protein domains, proteins and protein complexes made up of two, several or many subunits. These oligopeptides, polypeptide sequences, protein domains and proteins presented by the polypeptide scaffolds of the invention can include antigenic entities that stimulate the immune system to trigger an immune response, for example for vaccination purposes, or for preparing antibodies or other binder molecules in cell culture, or *in vitro* in a test tube. In a preferred embodiment, the polypeptides of the invention are assembled into Virus Like Particles (VLPs) optimized for presentation of antigens useful in the context of vaccination against infectious agents or tumors.

[Continued on next page]

WO 2020/025724 A1

(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:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*