

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 August 2020 (06.08.2020)



(10) International Publication Number
WO 2020/157288 A1

(51) International Patent Classification:

C12N 15/113 (2010.01) C12N 5/0783 (2010.01)
A61K 35/17 (2015.01)

(21) International Application Number:

PCT/EP2020/052454

(22) International Filing Date:

31 January 2020 (31.01.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

19155132.4 01 February 2019 (01.02.2019) EP

(71) Applicant: UNIVERSITÄT BASEL [CH/CH]; Vizerektorat Forschung, Petersgraben 35, 4001 BASEL (CH).

(72) Inventors: JEKER, Lukas; Aeussere Baselstrasse 75, 4125 RIEHEN (CH); DÖLZ, Marianne; Lindenstrasse 23, 4123 ALLSCHWIL (CH).

(74) Agent: PLASSERAUD IP; 66 rue de la Chaussée d'Antin, 75440 PARIS CEDEX 09 (FR).

(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, 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: CALCINEURIN INHIBITOR RESISTANT IMMUNE CELLS FOR USE IN ADOPTIVE CELL TRANSFER THERAPY

(57) Abstract: The present invention relates to immune cells in which the regulatory activity of miR-17~92 cluster or paralogs thereof is increased to confer calcineurin inhibitor resistance. In particular said immune cell is engineered to overexpress at least one mi RNA of miR-17~92 cluster or paralogs thereof or to inactivate at least one miR-17~92 cluster target gene to confer calcineurin inhibitor resistance. Particularly, the present invention relates to the use of calcineurin inhibitor-resistant immune cells in combination with calcineurin inhibitor in adoptive cell transfer therapy in a patient in need thereof.



WO 2020/157288 A1