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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
11 June 2020 (11.06.2020)

WIPO | PCT

(10) International Publication Number
WO 2020/115140 A1

(51) International Patent Classification:
*A61K 9/14* (2006.01) *A61K 31/435* (2006.01)
*A61K 9/51* (2006.01) *A61P 37/06* (2006.01)
*A61K 9/70* (2006.01)

(21) International Application Number:
PCT/EP2019/083691

(22) International Filing Date:
04 December 2019 (04.12.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10 2018 130 848.5
04 December 2018 (04.12.2018) DE

(71) Applicant: **LEON-NANODRUGS GMBH** [DE/DE]; Kopernikusstraße 9, 81679 Munich (DE).

(72) Inventors: **BEIER, Wolfgang**; Rabenkopfstr. 24 a, 81545 Munich (DE). **HORSTKOTTE, Elke**; Numbergerstr. 10, 81245 Munich (DE).

(74) Agent: **HELD, Stephan**; MEISSNER BOLTE, Widenmayerstr. 47, 80538 Munich (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, 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.

(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).

**Published:**
— *with international search report (Art. 21(3))*

WO 2020/115140 A1

(54) Title: NANOPARTICLES COMPRISING TACROLIMUS

(57) Abstract: The present invention relates to nanoparticles comprising tacrolimus,a method for providing nanoparticles comprising tacrolimus as well as to nanoparticles comprising tacrolimus that are obtainable by said method. The invention also relates to the nanoparticles comprising tacrolimus for use as a medicament. The invention further relates to a mucoadhesive buccal film containing said nanoparticles comprising tacrolimus and said mucoadhesive buccal film for use as a medicament, especially in pediatric patients.