

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
01 December 2022 (01.12.2022)



(10) International Publication Number
WO 2022/251629 A2

(51) International Patent Classification:
Not classified

(21) International Application Number:
PCT/US2022/031337

(22) International Filing Date:
27 May 2022 (27.05.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/194,073 27 May 2021 (27.05.2021) US
63/289,319 14 December 2021 (14.12.2021) US

(71) Applicant: **ALNYLAM PHARMACEUTICALS, INC.**
[US/US]; 675 West Kendall Street, Henri A. Termeer
Square, Cambridge, Massachusetts 02142 (US).

(72) Inventors: **ZUBER, Jeffrey**; c/o Alnylam Pharmaceu-
ticals, Inc., 675 West Kendall Street, Henri A. Ter-
meer Square, Cambridge, Massachusetts 02142 (US).
MCININCH, James D.; c/o Alnylam Pharmaceuticals,
Inc., 675 West Kendall Street, Henri A. Termeer Square,
Cambridge, Massachusetts 02142 (US). **SCHLEGEL,**
Mark K.; c/o Alnylam Pharmaceuticals, Inc., 675 West
Kendall Street, Henri A. Termeer Square, Cambridge,
Massachusetts 02142 (US). **CASTORENO, Adam**; c/o Al-
nylam Pharmaceuticals, Inc., 675 West Kendall Street, Hen-
ri A. Termeer Square, Cambridge, Massachusetts 02142
(US).

(74) Agent: **MEIGS, Julie Broadus et al.**; Womble Bond
Dickinson (US) LLP, PO Box 570489, Atlanta, Georgia
30357-0037 (US).

(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).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- without international search report and to be republished upon receipt of that report (Rule 48.2(g))

WO 2022/251629 A2

(54) Title: COMPOSITIONS AND METHODS FOR SILENCING CARBONIC ANHYDRASE 2 EXPRESSION

(57) Abstract: The disclosure relates to double-stranded ribonucleic acid (dsRNA) compositions targeting carbonic anhydrase 2 (CA2), and methods of using such dsRNA compositions to alter (e.g., inhibit) expression of carbonic anhydrase 2.