

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 December 2024 (26.12.2024)



(10) International Publication Number
WO 2024/261175 A1

(51) International Patent Classification:

A61K 38/55 (2006.01) A61P 11/00 (2006.01)
C12N 15/81 (2006.01)

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, ME, 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).

(21) International Application Number:

PCT/EP2024/067329

(22) International Filing Date:

20 June 2024 (20.06.2024)

Published:

— with international search report (Art. 21(3))
— with sequence listing part of description (Rule 5.2(a))

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

23181084.7 22 June 2023 (22.06.2023) EP

(71) Applicant: AATEC MEDICAL GMBH [DE/DE];
Friedenheimer Brücke 20, c/o Nutriion offices, 80639
München (DE).

(72) Inventors: JANKOWSKY, Rüdiger; Karl-Gayer-Strasse
29, 80997 München (DE). STANGL, Manfred; Wirthfeld-
weg 14, 82054 Sauerlach (DE). STRASSMAIR, Michael;
Brunnengasse 27, 85662 Hohenbrunn (DE).

(74) Agent: HERTIN UND PARTNER RECHTS- UND
PATENTANWÄLTE PARTG MBB; Kurfürstendamm
54/55, 10707 Berlin (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, CV, 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, MG, MK, MN, MU, 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, CV,
GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST,
SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ,

(54) Title: A RECOMBINANT HUMAN ALPHA-1 ANTITRYPSIN GLYCOPROTEIN FOR USE IN TREATING NON-VIRAL
INFLAMMATORY DISEASES OF THE LUNG

(57) Abstract: The invention relates to a human recombinant AAT (rhAAT) protein or fragment thereof, expressed in a genetically modified yeast, for use in the treatment and/or prevention of a non-viral disease of the lung associated with inflammation and/or a pathological immune response. In embodiments the rhAAT or fragment has one or more N-linked glycosylations, comprising at least one HexNAc1 glycosylation. In other embodiments, the rhAAT glycoprotein or fragment thereof comprises at least one Hex9HexNAc2, Hex10HexNAc2, Hex11HexNAc2, Hex12HexNAc2, Hex13HexNAc2, Hex14HexNAc2, Hex15HexNAc2 and/or Hex16HexNAc2 glycosylation. In embodiments the invention further relates to a protein preparation comprising recombinant human alpha1-antitrypsin (rhAAT) glycoproteins or fragments thereof with heterologous N-linked glycosylations. The invention further relates to a pharmaceutical composition comprising the rhAAT protein or fragment thereof or a protein preparation for use in the treatment of a non-viral disease of the lung associated with inflammation and/or a pathological immune response.



WO 2024/261175 A1