

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
07 May 2020 (07.05.2020)



(10) International Publication Number
WO 2020/088767 A1

(51) International Patent Classification:
C07B 59/00 (2006.01) A61K 51/08 (2006.01)

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).

(21) International Application Number:
PCT/EP2018/079909

Declarations under Rule 4.17:

(22) International Filing Date:
31 October 2018 (31.10.2018)

— as to non-prejudicial disclosures or exceptions to lack of
novelty (Rule 4.17(v))

(25) Filing Language: English

Published:

(26) Publication Language: English

— with international search report (Art. 21(3))

(71) Applicant: **ADVANCED ACCELERATOR APPLI-
CATIONS (ITALY) SRL** [IT/IT]; Via dell'Industria Prima
Traversa, 86077 Pozzilli (Isernia) (IT).

(72) Inventors: **FUGAZZA, Lorenza**; Corso D'Azeglio 29,
10015 Ivrea (TO) (IT). **DE PALO, Francesco**; Corso Ver-
celli 158, 10015 Ivrea (TO) (IT). **BARBATO, Donato**; Via
Bellini 11/B, 10015 Ivrea (TO) (IT). **MARIANI, Maurizio
F.**; Via Castiglia 6, 10015 Ivrea (TO) (IT). **TESORIERE,
Giovanni**; c/o Advanced Accelerator Applications (Italy)
S.R.L., Via Ribes, 5, 10010 Collettero Giacosa (TO) (IT).
BRAMBATI, Clementina; Via Oddino Morgari 3, 10125
Torino (IT).

(74) Agent: **CABINET PLASSERAUD**; 235 cours Lafayette,
69006 Lyon (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, 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,

(54) Title: METHODS FOR SYNTHESIS OF RADIONUCLIDE COMPLEX

(57) Abstract: The present disclosure relates to the synthesis of radionuclide complex solutions, in particular for their use in the commercial production of radioactive drug substances, for diagnostic and/or therapeutic purposes. In particular, the synthesis method comprises the following steps in the following order: a. providing a radionuclide precursor solution into a first vial, b. transferring the radionuclide precursor solution into a reactor, c. providing a reaction buffer solution into said first vial containing residual radionuclide precursor solution, d. transferring the buffer reaction solution and residual radionuclide precursor solution from said first vial into the reactor, e. transferring a peptide solution comprising the somatostatin receptor binding peptide linked to a chelating agent, into the reactor, f. reacting the somatostatin receptor binding peptide linked to a chelating agent with said radionuclide in the reactor to obtain the radionuclide complex, g. recovering said radionuclide complex.



WO 2020/088767 A1