

(51) International Patent Classification:
C07D 237/14 (2006.01)(21) International Application Number:
PCT/US2011/024109(22) International Filing Date:
8 February 2011 (08.02.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/302,477 8 February 2010 (08.02.2010) US
61/315,376 18 March 2010 (18.03.2010) US
61/333,693 11 May 2010 (11.05.2010) US(71) Applicant (for all designated States except US): **LAN-
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(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, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, 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, SD, SL, SZ, TZ, UG,
ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, ML, MR, NE, SN, TD, TG).

Published:

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

(54) Title: METHODS AND APPARATUS FOR SYNTHESIZING IMAGING AGENTS, AND INTERMEDIATES THEREOF

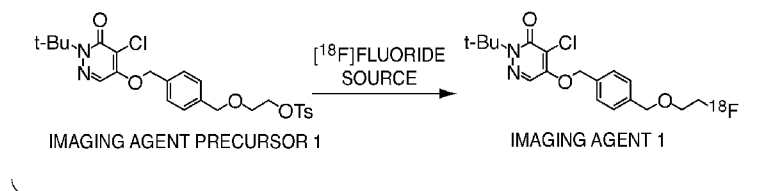


Fig. 1

(57) Abstract: The present invention generally relates to methods and system for the synthesis of imaging agents, and precursors thereof. The methods may exhibit improved yields and may allow for the large-scale synthesis of imaging agents, including imaging agents comprising a radioisotope (e.g., ^{18}F). Various embodiments of the invention may be useful as sensors, diagnostic tools, and the like. In some cases, methods for evaluating perfusion, including myocardial perfusion, are provided. Synthetic methods of the invention have also been incorporated into an automated synthesis unit to prepare and purify imaging agents that comprise a radioisotope. In some embodiments, the present invention provides a novel methods and systems comprising imaging agent 1, including methods of imaging in a subject comprising administering a composition comprising imaging agent 1 to a subject by injection, infusion, or any other known method, and imaging the area of the subject wherein the event of interest is located.