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- (71) **Applicant:** ISI LIFE SCIENCES, INC. [US/US]; 610 Newport Center Drive, Suite 500, Newport Beach, California 92660 (US).
- (72) **Inventors:** SWISS, Gerald F.; c/o ISI Life Sciences, Inc., 610 Newport Center Drive, Suite 500, Newport Beach, California 92660 (US). MORIARTY, Robert W.; c/o ISI Life Sciences, Inc., 610 Newport Center Drive, Suite 500, Newport Beach, California 92660 (US). PARIZA, Richard; c/o ISI Life Sciences, Inc., 610 Newport Center

Drive, Suite 500, Newport Beach, California 92660 (US). **KESHISHIAN, Craig**; c/o ISI Life Sciences, Inc., 610 Newport Center Drive, Suite 500, Newport Beach, California 92660 (US). **WHITE, David**; c/o ISI Life Sciences, Inc., 610 Newport Center Drive, Suite 500, Newport Beach, California 92660 (US).

(74) **Agents:** RAO, Photon et al.; Foley & Lardner LLP, 3000 K Street NW, Suite 600, Washington, District of Columbia 20007 (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, IR, IS, 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.

[Continued on next page]

(54) **Title:** COMPOSITIONS AND METHODS FOR INTERNALIZING PRO-LABELED MOLECULES INTO TARGETED CELLS AND TRANSFORMING THEM *IN SITU* INTO LABELED MOLECULES

(57) **Abstract:** Disclosed are compositions and methods for assessing the presence of target cell, such as tumor cells amongst normal cells.

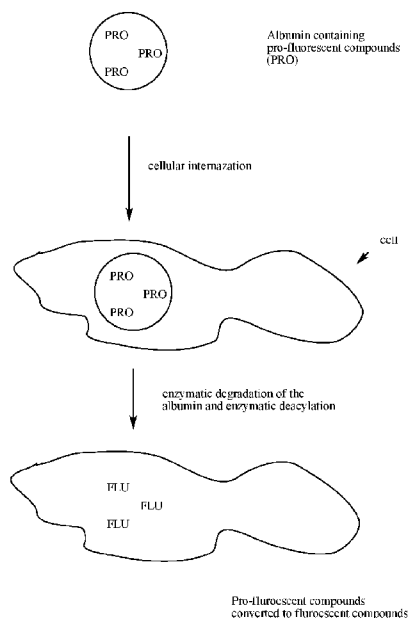


FIG. 1



(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).

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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - A61K 51/08, A61K 51/04 (2017.01)
 CPC - A61K 51/109, A61K 51/088, A61K 51/083

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

See Search History Document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

See Search History Document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

See Search History Document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	Ogawa et al. "Fluorophore-Quencher Based Activatable Targeted Optical Probes for Detecting in Vivo Cancer Metastases" Molecular Pharmaceuticals. 21 January 2009 (21.01.2009) vol 6, pg. 386-395; pg. 388, Figure 1, pg. 390, left col, para 3, 5, pg. 394, right col, para 2	1-2, 4, 13, 15-16 ----- 3, 5-12
X	"Pubchem CID 102433897" Create Date: 26 December 2015 (26.12.2015) Date Accessed: 21 May 2017 (21.05.2017); pg. 3, compound listed	20-21
X	"Pubchem CID 81743" Create Date: 08 August 2005 (08.08.2005) Date Accessed: 21 May 2017 (21.05.2017); pg. 3, compound listed	20, 22
X -- Y	US 6,875,850 B2 (Heindl et al.) 05 April 2005 (05.04.2005); col 1, ln 65-67, col 11, ln 5-25, col 15, ln 1-28	23, (25, 26-28)/23 ----- 8-11, 14, 17-18, 24, (26-28)/24, 34, 37a
X	"Pubchem CID 101839416" Create Date: 18 December 2015 (18.12.2015) Date Accessed: 21 May 2017 (21.05.2017); pg. 3, compound listed	30-32
X -- Y	US 2014/0005141 A1 (Amit et al.) 02 January 2014 (02.01.2014); para [0013], [0019], [0052]	33, 35-36 ----- 34
X -- Y	US 6,455,268 B1 (Jarnigan et al.) 24 September 2002 (24.09.2002); col 5, ln 41-46, col 6, ln 59-60, col 7, ln 1, col 9, ln 45-60, col 10, ln 5-25	39-40, 44-45, 47 ----- 41-43, 46

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

21 May 2017

Date of mailing of the international search report

09 JUN 2017

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Authorized officer:

Lee W. Young

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 17/13531

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Roelants et al. "Use of fluorescein isothiocyanate-human serum albumin for the intravesical photodiagnosis of non-muscle-invasive bladder cancer: an in vitro study using multicellular spheroids composed of normal human urothelial and urothelial cell carcinoma cell lines" BJU International. 13 December 2010 (13.12.2010) vol. 108, pg. 455-459; abstract, pg. 455, right col, para 1, pg. 457, Figure 2	3, 5, (6-7)/(3, 5), 12, 14, 19
Y	Urano et al. "Evolution of Fluorescein as a Platform for Finely Tunable Fluorescence Probes" Journal of the American Chemical Society. 10 March 2005 (10.03.2005) vol 127, pg. 4888-4894; pg. 4892, Figure 3.b, pg. 4892, left col, para 1, abstract	6-7, 19
Y	US 2013/0344002 A1 (Jallad et al.) 26 December 2013 (26.12.2013); Fig. 3b	17-18, 24, (26-28)/24, 37a, 37b, 38, 43, 46
Y	US 2014/0227297 A1 (Goonewardena et al.) 14 August 2014 (14.08.2014); Figure 1, compound 3	37b, 38
Y	US 2015/057433 A1 (Deming et al.) 26 February 2015 (26.02.2015); para [0119]	41-42
Y	Abbasi et al. "Cationic Albumin Nanoparticles for Enhanced Drug Delivery to Treat Breast Cancer: Preparation and In Vitro Assessment" Journal of Drug Delivery. 2012, pg. 1-8; abstract	12, 14

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 17/13531

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 48-49
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Omnibus claims

3. ☒ Claims Nos.: 29
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.