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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 January 2011 (13.01.2011)

PCT

(10) International Publication Number
WO 2011/003883 A1

(51) **International Patent Classification**:
G01N 33/50 (2006.01) ***A61K 48/00*** (2006.01)

(21) **International Application Number**:
PCT/EP2010/059593

(22) **International Filing Date**:
5 July 2010 (05.07.2010)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
200930417 4 July 2009 (04.07.2009) ES

(71) **Applicant** *(for all designated States except US)*: **FUNDACIÓN CENTRO NACIONAL DE INVESTIGACIONES ONCOLÓGICAS CARLOS III** [ES/ES]; C/ Melchor Fernández Almagro, 3, E-28029 Madrid (ES).

(72) **Inventors; and**

(75) **Inventors/Applicants** *(for US only)*: **SOENGAS GONZÁLEZ, María Soledad** [ES/ES]; C/Melchor Fernández Almagro, 3, E-28029 Madrid (ES). **TORMO CARULLA, Damià** [ES/ES]; C/Melchor Fernández Almagro, 3, E-28029 Madrid (ES).

(74) **Agent**: **ILLESCAS TABOADA, Manuel**; Calle Recoletos nº 13 -5º Izq., E-28001 Madrid (ES).

(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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

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

— *with sequence listing part of description (Rule 5.2(a))*

WO 2011/003883 A1

(54) **Title**: PROCESS FOR THE IDENTIFICATION OF COMPOUNDS FOR TREATING CANCER

(57) **Abstract**: Process for the identification of compounds for treating cancer. The invention relates to a method for identifying candidate compounds for use as therapeutic agents for the treatment of cancer, among those who are able to activate the MDA-5 protein or increase NOXA protein levels and to trigger autophagy. It is based on the fact that activation of dsRNA sensor MDA-5 is able to trigger the destruction of cancer cells by activation both autophagy and apoptosis, autonomously and selectively in tumor cells, without provoking the stabilization of the natural antagonist NOXA, MCL-I. The invention also relates to the use of double-stranded RNAs of the same or similar nature such as polyinosinic-polycytidylic acid (pIC), complexed with carriers such as polyethylenimine poly cation (PEI), for the manufacture of medicines for the treatment of cancer.