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(54) Title: NOVEL FLUORESCENT DYES AND POLYMERS FROM DIHYDROPHENANTHRENE DERIVATIVES

(57) Abstract: The present disclosure provides novel dihydrophenanthrene (DHP)-cyanine and DHP-squaraine fluorescent compounds and water-soluble polymers thereof. The DHP- cyanine and DHP-squaraine fluorescent compounds and polymers can be excited using UV, violet, blue, yellow, green, red, or NIR wavelengths. The fluorescent dyes may be conjugated to antibodies for detection of target analytes in biological samples and are suitable for use in flow cytometry analyses.



INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER INV. C09B23/08 C09B69/10 ADD.		
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B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) C09B		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal, CHEM ABS Data, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NEUNHOEFFER OTTO ET AL: "Synthese und Sensibilisierungsverhalten von Pyrenothiazol- und Pyrenothiazin-carbocyaninen, I Pyreno[4'.3':4.5] thiazol-carbocyanine", JUSTUS LIEBIGS ANNALEN DER CHEMIE, vol. 647, no. 1, 31 October 1961 (1961-10-31), pages 101-107, XP093099918, DE ISSN: 0075-4617, DOI: 10.1002/jlac.19616470115 page 102; compounds Va-Vc -----	1-4, 6-8, 10, 17, 18
A	WO 2021/101145 A1 (SFC CO LTD) 27 May 2021 (2021-05-27) page 42; claim 1 ----- -/-	1-22
☒ 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 December 2023		Date of mailing of the international search report 10/01/2024
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Jeanjean, Fabien

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
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X	EP 3 636 635 A1 (ACADEMISCH ZIEKENHUIS LEIDEN [NL]; UNIV MUENCHEN TECH [DE] ET AL.) 15 April 2020 (2020-04-15)	1-8, 10-22
A	page 3, paragraph 6 page 42; claim 1 -----	9

INTERNATIONAL SEARCH REPORT

Information on patent family members

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