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(54)	Title	METHOD OF DETECTING BLADDER CANCER
(56)	References Cited:	US-A1- 2003 158 258 JP-T- 2002 512 205 US-A1- 2005 031 541 ZAAK D ET AL: "Photodynamic Diagnosis of Prostate Cancer Using 5-Aminolevulinic Acid-First Clinical Experiences", UROLOGY, BELLE MEAD, NJ, US, vol. 72, no. 2, 11 April 2008 (2008-04-11) , pages 345-348, XP023520570, ISSN: 0090-4295, DOI: 10.1016/J.UROLOGY.2007.12.086 [retrieved on 2008-04-11] WAIDELICH ET AL: "CLINICAL EXPERIENCE WITH 5-AMINOLEVULINIC ACID AND PHOTODYNAMIC THERAPY FOR REFRACTORY SUPERFICIAL BLADDER CANCER", JOURNAL OF UROLOGY, LIPPINCOTT WILLIAMS & WILKINS, BALTIMORE, MD, US, vol. 165, no. 6, 1 June 2001 (2001-06-01), pages 1904-1907, XP005544839, ISSN: 0022-5347, DOI: 10.1016/S0022-5347(05)66239-8 MANIVASAGER VANAJA ET AL: "A study of 5-aminolevulinic acid and its methyl ester used in

in vitro and in vivo systems of human bladder cancer", INTERNATIONAL JOURNAL OF ONCOLOGY, DEMETRIOS A. SPANDIDOS ED. & PUB, GR, vol. 22, no. 2, 1 February 2003 (2003-02-01), pages 313-318, XP009148822, ISSN: 1019-6439

HARUKI AKASU ET AL.: '5-ALA ni yoru Jucchu Fukukojosen no Keiko Hakkoteki Dotei 10 -rei no Kento' FOLIA ENDOCRINOLOGICA JAPONICA vol. 81, no. 1, 2005, page 174, XP008143039

KAMASAKI, N. ET AL.: 'Photodynamic Diagnosis of Squamous Cell Carcinoma in Mouse Tongue Using 5-aminolevulinic Acid.' THE JOURNAL OF JAPAN SOCIETY FOR LASER SURGERY AND MEDICINE vol. 22, no. 4, 2001, pages 255 - 262, XP008144824

YUKO MINAMI ET AL.: 'Aminolevulinic Acid o Mochiita Haimonbu Haigan no Keiko Shindan' JAPANESE JOURNAL OF LUNG CANCER vol. 42, no. 5, 2002, page 374, XP008143042

NORIO MIYOSHI ET AL.: '5-Aminolevulinic acid (5-ALA) o Toyo shita Shuyonai Taishabutsu Protoporphyrin-IX(Pp-IX) no Keiko Bunseki' THE JOURNAL OF JAPAN SOCIETY FOR LASER SURGERY AND MEDICINE vol. 23, 2002, pages 81 - 85, 87,, XP008144825

VAN, S.T. ET AL.: 'Comparison of normal piglet bladder damage after PDT with oral or intravesical administration of ALA' LASERS MED SCI vol. 17, no. 4, 2002, pages 238- 245, XP008143069

JOHANSSON, J. ET AL.: 'Laser-induced fluorescence studies of normal and malignant tumour tissue of rat following intravenous injection of delta-amino levulinic acid' LASERS SURG MED vol. 20, no. 3, 1997, pages 272 - 279, XP008143048

HORNUNG, R. ET AL.: 'In vivo detection of metastatic ovarian cancer by means of 5-aminolevulinic acid-induced fluorescence in a rat model' J AM ASSOC GYNECOL LAPAROSC vol. 5, no. 2, 1998, pages 141 - 148, XP008143073

GRONLUND-PAKKANEN, S. ET AL.: 'The fluorescence biodistribution and kinetics of aminolevulinic acid induced protoporphyrin IX in the bladder of a rat model with orthotopic urothelial carcinoma' J UROL vol. 167, no. 4, 2002, pages 1848- 1853, XP005543745

Inc Association ET AL: "0022-5347/95/1533-0802\$03.00/0 TH!3 JOURNAL OF UROLOGY Copyright © 1995 by AMERICAN U R O ~ I C A L BIODISTRIBUTION AND PHOTOTOXICITY OF 5-AMINOLEVULINIC ACID-INDUCED PPIX IN AN ORTHOTOPIC RAT BLADDER TUMOR MODEL From the Wellman Laboratories of Photomedicine and the Departments of Urology and Derma", , 1 March 1995 (1995-03-01), pages 802-806, XP055139758, Retrieved from the Internet: URL:http://ac.els-cdn.com/S0022534701677267/1-s2.0-S0022534701677267-main.pdf?_tid=64102cce-39c6-11e4-8875-00000aach35f&acdnat=1410448677_a5b14cd2bd51e77f2c33082ea56e9f85 [retrieved on 2014-09-11]

ZHENGWEN XIAO ET AL: "Biodistribution of Photofrin II and 5-Aminolevulinic Acid-Induced Protoporphyrin IX in Normal Rat Bladder and Bladder Tumor Models: Implications for Photodynamic Therapy", PHOTOCHEMISTRY AND PHOTOBIOLOGY, vol. 67, no. 5, 1 May 1998 (1998-05-01), pages 573-583, XP055139678, ISSN: 0031-8655, DOI: 10.1111/j.1751-1097.1998.tb09096.x

GRONLUND-PAKKANEN ET AL: "The Fluorescence Biodistribution And Kinetics Of Aminolevulinic Acid Induced Protoporphyrin IX In The Bladder Of A Rat Model With Orthotopic Urothelial Carcinoma", JOURNAL OF UROLOGY, LIPPINCOTT WILLIAMS & WILKINS, BALTIMORE, MD, US, vol. 167, no. 4, 1 April 2002 (2002-04-01) , pages 1848-1853, XP005543745, ISSN: 0022-5347, DOI: 10.1016/S0022-5347(05)65247-0

KENJI INOUE ET AL.: 'CLINICAL EXPERIENCE WITH INTRAVESICAL INSTILLATIONS OF 5 - AMINOLEVULINIC ACID (5 -ALA) FOR THE PHOTODYNAMIC DIAGNOSIS USING FLUORESCENCE CYSTOSCOPY FOR BLADDER CANCER' THE JAPANESE JOURNAL OF UROLOGY vol. 97, no. 5, 2006, page s 719 - 729, XP008143050

Enclosed is a translation of the patent claims in Norwegian. Please note that as per the Norwegian Patents Acts, section 66i the patent will receive protection in Norway only as far as there is agreement between the translation and the language of the application/patent granted at the EPO. In matters concerning the validity of the patent, language of the application/patent granted at the EPO will be used as the basis for the decision. The patent documents published by the EPO are available through Espacenet (<http://worldwide.espacenet.com>) or via the search engine on our website here: <https://search.patentstyret.no/>

Patentkrav

1. En sensibilisator som omfatter 5-aminolevulinsyre (ALA), et derivat derav, eller et salt
5 av disse for bruk i detektering av blærekreft,
hvor nevnte derivat er valgt fra gruppen som består av 5-aminolevulinsyremetylester, 5-aminolevulinsyreetyler, 5-aminolevulinsyrepropylester, 5-aminolevulinsyrebutylester og 5-aminolevulinsyrepenylester,
hvor mengden av ALA, derivatet derav, eller saltet av disse inneholdt i nevnte
10 sensibilisator er, som en total mengde uttrykt i mol, 10-50 mg per 1 kg kroppsvekt i ALA-hydrokloridekvivalent, og
hvor nevnte sensibilisator blir administrert oralt; og
hvor nevnte detektering omfatter trinnene av (a) å bestråle blæren med et eksitasjonslys av omtrent 380-430 nm og av (b) å detektere fluorescens ved omtrent 600-700 nm hvor
15 trinn (a) og (b) blir utført 2-5 timer etter administrering av nevnte sensibilisator.

2. Sensibilisator for bruk ifølge krav 1, hvor blærekreft er på et sykdomsstadium av pTis (intraepitelkreft), pTa (uten invasjon), pT1 (med invasjon til submukosalt bindevev), pT2 (med muskelinvasjon) eller pT3 (med invasjon til pericystisk fettvev).