

(12) SOLICITUD INTERNACIONAL PUBLICADA EN VIRTUD DEL TRATADO DE COOPERACIÓN
EN MATERIA DE PATENTES (PCT)

(19) Organización Mundial de la Propiedad
Intelectual
Oficina internacional



(43) Fecha de publicación internacional
2 de Mayo de 2002 (02.05.2002)

PCT

(10) Número de Publicación Internacional
WO 02/34897 A1

(51) Clasificación Internacional de Patentes⁷: **C12N 9/08**,
9/02, C02F 3/32

Francisco [ES/ES]; Avenida Teniente Flomesta, Edificio
de la Convalecencia, E-30003 Murcia (ES).

(21) Número de la solicitud internacional: PCT/ES01/00399

(74) Mandatario: **ASTIZ SUAREZ, Enrique**; Calle Col-
umela, 5-5°, E-28001 Madrid (ES).

(22) Fecha de presentación internacional:
23 de Octubre de 2001 (23.10.2001)

(81) Estados designados (*nacional*): AE, AG, AL, AM, AT,
AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR,
CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE,
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,
ZA, ZW.

(25) Idioma de presentación: español

(26) Idioma de publicación: español

(30) Datos relativos a la prioridad:
P200002544 23 de Octubre de 2000 (23.10.2000) ES

(84) Estados designados (*regional*): patente ARIPO (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), patente
euroasiática (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
patente europea (AT, BE, CH, CY, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), patente OAPI
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG).

(71) Solicitante (*para todos los Estados designados salvo
US*): **UNIVERSIDAD DE MURCIA** [ES/ES]; Avenida
Teniente Flomesta, Edificio de la Convalecencia, E-30003
Murcia (ES).

(72) Inventores; e

(75) Inventores/Solicitantes (*para US solamente*): **RO-
DRIGUEZ LOPEZ, José Neptuno** [ES/ES]; Avenida
Teniente Flomesta, Edificio de la Convalecencia, E-30003
Murcia (ES). **TUDELA SERRANO, José Bautista**
[ES/ES]; Avenida Teniente Flomesta, Edificio de la Con-
valecencia, E-30003 Murcia (ES). **GARCIA CANOVAS,**

Publicada:

— con informe de búsqueda internacional

*Para códigos de dos letras y otras abreviaturas, véase la sección
"Guidance Notes on Codes and Abbreviations" que aparece al
principio de cada número regular de la Gaceta del PCT.*

(54) Title: ARTICHOKE EXTRACT (*CYNARA SCOLYMUS*, L.) AND ITS USE IN DECONTAMINATION OF MEDIA WHICH
ARE CONTAMINATED WITH PHENOLS, AROMATIC AMINES, ORGANIC HALIDES AND/OR HEAVY METALS

(54) Título: EXTRACTO DE ALCACHOFA (*CYNARA SCOLYMUS*, L.) Y SU EMPLEO EN LA DESCONTAMINACIÓN DE
MEDIOS CONTAMINADOS CON FENOLES, AMINAS AROMÁTICAS, HALUROS ORGÁNICOS Y/O METALES PESADOS

(57) Abstract: The artichoke extract comprises enzymes with peroxidase and polyphenol oxidase activity, can be obtained from
waste materials (stems, leaves and bracts) of artichokes through homogenization of said wastes in an aqueous medium, and can be
used to decontaminate liquid, solid and semi-solid media which have been contaminated with phenols, aromatic amines, organic
halides and/or heavy metals, through treatment with peroxide in the presence of said artichoke extract.

(57) Resumen: El extracto de alcachofa comprende enzimas con actividad peroxidasa y polifenol oxidasa, puede ser obtenido a
partir de desechos (tallos, hojas y brácteas) de alcachofas mediante homogenización de dichos desechos en un medio acuoso, y
puede ser utilizado para descontaminar medios líquidos, sólidos y semisólidos contaminados con fenoles, aminas aromáticas, haluros
orgánicos y/o metales pesados, mediante tratamiento con peróxido en presencia de dicho extracto de alcachofa.



WO 02/34897 A1

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES 01/00399

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 : C12N 9/08, 9/02, C02F 3/32

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)

IPC7 : C12N 9, C02F

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)

CIBEPAT, HCAPLUS, MEDLINE, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KANEL, M. Y.; GHAZY, A.M. Peroxidases of <i>Cynara scolymus</i> (global artichoke) leaves. Purification and properties 1973 Acta Biol. Med. Ger., 31 (1), 39-49	1-2 15-16
Y	ESPIN, JUAN CARLOS et al. Monophenolase activity of polyphenol oxidase from artichoke heads (<i>Cynara scolymus</i> L.) 1997 Food Sci. Technol. (London), 30(8), 819-825	1-2 15-16
Y	EP 462082 A2 (ENTE POUR LA NUOVE TECNOLOGIE E L'ENERGIE E L'AMBIENTE, ENEA) 18.12.1991. Page 6, Lines 15-18, 37-40, 53-54; claim 8.	15-16
A	EP 547318 A1 (AUSIMONT S.P.A.) 23.06.1993	15-16
A	EP 126394 A1 (PHILLIPS PETROLEUM COMPANY) 28.11.1984	15-16

☐ 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 document 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

28 December 2001 (28.12.01)

Date of mailing of the international search report

28 January 2002 (28.01.02)Name and mailing address of the ISA/ **S.P.T.O.**

Authorized officer

Facsimile No.

Telephone No.