


**PCT** ORGANIZACION MUNDIAL DE LA PROPIEDAD INTELECTUAL  
 Oficina Internacional  
**SOLICITUD INTERNACIONAL PUBLICADA EN VIRTUD DEL TRATADO DE COOPERACION  
 EN MATERIA DE PATENTES (PCT)**

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| <b>(51) Clasificación Internacional de Patentes <sup>6</sup> :</b><br><b>C11C 1/04, 3/02, 1/10, C11B 7/00, C12P 7/64, C07D 311/72, C12S 3/00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>A1</b>                                                                                                                                                                                              | <b>(11) Número de publicación internacional: WO 97/00309</b><br><br><b>(43) Fecha de publicación internacional:</b> 3 de Enero de 1997 (03.01.97) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |
| <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <b>(21) Solicitud internacional:</b> PCT/ES96/00133<br/><br/> <b>(22) Fecha de la presentación internacional:</b> 14 de Junio de 1996 (14.06.96)<br/><br/> <b>(30) Datos relativos a la prioridad:</b><br/>                 P 9501209      15 de Junio de 1995 (15.06.95)    ES<br/><br/> <b>(71)(72) Solicitante e inventor:</b> SAURA LOPEZ, Domingo [ES/ES]; Plaza Santoria, Edificio Constanza, 3-6°C, E-30003 Murcia (ES).<br/><br/> <b>(74) Mandatario:</b> UNGRIA LOPEZ, Javier; Ungria Patentes y Marcas, S.A., Avenida Ramón y Cajal, 78, E-28043 Madrid (ES).             </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <b>(81) Estados designados:</b> JP, US, Patente europea (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).<br/><br/> <b>Publicada</b><br/> <i>Con informe de búsqueda internacional.</i> </td> </tr> </table> |                                                                                                                                                                                                        |                                                                                                                                                   | <b>(21) Solicitud internacional:</b> PCT/ES96/00133<br><br><b>(22) Fecha de la presentación internacional:</b> 14 de Junio de 1996 (14.06.96)<br><br><b>(30) Datos relativos a la prioridad:</b><br>P 9501209      15 de Junio de 1995 (15.06.95)    ES<br><br><b>(71)(72) Solicitante e inventor:</b> SAURA LOPEZ, Domingo [ES/ES]; Plaza Santoria, Edificio Constanza, 3-6°C, E-30003 Murcia (ES).<br><br><b>(74) Mandatario:</b> UNGRIA LOPEZ, Javier; Ungria Patentes y Marcas, S.A., Avenida Ramón y Cajal, 78, E-28043 Madrid (ES). | <b>(81) Estados designados:</b> JP, US, Patente europea (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).<br><br><b>Publicada</b><br><i>Con informe de búsqueda internacional.</i> |
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| <b>(54) Title: PROCESS FOR THE ENZYMIC PREPARATION OF OILY EXTRACTS ENRICHED WITH NATURAL ANTIOXIDANTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                        |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |
| <b>(54) Título: PROCEDIMIENTO PARA LA PREPARACION ENZIMATICA DE EXTRACTOS OLEOSOS ENRIQUECIDOS EN ANTIOXIDANTES NATURALES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                        |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |
| <b>(57) Abstract</b><br><br>The process comprises (a) subjecting to an enzymatic reaction a deodorate of animal or plant oils previously subjected to a vacuum distillation; (b) subjecting the resulting product to a distillation in two steps, the first step at 200-240 °C and the second at 210-280 °C; (c) treating the distillation fraction rich in antioxidants, followed by filtration, centrifugation and distillation. Application to the human and animal food industry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                        |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |
| <b>(57) Resumen</b><br><br>Comprende: (a) someter a una reacción enzimática un desodorizado de aceites animales o vegetales previamente sometido a una destilación al vacío; (b) someter el producto obtenido a una destilación en dos etapas, la primera a 200-240 °C y la segunda a 210-280 °C; (c) tratar la fracción de destilación rica en antioxidantes seguido de filtración, centrifugación y destilación. Aplicación en la industria alimenticia humana y animal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                        |                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/ES 96/00133

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>6</sup> C11C1/04, 3/02, 1/10, C11B7/00, C12P7/64, C07D311/72, C12S3/00

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)

IPC<sup>6</sup> C11C, C11B, C12P, C07D, C12S

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, EPODOC, CA, WPIL

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                                                                                                         | Relevant to claim No. |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Y         | S. RAMAMURTHI et al. "Enzymatic pretreatment of deodorizer distillate for concentration of sterols and tocopherols", March 1993, Journal of American Oil Chemist Society, Vol.70, pages 287-295<br>See the whole documents | 1-7                   |
| Y         | US-5424457-A (SUMNER, C. jr., et al.) 13.06.95<br>See the whole documents                                                                                                                                                  | 1-7                   |
| A         | FR-2691974-A (SARPAP; YSOFINE) 10.12.93<br>See the whole documents                                                                                                                                                         | 1-7                   |



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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

19 September 1996 (19.09.96)

Date of mailing of the international search report

1 October 1996 (01.10.96)

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