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(54) **Title:** SEPARATION PROCESS

(57) **Abstract:** A process for treating a mixture of R,R- and S,S-lactide is provided. The process involves contacting the lactide mixture with an aliphatic alcohol and/or an alkoxide to produce a mixture of R,R- and S,S-aliphatic ester of lactyllactic acid, subsequently contacting the mixture of R,R- and S,S-aliphatic ester of lactyllactic acid with an enzyme to produce a mixture comprising aliphatic ester of lactic acid corresponding to one lactide enantiomer and the aliphatic ester of lactyllactic acid corresponding to the other lactide enantiomer, and recovering the product. Also provided are processes for the production of S-lactic acid, S,S-lactide, poly-S-lactic acid, R-lactic acid, R,R-lactide, poly-R-lactic acid and stereocomplex polylactic acid.



INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. C12P7/56 C12P41/00
ADD.

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)
C12P

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, FSTA, BIOSIS, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JEON ET AL: "Synthesis of alkyl (R)-lactates and alkyl (S,S)-O-lactyllactates by alcoholysis of rac-lactide using Novozym 435", TETRAHEDRON LETTERS, vol. 47, 2006, pages 6517-6520, XP025004806, cited in the application * See the whole document *	1-25
A	SHUKLOV ET AL: "Studies on the epimerization of diastereomeric lactides", TETRAHEDRON LETTERS, vol. 52, 30 December 2010 (2010-12-30), pages 1027-1030, XP028129681, * See page 1027 (Abstract); early online publication * ----- -/-	1-25



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

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"P" document published prior to the international filing date but later than the priority date claimed

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"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

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INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	TAKWA ET AL: "Rational redesign of Candida antarctica lipase B for the ring opening polymerization of D,D-lactide", CHEMICAL COMMUNICATIONS, vol. 47, 23 May 2011 (2011-05-23), pages 7392-7394, XP002682740, * See page 7392 (Scheme 1); early online publication *	1-25
A,P	----- FINDRIK ET AL: "Evaluation of factors influencing the enantioselective enzymatic esterification of lactic acid in ionic liquid", BIOPROCESS AND BIOSYSTEMS ENGINEERING, vol. 35, 22 October 2011 (2011-10-22), pages 625-635, XP035044355, * See pages 625-626 (Introduction); early online publication *	1-25
A,P	----- NÉMETH ET AL: "Asymmetric lactic acid esterification with biocatalysts in ionic liquid*", HUNGARIAN JOURNAL OF INDUSTRIAL CHEMISTRY VESZPRÉM, vol. 39, no. 3, 2011, pages 419-425, XP002697472, * See page 419 (Abstract) and pages 423-424 (Conclusion); the actual date of publication is not yet available *	1-25
