

Title (en)
PROTEIN PRODUCTION METHODS AND MODIFIED CELLS FOR USE THEREIN

Title (de)
PROTEINPRODUKTIONSVERFAHREN UND MODIFIZIERTE ZELLEN ZUR VERWENDUNG DARIN

Title (fr)
PROCEDES DE PRODUCTION DE PROTEINE ET CELLULES MODIFIEES POUR UTILISATION DANS CES PROCEDES

Publication
EP 1563073 A4 20070919 (EN)

Application
EP 03739320 A 20030626

Priority
• US 0320207 W 20030626
• US 39173802 P 20020626
• US 44049803 P 20030116

Abstract (en)
[origin: WO2004003151A2] Disclosed are cells having an increased amount of Bcl-xL protein and their use in protein production.

IPC 1-7
C12N 15/63; **C12N 15/85**; **C12N 15/86**; **C12N 1/19**

IPC 8 full level
C07K 14/47 (2006.01); **C12N 5/00** (2006.01); **C12P 21/02** (2006.01)

CPC (source: EP)
A61P 43/00 (2017.12); **C07K 14/4747** (2013.01); **C12N 5/0018** (2013.01); **C12P 21/02** (2013.01); **C12N 2500/36** (2013.01);
C12N 2501/48 (2013.01); **C12N 2510/02** (2013.01)

Citation (search report)

- [E] EP 1348758 A1 20031001 - BOEHRINGER INGELHEIM PHARMA [DE]
- [E] EP 1468079 A1 20041020 - KOREA ADVANCED INST SCI & TECH [KR]
- [XDY] MASTRANGELO ALISON J ET AL: "Part I. Bcl-2 and bcl-xL limit apoptosis upon infection with alphavirus vectors", BIOTECHNOLOGY AND BIOENGINEERING, WILEY & SONS, HOBOKEN, NJ, US, vol. 67, no. 5, 5 March 2000 (2000-03-05), pages 544 - 554, XP002217633, ISSN: 0006-3592
- [XD] MASTRANGELO A J ET AL: "Part II. Overexpression of bcl-2 family members enhances survival of mammalian cells in response to various culture insults", BIOTECHNOLOGY AND BIOENGINEERING, WILEY & SONS, HOBOKEN, NJ, US, vol. 67, no. 5, 5 March 2000 (2000-03-05), pages 555 - 564, XP002326420, ISSN: 0006-3592
- [X] JOEL CHARBONNEAU ET AL: "Protection of hybridoma cells against apoptosis by a loop domain-deficient Bcl-xL protein", CYTOTECHNOLOGY, KLUWER ACADEMIC PUBLISHERS, DO, vol. 37, no. 1, 1 September 2001 (2001-09-01), pages 41 - 47, XP019236711, ISSN: 1573-0778
- [YD] ZANGHI JAMES A ET AL: "Serum protects protein-free competent Chinese hamster ovary cells against apoptosis induced by nutrient deprivation in batch culture", BIOTECHNOLOGY AND BIOENGINEERING, vol. 64, no. 1, 5 July 1999 (1999-07-05), pages 108 - 119, XP002446136, ISSN: 0006-3592
- [YD] KIM N S ET AL: "Overexpression of bcl-2 inhibits sodium butyrate-induced apoptosis in Chinese hamster ovary cells resulting in enhanced humanized antibody production", BIOTECHNOLOGY AND BIOENGINEERING - COMBINATORIAL CHEMISTRY, WILEY, NEW YORK, NY, US, vol. 71, no. 3, 2000, pages 184 - 193, XP002208594
- [PX] MEENTS H ET AL: "Impact of coexpression and coamplification of sICAM and antiapoptosis determinants bcl-2/bcl-x(L) on productivity, cell survival, and mitochondria number in CHO-DG44 grown in suspension and serum-free media", BIOTECHNOLOGY AND BIOENGINEERING, WILEY & SONS, HOBOKEN, NJ, US, vol. 80, no. 6, 20 December 2002 (2002-12-20), pages 706 - 716, XP002251640, ISSN: 0006-3592
- [AD] GOSWAMI J ET AL: "Apoptosis in batch cultures of Chinese hamster ovary cells", BIOTECHNOLOGY AND BIOENGINEERING, WILEY & SONS, HOBOKEN, NJ, US, vol. 62, no. 6, 20 March 1999 (1999-03-20), pages 632 - 640, XP002326418, ISSN: 0006-3592
- [AD] FUSSENEGGER M ET AL: "CONTROLLED PROLIFERATION BY MULTIGENE METABOLIC ENGINEERING ENHANCES THE PRODUCTIVITY OF CHINESE HAMSTER OVARY CELLS", NATURE BIOTECHNOLOGY, NATURE PUBLISHING GROUP, NEW YORK, NY, US, vol. 16, no. 5, May 1998 (1998-05-01), pages 468 - 472, XP001093788, ISSN: 1087-0156
- [T] CHIANG GISELA G ET AL: "Bcl-x(L) mediates increased production of humanized monoclonal antibodies in chinese hamster ovary cells", BIOTECHNOLOGY AND BIOENGINEERING, vol. 91, no. 7, September 2005 (2005-09-01), pages 779 - 792, XP002446137, ISSN: 0006-3592
- [T] FIGUEROA B ET AL: "A COMPARISON OF THE PROPERTIES OF A BCL-XL VARIANT TO THE WILD-TYPE ANTI-APOPTOSIS INHIBITOR IN MAMMALIAN CELL CULTURES", METABOLIC ENGINEERING, ACADEMIC PRESS, US, vol. 5, no. 4, October 2003 (2003-10-01), pages 230 - 245, XP008064154, ISSN: 1096-7176
- See references of WO 2004003151A2

Citation (examination)

- JUNG D. ET AL: "Inducible expression of Bcl-XL restricts apoptosis resistance to the antibody secretion phase in hybridoma cultures", BIOTECHNOLOGY AND BIOENGINEERING, vol. 79, no. 2, 21 May 2002 (2002-05-21) - 20 July 2002 (2002-07-20), pages 180 - 187
- FUSSENEGGER M. ET AL: "Regulated overexpression of the survival factor bcl-2 in CHO cells increases viable cell density in batch culture and decreases DNA release in extended fixed-bed cultivation", CYTOTECHNOLOGY, vol. 32, no. 1, 1 January 2000 (2000-01-01), KLUWER ACADEMIC PUBLISHERS, DORDRECHT, NL, pages 45 - 61, XP002326419

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)
WO 2004003151 A2 20040108; **WO 2004003151 A3 20050623**; AU 2003245702 A1 20040119; AU 2010201256 A1 20100422;
CA 2491212 A1 20040108; EP 1563073 A2 20050817; EP 1563073 A4 20070919; JP 2006503555 A 20060202; JP 2011004771 A 20110113

DOCDB simple family (application)
US 0320207 W 20030626; AU 2003245702 A 20030626; AU 2010201256 A 20100329; CA 2491212 A 20030626; EP 03739320 A 20030626;
JP 2004517898 A 20030626; JP 2010233087 A 20101015