9705182-5

RTMP COPY

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : C12N 5/00, C07K 19/00 — A1

(11) International Publication Number: WO 96/39488

(43) International Publication Date: 12 December 1996 (12.12.96)

(21) International Application Number: PCT/US96/09284

(22) International Filing Date: 6 June 1996 (06.06.96)

(30) Priority Data: 08/469,348 — 6 June 1995 (06.06.95) — US

(71) Applicants: GENENTECH, INC. [US/US]; 460 Point San Bruno Boulevard, South San Francisco, CA 94080-4990 (US). F. HOFFMANN-LA ROCHE AG [CH/CH]; Grenzacherstrasse 124, CH-4070 Basle (CH).

(72) Inventors: ETCHEVERRY, Tina; 1471 Greenwood Terrace, Berkeley, CA 94708 (US). RYLL, Thomas; Apartment 908, 120 West 3rd Avenue, San Mateo, CA 94402 (US). LESSLAUER, Werner; Aeussere Baselstrasse 288, CH-4125 Riehen (CH). SCHREITMULLER, Thomas; Binzenerstrasse 11e, D-79539 Lorrach (DE). RICHTER, Wolfgang; Dinkelbergstrasse 23a, D-7850 Lorrach (DE).

(74) Agents: KURZ, Walter et al.; Heller Ehrman White & McAuliffe, 525 University Avenue, Palo Alto, CA 94301-1900 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: PROCESS FOR CONTROLLING SIALYLATION OF PROTEINS PRODUCED BY MAMMALIAN CELL CULTURE

(57) Abstract

The present invention relates to novel process for the preparation of glycoproteins by mammalian cell culture wherein the sialic acid content of the glycoprotein produced is controlled over a broad range of values by manipulating the cell culture environment. The invention provides for processes in which the sialic acid content of the glycoprotein is modified by changes in cell culture parameters which affect cell specific productivity. Preferred embodiments of the invention include cell culture processes in the osmolality of the cell culture is controlled as well as the concentration of a transcription enhancer during the production phase of the cell culture. The invention further provides for novel preparations of soluble type 1 tumor necrosis factor immunoglobulin G1 and their uses in the treatment of inflammatory or immune related disorders.