

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 October 2004 (07.10.2004)

PCT

(10) International Publication Number
WO 2004/085500 A1

(51) International Patent Classification⁷: **C08F 216/20**,
222/06, 8/12, 8/32, C08G 65/332, A61K 47/48, 38/16

(74) Agents: **OHNO, Akio** et al.; c/o SANKYO COMPANY,
LIMITED, 2-58, Hiromachi 1-chome, Shinagawa-ku,
Tokyo, 1408710 (JP).

(21) International Application Number:
PCT/JP2004/004134

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(22) International Filing Date: 24 March 2004 (24.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003-080389 24 March 2003 (24.03.2003) JP
2003-355853 16 October 2003 (16.10.2003) JP
2003-426598 24 December 2003 (24.12.2003) JP

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

(71) Applicant (for all designated States except US): **SANKYO
COMPANY LIMITED** [JP/JP]; 5-1, Nihonbashi Honcho
3-chome, Chuo-ku, Tokyo, 1038426 (JP).

(72) Inventors; and

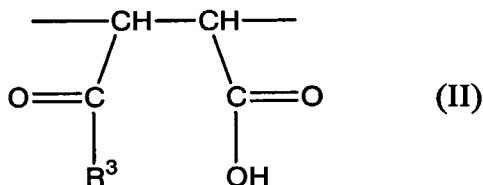
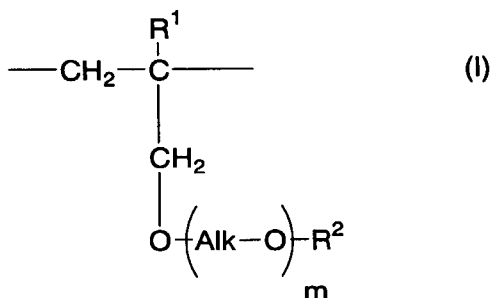
(75) Inventors/Applicants (for US only): **KASUYA, Yuji**
[JP/JP]; c/o SANKYO COMPANY, LIMITED, 2-58,
Hiromachi 1-chome, Shinagawa-ku, Tokyo, 1408710 (JP).
HONMA, Masashi [JP/JP]; c/o SANKYO COMPANY,
LIMITED, 2-58, Hiromachi 1-chome, Shinagawa-ku,
Tokyo, 1408710 (JP).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: POLYMERIC MODIFIERS AND PHARMACEUTICAL COMPOSITIONS



(57) Abstract: A copolymer or a pharmacologically acceptable salt thereof is provided, which contains, as constitutional units, (a) one or more structural units of formula (I): wherein m is an integer of from 3 to 100, Alk represents alkylene, and R¹ and R² are the same or different and each represents hydrogen or optionally substituted alkyl, and (b) one or more structural units of formula (II): wherein R³ represents hydroxyl, optionally substituted alkoxy, optionally substituted aryloxy, or a group represented by the formula -NR⁴R⁵, wherein R⁴ and R⁵ are the same or different and each represents hydrogen or optionally substituted alkyl. There is further provided a pharmaceutical composition comprising said copolymer, a protein modifier comprising said copolymer, a complex of said copolymer with a protein, a method of preventing or treating diseases using said complex, use of said complex in the manufacture of a medicament for preventing or treating diseases and methods for the synthesis of said copolymers and said complexes.