

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
6 January 2005 (06.01.2005)

PCT

(10) International Publication Number
WO 2005/000862 A3

(51) International Patent Classification⁷: **C07H 5/10**,
C12N 9/56, 9/44

(21) International Application Number:
PCT/GB2004/002706

(22) International Filing Date: 24 June 2004 (24.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0314743.6 24 June 2003 (24.06.2003) GB
0328884.2 12 December 2003 (12.12.2003) GB

(71) Applicant (for all designated States except US): **ISIS IN-
NOVATION LIMITED** [GB/GB]; Ewert House, Ewert
Place, Summertown, Oxford OX2 7SG (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DAVIS, Benjamin,
Guy** [GB/GB]; Chemistry Research Laboratory, 12 Mans-
field Road, Oxford OX1 3TA (GB). **GAMBLIN, David,
Philip** [GB/GB]; Chemistry Research Laboratory, 12
Mansfield Road, Oxford OX1 3TA (GB). **FAIRBANKS,
Anthony, John** [GB/GB]; Chemistry Research Laboratory,
12 Mansfield Road, Oxford OX1 3TA (GB). **GARNIER,
Philippe** [FR/GB]; Chemistry Research Laboratory, 12
Mansfield Road, Oxford OX1 3TA (GB).

(74) Agent: **FRANK B. DEHN & CO.**; 179 Queen Victoria
Street, London EC4V 4EL (GB).

(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.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (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).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
18 August 2005

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: REAGENTS AND METHODS FOR THE FORMATION OF DISULFIDE BONDS AND THE GLYCOSYLATION OF
PROTEINS

(57) Abstract: Methods and reagents for the formation of disulfide bonds, particularly in proteins, peptides and amino acids. The
methods and reagents are particularly useful for the controlled glycosylation of proteins, peptides and amino acids. The methods
utilise thiosulfonate or selenenylsulfide compounds as reagents or intermediates. Some proteins and peptides comprising selenenyl-
sulfide groups also form part of the invention.



WO 2005/000862 A3