

Dr Chun-Ting (CT) Yuen

Publications

Reports and Monographs

Glycan analysis of glycoproteins (Monograph 2.2.59).

European Pharmacopoeia 2011, 7 (1), 97-102

CT Yuen and other expert members of the EDQM GLM Working Party (2006 – today)

DTI-PM2.3 report (2007). Measurements for Biotechnology: Characterisation and quantitation of post-translationally modified proteins

Smita Thobhani & Marc Bailey (NPL); Chun-Ting Yuen & Chris Jones (NIBSC)

DTI-PC2 report (2006): The Regulatory Framework for Glycan Analysis of Biopharmaceuticals

C-T Yuen and C Jones; NIBSC

Papers

Investigation in a murine model of possible mechanisms of enhanced local reactions to post-primary diphtheria tetanus toxoid boosters in recipients of acellular pertussisdiphtheria-tetanus vaccine

Human Vaccines & Immunotherapeutics 2014, 10 (7), 2074-80

Masaki Ochiai, Yoshinobu Horiuchi, **Chun-Ting Yuen**, Catpagavalli Asokanathan, Akihiko Yamamoto, Kenji Okada, Michiyo Kataoka, Kevin Markey, Michael Corbel and Dorothy Xing

Confocal microscopy study of pertussis toxin and toxoids on CHO-cells

Vaccines & Immunotherapeutics 2013, 9(2), 332–338

Yajun Tan, Roland A. Fleck, Catpagavalli Asokanathan, **Chun-Ting Yuen**, Dorothy Xing, Shumin Zhang, Junzhi Wang

Evaluation of an in vitro assay system as a potential alternative to current histamine sensitization test for acellular pertussis vaccines.

Biological 2012, 40, 456-465

Dorothy Xing, **CT Yuen**, Catpagavalli Asokanathan, Peter Rigsby and Yoshinobu Horiuchi

Strategic approaches for developing alternative tests for safety and potency of vaccines

Procedia in Vaccinology 2011, 5, 156–163

Yoshinobu Horiuchi□, Masaki Ochiai, Michiyo Kataoka, Akihiko Yamamoto, **Chun-Ting Yuen**, Cathy Asokanathan, Michael Corbel, Takeshi Kurata and Dorothy Xing

Glycan analysis of glycoprotein pharmaceuticals: Evaluation of analytical approaches to Z number determination in pharmaceutical erythropoietin products

Biological 2011, 39 (6), 396-403

Chun-Ting YUEN, Yong ZHOU, Qing-Zhou WANG, Ji-Feng HOU, Adrian Bristow, Jun-Zhi WANG

Investigation of effects of different commercial source of bovine serum albumin on the binding of pertussis toxin to the glycoprotein fetuin Vaccine

Vaccine 2011, 29, 7593–7594

Cathy Asokanathan, **Chun-Ting Yuen**, Naomi Lin and Dorothy Xing

An in vitro assay system as a potential replacement for the histamine sensitisation test for acellular pertussis based combination vaccines

Vaccine 2010, 28, 3714-21

Chun-Ting Yuen, Yoshinobu Horiuchi, Catpagavalli Asokanathan, Sarah Cook, Alexandra Douglas-Bardsley, Masaki Ochiai, Michael Corbel and Dorothy Xing

Identification and quantification of N-linked oligosaccharides released from glycoproteins: an inter-laboratory study.

Glycobiology 2009, 19 (3), 201-11

Thobhani S, **Yuen CT**, Bailey MJ, and Jones C

Glycan Mapping of Glycotherapeutics.

Pharmeuropa Scientific Notes, 2008, 1, 9-16.

Yuen C-T, Bristow A and Jones C

Differentiation between isomeric triantennary N-linked glycans by negative ion tandem mass spectrometry and confirmation of glycans containing galactose attached to the bisecting (beta1-4-GlcNAc) residue in N-glycans from IgG.

Rapid Commun Mass Spectrom. 2008, 22 (7):1047-1052

David J Harvey, Max Crispin, Chris Scanlan, Bernhard B Singer, Lothar Lucka, Veronica T Chang, Catherine M Radcliffe, Smita Thobhani, **Chun-Ting Yuen**, Pauline M Rudd

ADP-ribosylation activity in pertussis vaccines and its relationship to the *in vivo* histamine-sensitisation test.

Vaccines 2007, 25, 3311–3318.

Gomez SR, **Yuen C-T**, Asokanathan C , Douglas-Bardsley A , Corbel MJ, Coote JG, Parton R and Xing DKL.

A fluorescent peptide substrate for measuring the ADP-ribosylation activity of the cholera toxin A-subunit.

Human Vaccines 2006, 2 195-199.

Chun-Ting Yuen and Sjoerd Rijpkema

Comparative analysis of HIV-1 recombinant envelope glycoproteins from different culture systems.

Applied Microbiology and Biotechnology 2006, 72, 2, 279-290.

Jeffs, S. A., Goriup, S., Stacey, G. N., **Yuen, C. T.**, & Holmes, H. C.

Development of a carbohydrate-binding assay for the B oligomer of pertussis toxin and toxoid.

Anal. Biochem 2006, 356, 244-253.

Sheena R. Gomez, Dorothy K-L. Xing, Michael J. Corbel, John Coote, Roger Parton, **Chun-Ting Yuen**.

Relationships between the N-glycan structures and biological activities of recombinant human erythropoietins produced using different culture conditions and purification procedures.

Advances in Experimental Medicine and Biology 2005, 564, 141-142.

CT Yuen, PL Storrington, RJ Tiplady, R Wait, CK Gee, P Gerson, P Lloyd, JA Cremata.

Plant-derived mouse IgG monoclonal antibody fused to KDEL Endoplasmic Reticulum-retention signal is N-glycosylated homogeneously throughout the plant with mostly high-Mannose type N-glycans.

Plant Biotechnology J, 2005, 3, 449-457.

Triguero Ada, Cabrera Gleysin, Cremata José A., **Yuen Chun-Ting**, Wheeler Jun and Ramírez Nadia I.

Modifications of the catalytic and binding subunits of pertussis toxin by formaldehyde, and correlation with toxicity and immunogenicity

Vaccine 2003, 21, 2329-2337.

Sarah Fowler, Dorothy K.-L. Xing, Barbara Bolgiano, **Chun-Ting Yuen** and Michael J. Corbel

Immunohistochemical and biochemical analyses of GD3, GT1b and GQ1b gangliosides during neural differentiation of P19 EC cells.

FEBS Letters 2003, 537, 73-78.

T Osanai, M Kotani, **CT Yuen**, H Kato, Y Sanai, S Takeda

Relationships between the N-glycan structures and biological activities of recombinant human erythropoietins produced using different culture conditions and purification procedures.

BJ Haematol 2003, 121, 511-526.

CT Yuen, PL Storrington, RJ Tiplady, R Wait, CK Gee, P Gerson, P Lloyd, JA Cremata.

Differences between the N-glycans of human serum erythropoietin and recombinant human erythropoietin.

Blood 2003, 101 (3), 1024.

PL. Storrington and **CT. Yuen**.

Approaches for estimating activity of botulinum toxin type B in therapeutic formulations

Naunyn-Schmiedeberg's Arch. Pharmacol. 2002, 365, 1-4

TA. Alsop, T. Leung, **CT. Yuen**, R Tierney, D Sesardic,

Developments in Reduction and Replacement of In vivo Toxicity and Potency Tests for Pertussis Vaccines.

Developments in Biologicals 2002, 111, 57-68.

D Xing, C Canthaboo, A Douglas-Bardsley, **CT Yuen**, S Prior, Y Liu and M Corbel.

An Enzymatic-High Performance Liquid Chromatography Coupled Assay for Determination of Ribosylation Activity of Pertussis Toxin and its Correlation with *In Vivo* Toxic Effect.

Vaccine 2002, 21, 44-52.

CT Yuen, C Canthaboo, JA Menzies, T Cyr, LW Whitehouse, C Jones, MJ Corbel, D Xing.

HPLC profiling of N-glycans on glycoproteins.

Biomedical Chromatography 2002, 16, 247-254.

CT Yuen, CK Gee and C Jones.

Expression of glycoconjugates bearing the Lewis x epitope during neural differentiation of P19 EC cells.
FEBS 2001, 488, 23-28.

Osanai-T, Chai-W, Tajima-Y, Shimoda-Y, Sanai-Y; **Yuen-CT**.

The Cysteine-Rich Domain of the Macrophage Mannose Receptor is a Multispecific Lectin Which Recognizes Chondroitin Sulfates A and B and Sulfated Oligosaccharides of Blood-Group Lewis^a and Lewis^x Types in Addition to the Sulfated N-Glycans of Lutropin.

J Exp Med 2000, 191, 1117-1126.

Leteux-C, Chai-W, Loveless-RW, **Yuen-CT**, Uhlin-Hansen-L, Combarnous-Y, Jankovic-M, Maric-SC, Misulovin-Z, Nussenzweig-MC; Feizi-T.

Fluorescent neoglycolipids-Probes for the study of oligosaccharide-protein interactions.

Eur J Biochem 2000, 267, 1795-1804.

Stoll-MS, Feizi-T, Loveless-RW, Chai-W, Lawson-AM; **Yuen-CT**.

High prevalence of 2-substituted and 2,6-disubstituted mannitol-terminating sequences among oligosaccharides released from brain glycopeptides by reductive alkaline hydrolysis.

Eur J Biochem 1999, 263, 879-888.

Chai-W, **Yuen-CT**, Kogelberg-H, Carruthers-RA, Feizi-T; Lawson-AM.

Core-branching pattern and sequence analysis of mannitol-terminating oligosaccharides by neoglycolipid technology.

Analytical Biochem 1999, 270, 314-322.

Chai-W, **Yuen-CT**, Feizi-T; Lawson-AM.

Recombinant G_{M2}-activator protein stimulates the *in vivo* degradation of G_{A2} in G_{M2} gangliosidosis AB variant fibroblasts but shows no detectable binding of G_{A2} in an *in vitro* assay.

Neurochemical Research, 1999; 24(2): 295-300.

Bierfreund-U, Lemm-T, Hoffmann-A, Uhlhorn-Dierks-G, Childs-RA, **Yuen-CT**, Feizi-T; Sandhoff-K.

Antibody 91.9H is specific for the 3'-sulphated Le^a tetrasaccharide sequence.

Glycobiology, 1998; 8: 1237-1242.

Loveless-RW, **Yuen-CT**, Tsuiji-H, Irimura-T; Feizi-T.

Non reductive release of O-linked oligosaccharides from mucin glycoproteins for structure/ function assignments as neoglycolipids: application in the detection of novel ligands for E-selectin.

Glycobiology. 1997; 7: 861-872

Chai-W; Feizi-T; **Yuen-CT**; Lawson-AM.

Valency dependent patterns of binding of human L-selectin toward sialyl and sulfated oligosaccharides of Le^a and Le^x types: relevance to anti-adhesion therapeutics.

Biochemistry. 1997; 36: 5260-5266

Galustian-C; Childs-RA; **Yuen-CT**; Hasegawa-A; Kiso-M; Lubineau-A; Shaw-G; Feizi-T.

Brain contains HNK-1 immunoreactive O-glycans of the sulfoglucuronyl lactosamine series that terminate in 2-linked or 2,6-linked hexose (mannose).

J. Biol. Chem. 1997; 272: 8924-8931

Yuen-CT; Chai-W; Loveless-RW; Lawson-AM; Margolis-RU; Feizi-T.

The Lex carbohydrate sequence is recognized by antibody to L5, a functional antigen in early neural development.

J-Neurochem. 1996; 66(2): 834-44

Streit-A; **Yuen-CT**; Loveless-RW; Lawson-AM; Finne-J; Schmitz-B; Feizi-T; Stern-CD.

Two families of murine carbohydrate ligands for E-selectin.

Biochem-Biophys-Res-Commun. 1996; 218(2): 610-5

Osanai-T; Feizi-T; Chai-W; Lawson-AM; Gustavsson-ML; Sudo-K; Araki-M; Araki-K; **Yuen-CT**.

Mass Spectrometry in Carbohydrate Recognition Studies. *Mass Spectrometry in the Biological Sciences*, eds. Burlingame-AL and Carr-SA, Humana Press, USA. 1996: 351-364

Lawson-AM; Chai-W; **Yuen-CT**; Feizi-T.

Glycolipid ligands for selectins support leukocyte tethering and rolling under physiologic flow conditions.

J-Immunol. 1995; 154(10): 5356-66

Alon-R; Feizi-T; **Yuen-CT**; Fuhlbrigge-RC; Springer-TA.

Further studies of the binding specificity of the leukocyte adhesion molecule, L-selectin, towards sulphated oligosaccharides—suggestion of a link between the selectin-and the integrin-mediated lymphocyte adhesion systems.

Glycobiology. 1995; 5(1): 29-38

Green-PJ; **Yuen-CT**; Childs-RA; Chai-W; Miyasaka-M; Lemoine-R; Lubineau-A; Smith-B; Ueno-H; Nicolaou-KC; Feizi-T.

Studies of oligosaccharide recognition by the leukocyte workshop antibodies.

Leukocyte Typing V, vol. 2, eds. Schlossman-SF et al, Oxford University Press, UK. 1995; 1539-1541

Green-PJ; **Yuen-CT**; Feizi-T.

Oligosaccharide ligands for NKR-P1 protein activate NK cells and cytotoxicity [Published]

Nature. 1994; 372(6502), 150-7 (**Correction: Nature 1996, 380, 599; Retraction: Nature. 2013 Aug 22;500 (7463):490**)

Bezouska-K; **Yuen-CT**; O'Brien-J; Childs-RA; Chai-W; Lawson-AM; Drbal-K; Fiserova-A; Pospisil-M; Feizi-T.

The adhesive specificity of the soluble human lectin, IgE-binding protein, toward lipid-linked oligosaccharides. Presence of the blood group A, B, B-like, and H monosaccharides confers a binding activity to tetrasaccharide (lacto-N-tetraose and lacto-N-neotetraose) backbones.

Biochemistry. 1994; 33(20): 6342-9

Feizi-T; Solomon-JC; **Yuen-CT**; Jeng-KC; Frigeri-LG; Hsu-DK; Liu-FT.

Differential recognition by conglutinin and mannan-binding protein of N-glycans presented on neoglycolipids and glycoproteins with special reference to complement glycoprotein C3 and ribonuclease B.

J-Biol-Chem. 1994; 269(15): 11555-62

Solis-D; Feizi-T; **Yuen-CT**; Lawson-AM; Harrison-RA; Loveless-RW.

Sulfated blood group Lewis^a. A superior oligosaccharide ligand for human E-selectin.

J-Biol-Chem. 1994; 269(3): 1595-8

Yuen-CT; Bezouska-K; O'Brien-J; Stoll-M; Lemoine-R; Lubineau-A; Kiso-M; Hasegawa-A; Bockovich-NJ; Nicolaou-KC; Feizi-T.

Neoglycolipids: probes of oligosaccharide structure, antigenicity, and function.

Methods-Enzymol. 1994; 230: 484-519

Feizi-T; Stoll-MS; **Yuen-CT**; Chai-W; Lawson-AM.

Differences in the binding specificities of *Pseudomonas aeruginosa* M35 and *Escherichia coli* C600 for lipid-linked oligosaccharides with lactose-related core regions.

Infect-Immun. 1992; 60(12): 5078-84

Rosenstein-IJ; **Yuen-CT**; Stoll-MS; Feizi-T.

High affinity binding of the leukocyte adhesion molecule L-selectin to 3'-sulphated-Lea and -Lex oligosaccharides and the predominance of sulphate in this interaction demonstrated by binding studies with a series of lipid-linked oligosaccharides.

Biochem-Biophys-Res-Commun. 1992; 188(1): 244-51

Green-PJ; Tamatani-T; Watanabe-T; Miyasaka-M; Hasegawa-A; Kiso-M; **Yuen-CT**; Stoll-MS; Feizi-T.

Novel sulfated ligands for the cell adhesion molecule E-selectin revealed by the neoglycolipid technology among O-linked oligosaccharides on an ovarian cystadenoma glycoprotein.

Biochemistry. 1992; 31(38): 9126-31

Yuen-CT; Lawson-AM; Chai-W; Larkin-M; Stoll-MS; Stuart-AC; Sullivan-FX; Ahern-TJ; Feizi-T.

Spectrum of sialylated and nonsialylated fuco-oligosaccharides bound by the endothelial-leukocyte adhesion molecule E-selectin. Dependence of the carbohydrate binding activity on E-selectin density [published erratum appears in *J Biol Chem* 1992 Aug;267(24):17478]

J-Biol-Chem. 1992; 267(19): 13661-8

Larkin-M; Ahern-TJ; Stoll-MS; Shaffer-M; Sako-D; O'Brien-J; **Yuen-CT**; Lawson-AM; Childs-RA; Barone-KM; Langer-Safer-PR; Hasegawa-A; Kiso-M; Larsen-GN; Feizi-T.

Specificity of lung surfactant protein SP-A for both the carbohydrate and the lipid moieties of certain neutral glycolipids.

J-Biol-Chem. 1992; 267(14): 9972-9

Childs-RA; Wright-JR; Ross-GF; **Yuen-CT**; Lawson-AM; Chai-W; Drickamer-K; Feizi-T.

Human serum amyloid P is a multispecific adhesive protein whose ligands include 6-phosphorylated mannose and the 3-sulphated saccharides galactose, N-acetylgalactosamine and glucuronic acid.

EMBO-J. 1992; 11(3): 813-9

Loveless-RW; Floyd-O'Sullivan-G; Raynes-JG; **Yuen-CT**; Feizi-T.

Differential recognition of core and terminal portions of oligosaccharide ligands by carbohydrate-recognition domains of two mannose-binding proteins.

J-Biol-Chem. 1990; 265(34): 20770-7

Childs-RA; Feizi-T; **Yuen-CT**; Drickamer-K; Quesenberry-MS.

The spectrum of N-linked oligosaccharide structures detected by enzymic microsequencing on a recombinant soluble CD4 glycoprotein from Chinese hamster ovary cells.

Eur-J-Biochem. 1990; 192(2): 523-8

Yuen-CT; Carr-SA; Feizi-T.

Response of mononuclear leukocyte cyclic adenosine monophosphate-phosphodi-esterase activity to treatment with topical fluorinated steroid ointment in atopic dermatitis.

J-Am-Acad-Dermatol. 1989; 21(1): 69-74

Holden-CA; **Yuen-CT**.

The effect of in vitro exposure to histamine on mononuclear leukocyte phosphodiesterase activity in atopic dermatitis.

Clin-Exp-Dermatol. 1989; 14(3): 186-90

Holden-CA; **Yuen-CT**; Coulson-IH.

Anti-collagen antibodies in granuloma annulare and necrobiosis lipoidica.

Clin-Exp-Dermatol. 1988; 13(4): 252-4

Evans-CD; Pereira-RS; **Yuen-CT**; Holden-CA.

Decreased tissue fibrinolytic activity in granuloma annulare.

Clin-Exp-Dermatol. 1987; 12(6): 437-9

Misch-KJ; **Yuen-CT**; Rhodes-EL.

Increased activity of serum amine oxidases in granuloma annulare, necrobiosis lipoidica and diabetes.

Br-J-Dermatol. 1987; 116(5): 643-9

Yuen-CT; Easton-D; Misch-KJ; Rhodes-EL.

Isoenzymes of urinary N-acetyl-beta-D-glucosaminidase (NAG) in patients with renal transplants.

Clin-Chim-Acta. 1987; 164(3): 339-50

Yuen-CT; Corbett-CR; Kind-PR; Thompson-AE; Price-RG.

Urinary enzymes as early indicators of renal changes.

Occupational & Environmental Chemical Hazards, Ellis Horwood Ltd, UK. 1987; 297-303

Price-RG; Halman-J; **Yuen-CT**.

Accumulation of sorbitol in endothelial cells—a possible cause of diabetic microangiopathy.

Diabetes-Res. 1986; 3(4): 217-9

Koh-MS; Misch-KJ; **Yuen-CT**; Rhodes-EL.

Colorimetric assay for N-acetyl-beta-D-glucosaminidase (NAG) in pathological urine using the omega-nitrostyryl substrate: the development of a kit and the comparison of manual procedure with the automated fluorimetric method.

Ann-Clin-Biochem. 1984; 21(4): 295-300

Yuen-CT; Kind-PRN; Price-RG; Praill-PFG; Richardson-AC.

The diagnostic value of urinary enzyme measurements in hypertension.

Clin-Chim-Acta. 1983; 133(3): 317-25

Johnston-ID; Jones-NF; Scoble-JE; **Yuen-CT**; Price-RG

Colorimetric assays for N-acetyl-beta-D-glucosaminidase and beta-D-galactosidase in human urine using newly-developed omega-nitrostyryl substrates.

Clin-Chim-Acta. 1982; 124(2): 195-204

Yuen-CT; Price-RG; Chattagoon-L; Richardson-AC; Praill-PFG.

The assay of arylesterase in serum using two new colorimetric substrates, omega-nitrostyrylacetate and propionate.

Clin-Chim-Acta. 1981; 112(1): 99-105

Yuen-CT; Price-RG; Richardson-AC; Praill-PFG.