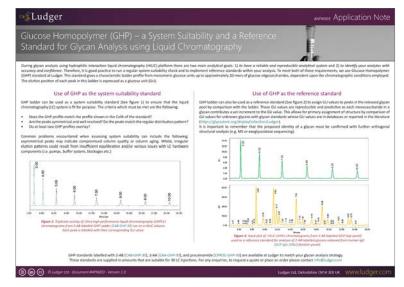
Application note for uses of Glucose Homopolymer ladder in Glycan Analysis

During glycan analysis using hydrophilic interaction liquid chromatography (HILIC) platform there are two main analytical goals: 1) to have a reliable and reproducible analytical system and 2) to identify your analytes with accuracy and confidence. Therefore, it is good practice to run a regular system suitability check and to implement reference standards within your analysis and at Ludger we use the Glucose Homopolymer (GHP) standard for our chromatographic glycan analysis.

Our new application note illustrates the uses of GHP standard as a system suitability standard and a reference standard to assist you with your chromatographic analysis.

We offer GHP standards labelled with 2-AB [CAB-GHP-30], 2-AA [CAA-GHP-30], and procainamide [CPROC-GHP-30]. To enquire or place an order please contact: info@ludger.com



For more information and to view the application note, please visit our webpage on glycan standards.

LudgerSep Buffers for WAX and HPLC Analysis of Glycans

LudgerSep buffers are produced to simplify the preparation of solvents for glycan analysis using either WAX columns or HPLC columns. The advantages of using our buffers include: ease of buffer preparation, consistence of pH for every batch purchased, there is no risk of contamination or out-of-specification problems that arise during glycan analysis when using LudgerSep buffers.

The table summarises the different applications; specifications including description, usage, storage and a link to the product guide to assist you with your glycosylation analysis workflow.

To view the pdf version of the table, please visit our Glycan HPLC and UHPLC columns and buffers webpage.

For any enquiries, to request a quote or place an order please contact: info@ludger.com

Mathems Ludger LudgerSep™ Buffers for WAX and HPLC Analysis of Glycans		diameter districts and the second districts ar	LS-R-BPTX10 LudgerSep R BPT solvent x10 concentrate For preparation of butylamine/ orthophosphoric acid/ tetrahydrofuran solvent (BPT) used in monosaccharide HPLC analysis.		
Catalogue #	LS-C-BUFFX4	LS-N-BUFFX40			
Buffer	LudgerSep C Buffer x4 Concentrate	LudgerSep N Buffer x40 Concentrate			
Application	Used in WAX (weak anion exchange) HPLC analysis of labeled glycans	For preparation of LS-N buffer (50 mM ammonium formate buffer, pH 4.4) used in amide or HILIC (hydrophilic interaction liquid chromatography) HPLC analysis of labeled glycans			
Description	2.0M ammonium formate buffer/ solution pH9.0	50ml of x40 LS-N buffer (2.0M ammonium formate buffer/solution)	50 mL of x10 LS-BPT solvent		
Usage	Dilute the whole contents of the bottle (50mL) with 150 mL HPLC grade water, then add 50 mL acteonitrile to make LS-C solvent (500 mM ammonium formate H 9, 20% acetonitrile v/v). The 50 mL of X4 buffer will make 250 mL of LS-C solvent.	Dilute with de-gassed HPLC grade water (use 1 part of x40 buffer to 39 parts of water) to make LS-N buffer (50 mM ammonium formate, pH 4.4). The 50 mi of x40 buffer will make 2 litres of LS-N buffer.	Dilute with de-gassed HPLC grade water use 1 bottle of LS-R-BPTX10 solvent to 450 mL of water. The 50 mL of x10 solvent will make 500 mL of BPT solvent.		
Storage	Store unopened bottle below 25 °C. As with any HPLC solvent we recommend preparation of immediately before use.	Store unopened bottle below 25 °C, As with any HPLC solvent we recommend preparation of the solvent immediately before use.	Store unopened bottle at 4 °C. As with any HPLC solvent we recommend preparation of the solvent immediately before use.		
Product Guide	ludger-ls-c-buffx4-guide	ludger-ls-n-buffx40-guide	ludger-ls-r-bptx10-guide		

Summary of HPLC and UHPLC columns for glycan analysis

At Ludger we offer a range of HPLC and UHPLC columns to suit your specific chromatographic applications.

The table below summarises the different applications; column specifications including particle size, flow rates, column pressure, temperature and a link to the product guide to assist you with your chromatography analysis.

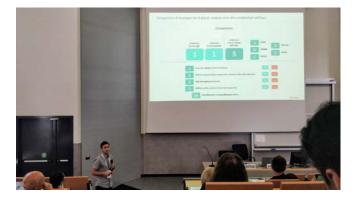
To view the pdf version of the table, please visit our Glycan HPLC and UHPLC columns and buffers webpage. For any enquiries, technical advice or to request a quotation, please contact us at: info@ludger.com

o≰ Ludger LudgerSep™ HPLC and UHPLC Columns								1
Catalogue #	LS-C2-4.6x50 and LS-C2-4.6x150	LS-C3-7.5x75	LS-N1-4.6x10 and LS-N1-4.6x250	LS-N2-4.6x150 and LS-N2-2.1x150	LS-R1-4.6x150	LS-R2-4.6x150	LS-UR2-2.1x50	LS-UR2-2.1x100
Column	C2 anion exchange HPLC column	C3 anion exchange HPLC column	N1 amide HPLC column	N2 amide HPLC column	R1 HPLC column	R2 HPLC column	uR2 UHPLC column for monosaccharide analysis	uR2 DMB UHPLC column for sialic acid analysis
Application	Separation of negatively charged glycans into neutral, mono, di, tri and tetra species.	Separation of negatively charged glycans into neutral, mono, di, tri and tetra species.	Separation of fluorophore labelled glycans according to size and shape.	Separation of fluorophore labelled glycans according to size and shape.	Separation of DMB labelled sialic acids on HPLCs	Monosaccharide analysis on HPLC systems	Monosaccharide analysis on UHPLC systems	Separation of DMB labelled sialic acids on UHPLCs
Description	Polystyrene particles with a macroporous polymeric anion exchange coating optimized for anion exchange chromatography. (1000 Angstrom pore size)	The C3 HPLC column contains macroporous (1000 Angstrom) anion exchange particles optimized for anion exchange chromatography of complex glycan mixtures.	LudgerSep N1 HPLC columns contain 5 um particles (80 Angstrom pore size) with a polymeric amide coating suitable for low resolution chromatography of complex glycan mixtures where UHPLC is not available.	LudgerSep N2 HPLC columns contain 3 um particles (80 Angstrom pore size) with a polymeric amide coating suitable for low resolution chromatography of complex glycan mixtures where UHPLC is not available and quicker gradients than N1 are required	The LudgerSep R1 HPLC column contains particles with an octadecylsilane coating optimized for hydrophobic chromatography. 120 Angstrom pore size	The LudgerSep R2 HPLC column contains particles with an octadecylsilane coating optimized for hydrophobic chromatography. It is optimized to handle efficient elution of the monosaccharides from the free dye peak. 175 angstrom pore size	The LudgerSep uR2 UHPLC column contains particles with an octadecylsilane coating optimized for hydrophobic chromatography. It is optimized to handle efficient elution of the monosaccharides from the free dye peak. 175 angstrom pore size	The LudgerSep uR2 UHPLC column contains particles with an octadecylsilane coating optimized for hydrophobic chromatography.
Particle size	8 um	10 um	5um	3um	3um	3um	1.9um	1.9um
Column Dimensions (width x length)	4.6mm x 50mm OR 4.6mm x 150 mm	7.5mm x 75mm	4.6mm x 10 mm OR 4.6mm x 250mm	4.6mm x 150mm OR 2.1mm x 150mm	4.6mm x 150mm	4.6mm x 150mm	2.1mm x 50mm	2.1mm x 100mm
Flow Rates	1mL/min	0.3 – 1.2mL/min	0.4 mL/min typical	0.4 mL/min typical	0.3 mL/min	0.3-2mL/min	0.4mL/min	0.25mL/min
Pressure	Max 3000 psi (207 bar)	Max 2175 psi (150 bar)	Max 2175 psi (150 bar)	Max 2900 psi (200 bar)	Max 5800 psi (400 bar)	Max 5800 psi (400 bar)	Max 18000 psi (1250 bar)	Max 18000 psi (1250 bar)
pH Range	1-14 pH stable	2-12	2-7.5	2-7.5	2-8	1-11	1-11	1-11
Temperature	10-80 °C	10-45 °C	30 °C typical (range 10-80 °C)	30 °C typical (range 10-50 °C)	60 °C max	60 °C max	60 °C max	60 °C max
Solvents	Acetonitrile, 20-500mM ammonium formate or ammonium acetate solvents	Acetonitrile, 20-500mM ammonium formate or ammonium acetate solvents	Acetonitrile and 50-250mM ammonium formate pH4.4	Acetonitrile and 50-250mM ammonium formate pH4.4	Acetonitrile + methanol mix	Solvent A: 0.2% butylamine/ 0.5% phosphoric acid/ 1% tetrahydrofuran in purified water. Solvent B: Acetonitrile	Solvent A: 0.2% butylamine/ 0.5% phosphoric acid/ 1% tetrahydrofuran in purified water. Solvent B: Acetonitrile	Acetonitrile + methanol mix
Companion Products	LudgerSep C Buffer x4 Concentrate LS-C-BUFFX4	LudgerSep C Buffer x4 Concentrate LS-C-BUFFX4	LudgerSep N Buffer x40 Concentrate LS-N-BUFFX40	LudgerSep N Buffer x40 Concentrate LS-N-BUFFX40		LudgerSep R BPT solvent x10 concentrate LS-R-BPTX10	LudgerSep R BPT solvent x10 concentrate LS-R-BPTX10	-
Product Guide	ludger-ls-c2-guide	ludger-ls-c3-guide	ludger-ls-n1-guide	ludger-ls-n2-guide	ludger-is-r1-guide	ludger-Is-r2-guide	ludger-Is-ur2-guide	ludger-ls-ur2-dmb-guide

Ludger at Glyco25 2019

Maximilianos Kotsias (Scientist, Ludger) recently attended the 25th International Symposium on Glycoconjugates 2019 August 25th-31st in Milan, Italy. He presented a talk entitled "Advancements in glycoanalytical strategies for N- and O-glycan analysis from in vitro established cell lines". Additionally, he took part in a round table discussion regarding the use of mass spectrometry for the analysis of glycans.

If you are interested in N- and O-glycan analysis workflows please visit our Glycan Analysis webpage and for any enquiries regarding our custom analytical services contact us at: info@ludger.com



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