



Product Guide for LudgerClean™ T1

Glycan Cleanup Cartridges

Part of the Ludger-Velocity™ Fast Glycan Analysis Range.

(Ludger Product Code: LC-T1-Ax)

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Contents

	Page
Contents	2
Specifications for LudgerClean™ T1 Cartridges	3
Additional Reagents and Equipment Required	4
Introduction.....	4
Timeline for Cleanup.....	4
Instructions for Use with a Vacuum Manifold	5
1 Wash and prime the cartridge	5
2 Prepare the glycan samples	5
3 Apply the samples to the cartridge	5
4 Wash off non-glycan contaminants	5
5 Elute the glycans.....	5
6 Store or Dry (optional) the eluted glycans.....	5
Warranties and Liabilities.....	6
Document Revision Number	6
Material Safety Data Sheet	7

Specifications for LudgerClean™ T1 Cartridges

- Application** The cartridges contain a unique solid phase extraction (SPE) resin that binds a wide range of fluorescently labeled glycans and allows purification of these from labeling reagents. They are compatible with many leading vacuum manifold SPE handling systems. Labelled glycans can be N or O-link type.
- Description** For post-labeling purification of LudgerTag™ fluorophore and chromophore labeled glycans. Suitable for cleanup after glycan labeling with 2-AB (2-aminobenzamide) and 2-AA (2-aminobenzoic acid).
- Binding Capacity** Each cartridge can typically bind glycans released from up to 50-100 µg glycoprotein. For higher capacity cleanup use LC-A-Ax cartridges.
- Number of Samples** LudgerClean™ T1 cartridges are designed for single use only.
- Suitable Samples** A wide range of glycans can be purified. These include N-linked and O-linked type oligosaccharides.
- Binding Selectivity** Essentially stoichiometric binding and elution for most complex glycan mixtures.
- Storage:** Store at room temperature in the dark. Protect from sources of heat, light, and moisture. The cartridges are stable for at least two years as supplied.
- Shipping:** The product can be shipped at ambient temperature.
- Handling:** Ensure that any glass, plasticware or solvents used are free of glycosidases and environmental carbohydrates. Use powder-free gloves for all sample handling procedures and avoid contamination with environmental carbohydrate.
- Safety:** Please read the Material Safety Data Sheets (MSDS's) for all chemicals used. All processes involving hazardous reagents should be performed using appropriate personal safety protection - eyeglasses, chemically resistant gloves (e.g. nitrile), etc. - and where appropriate in a laboratory fume cupboard

For research use only. Not for human or drug use

Additional Reagents and Equipment Required

Reagents

- Pure water (HPLC grade)
- Acetonitrile (HPLC grade)
- Binding solution – 96 % acetonitrile in water (v/v)
- Wash solution – 96 % acetonitrile in water (v/v)
- Elution solution – pure water

Equipment

- Pipettes
- 0.5 µm or 0.2 µm microcentrifuge filters
- Microcentrifuge

Introduction

LudgerClean™ T1 cartridges have been designed for purification of glycans post-fluorophore labeling. The cartridges are designed for use with vacuum manifolds or liquid handling robots. They can also be used as stand-alone devices where the user relies on gravity for washing and elution steps.

Timeline for Cleanup

The LudgerClean™ T1 glycan cleanup procedure typically takes around 55 minutes using a vacuum manifold.

Procedure	Time
1. Assemble the vacuum manifold	02 min
2. Preparation of T1 cartridges	10 min
3. Preparation of samples for cleanup	05 min
4. Apply the sample to T1 cartridges	08 min
5. Washing cartridges	15 min
6. Elution of labelled glycans	15 min
Total Time	55 min

Instructions for Use with a Vacuum Manifold

1 Wash and prime the cartridge

Prepare each LudgerClean™ T1 cartridge by washing with the following:

Reagent	Volume (ml)
1 st wash: Water	1
2 nd wash: 96 % acetonitrile*	1

**Prime with 100% acetonitrile for O-glycan clean-up.*

2 Prepare the glycan samples

Pipette 200 µL of 96% acetonitrile (100% acetonitrile for O-link glycans) into your fluorophore labeled sample (typically fluorophore labelling mix + glycan is a 5-10 µL volume of sample). Gently mix the sample by pipette action.

3 Apply the samples to the cartridge

Load each sample onto a primed cartridge. Without applying a vacuum allow the sample to settle into the cartridge for 5 minutes. Most of the solution should flow into the cartridge over this time. Next, apply a slow vacuum (approximately taking one minute) to drain the LC-T1.

4 Wash off non-glycan contaminants

Wash with 1mL of 96% acetonitrile* by applying the solution to the top of the cartridge and allow a slow vacuum to pull the solution through over a period of a few minutes. Repeat with 2 additional washes of 1ml 96% acetonitrile*. *100% acetonitrile for O-link glycan clean-up.

5 Elute the glycans

Remove the waste reservoir and replace with a collection reservoir.

Without applying a vacuum, elute fluorophore labeled glycans with 0.5 mL purified water (for extra caution 1 mL can be used to elute glycans where very large glycans are expected) by adding the water to the top of each cartridge and allowing about 15 minutes for the solution to pass through the cartridge and drain into the collection plate. After 15 minutes a gentle vacuum can be applied to the cartridges to ensure all eluant has been drained from the cartridge. Slow sample binding and elution from SPE cartridges generally ensures better sample to sample reproducibility.

6 Store or Dry (optional) the eluted glycans

Samples can be stored for several hours at 4°C or -20°C for longer (eg months). Alternatively the sample can be dried in a centrifugal evaporator without heat and ensure that the sample is removed shortly after completely dry. Extended drying times or heat can cause desialylation of glycans.

Warranties and Liabilities

Ludger warrants that the above product conforms to the attached analytical documents. Should the product fail for reasons other than through misuse Ludger will, at its option, replace free of charge or refund the purchase price. This warranty is exclusive and Ludger makes no other warranties, expressed or implied, including any implied conditions or warranties of merchantability or fitness for any particular purpose.

Ludger shall not be liable for any incidental, consequential or contingent damages.

This product is intended for *in vitro* research only.

Document Revision Number

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Material Safety Data Sheet

Manufacturer	Ludger Ltd Culham Science Centre, Oxford OX14 3EB, UK Tel: +44 870 085 7011, Fax: +44 870 163 4620 Email: safety@ludger.com, Website: www.ludger.com
Identification of the substance	LudgerClean™ T1 cartridges
Composition	Tube of polypropylene containing glycan absorption resin
Hazard identification	Non hazardous.
First aid measures	In case of contact: Eyes: irrigate with plenty of water. Skin: wash with soap and water. Ingestion: drink plenty of water. Inhalation: move to a well ventilated area and clear nose and throat. If in doubt seek medical advice.
Fire fighting measures	Non hazardous. Water spray or appropriate foam according to surrounding fire conditions.
Accidental release measures	Wash spill site with copious amounts of water.
Handling and storage	Store at room temperature. Handle in accordance with Good Laboratory Practice.
Exposure Controls /	Wear appropriate protective clothing (safety spectacles, gloves, laboratory coat) in accordance with Good Laboratory Practice.
Physical and chemical properties	Constructed of solid plastic and polymeric materials
Stability and reactivity	Not combustible.
Toxicological information	Toxicological, carcinogenic and mutagenic properties have not been investigated.
Ecological information	Data not available.
Disposal considerations	No special requirements. Dispose of according to local requirements.
Transport information	Contact Ludger Ltd for transportation information.
Regulatory information	Data not available.
Other information	The advice offered is derived from the currently available information on the hazardous materials in this product or component. Consideration has been made regarding the quantities offered in the pre-dispensed container. The advice offered is, therefore, not all inclusive nor should it be taken as descriptive of the compound generally.