LigaGuard™

Host Cell Protein Capture in Flow-Through Mode Instructions

Product Overview

LigaTrap Technologies is excited to introduce **LigaGuard (LG)** resin for the purification of biotherapeutics via *flow-through affinity chromatography*. The **LG** resin captures host cell proteins (HCPs) and DNA in flow-through mode, while allowing the target product to flow through unbound, and is ideal for rapid and continuous purification applications. The resin features broad targeting activity towards different mammalian sources - including Chinese Hamster Ovary (CHO) and Human Embryonic Kidney (HEK293) cells - and can be utilized for purification of proteins (*e.g.*, monoclonal antibodies and growth factors) as well as viral vectors (*e.g.*, Adenoassociated Virus, Lentivirus, and viral vaccines). **LG** resin is offered as loose resin or in 1mL and 5mL prepacked column formats to support bioprocess R&D efforts. **LG** features an equilibrium binding capacity ≥ 25 mg of HCPs per mL of resin (upon static incubation) and dynamic binding capacity ≥ 15 mg of HCPs per mL of resin ($DBC_{10\%}$ at a residence time of 1 - 2 min).

Product Specifications

Parameter	LigaGuard Loose Resin Specifications
Binding Targets	CHO HCPs, HEK293 HCPs, MDCK HCPs, Vero cells HCPs, and DNA of each target
Equilibrium Capacity (Q_{max})	≥ 25 mg of HCPs per mL of resin
Dynamic Binding Capacity (DBC10%)	(RT: 1-2 min) ≥ 15 mg of HCPs per mL of resin (RT: 5 min) ≥ 20 mg of HCPs per mL of resin
Pressure Limit	Ensure not to exceed a maximum flow rate of 600cm/hr.
Storage	20% v/v ethanol in water, store at 4°C

Recommended Chromatographic Buffers

- Sample Buffer: 20 mM Tris HCl buffer, pH 7.4*
- Binding Buffer: 20 mM Tris HCl buffer, pH 7.4*
- Washing Buffer: 20 mM Bis-Tris HCl buffer, pH 6.5
- Regeneration Buffer: 1% v/v phosphoric acid, pH 2.5
- Storage Solution: 20% v/v ethanol in water

** The pH of the Sample and Binding Buffers should be adjusted depending on the isoelectric point of the product.*

Procedure

Sample Preparation

1. Clarify the harvest/feedstock.
2. Condition the clarified harvest/feedstock via Tangential Flow Filtration or dilution with Sample Buffer to reach a conductivity of ~ 5 mS/cm and a HCP titer of ~ 0.1 – 1 mg/mL.**

Chromatographic Protocol

3. Equilibrate the **LG** column with 3 Column Volumes (CV) of Binding Buffer.
4. Load the (conditioned) clarified harvest/feedstock over the **LG** column.***
5. Following loading of sample, wash the column with 2 CV of Washing Buffer.
6. Combine flow-through and wash fractions (product).
7. Regenerate the **LG** column with 3 CV of Regeneration Buffer.
8. Equilibrate the **LG** column with 3 CV of Sample Buffer.
9. Store the column in Storage Solution at 4°C.

*** The clarified harvest/feedstock may be loaded over the LigaGuard columns without pretreatment; however, for optimal HCP/DNA removal, conditioning the harvest/feedstock to a conductivity of ~ 5 mS/cm using the Sample buffer is recommended*

**** Load Volume: 0.75 x HCP titer in the feedstock (mg/mL)*

Batch Method Protocol

10. Transfer loose resin to a clean mixing container of adequate volume, which can hold resin, sample, and buffers.
11. Equilibrate the **LG** column with 3 Column Volumes (CV) of Binding Buffer and discard.
12. Load the (conditioned) clarified harvest/feedstock over the **LG** column and mix gently for a desirable time at room temperature or overnight at 4°C.
13. Collect the supernatant after incubation and wash the resin with 2 CV of washing buffer and combine with supernatant with wash collection (Clean Product).
14. Regenerate the **LG** column with 3 CV of Regeneration Buffer.
15. Equilibrate the **LG** column with 3 CV of Sample Buffer.
16. Rinse resin with 3 CV of deionized water prior to storing.
17. Store the resin in Storage Solution at 4°C.

Who We Are

LigaTrap Technologies is an emerging leader in innovative and proprietary peptide affinity ligands for antibody purifications.

LigaTrap's newest affinity adsorbent, **LigaGuard**, is the solution for purifying HCP and DNA contaminants for Mammalian, AAV, and Lentivirus bioprocessing.

Contact Us

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