

CIMmic[®] Monolithic Columns

Pre-Activated Columns for
Immobilization Screening



Portfolio Overview

CIMmic[®] is a line of small monoliths with pre-activated surfaces used as a basis for preparation of custom-made chromatographic columns by coupling various ligands, such as proteins, nucleic acids, peptides, etc. Covalent coupling reduces ligand leakage and improves stability and reusability. CIMmic[®] combines the advantages of the CIM[®] (Convective Interaction Media) monolithic stationary phase with a flexible design and the possibility to operate manually with syringes, low pressure pumps, or HPLC systems. Due to the economic use of expensive ligands, the small bed volume (0.1 mL) of CIMmic[®] discs is particularly suitable for screening purposes and optimizing immobilization protocols.

Key Benefits

- Three pre-activated surface chemistries enable coupling of a wide range of ligands
- Covalent bonding of ligands reduces leakage, improving stability and reusability
- 100 µL column volume has minimal sample requirements
- Ideal for immobilization screening and optimization as well as small-scale proof of concept
- Use for custom affinity columns, enzymatic reactors, etc.

Relevant Applications

Uses of CIMmic® columns:

- Immobilization screening
- Custom affinity columns
- Enzymatic reactors
- Sample preparation
- Diagnostic tools

The CIMmic® Product Portfolio

CIMmic® discs are made of the same polymethacrylate monolithic material as CIMmultus® or CIMac® columns and share the features and advantages of the CIM® stationary phase:

- Large flow-through channels
- Convective mass transport
- Flow-independent capacity and resolution
- Designed for working with large biomolecules

CIMmic® discs are operational when inserted into a custom-designed housing. Placement and changeout in the column require no special tools and is done very quickly. To increase the bed volume of the column, up to three discs can be positioned in the same housing. Three discs per pack enable the preparation of three identical columns or the screening of different coupling conditions.

CIMmic® monoliths are available in three different chemistries for coupling various ligand types that may require different conditions to bind efficiently or stably. All three activated groups form covalent bonds between the matrix and the ligand, reducing leaching and improving stability and reusability.

CIMmic CDI-0.1 Disk (carboxy imidazole, 2 µm pores)

CIMmic® CDI (carboxy imidazole) pack contains three identical monolithic chromatographic discs with a bed volume of 0.1 mL and is intended for covalent immobilization of amine- or thiol-containing ligands such as proteins or peptides via a carbamate bond. A distinctive feature of CDI-based coupling is a formation of a neutral (no charge) linkage between the ligand and monolith.

Note: Pack of three. Housing is not included.
Literature: Product Sheet and Instruction Manual
CDI Immobilization Procedure

CIMmic® ALD-0.1 Disk (aldehyde, 2 µm pores)

CIMmic® ALD (aldehyde) pack contains three identical monolithic chromatographic discs with a bed volume of 0.1 mL and is intended for covalent immobilization of amine- or thiol-containing ligands such as proteins or peptides. A distinctive feature of ALD-based coupling is the extreme chemical stability of the link between the ligand and monolith.

Note: Pack of three. Housing is not included
Literature: Product Sheet and Instruction manual
ALD Immobilization Procedure

CIMmic® HDZ-0.1 Disk (hydrazide, 2 µm pores)

CIMmic® HDZ (hydrazide) pack contains three identical monolithic chromatographic discs with a bed volume of 0.1 mL and is intended for covalent immobilization of glycoproteins through oxidized sugar groups and other carbonyl-containing molecules. A distinctive feature of HDZ-based coupling is site-directed coupling of antibodies, producing highly efficient immunoaffinity-based columns.

Note: Pack of three. Housing is not included.
Literature: Product Sheet and Instruction Manual
HDZ Immobilization Procedure

CIMmic® Screening Pack

CIMmic® Screening pack contains three monolithic chromatographic discs: one CIMmic® CDI (carboxy imidazole), one CIMmic® ALD (aldehyde), and one CIMmic® HDZ (hydrazide). Each disc has a bed volume of 0.1 mL and is intended for covalent immobilization of ligands. The diversity of three different pre-activated monoliths enables an early screening of the most efficient coupling protocol for a specific ligand.

Note: Housing is not included in the Screening Pack.
Literature: Optimization of Covalent Immobilization of Recombinant Prokaryotic Lectins on CIMmic® Platform (AN)

CIMmic® Complete Housing

This is a custom-designed housing for CIMmic® discs. They are easily interchanged in seconds without the use of any special tools. Up to three discs can be positioned in the same housing.

Technical Specifications

CIMmic® Discs

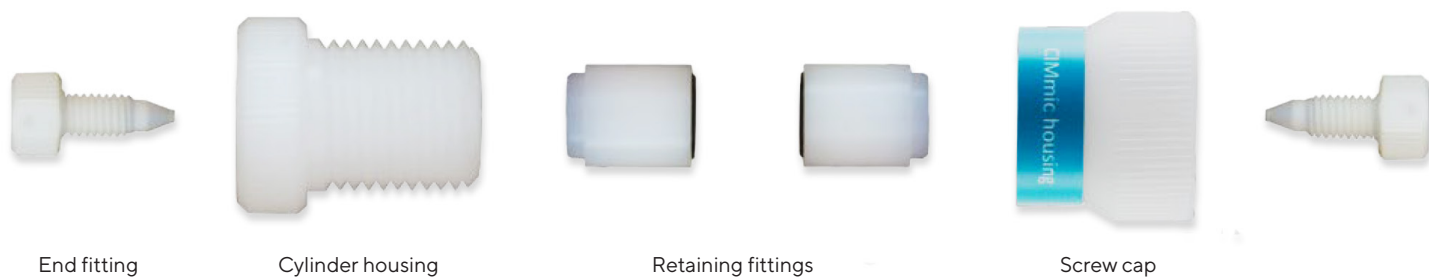
Attribute	CIMmic® CDI	CIMmic® ALD	CIMmic® HDZ
Disc Color Code	Black	Yellow	Grey
Monolith Dimensions	5.2 mm ID × 5 mm L	7.9 mm ID × 2.1 mm L	5.2 mm ID × 5 mm L
Column Volume	0.1 mL	0.1 mL	0.1 mL
Pore Size	2 µm	2 µm	2 µm
Channel Size	1 µm	1 µm	1 µm
Activated Group	Carboxy Imidazole	Aldehyde	Hydrazide
Couples to	Amine or Thiol	Amine or Thiol	Glycoproteins (Carbonyl)
Covalent Bond Formed	Amide	Amine	Hydrazone
Recommended Flow Rate	0.2 – 3 mL/min or 2 – 30 CV/min	0.2 – 3 mL/min or 2 – 30 CV/min	0.2 – 3 mL/min or 2–30 CV/min
Maximum Operating Pressure	5 bar, 70 psi, 0.5 MPa	5 bar, 70 psi, 0.5 MPa	5 bar, 70 psi, 0.5 MPa
Shelf Life	3 months*	2 years	6 months

*Produced on request due to short shelf life. Delivery time is 6 – 8 weeks.



CIMmic® Housing

Attribute	
Housing Material	Acetal copolymer (POM-C)
End Frits	30 µm
Connector	10–32 UNF coned port, 1/16" OD connection
Flow Design	Symmetrical, operation in both directions possible, axial flow
Capacity	1–3 × 0.1 mL CIMmic® discs, easily interchangeable without tools
Operation	With HPLC FPLC system, low pressure pumps, or manually with syringes
Stability	Elevated resistance to hydrolysis, strong alkalis, and moisture adsorption



Ordering Information

CIMmic[®] Columns

Item	Description	Package	Order Number
CIMmic [®] CDI-0.1 Disc (Carboxy Imidazole)		3 per pack	103.8000-2
CIMmic [®] ALD-0.1 Disc (Aldehyde)		3 per pack	103.8001-2
CIMmic [®] HDZ-0.1 Disc (Hydrazide)		3 per pack	103.8002-2
CIMmic [®] Complete Housing		1 per pack	102.0000
CIMmic [®] Screening Pack	1 each CDI, ALD, and HDZ 0.1 mL CIMmic [®] discs	1 each per pack (total 3)	103.8005-2

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