ÄKTA start

System Cleaning Procedure



Overview

ÄKTA™ start is a simple and modern liquid chromatography system intended for preparative purification of proteins at laboratory scale. The system can be used for a variety of research purposes to fulfill the needs of the users in academia and the life sciences industry.

This Cue Card describes the system cleaning procedure for ÄKTA start. It is recommended to clean the system flow path every day after the use or while leaving the instrument idle for a long duration. The salt crystals formed by the buffers reduces the valve life. Cleaning also helps in maintaining the system and workplace hygiene.

Regular maintenance is important for safe and trouble-free operation of ÄKTA start.

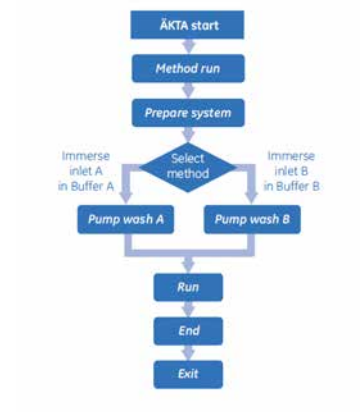
Cleaning the Buffer valve and Wash valve (Pump wash A/B)

The Buffer valve and Wash valve can be cleaned using DM water. Cleaning the Buffer valves prevents cross-contamination and carryover of buffers.

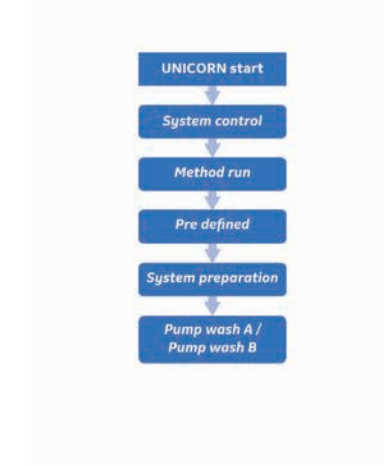
Instruction

Step	Action
1.	Immerse the buffer A or B inlet tubing in DM water or buffer of choice.
2.	Follow the workflow below to run Pump wash.

Operation from the instrument display



Operation from UNICORN™ start



Cleaning the sample valve

Instruction

Step	Action
1.	Immerse the sample inlet tubing in the cleaning solution (DM water, 1M NaCl or 1 M NaOH).
2.	Set Run parameters: • Set Flow rate to 5 ml/min. • Clear the Save results to USB option.
3.	Set Flow path: • Set Sample valve to Sample. • Set Wash valve to Column. • Set Outlet valve to Waste.
4.	Run for 3 to 10 minutes.

Note: If the sample inlet port is used to load the sample, make sure to clean the sample inlet port thoroughly using 1 M NaCl or 1M NaOH. If the sample is viscous, clean the sample inlet port with both 1 M NaCl and 1 M NaOH.

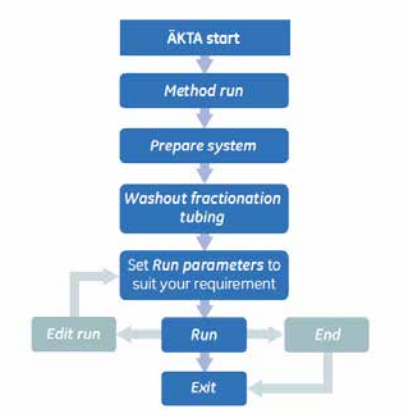
Note: *Do not leave NaOH or NaCl in the sample inlet port and wash the inlet port thoroughly with DM water. To make sure that NaOH is removed, check the pH after water wash.*

Cleaning the fractionation tubing

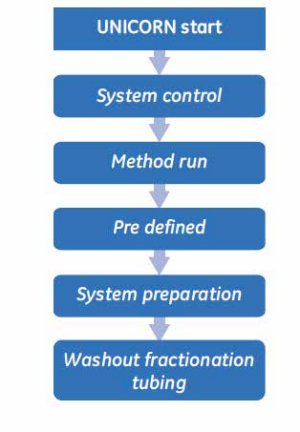
Instruction

Step	Action
1.	Immerse the buffer inlet tubing in DM water or the buffer of choice.
2.	Disconnect the column from the flow path and reconnect the tubing with a Union connector.
3.	Follow the workflow below to run ***Washout fractionation tubing.***

Operation from the instrument display



Operation from UNICORN start



Note: *If the valve leaks, follow the cleaning protocol to help resolve the valve leakage issue.*

Decontaminating the system

System cleaning

The ***System cleaning*** method is used to clean the instrument flow path for routine maintenance, preparing the system for storage, removing/ preventing contamination in the flow path, preventing carryover of buffers/samples.

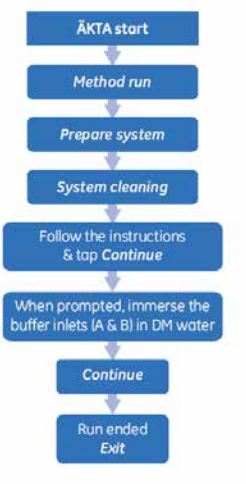
Cleaning solutions

- 1 M NaOH
- DM water

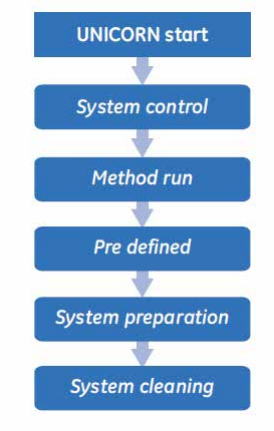
Instruction

Step	Action
1.	Clean the inlets and outlets (buffer tubing, sample inlet tubing, fractionation tubing).
2.	Immerse the buffer inlet tubing (A & B) in 1 M NaOH.
3.	Disconnect column from the flow path and reconnect the tubing with a Union connector.
4.	Follow the workflow to run ***System cleaning***.

Operation from the instrument display



Operation from UNICORN start



Note:

- Do not leave NaOH in the system. Wash the flow path thoroughly with water.
- Check the pH after water wash to ensure complete removal of NaOH.
- It is recommended not to end the method before it is completed.

Storage of the instrument

Short term storage (1-2 days)

Storage solution: DM water

Note: *Before cleaning the flow path, remove the column and re-connect the flow path.*

Instruction

Step	Action
1.	Immerse the buffers and the sample inlet tubing in DM water.
2.	Run system methods (***Pump wash A & B***, ***Washout fractionation tubing***) or run manually to flush the flow path (including all inlets and outlets) with DM water. Pump at least 20 ml water through the system.
3.	End the run and leave the system filled with DM water during the storage period.
4.	Open the pump cover after switching off the instrument.

Long term storage (>3 to 4 days)

Storage solution: 20% ethanol (aqueous solution)

Note: Before cleaning the flow path, remove the column and re-connect the flow path.

Instruction

Step	Action
1.	Immerse the buffer and the sample inlet tubing in 20% ethanol.
2.	Start a manual run and pump 20 ml of 20% ethanol through the system.
3.	Edit the run and set the run parameters to clean the sample inlet tubing and the outlet tubing for fraction collection.
4.	End the run and leave the system filled with 20% ethanol during the storage period.
5.	Open the pump cover after switching off the instrument.

Getting help

ÄKTA start Instrument Display Help

- Accessible from every screen on the Instrument Display by tapping the question mark located in the upper right corner.
- The Display Help text provides information about the content of the current screen or refers to more detailed documentation.

For more details, refer to *ÄKTA start Maintenance Cue Card (29024043).*

Page intentionally left blank

cytiva

cytiva.com

Cytiva and the Drop logo are trademarks of Global Life Sciences IP Holdco LLC or an affiliate.

ÄKTA and UNICORN are trademarks of Global Life Sciences Solutions USA LLC or an affiliate doing business as Cytiva.

All other third-party trademarks are the property of their respective owners.

Any use of UNICORN is subject to Cytiva Standard Software License End-User License Agreement for Life Sciences Software Products. A copy of this Standard Software End-User License Agreement is available on request.

UNICORN start © 2020–2021 Cytiva

© 2020–2021 Cytiva

All goods and services are sold subject to the terms and conditions of sale of the supplying company operating within the Cytiva business. A copy of those terms and conditions is available on request. Contact your local Cytiva representative for the most current information.

For local office contact information, visit cytiva.com/contact.

29284718 AB 04/2021