

Flow Cell Selection and Information

The KinExA® flow cell is a capillary tube with a 20 Micron screen for retaining the solid phase. The lifespan of a flow cell varies widely due to factors such as: the type of beads that are being used, what materials are run through it, the flow rates and volumes used, etc.

Note: For instructions on how to change or align the flow cell, see *How to Guide 203 – Flow Cell Replacement and Alignment (HG203)*.

When to change your flow cell

- 1. Abnormal data traces.** On a KinExA 3000 instrument, the only direct record of the instrument function is the data traces. If the traces show evidence of excessive bubbles, baseline creep (**Figure 1**), inconsistent baseline, or higher than usual noise, it is reasonable to change the flow cell to see if improvement results.
 - If baseline creep is occurring, Sapidyne recommends replacing the flow cell with a siliconized flow cell.

- As a diagnostic procedure, users can open the fast rinse dialog and draw 3000 ul at a rate of 3 ml/min. If everything is functioning properly the instrument can use this volume and rate without cavitating or pulling air bubbles in. If there is evidence of cavitation (partial vacuum in the aspiration syringe and/or bubbles forming under the screen of the flow cell (as opposed to flowing into the flow cell at the top), the flow cell should be changed.

- 2. Pressure data.** A KinExA 3200 includes pressure data that is useful in monitoring flow cell performance. Pressure is a more direct and sensitive indicator of flow cell performance than the data traces and flow cells can often be replaced before they adversely affect the binding data.
 - Upward trends in the backflush pressure, as shown in **Figure 2**, are an important indicator that the flow cell is becoming plugged and should be changed.
 - For more information on the interpretation of pressure data and expected normal values, see Tech Note 214 – Pressure Data (**TN214**).

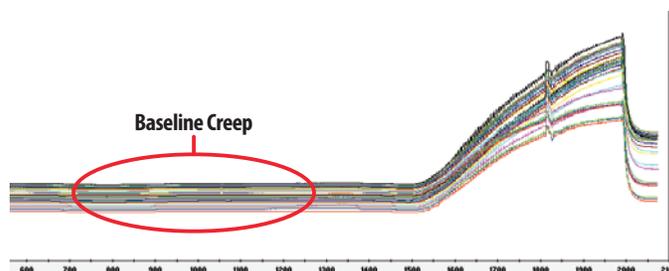


Figure 1. The increase in baseline with each run indicates a sticky system or dirty flow cell.

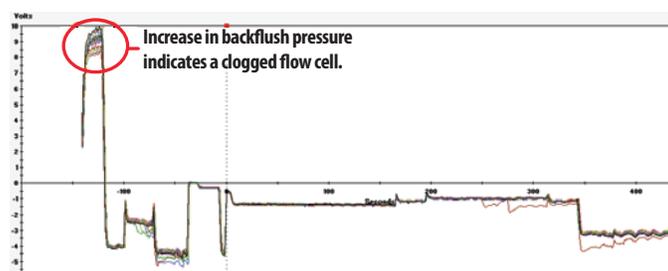


Figure 2. The steady increase in backflush pressure with each run indicates a clogged flow cell.

