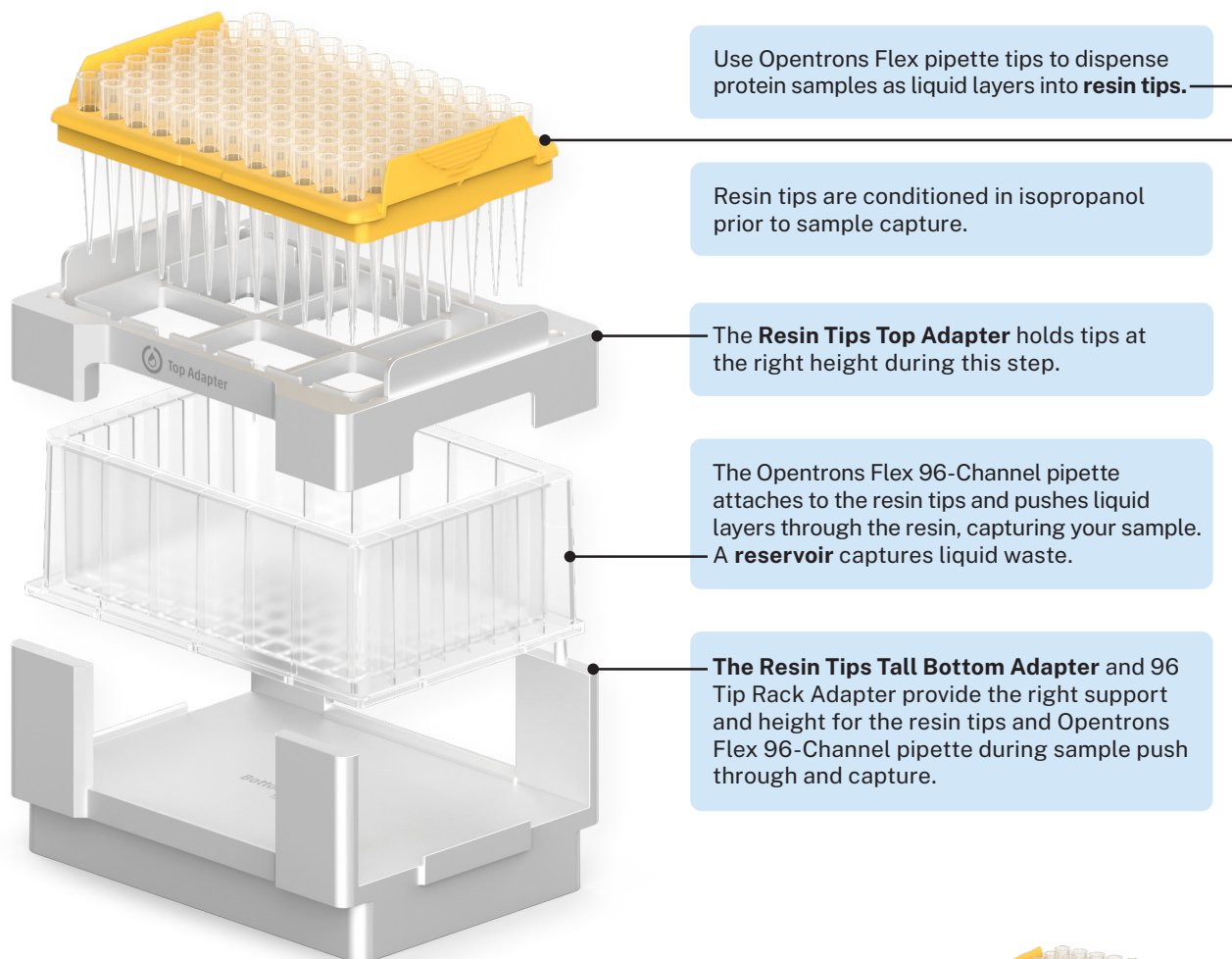




Opentrons Flex[®] Resin Tips Adapter Set

The Opentrons Flex Resin Tips Adapter set includes four adapter pieces designed to support third-party Evosep Evtips for fully automated protein sample clean-up ahead of mass spectrometry. The adapter set enables the Opentrons Flex 96-Channel Pipette (5–1,000 μ L) to efficiently load and capture digested protein samples onto Evtips, streamlining one of the most time-consuming steps in a proteomics workflow. The set is used in combination with the Opentrons Flex robot, Opentrons Flex 96-Channel Adapter, Evosep Evtips, and standard consumables.



Load third-party Evosep Evtips and the Resin Tips Adapter Set (PN 999-00254) in a labware stack on the Opentrons Flex deck. The **Resin Tips Short Adapter** is placed in another open deck slot to allow for conditioning of the resin tips.



Evaluation of Automated Performance Using the Opentrons Flex for Protein Sample Clean-up

An optimized protocol on the Opentrons Flex was used to automate protein sample clean-up from HeLa cells on third-party Evosep Evotips (Figure 1). In a direct comparison with manual preparation, total protein identification was consistent across three independent runs of 48 samples each, demonstrating reproducible and reliable results with reduced hands-on time.

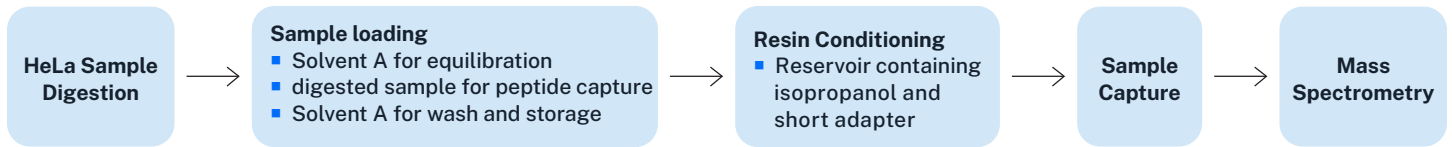


Figure 1. Workflow for fully automated Evotip sample loading, resin conditioning, and sample capture on the Opentrons Flex ahead of mass spectrometry.

Three liquid layers were added to third-party Evosep Evotips:

- 15 μL Solvent A (for equilibration)
- 20 μL Pierce HeLa protein digest standard (2.5 or 0.25 $\text{ng}/\mu\text{L}$, prepared in Solvent A)
- 150 μL Solvent A (for sample washing and storage)

Eluted protein digests were processed on an EvosepOne LC2 for liquid chromatography and a ThermoFisher Orbitrap HFX mass spectrometer at an independent, third-party lab using the 30 samples per day (30 SPD) method. Data analysis was performed using directDIA on Spectronaut software.

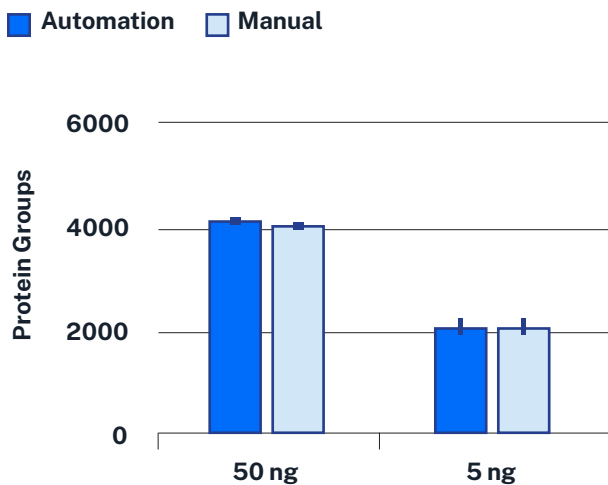


Figure 2. Automated sample clean-up matched the manual process for total protein group identification ($n=48$ samples; error bars represent the standard deviation).

In a direct comparison between automated and manual sample clean-up using third-party Evosep Evotips, total protein identification was consistent across three independent runs of 48 samples each (Figure 2). Here, the Opentrons Flex and Resin Tips Adapter Set can be used to automate essential protein sample clean-up, saving time at the bench while delivering reliable results.

Automate your sample clean-up workflow with the Resin Tips Adapter Set and save time in your proteomics workflows.