

## GENERAL INSTRUCTIONS / TapeStation 4150

**INSTRUMENT:** Automated electrophoresis platform for the quality control (QC) of DNA and RNA samples in next-generation sequencing (NGS), microarray and qPCR workflows

**Manufacturer:** Agilent Technologies

**Distributor:** Agilent Technologies (customer\_care\_finland@agilent.com, +358 10 855 2465)

**Technical support:** genomics\_tech\_europe@agilent.com

**Owner:** Tampere University / LAS

**Location:** ARVO E215

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**RESERVATIONS** should be made in AGENDO: <https://tuni.agendo.science/>

- **Billing is done according to reservations**

### AGENDO RESERVATION INSTRUCTIONS:

- Book max. 1 hour slot from Agendo for your run. Note that analysis takes 1 to 2 minutes per sample, or less than 20 minutes for 16 samples.
- **When pipetting the run yourself**, check **“Self service” box** in Agendo and select the proper **“Self Service kit name”** option and mark how many samples you want to run. **Mark only the actual amount of your samples**, there is no need to take the ladder into account.
- **When you want the core facility staff to run your samples**, select the proper **“Kit name”** option and mark how many samples you want to run. **Mark only the actual amount of your samples**, there is no need to take the ladder into account.

### ANALYSIS KITS PROVIDED:

- D1000 ScreenTape
- HS D1000 ScreenTape
- D5000 ScreenTape
- Genomic DNA ScreenTape
- RNA ScreenTape

**Refer to the correct Quick Guide when performing a run.** Each Quick Guide can be found as a printed version in the plastic folder of a corresponding logbook of each kit.



- Kits and reagents are stored in the E218 cold room, on the left side. They can be found in the green plastic basket and in the blue pipette box. The exception is the RNA kit ladder, which is stored at -20 °C in the freezer room E217, in the light blue plastic basket.
- Tube strips, caps and TapeStation tips are stored in the drawer that is situated near the TapeStation instrument.
- **NOTE!** The ScreenTape device must be used within two weeks after opening the ScreenTape device foil bag.
- **FIRST TIME USER:** Create your own results file by the following on the TapeStation laptop: **Documents – Agilent – TapeStation Data – Folder “your name\_group”**

#### WORKFLOW:

1. **Make sure that your samples fall into the quantitative range of the kit that you selected.** Measure the concentrations using e.g. Qubit if you are not aware of the concentrations. Dilute the samples if needed using water or TE buffer.
2. Equilibrate the reagents to room temperature at least 30 min before performing the run.
3. Switch on the computer and the instrument and launch the Agilent TapeStation Controller Software.
4. **When opening the ScreenTape device foil bag the first time, remember to write the opening date onto the bag.** Flick the ScreenTape device once to reduce air bubbles and insert it into the ScreenTape nest of the TapeStation instrument – make sure that the barcode is facing the reader (green light) on the right side of the nest.
5. Select required sample positions and name your samples in the TapeStation Controller Software. Ladder is exclusively loaded from location A1 on the tube strip holder.

**NOTE!** For best sizing and molarity quantification results, a ladder per ScreenTape device is recommended. Alternatively, an electronic ladder is available for D1000, HS D1000, and RNA kits, and can be selected in the Agilent TapeStation Controller software by right-clicking the mouse when over the A1 well and choosing “Use Electronic ladder”. Electronic ladder cannot be used with D5000 and Genomic DNA kits.

6. Load the correct amount of tips (and possible further ScreenTape device; software recognizes whether or not sufficient amount of reactions is still left in the

ScreenTape device for your run) as instructed by the TapeStation Controller software. Check that the waste bin is empty and clean.

7. Select your results folder from the settings menu to save your results into a correct folder: **Click “wheel” icon in the upper right corner - click Settings. In the lower right corner of the Settings window, click three dots and select your results folder that has been created beforehand.**

**NOTE! If you are performing an RNA ScreenTape run, select from the Settings window whether the RNA that you want to analyze is from a eukaryotic or prokaryotic origin.**

**NOTE! DO NOT CHANGE ANY OTHER SETTINGS!**

8. Vortex reagents and samples. Spin down before use.
9. Follow the correct Quick Guide to combine Sample Buffer and the ladder / Sample Buffer and the samples on a tube strip.
10. Apply caps to tube strip and mix liquids using the IKA MS3 vortexer at 2000 rpm for 1 min. When you press “Start”, the vortexing automatically lasts 1 min.
11. Spin down the liquids.
12. **NOTE! If you are using the RNA ScreenTape kit,** denature the samples and ladder according to the RNA ScreenTape Quick Guide.
13. Load sample strip into the TapeStation instrument. Place ladder in position A1 on tube strip holder.
14. Carefully remove caps of tube strips. Visually confirm that liquid is positioned at the bottom.
15. Click **Start**.
16. The TapeStation Analysis software opens automatically after the run and displays results. Copy your results from **Documents – Agilent – TapeStation Data – Folder “your name\_group”** to your USB stick.
17. **If you wish to analyze the results on your own computer,** contact IT support for the installation of the analysis program “TapeStation Analysis”.

**18. After the run, do the following:**

- **Empty the tip waste bin and clean it with distilled water,** dry and put back in the instrument.
- **Mark the number of used and unused lanes of the ScreenTape device into the correct logbook.** Mark also other requested information.
- **If you did not finish all reactions from the ScreenTape device, put the ScreenTape device back to its foil bag, seal the bag tightly with tape and mark on top of the bag how many reactions have been used from that ScreenTape.** Take the ScreenTape bag back to its storage location and store it in the horizontal orientation (same orientation as in the ScreenTape nest of the TapeStation instrument). Take also the Sample Buffer back to its storage location.
- Switch off the TapeStation instrument and laptop if you are the last user of the day.