



## EXERCISE: GETTING STARTED WITH SAV

### Purpose

This exercise explores the following topics:

- How to load run data into SAV
- How to explore run metrics with SAV

### Getting Started

This exercise uses SAV to review data from a MiSeq run.

### Supplies

The following supplies are needed:

- Sequencing Analysis Viewer (SAV) software  
Download from:  
[support.illumina.com/sequencing/sequencing\\_software/sequencing\\_analysis\\_viewer\\_sav/downloads.ilmn](http://support.illumina.com/sequencing/sequencing_software/sequencing_analysis_viewer_sav/downloads.ilmn)
- Run data folder  
Download from the Sequencing Analysis Overview online course.  
Access from the Resources tab or page 1.7.2.  
<http://support.illumina.com/training/sav-overview.ilmn>

Unzip the run data folder. The folder includes:

- RunInfo.xml
  - RunParameters.xml
  - InterOps folder
- SAV User Guide (Optional)  
Download from  
[http://support.illumina.com/sequencing/sequencing\\_software/sequencing\\_analysis\\_viewer\\_sav/downloads.ilmn](http://support.illumina.com/sequencing/sequencing_software/sequencing_analysis_viewer_sav/downloads.ilmn)

Follow the steps and complete each of the questions. You can find the answers on page 6.

### Open the Training Run

Open SAV and browse to the training run folder. Click Refresh.

1. Look at the Status on the Analysis Tab. What are the values for cycles extracted, called and scored? (Fill in the answer.)

Extracted: \_\_\_\_ Called: \_\_\_\_ Scored: \_\_\_\_

2. Which value shows the last cycle for which image analysis has been performed?
  - A. Extracted
  - B. Called
  - C. Scored

### Analysis Tab – Flow Cell Chart

The Flow Cell Chart shows color-coded quality metrics per tile for the entire flow cell.

Adjust the Flow Cell Chart to show intensity for: cycle 14, base G, top surface of the flow cell.

3. Hover over the top tile in the chart. What text do you see?

\_\_\_\_\_

4. Click the top tile in the chart. Where does it take you?

\_\_\_\_\_

### Analysis Tab – Data by Cycle

Navigate back to the Analysis tab. Click the chevron in the top right corner of the Data by Cycle pane to enlarge it.

The Data by Cycle plot allows you to see quality metrics for the run. The Intensity plot shows the intensity by color of the 90% percentile of the data for each cycle.

5. Adjust the plot to show Intensity for all bases. Which base has the highest intensity across the run?

---

6. Adjust the plot to show intensity for Base A. Where do you see a spike in intensity?
  - A. Cycle 0–20
  - B. Cycle 250–260
  - C. Cycle 500–520

### Analysis Tab – Data by Lane

Navigate back to the default Analysis tab view. Click the chevron in the top right corner of the Data by Lane pane to enlarge it.

The Data by Lane plot shows quality metrics per lane. Adjust the plot to show Clusters for the top surface of the flow cell. The blue box shows raw clusters and the green box shows clusters passing filter. The red line indicates the median tile value. On this plot, you can use your mouse wheel to zoom in and out.

7. What is the median tile value for clusters passing filter?
  - A. 0.520 M
  - B. 0.530 M
  - C. 0.585 M

### Analysis Tab – QScore Distribution

Navigate back to the default Analysis tab view. Click the chevron in the top right corner of the QScore Distribution pane to enlarge it.

The QScore Distribution plot shows Q-scores on the x axis and the total number of bases on the y axis. The quality score is cumulative for the current cycle and previous cycles, and only reads that pass the quality filter are included. Drag the cutoff slider to highlight how many bases have a minimum Q-score of Q20 or higher.

8. What percent of bases have Q-scores greater than or equal to Q20?

---

### Analysis Tab – QScore Heatmap

Navigate back to the default Analysis tab view. Click the chevron in the top right corner of the QScore Heatmap pane to enlarge it.

The heat map shows Q-score by cycle. The color represents the percentage of the bases that have a particular Q-score.

9. Approximately what Q-score does the maximum percentage of bases have at cycle 280?

---

### Imaging Tab

Navigate to the Imaging tab. The Imaging tab lists detailed data and metrics for the run. If you have thumbnails in your run folder, you can view them here. (The run you are viewing does not have thumbnails.) Grab the right edge of the table and pull it to the right to view more of the table columns. Use the scroll bar on the bottom of the table to view review additional columns.

Review data for Cycle 75, Lane 1, Top Surface, Swath 1, Section 5.

10. The %PF column shows the percentage of clusters passing filter. Scroll right until you see the %PF column. What is the value in the row shown for the filtered data?

---

11. Show data for the whole run by clicking the Clear Filter  icon. How many rows of data are shown for the whole run?

---

### Summary Tab

Navigate to the Summary tab. The Summary tab has tables with basic data quality metrics summarized per lane and per read.

This run has two reads and two index reads.

12. Review the Run Summary table. The Yield Total column shows the number of bases sequenced. What is the Yield Total for Read 1?

---

### Tile Status Tab

Navigate to the Title Status tab. The Tile Status tab shows what step of the analysis process each tile is in; specifically the number of cycles that have been extracted, called, and scored for a given tile.

13. Why are all three cycle numbers the same for all tiles in this run?

---

### TruSeq Controls Tab

Navigate to the TruSeq Controls tab. This tab shows in-line controls for the sample prep. Controls can be spiked into the TruSeq sample prep.

14. When would the TruSeq Controls tab show data?

---

### Indexing Tab

Navigate to the Indexing tab. The Indexing tab lists count information for indexes used in the run.

The Indexing tab is only available if a sample sheet was supplied to the instrument control software at the start of the run and the run is an index run.

15. Look at row 6. The % of Reads Identified (PF) column shows the number of reads (only includes Passing Filter reads) mapped to this index. What is the value for index number 6?

---

**Answers**

1. 518, 518, 518
2. A
3. Lane 01 Tile 1101 144
4. Imaging tab
5. C
6. B
7. B
8. 91.9%
9. Q35
10. 90.8%
11. 14504
12. 3.8 G
13. The run is complete.
14. When the TruSeq Controls are spiked in by the user during library preparation.
15. 4.5559%