

Wave Desktop 2.3 – Release Notes

Software Version: 2.3.0.19
Release Date: 13 June 2016

Introduction

This document provides information pertaining to software changes and new features found in Wave Desktop 2.3. The focus of this software release is to provide a simple, straightforward Seahorse data analysis experience through a more intuitive user interface that supports routine functions for all Seahorse XF Analyzer data.

Compatibility

Wave Desktop 2.3 is intended for use **only** on PCs (Personal Computers – Laptop or Desktop) with a Windows Operating System installed (64-bit OS recommended). Compatible Windows Operating Systems are: Windows 7; Windows 8.1; Windows 10. For more information, see PDF documents *Seahorse XF Software Specifications* and *Running Wave Desktop on a Mac*

Wave Desktop 2.3 is not supported for installation on Agilent Seahorse XFe and XF Analyzer Controllers.

What's New in Wave Desktop 2.3?

Improved User-Interface

Renamed Navigation Views under Wave Home

Templates (formerly called 'New') displays the Seahorse default templates as well as any user-customized templates in list or icon views. Results (formerly called 'Open') displays all recently opened assay result files and bookmarked places (called *Favorites*) to access local or network directories where assay result files are stored. These naming changes more accurately represent the functionality within each section and the types of Seahorse files that are accessed in these views.

Wave 2.3	Wave 2.3	Purpose
Templates	New	Create, customize, import and export Assay Template files for a Seahorse assay.
Results	Open	Analysis of Assay Result files, quick access to favorite file directories and recently analyzed assays.
Catalog	Catalog	Save frequently used <i>compounds</i> , <i>pretreatments</i> , <i>assay medium</i> and <i>cell types</i> .
Options	Options	Configure the local Template and Catalog file directories and default Instrument Protocol options.
Help	Help	Seahorse Technical Support contact information, software version and auto-compile feature for <i>System Files</i> .

Quickly locate Assay Template and Result Files – Now Searchable and Sortable

Use the search bar to search for and display *Templates* or *Results* based on a keyword or phrase in the file name or sort the list of *Templates* and *Results* by name (alphabetical), date (last modified date), and by the type of Agilent Seahorse XF Analyzer (*Results* view only).

Updated Buttons & Icons

A refreshed button, icon, and color palette provides a more accurate visual indication for each button in Wave. Unique *Template* icons help easily identify Seahorse XF assay templates and user-customized assay templates. Enlarged analyzer icons help easily identify data files from Agilent Seahorse XFe96, XFe24 and XFp Analyzers.

New Features – Data Analysis

Seahorse XF Report Generator Integration

Export Seahorse XF data to the Report Generators to generate a customizable Summary Report of the assay results. Data manipulations made in Wave will persist to the parameter calculations in each Report Generator Summary Report, such as assay wells that have been turned OFF (ie. outliers) and rate data that has been normalized. The integrated Report Generators are:

- Seahorse XF Cell Energy Phenotype Test
- Seahorse XF Cell Mito Stress Test
- Seahorse XF Glycolysis Stress Test
- Seahorse XF Mito Fuel Flex Test

Export Modified Rate Data

Seahorse XF data that has been normalized, displayed as a percent of baseline, or has excluded assay wells (example: outlier wells) is now exported to Microsoft Excel, GraphPad Prism, and the Report Generators as modified. Use the **Export** button on the *Quick View*, *Overview* and *OCR vs. ECAR* analysis views to export assay result data.

Automatically Open XFd data files from Agilent Seahorse XF24/XF96 Analyzers

Double-click an XFd data file on your Desktop, USB flash drive, or network directory to automatically open in Wave Desktop 2.3. If Wave Desktop is open, select the *Results* view and click **Browse** to manually open an XFd data file.

Modify Assay Result Files

Making changes to an assay result file is now quicker and easier. Display editable tabs for the *Group Definitions*, *Plate Map*, *Injection Names* and *General Information* in a single view after clicking **Modify**.

Normalization Scale Factor

The new *Normalization Scale Factor* allows users to normalize to a specific cell number of other normalization unit. Click **Normalize** (on *any* analysis view) to enter a custom *normalization scale factor* to recalculate and scale normalized rate data. See the *Wave Desktop 2.3 User Guide* for more information.

$$\text{Normalized Rate (well)} = \left[\frac{\text{Rate (well)}}{\text{Normalization Value}} \right] * \text{Normalization Scale Factor}$$

Pre-Populated Catalog

Choose from a selection of Seahorse compounds and reagents, medium, and cell types in the **Catalog**. This **Catalog** is installed by default when upgrading to Wave Desktop 2.3 and will not overwrite any existing entries. Rather than typing in the same Assay Media or Cell Type information, add custom entries to the **Catalog** to quickly add details to an assay template or when modifying an assay result file.

One-step System File Collection

Save and send *System Files* to Seahorse Technical Support from the *Help* view by pressing the **Send System Files** button. The two options are **Save**, to choose a location to save the *System Files* zipped folder, and **Send**, to create a new email to attach the *System Files* folder and send to Seahorse Technical Support. Internet access is required to send the *System Files* to Seahorse Technical Support.

Creating and Customizing Seahorse Assays

Default Seahorse Assay Templates

Wave Desktop automatically installs a selection of default assay templates for the Seahorse XFe and XFp Analyzers, noted by a blue Seahorse icon. Open and **Save as** to create a custom assay template. The original default assay template files are locked from editing. The list of default assay templates installed are:

- Seahorse XF Cell Energy Phenotype Test
- Seahorse XF Cell Mito Stress Test (with and without *Acute Injection*)
- Seahorse XF Glycolysis Stress Test (with and without *Acute Injection*)
- Seahorse XF Mito Fuel Flex Test (*Dependency* and *Flexibility*)
- Cell Characterization 1 (FCCP Titration) and Cell Characterization 2 (Cell Mito + Glycolysis Stress Tests) – *Seahorse XFp Analyzer only*



Blank



Seahorse Standard Assay Template



User Customized Template

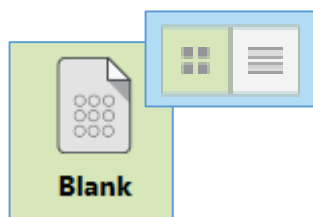
Automated Template Import

Double-clicking an assay template file on a USB Flash Drive or network location will automatically import the file to Wave if it has not been imported previously.

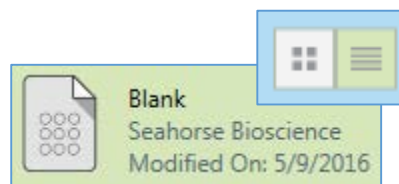
Note: For Wave Controller 2.2 assay templates **must** be imported to the software using the **Import** button. Double-clicking an assay template in Wave Controller 2.2 will open into the Template Editor mode and the **Start Run** button will not be displayed.

List and Icon View for Assay Templates

Assay templates on the *Templates* view can be displayed in two formats: List and Icon. The *Icon* view is the default view and more information about the template can be seen on the right-side of Wave below *Template Details*. The *List* view displays the template icon, name, author and date modified for each template in the list.



Icon view for Assay Templates.



List view for Assay Templates

Additional Information

Existing Seahorse Files & Upgrading to Wave 2.3

Installation of Wave Desktop 2.3 will **NOT** overwrite or delete any previously customized assay template or result files. All Seahorse files will be preserved after upgrading to Wave 2.3.

XF PhenoGram Analysis View

The XF PhenoGram analysis view has been removed from the list of available analysis views when clicking **Add View** in Wave Desktop 2.3.

Save as...Assay Design File Removed

Saving assay design files has been removed – double-clicking an existing assay design file will open in Wave Desktop 2.3 and can be saved as an assay template.

Enable Macros in MS Excel Trust Center

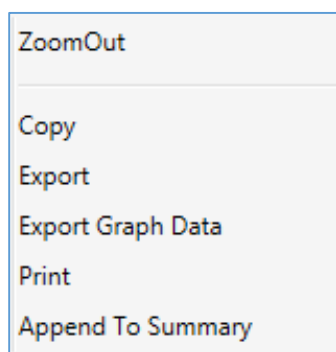
It is highly recommended that Microsoft Excel Export to RG – Turn ON enable all macros in trust center to prevent 'Enable Content' message box each time. See the Wave Desktop 2.3 User Guide or any Seahorse XF Report Generator User Guide for more information.

Language Compatibility

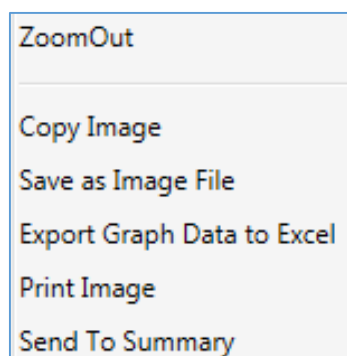
Wave Desktop 2.3 has been validated for use with Windows Operating Systems 7, 8.1 and 10 in the following languages: English, French, Japanese, Chinese and German. See the *Known Issues* section for known software bugs related to specific Windows OS language settings in Wave Desktop 2.3.

Renamed Right-click Graph Options

Right-click on a kinetic graph or scatter plot in Wave – the same functionality is provided however they have been renamed to better represent each option on the list. The two images below provide a comparison between Wave 2.2 and Wave 2.3.



Wave 2.2 | Right-click export options.



Wave 2.3 | Right-click export options.

Fixed Bug List

Kinetic Graph Injection Lines

The injection lines displayed on the kinetic graphs in the *Quick View* and *Overview* analysis views are positioned correctly when analyzing any Seahorse result file. This bug primarily affected data files (XFd) from the Agilent Seahorse XF96 and XF24 Analyzers.

Rate Highlight Measurement Tool

The blue *Rate Measurement Highlight* tool is correctly positioned in the kinetic graph on the rate measurement point that is selected in the *Measurement* drop-down menu above the kinetic graph.

Editing & Saving Assay Templates

After modifying a custom assay template click **Save** to overwrite the existing template content with the new changes. To keep the original template file, click **Save as Template** (down arrow next to **Save** button) or create a duplicate of the template from the *Template* view, then open and modify the duplicate template.

Typing and Adding Details to Assay Template and Result Files

Typing in Wave Desktop 2.3 while modifying an assay result file or customizing an assay template file has been dramatically improved. Single-clicking in a text field will no longer highlight the text in that field and will correctly position the mouse cursor wherever the user selects.

Renaming Assay Result Files in Windows

Renaming an assay result file on a USB drive, local or network directory using Windows Explorer will apply the new file name in Wave Desktop as well as the default file name when exporting data to Microsoft Excel, GraphPad Prism, and the Report Generator.

Known Issues

Save Prompt and Closing Assay Results, Templates, and Wave Desktop

Closing an assay result or assay template file in Wave will always prompt the user to save their work, even if the updates have been saved. Additionally, exiting Wave Desktop 2.3 software while an assay result or template file is open will *always* prompt the user to save any pending changes to those files. To avoid the save prompt when closing Wave Desktop, close any open assay result and template files, then close Wave.

Export Normalized Data to a Report Generator

Normalization values that are 5 digits or more will be displayed on the **Normalize** tab in the Report Generators as '#####'. This view is not editable; the column width cannot be adjusted to display the normalization value. This only affects the Report Generator export from Wave Desktop 2.3 and will be fixed in the next Report Generator update.

Adjusting View Scaling in an Assay Result File

Size and scale adjustments to a graph or plate map on an analysis view using the arrows or border lines is *not* saved and will be reset to the default scaling view when reopening the assay result file.

File Names with 150+ Characters

Assay result or assay template file names with more than 150 characters are not supported – Wave will display an error message after pressing **Save**. Rename the file with less than 150 characters to save the file.

Opening Assay Result Files on Wave 2.2

Assay result files that have been analyzed in Wave Desktop 2.3 then opened in Wave 2.2 (Desktop or Controller) will have horizontal grid lines displayed on the kinetic graphs. To delete the grid lines, click **Options** (on kinetic graph) then delete the **Y1 Axis Thickness** value in the box.

Identical Assay Template Names for Seahorse XFe & XFp Analyzers

Assay Template files for the Agilent Seahorse XFe Analyzer and the Agilent Seahorse XFp Analyzer with identical template file names will cause a save error. Rename the template with a unique file name.

Wave Desktop Language Compatibility Bugs

Dates in Wave Desktop 2.3 are displayed in the format mm/dd/yyyy for all Windows language settings.

French Windows OS – Decimal points, not commas, are displayed on all analysis views in Wave Desktop (Quick View, Overview, OCR vs. ECAR and Data). In addition, the Report Generators do not display data using commas, as expected, decimal points are used.

If any software bugs not listed above are encountered, please contact Seahorse Technical Support at: seahorse.support@agilent.com