Agilent OpenLab Sync

Feature Highlights for OpenLab Sync 7.4

Rev. A.00

OpenLab Sync 7.4 Feature Highlights



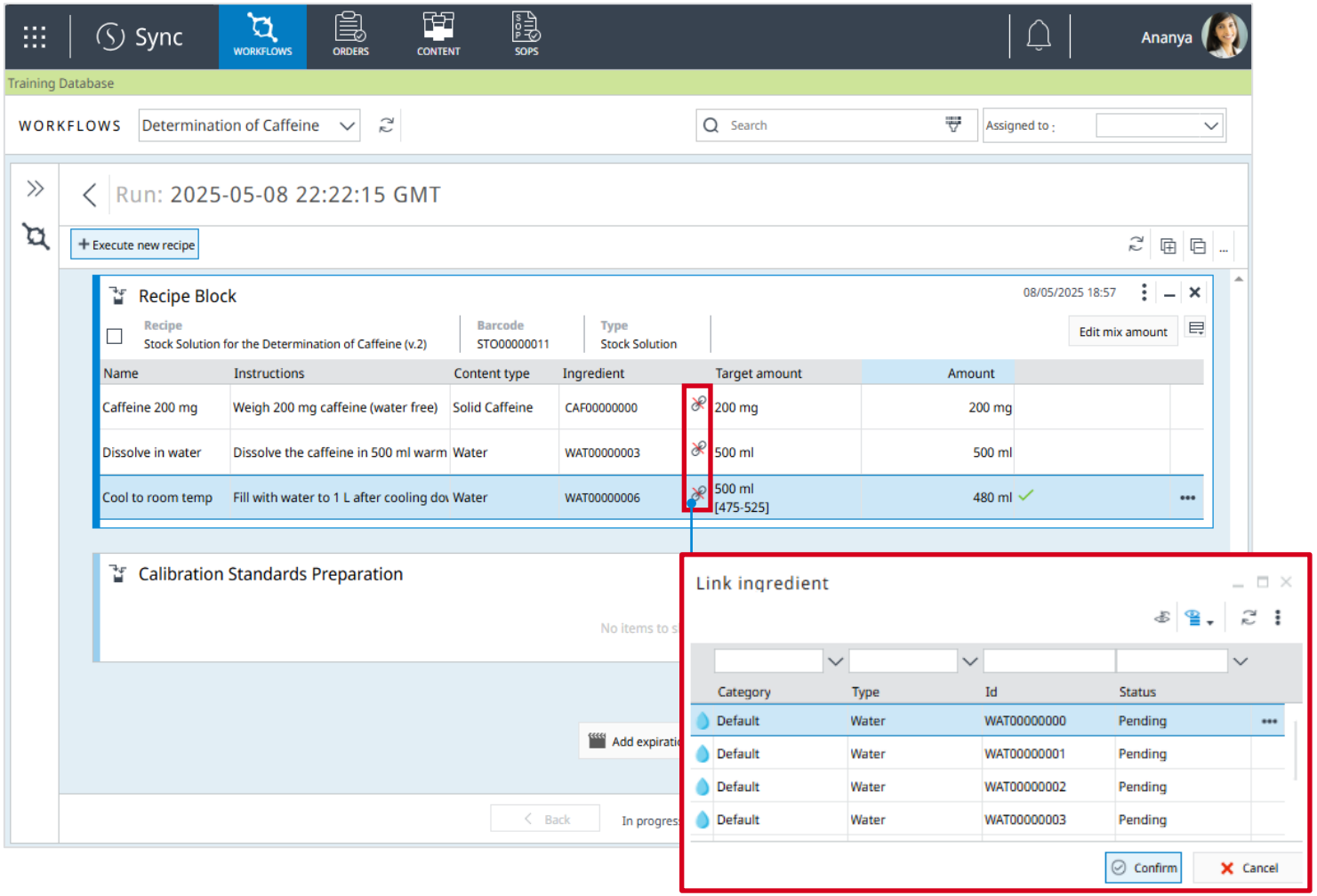
Create Recipes as SOPs

Recipe blocks were added to simplified protocols for ELN and Workflows. You can create recipes in the SOPs module to provide a guided mix experience.

With recipes you can:

- Restrict recipes to the lab's various methods and automatically execute them in permitted protocols
- Provide step by step instructions
- Set target ingredient amounts or expressions that calculate them, permissible amount ranges, and limitations
- Get the mix identifier and see the detailed mix composition so containers can be pre-labeled
- Link the ingredients to contents and track their usage – which updates their amounts everywhere else
- Use recipes with macros to easily create mixes and print labels

See the mix you're working on, enter amounts, and link samples

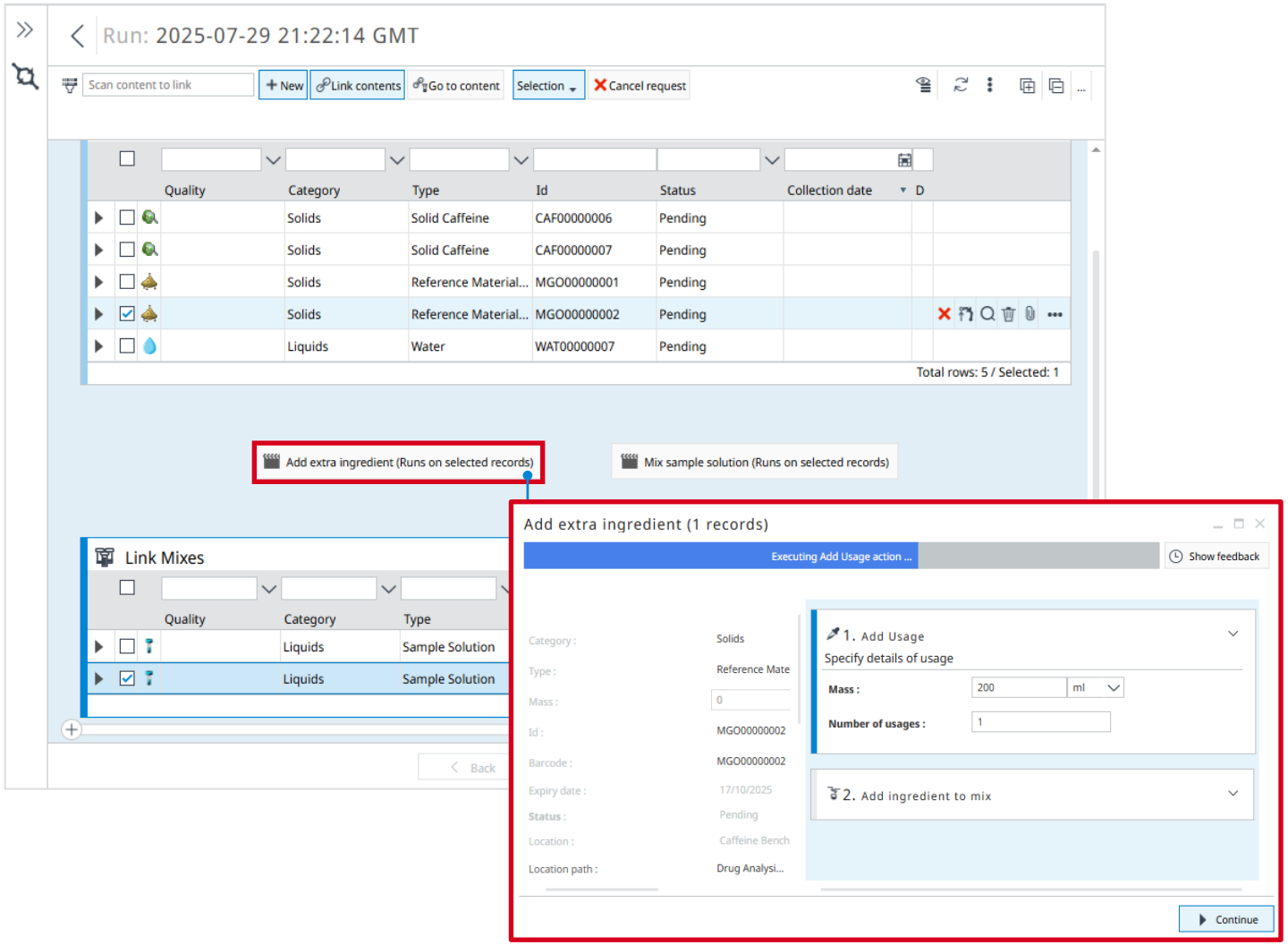


Refined Links Between Ingredients and Mixes

The identity of mixes gained benefits from the addition of recipes, even when mixes are made without them.

You can make macros that add usages of extra ingredients to a mix during a protocol run. The user just needs to choose which extra ingredients to add and the mix to associate them with, then run the macro.

Add Extra Reference Material to the Mix



Groups for Training Regulation

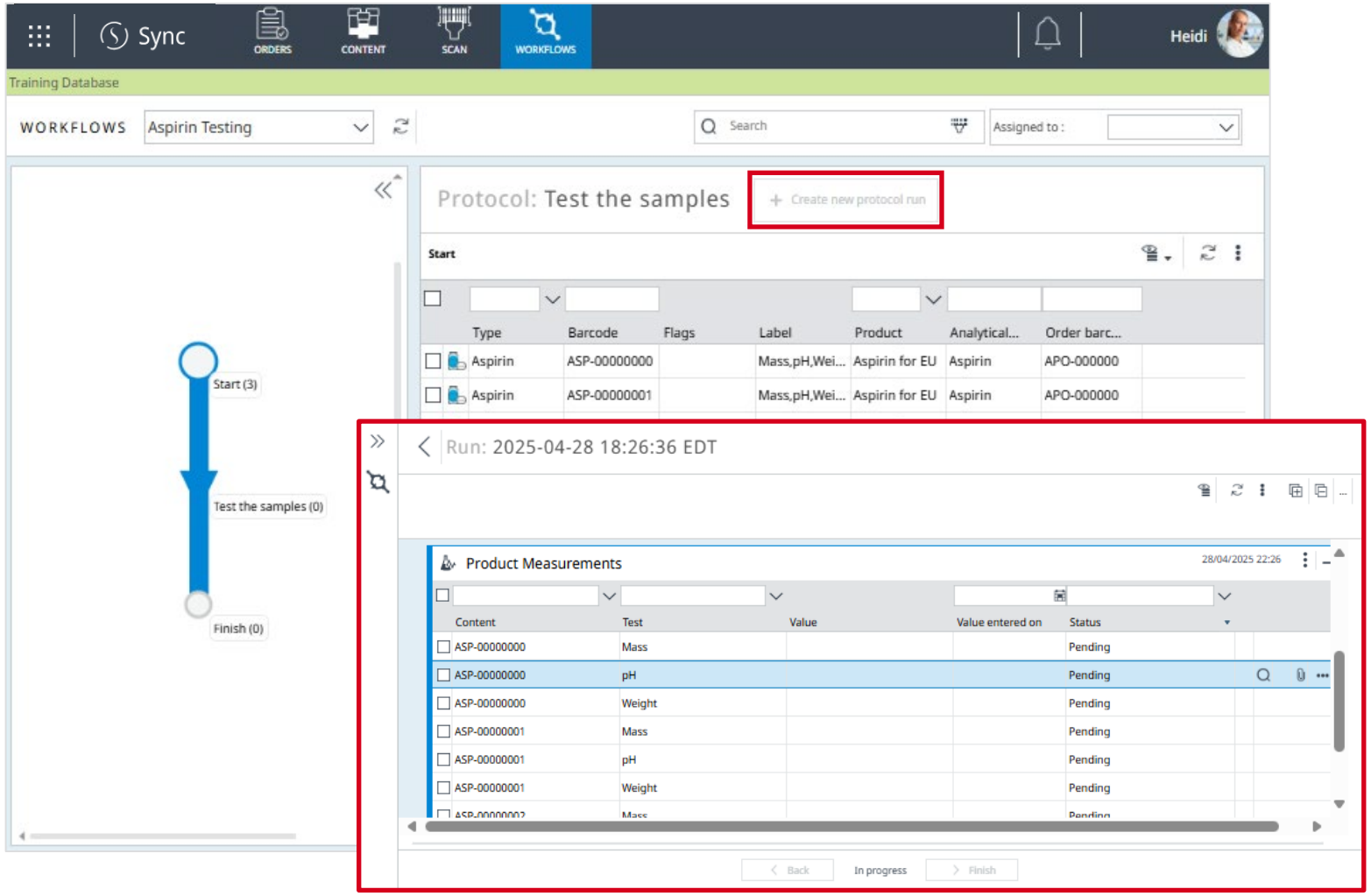
Training Groups can be created in the Groups module. You can add a start and end date to record the active training window.

Training groups can then be used to restrict **protocols** and **status transitions**.

Users who aren't trained or whose training has expired will lose the ability to:

- Perform restricted status transitions
- Edit existing restricted protocol runs
- Run restricted protocols

Heidi can't start new runs of the restricted protocol and existing runs are read-only



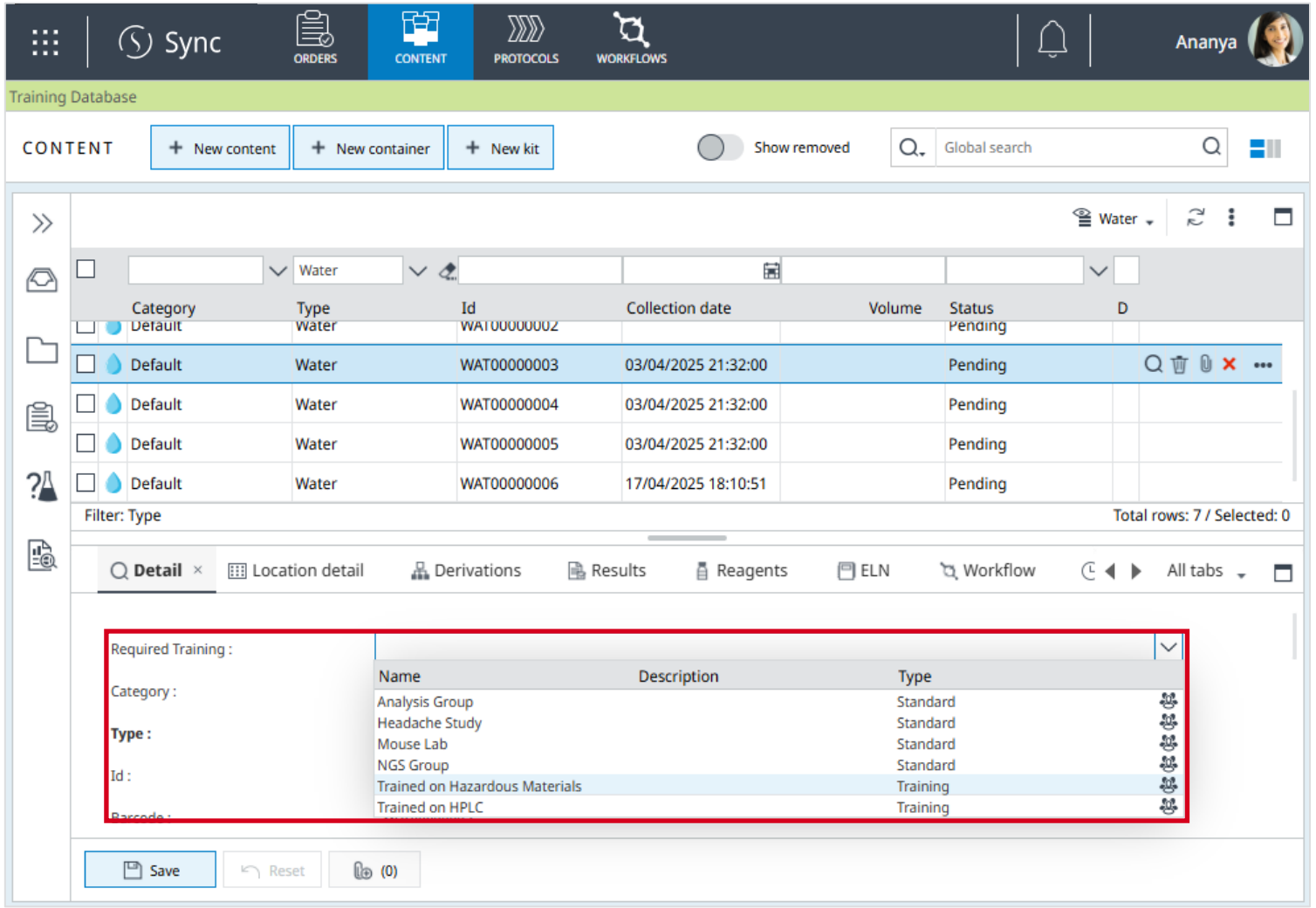
Quality of Life

Group and Subgroup Selection

Roles can be selected as a subgroup of a standard group. This allows you to quickly define the rights of a role group within the parent group.

You can also select training groups on dynamic choice fields with value table “group.”

Zoom on training groups in a dynamic choice



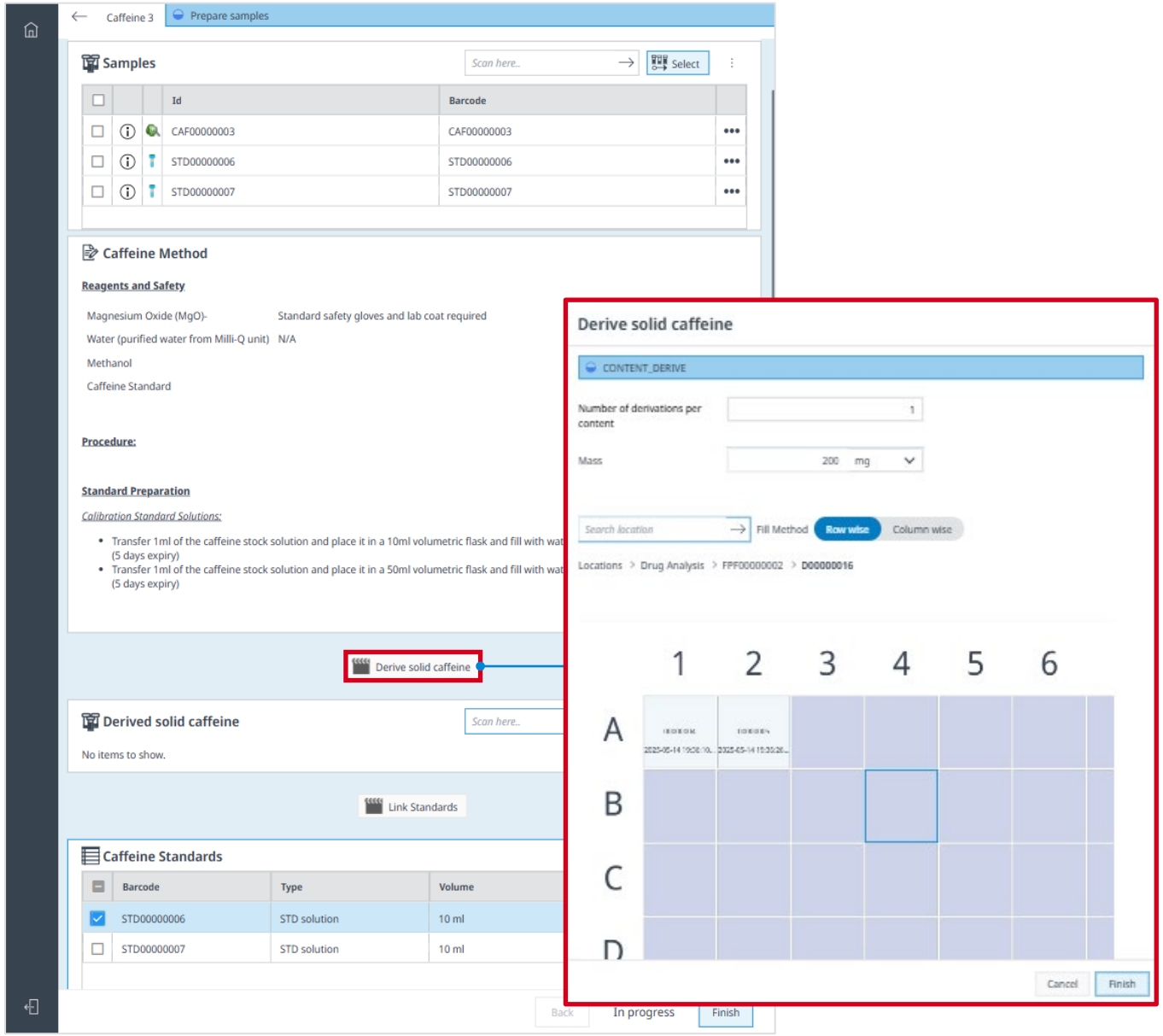
Actions Support in Bench View

Bench View (formerly Bench UI) has been expanded to fully support scanning, work with more macro steps, and work with simple Extensions (formerly SLIMS GATE) flows. These are quick automated steps that perform tasks for the user.

If the macro or flow requires data entry, a pop-up will be shown with input fields. If not, it will just run in the background. Users can scan samples from an action block to start the task or to link them into a link content block. They can also run Extensions flows on samples selected in a grid template block.

Tasks with multiple steps in Bench View have a stepper to show which is being executed in order. These macro steps are now supported:

- Choosing a new location in a macro step
- Content actions: Create, Copy, Move, Derive, Mix, Aliquot, Dilute and Add Usage
- Print labels

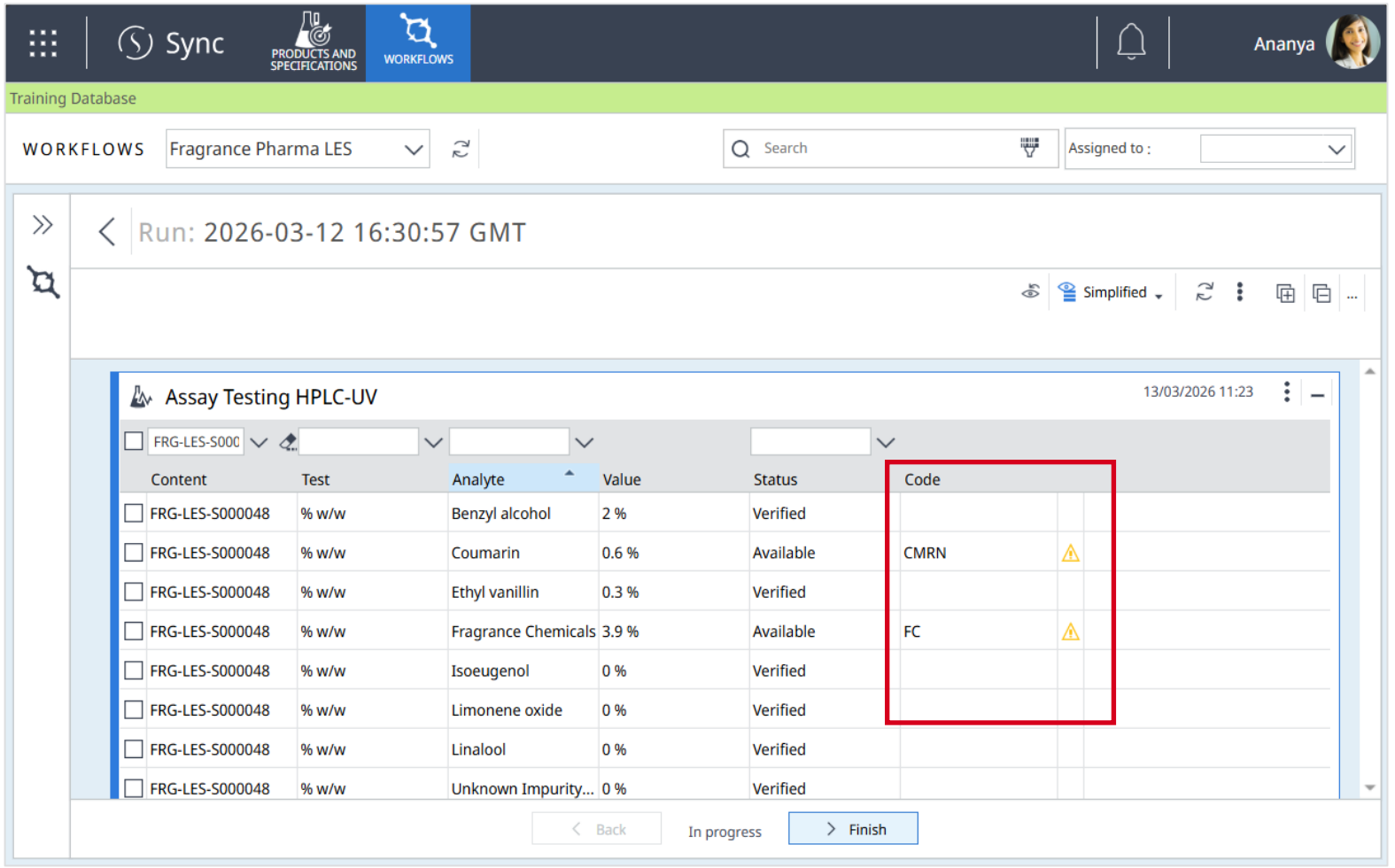


Coding System for Analytical Rules

A **Codes** column was added to specification rules and result rules to make it faster to identify which ones failed on a result.

Users or Reviewers who know the codes can tell immediately which specifications fired by looking at the code next to the result value.

Zoom on Code Column

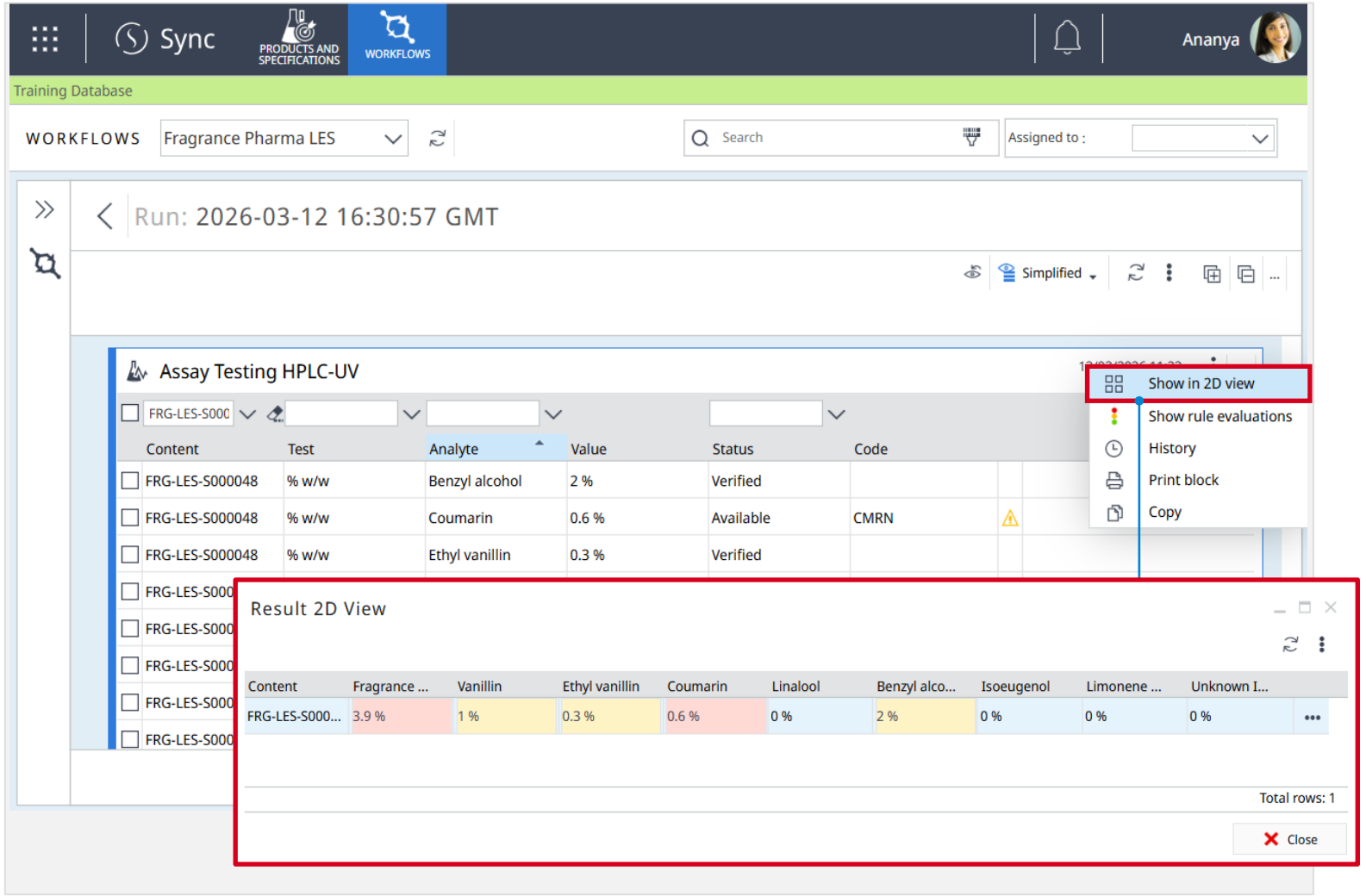


2D Analytical Results Grid

A grid can be opened during a protocol run to show analytical results as the focus. This simple view shows the results and is color-coded for warnings and errors.

The top columns adapt if the samples are associated to one or more tests, analytes, or both. However, the 2D view is only available if there is one result per test/analyte.

2D Grid Pop-up



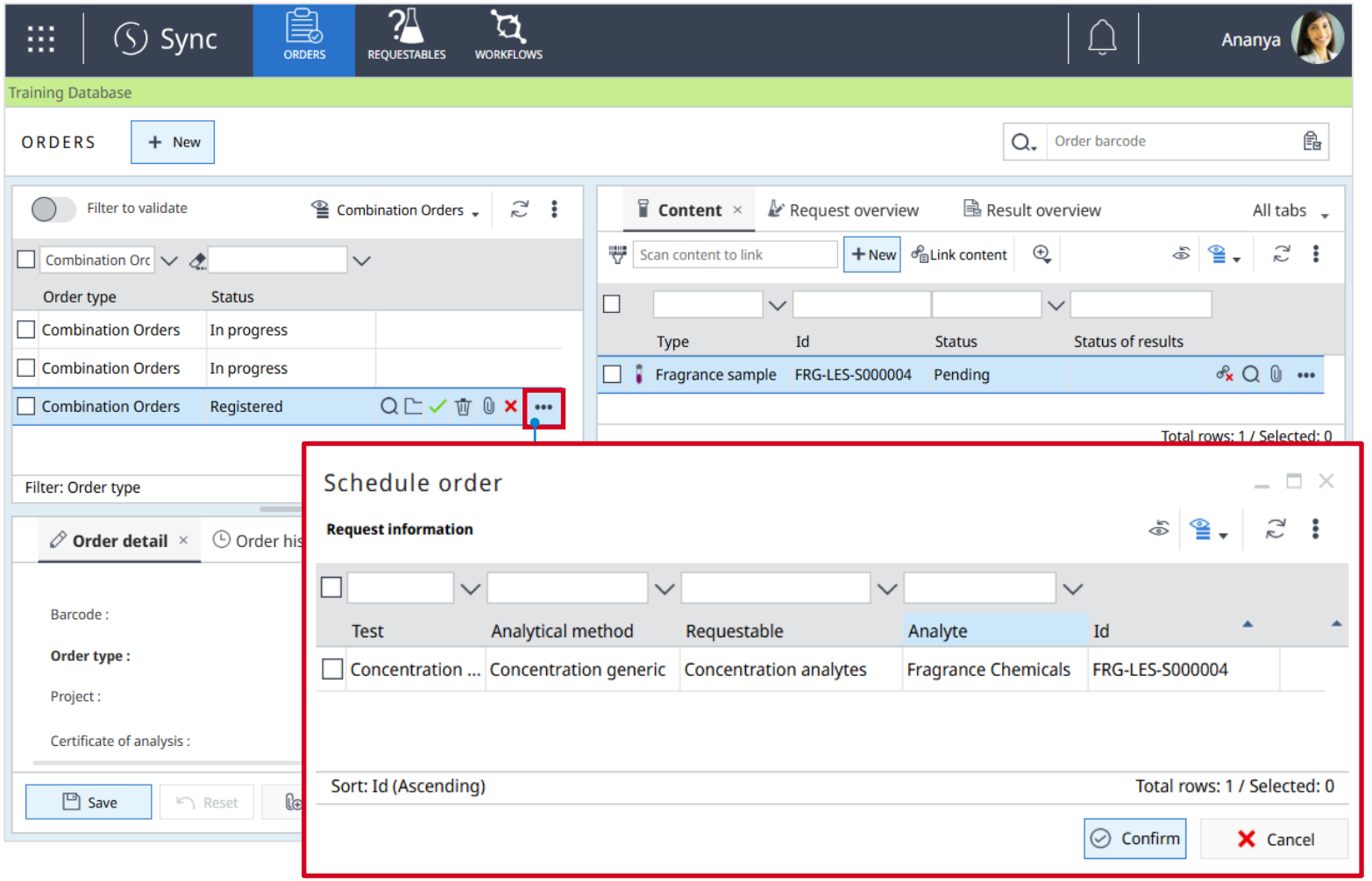
Schedule Orders with Analyte Groups

Analytical default orders* benefit by using analyte groups instead of individual analytes as requestables.

OpenLab Sync can make fewer internal requests which improves scheduling speed and shrinks the number of rows the user reviews when scheduling orders.

**Unavailable for QC Orders*

Schedule the Fragrance Chemicals analyte group

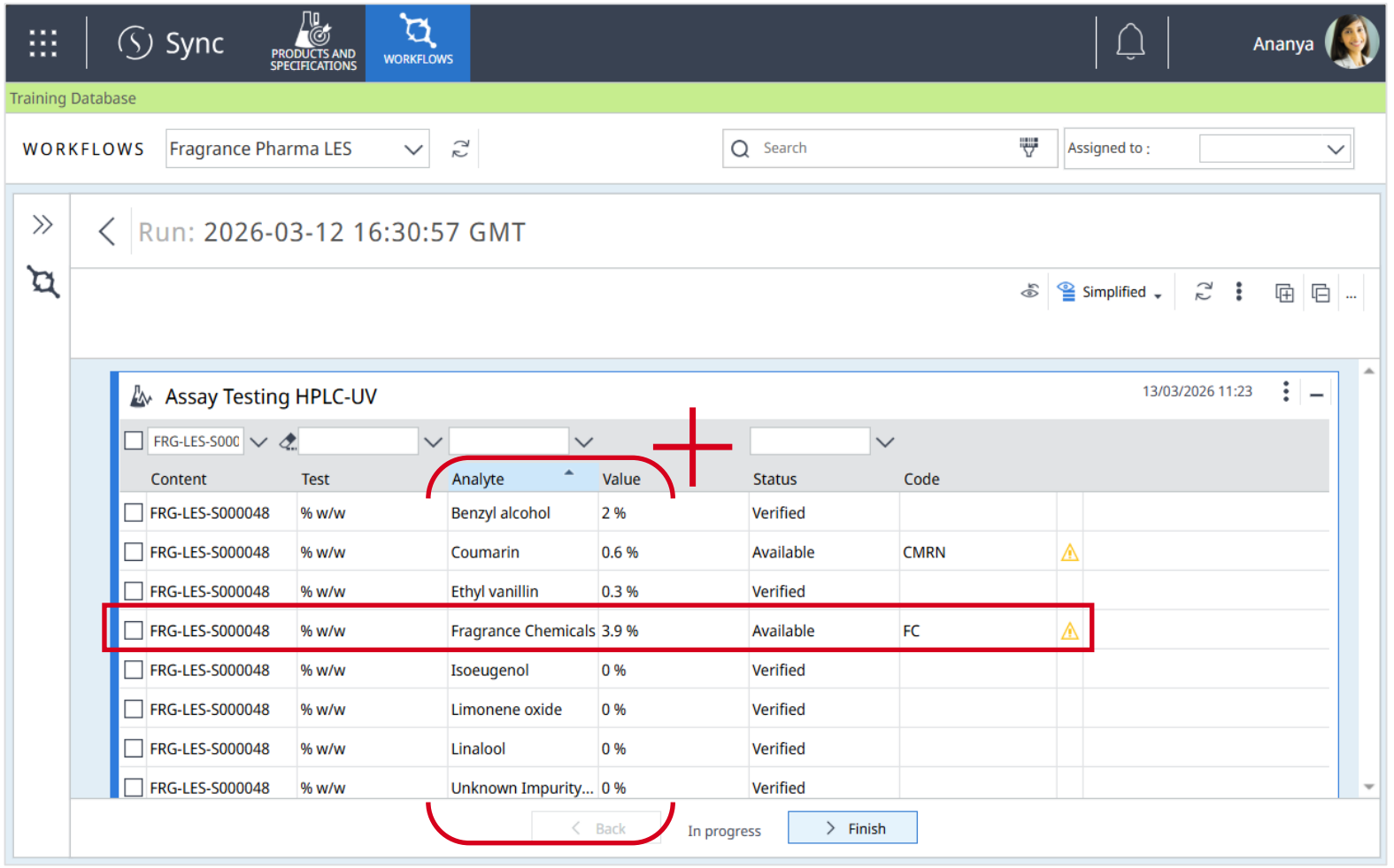


Create Aggregated Results on Analyte Group

Specification rules can be created for single analyte result values and for aggregated result values. You can now also create rules to measure the aggregated analyte group result to automatically react to the analyte group's sum.

You can either script a specification rule or create an aggregated sum match specification on the analyte group to get the result row added in the result block.

Aggregated results on the analyte group



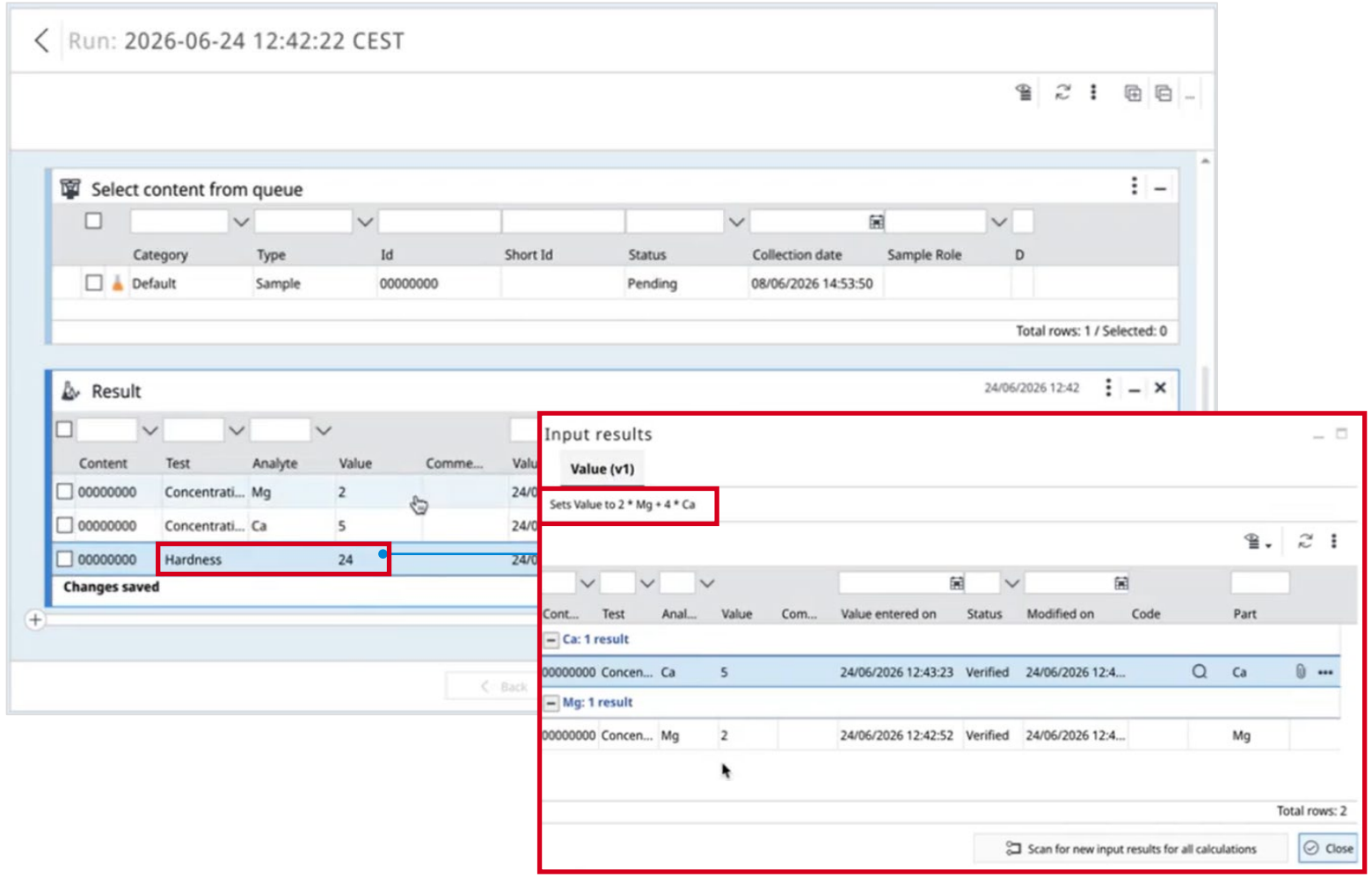
Result Calculations on Other Results

Result calculations are easier to create in the Tests module. They help labs automate derived analytical values directly within the results workflow.

Administrators can define calculations that use related result values as inputs, such as averages, sums, ratios, or relative differences, and OpenLab Sync updates the calculated result when the inputs change.

This reduces manual data entry, improves consistency, and gives users a clearer, more traceable way to manage calculated analytical outcomes.

Hardness is automatically calculated from other results

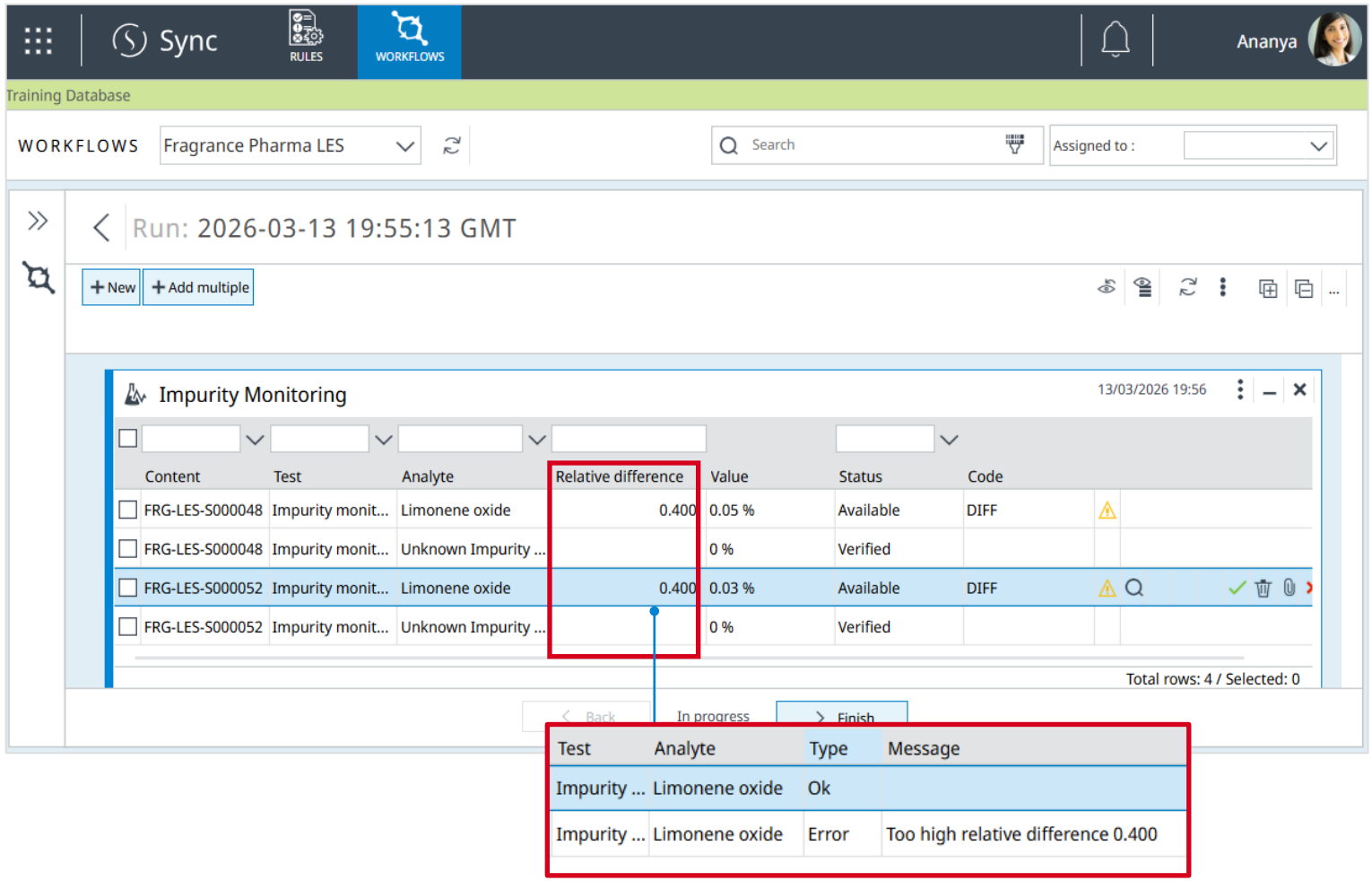


New Rule Type “Result Block”

Result block rules may check multiple results measured at the same time in the same result block. You can script rules to compare results, calculate their difference, and add an error if the difference is too big. One rule can even check the values of another rule that was run earlier.

They are useful to find human errors like switching blanks and analytical samples where the concentration of the blank is unexpectedly higher than the sample.

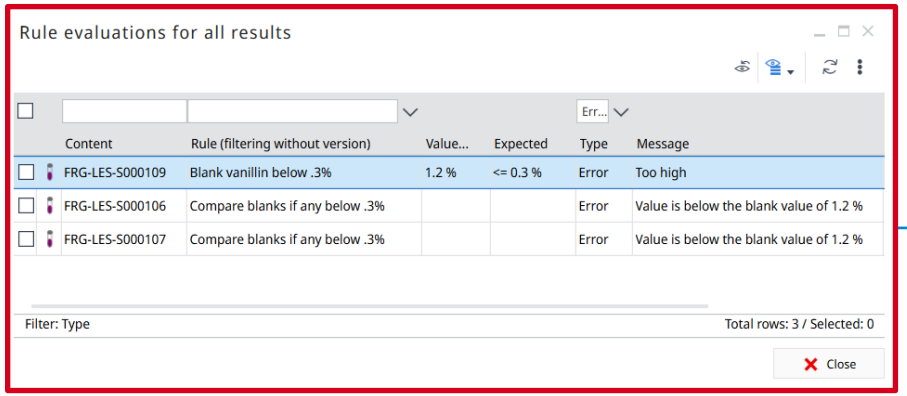
High relative difference between two sample results is identified



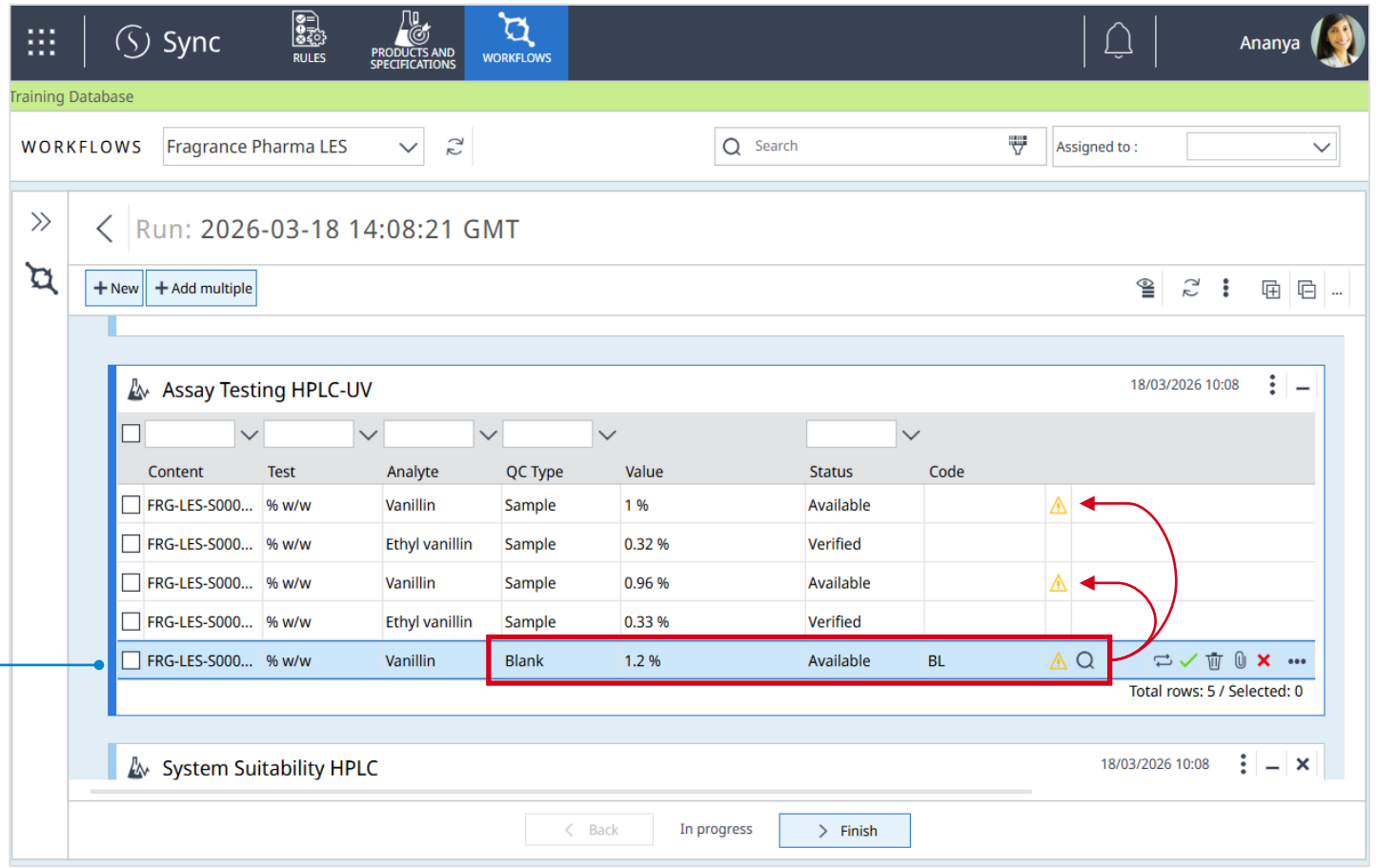
Result Block Rules can see Specification Outcomes

Result block rules can check result values on all results in one block, the evaluations of regular result rules in the block, and the evaluation of product specification rules in the block.

You can use them to compare results and find outlying values among rule evaluations. If the specifications applied code “BL” to a blank, indicating that it was unexpectedly higher than the sample results, then the result block rule can be scripted to apply errors to sample results that are lower than the blank.



Results higher than the Blank are marked



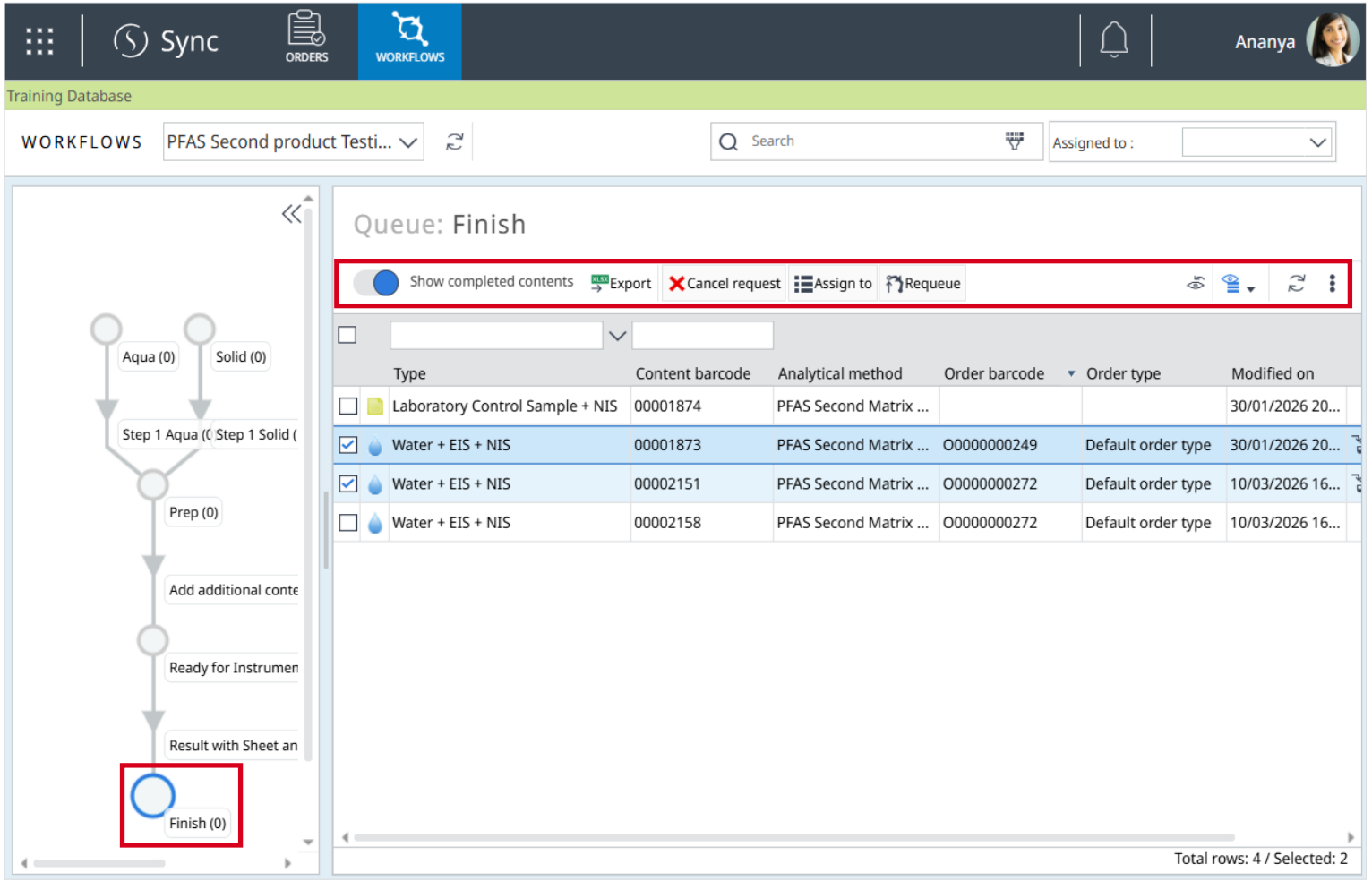
Improved Actions on Results

Empty result rows can now be rejected or cancelled.

Administrators can enable/disable “Can repeat results” to determine whether the “Repeat” action is available on each result block at runtime.

Finished protocol runs have more options on the last queue when they are finished, as long as the order is not yet **Validated**. If you enable **Show completed contents**, then the options **Export**, **Cancel request**, and **Requeue** appear.

Zoom on Finish Queue options



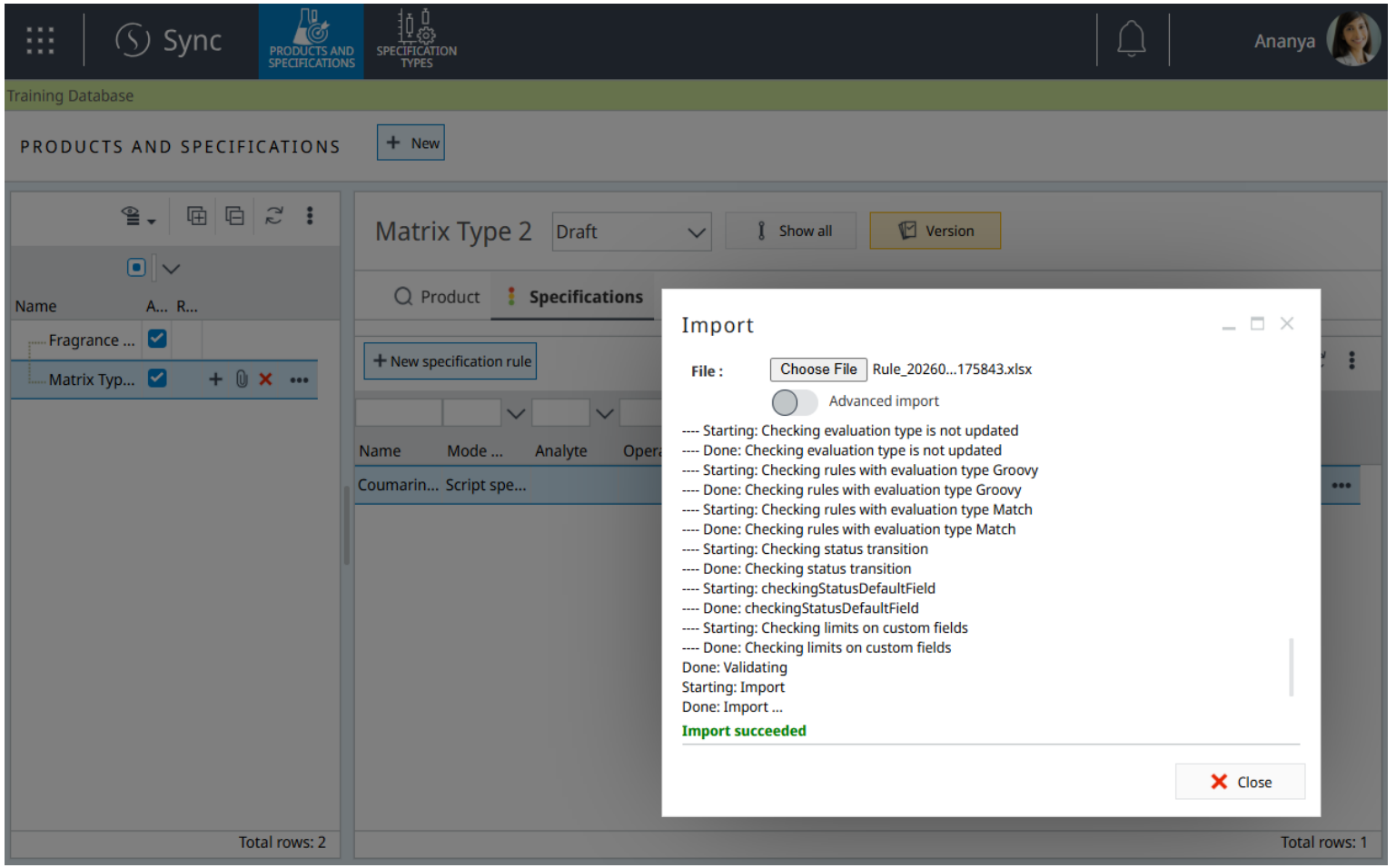
Import Specification Rules that have Specification Types

Scripted specification rules can now be imported in addition to match specification rules. This is only possible if the scripted specification rule has a Specification Type selected in its definition.

All the scripting should be on the Specification Type instead of the specification rule itself as a best practice. That makes it easier to manage scripts over time and reduces copy/paste effort and the chance of errors.

Only for users that have import from Excel role permissions.

Imported with Specification Type



Check Analytical Results with External Database

For labs with millions of specifications that are too hard to manage in OpenLab Sync directly.

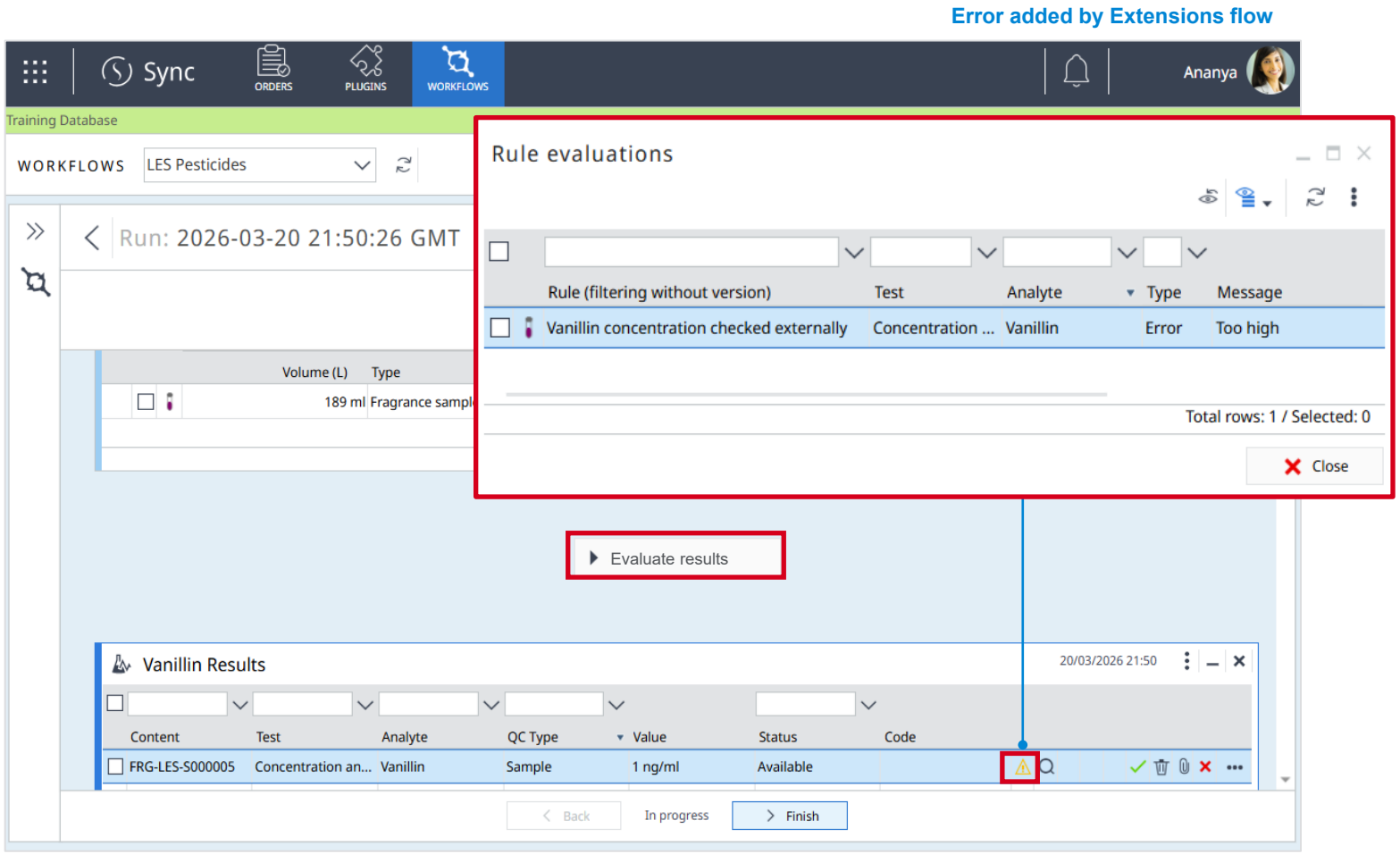
Product specifications can be managed with an external source, like a database of limits to check against OpenLab Sync rules.

Specifications with the “OpenLab Sync Extensions” mode of evaluation may use a plugin scripted to call out to the external system. They are evaluated by that system’s limits instead of ones set manually in OpenLab Sync.

This means whenever the limits change in the external system according to regulations, OpenLab Sync stays current, and the product specifications don’t need to be adapted.

Requires:

- OpenLab Sync Extensions
- A plugin provided by OpenLab Sync Engineers

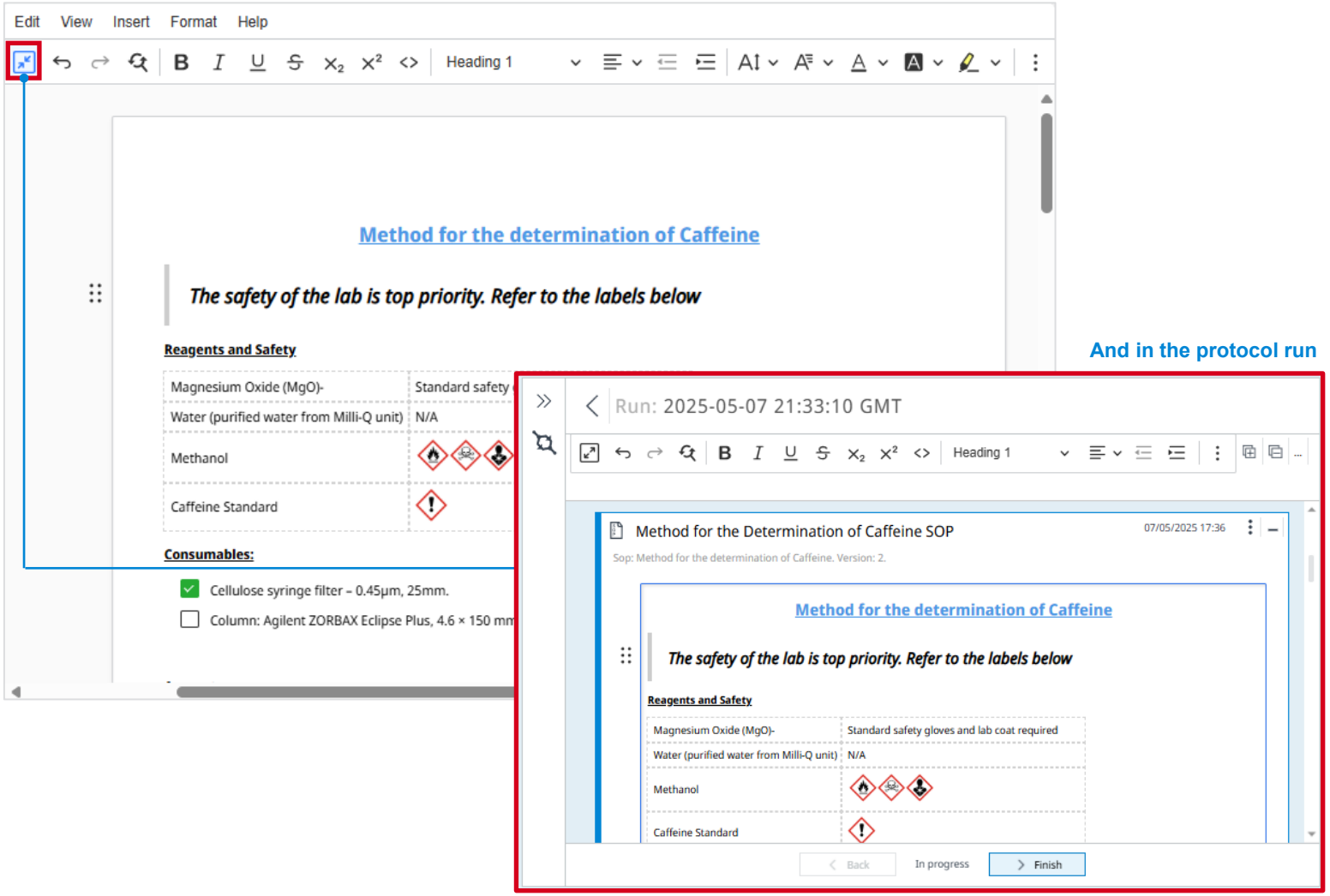


Upgraded Rich Text Editor

OpenLab Sync now uses CKEditor version 5 to take advantage of its modern UI and improved features for note taking and text editing.

The rich text editor is accessed anywhere that long text can be edited. For example, description fields, notes and forms in simplified protocols, rich text widgets in dashboards, and rich text custom fields.

An editable SOP block in full screen mode



Quality of Life

Track Reagents with Simplified Protocols

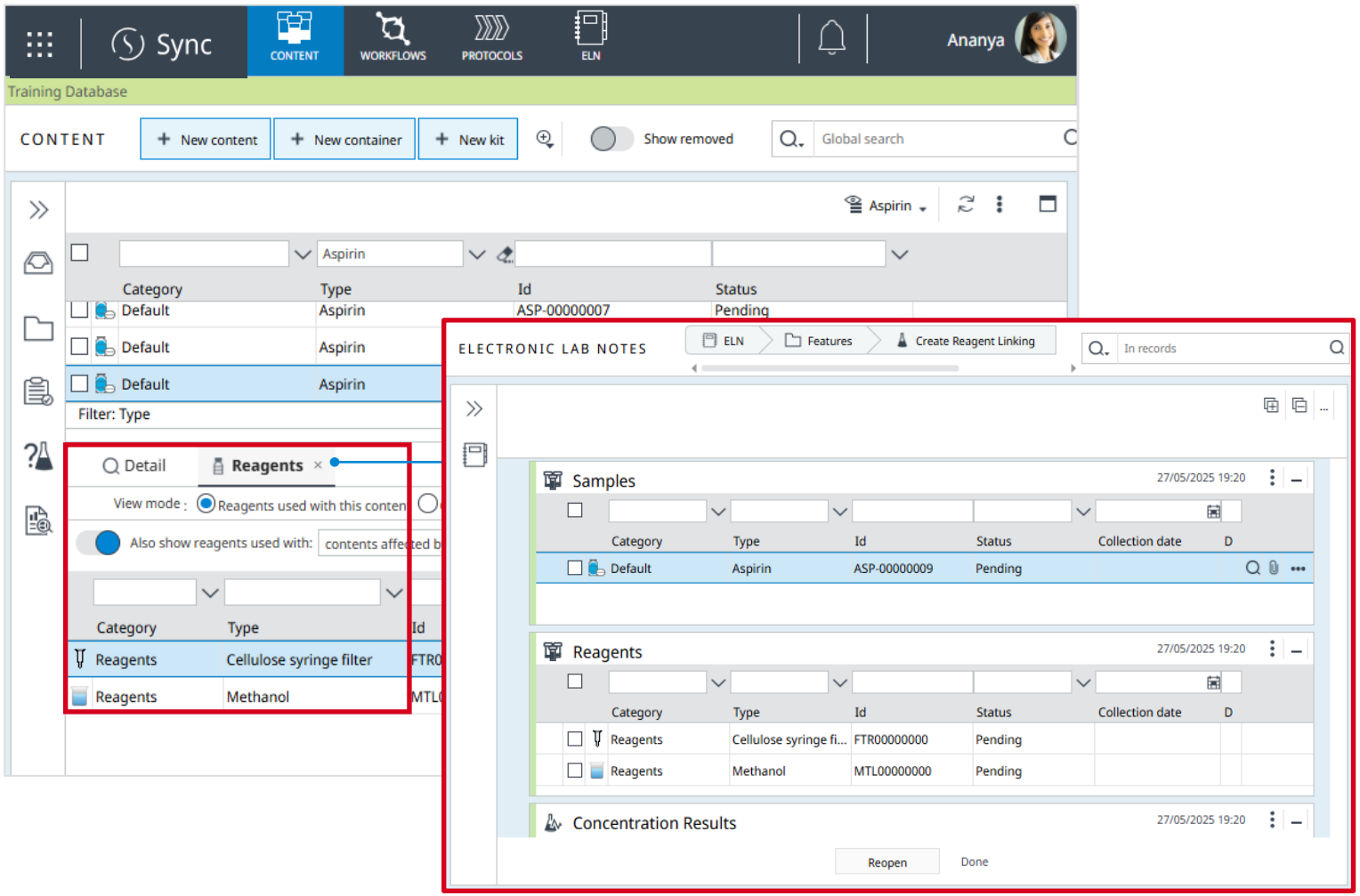
You can see the reagents used with your samples in the Reagents tab of the Content module. With this release, this works with default and simplified protocols.

A link content block as “Input” or “Output” is used to link the samples.

A link content block as “Extra” is used to link the reagents.

When they are in the same simplified protocol run, they are counted as used together.

Reagents tracked from Simplified Protocols



Quality of Life

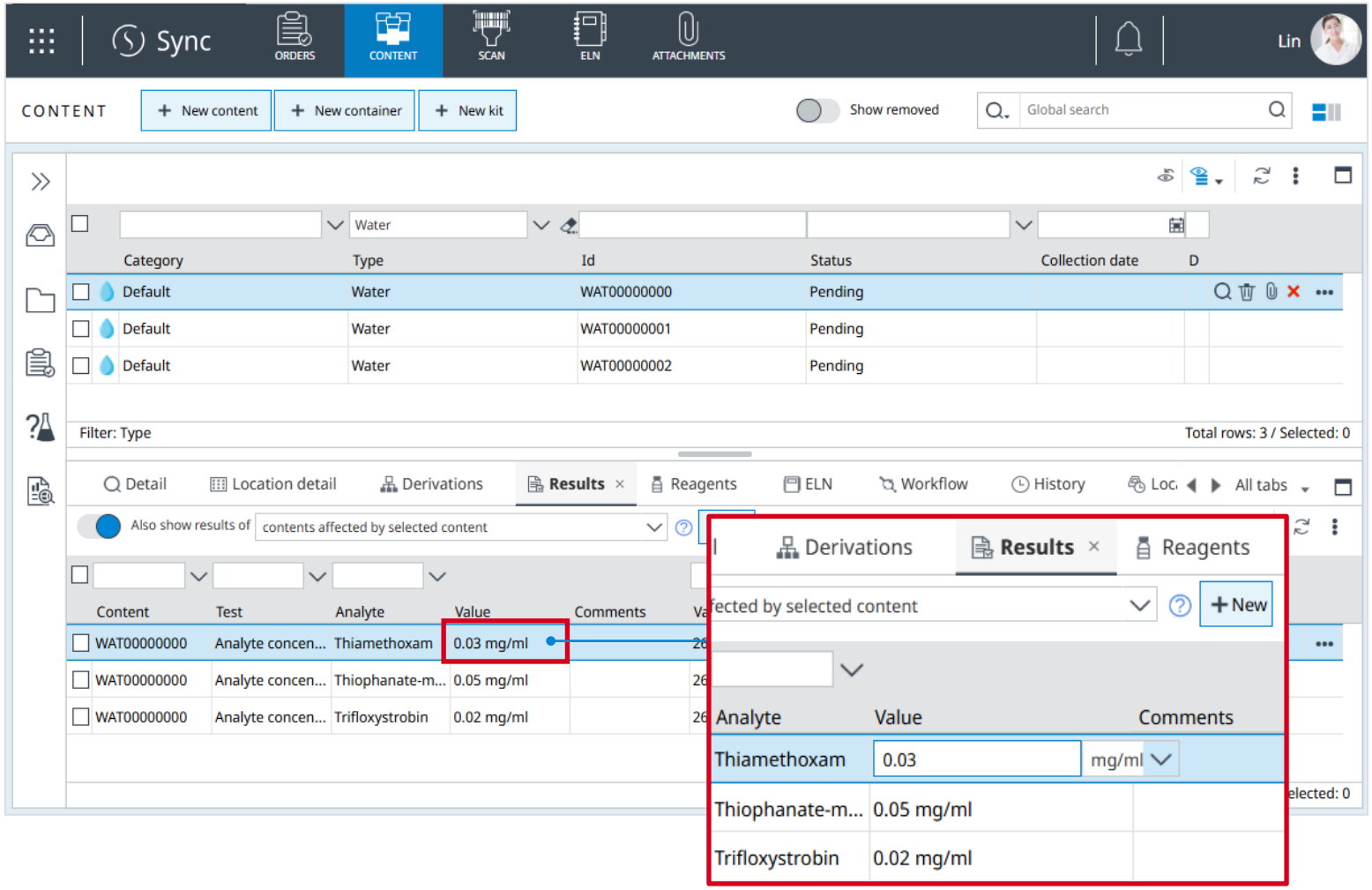
Edit Results is Controlled by a Permission

Users could add and edit results in the Content and Orders modules, as well as in a protocol run for ELN or Workflows.

A new role functionality access right locks result values so users can only edit them in the context of the protocol run. Result actions like reject, repeat, and validate are still accessible.

This means you can choose the desired level of editability for result values for each role.

Lin cannot edit results from runs, but the user in the red box can

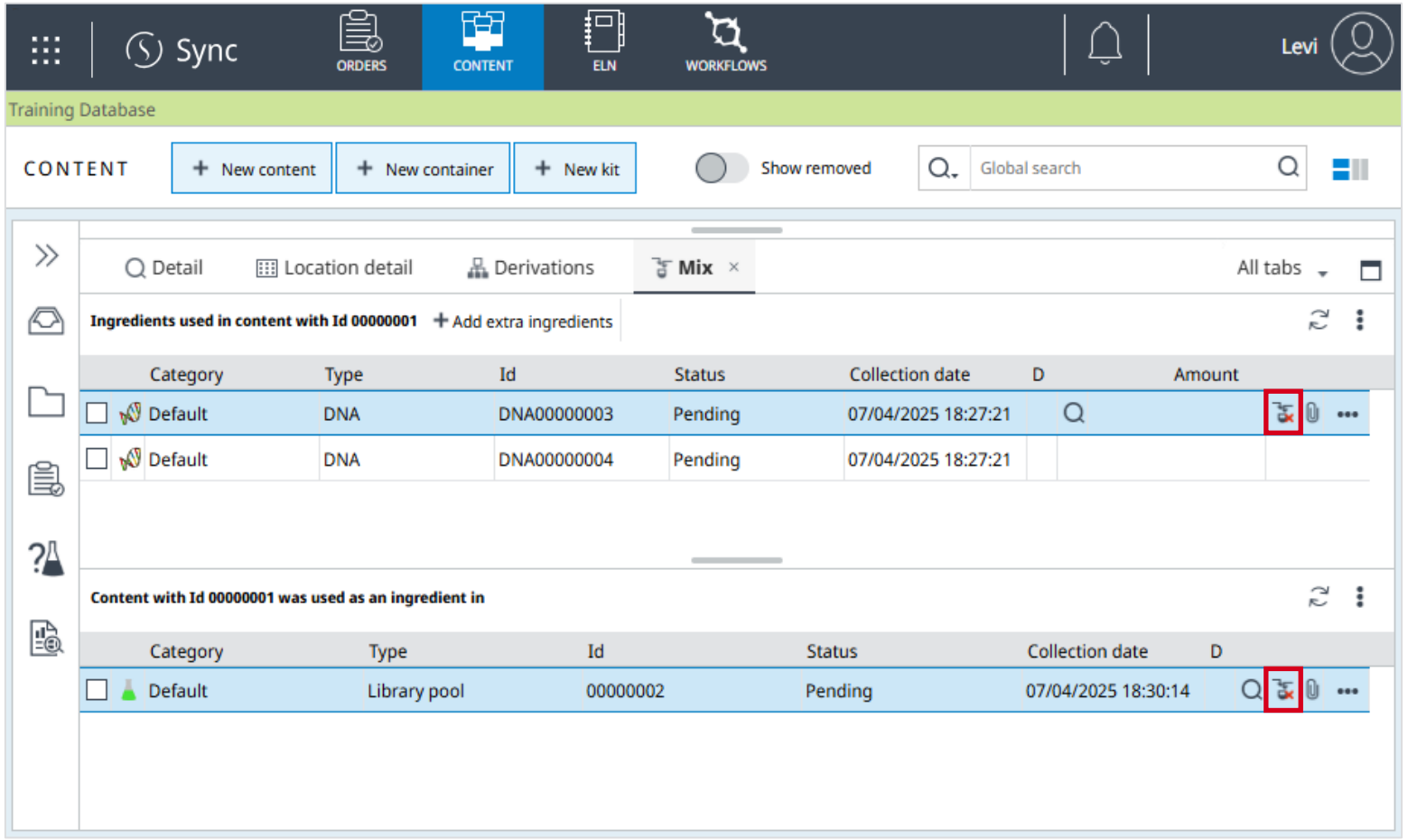


Quality of Life

Ingredient Removal is Controlled by a Permission

Administrators can choose which roles can remove ingredients from mixes. A new role access right hides the Remove Ingredients button in the Content module and in default protocols.

This user can remove ingredients from a mix



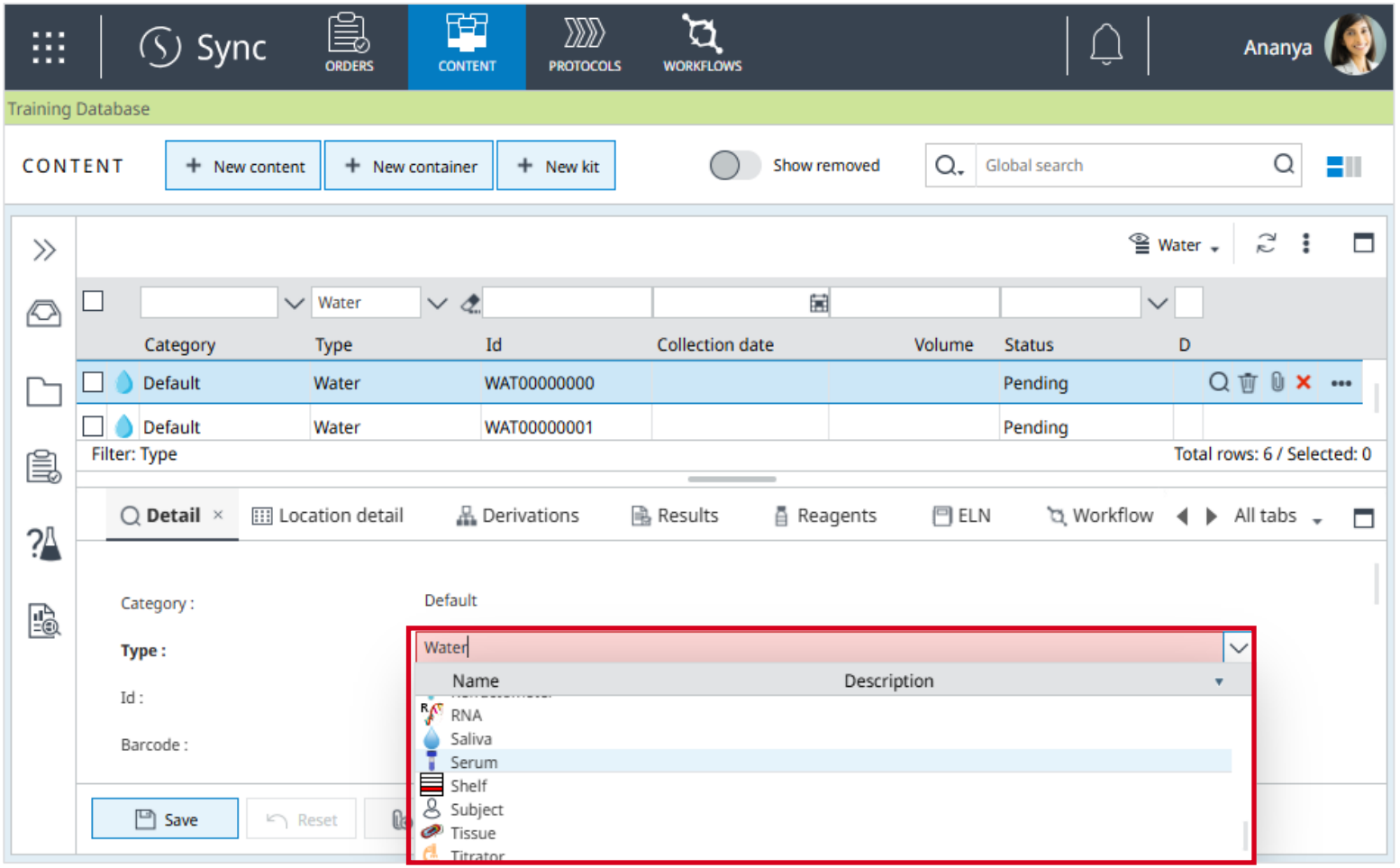
Quality of Life

Change Content Type After Creation

You can choose whether to allow or disallow the content type of contents to be editable after their creation. It is not recommended as a regular procedure but is used to correct mistakes and support customers coming from older OpenLab Sync versions.

The ability to change content type is defined at the category or content type level and is not available for container types or kits.

Content Type Edition when Enabled



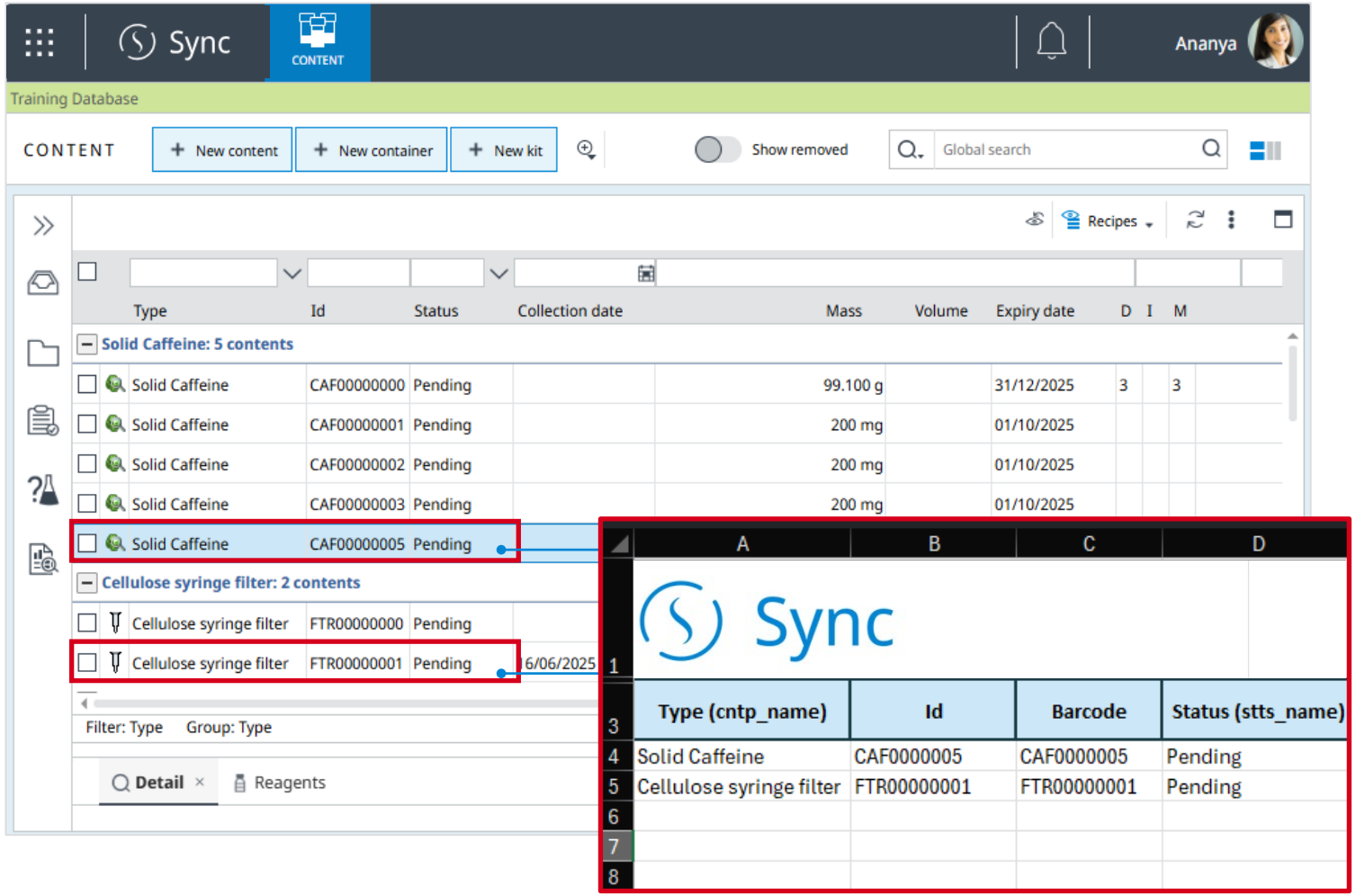
Quality of Life

Import Mixed Content Types

A template file can be generated in OpenLab Sync with the content type “Undefined.”

Then, contents of multiple types can be imported in the file by defining the content type for each row in the Excel file.

Import two content types by specifying in the Excel file



Quality of Life

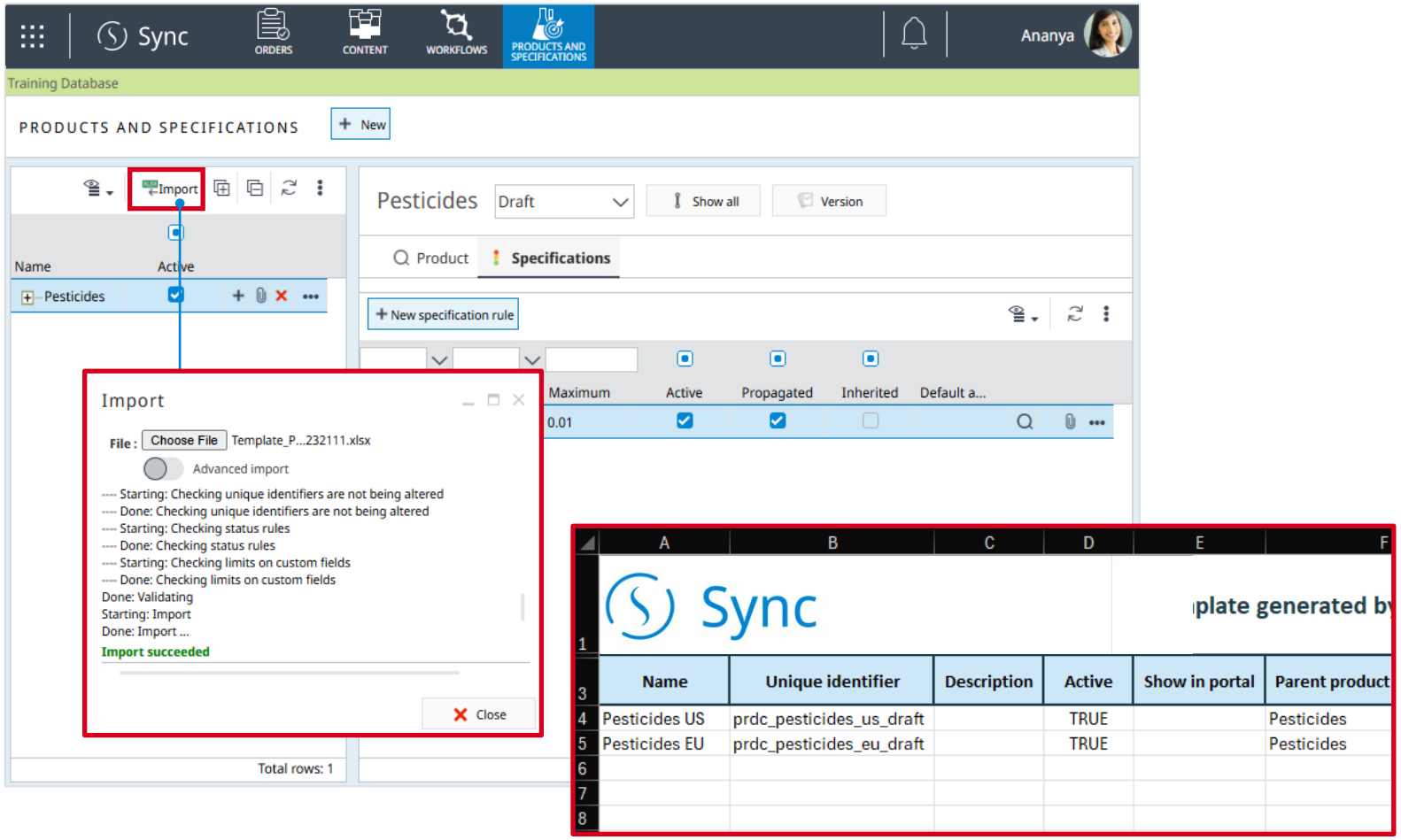
Import a Product via Excel

Quickly import multiple products or subproducts at a time with Excel.

Products are in a tree structure. They can only be imported at one level at a time.

For example, main products can be imported together, and subproducts of a main product can be imported together, but not both levels together.

Importing two subproducts



Quality of Life

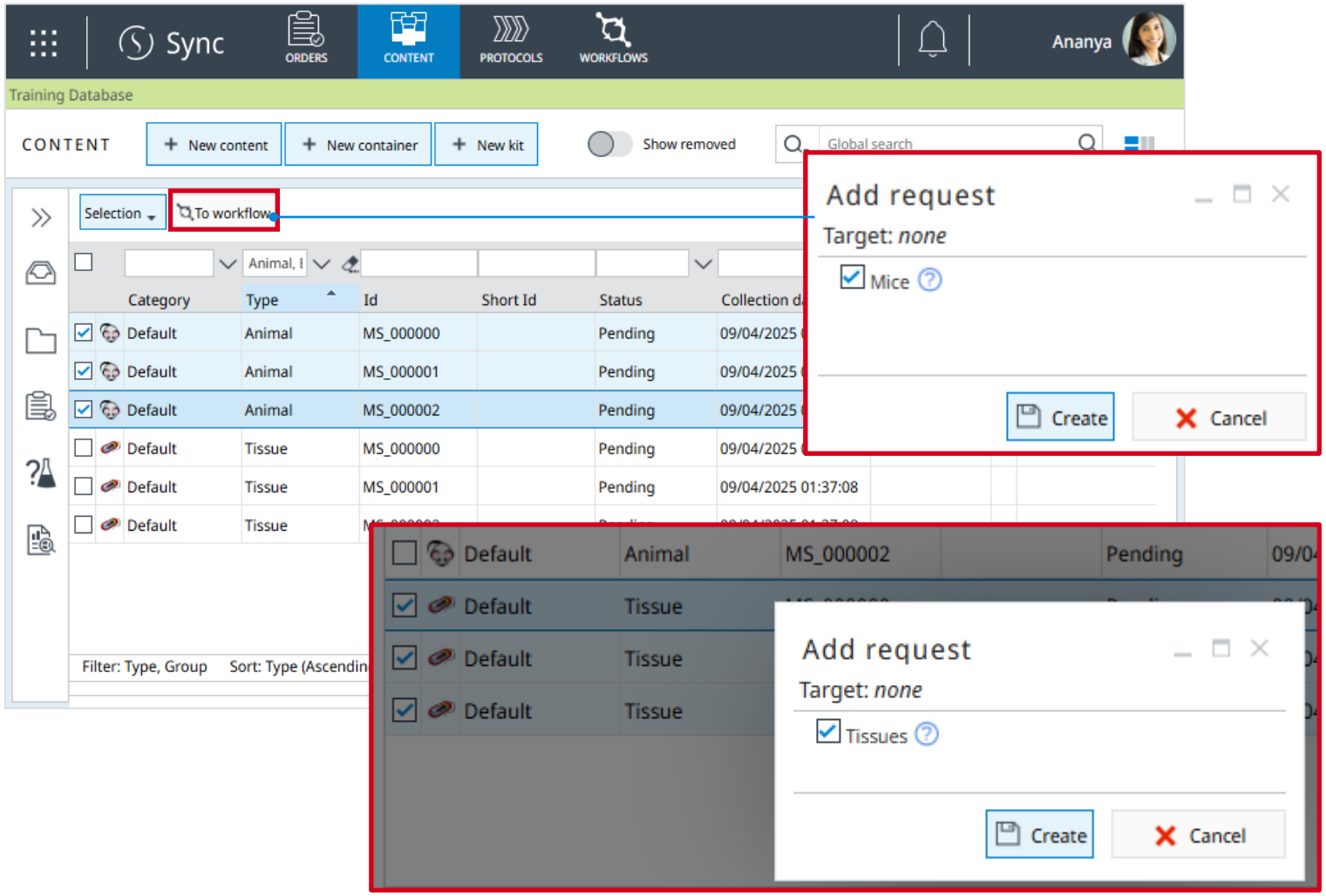
Requestables can be Restricted by Content Type / Category

An option was added to requestables so administrators can restrict those that are relevant for each sample type. With the restriction, users will only see the requestables that matter for the samples they selected.

What this affects:

- Requesting workflows right from the Content module (example on right)
- Adding requests to content in an order
- Choosing requests when adding samples to an order in the Requester Portal

Workflow paths restricted by the content type



Quality of Life

Dashboard can Display Report Previews

R report templates can be used to make custom graphs and reports for dashboards. A draft of the report is run when a user looks at the dashboard and a preview is shown.

Eligible report templates must be:

- R engine reports
- Criteria reports
- And have a single input file

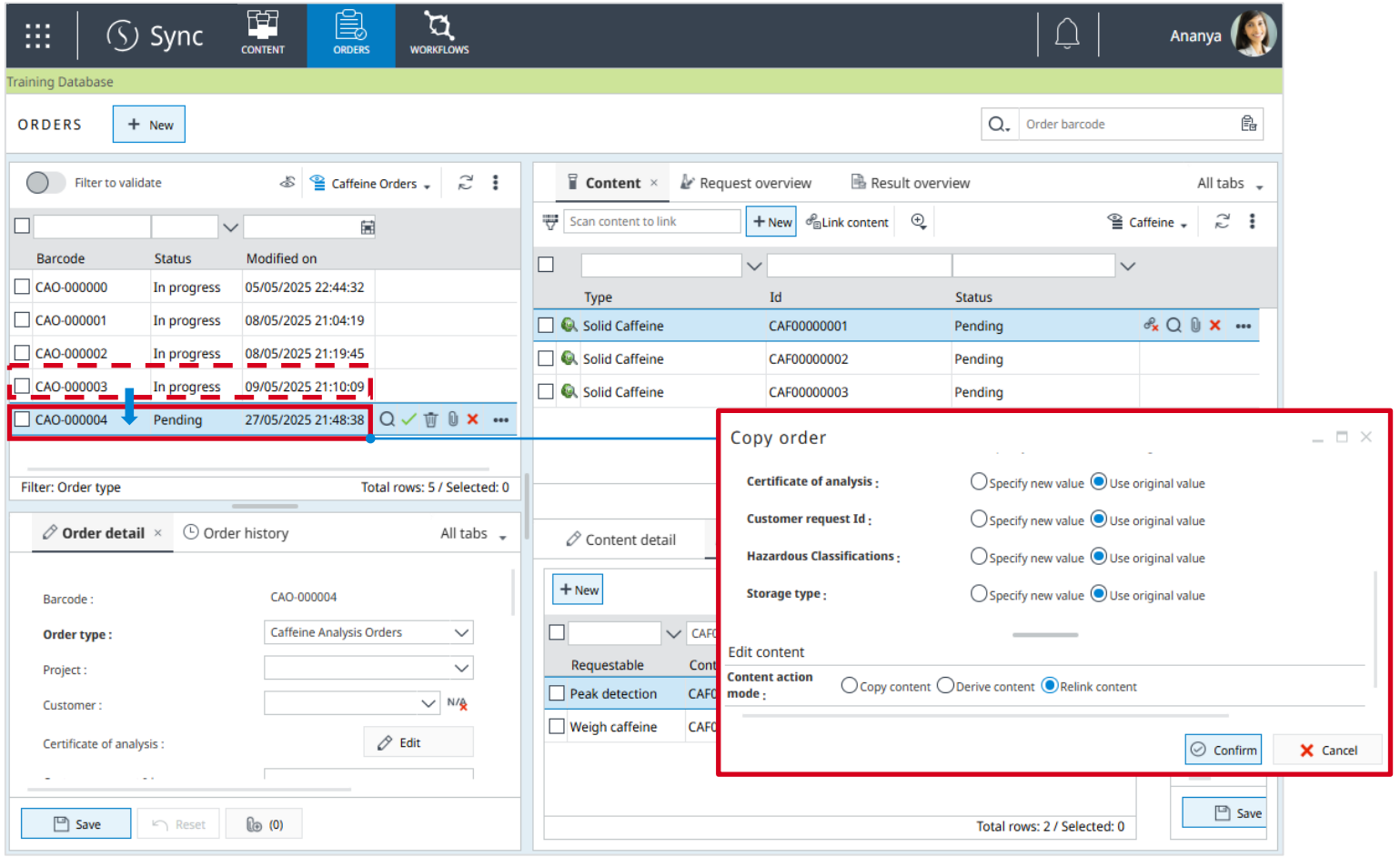


Quality of Life

Relink Content with a Copied Order

When an order is copied, the content and its requests can be relinked to the new order.

The copied order has the same contents and requests linked to it

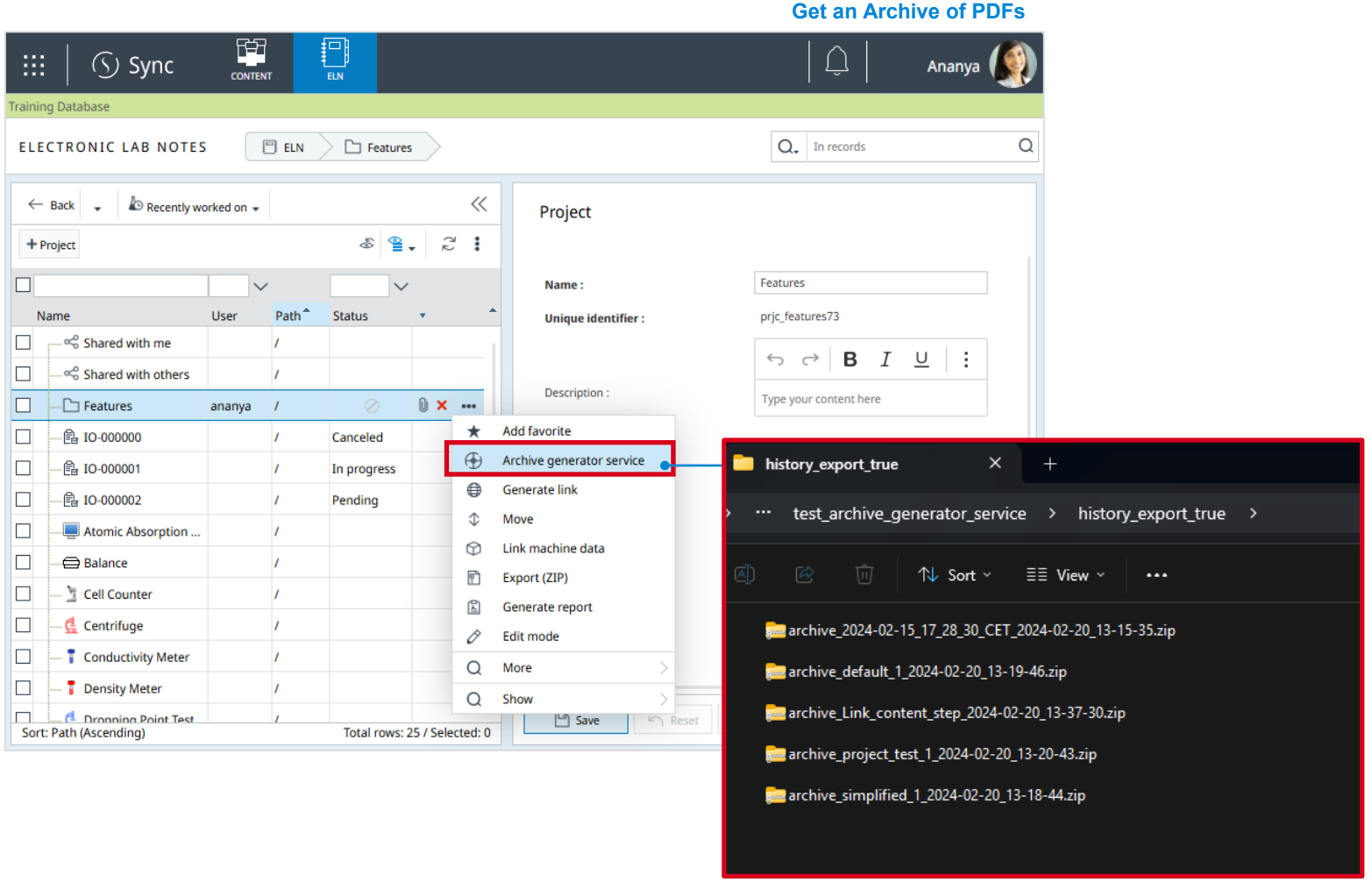


Quality of Life

Archive Generator Service for ELN

A plugin can be made using a new service to provide a collection of PDFs that include anything generated for the ELN's zip archives.

Get an Archive of PDFs

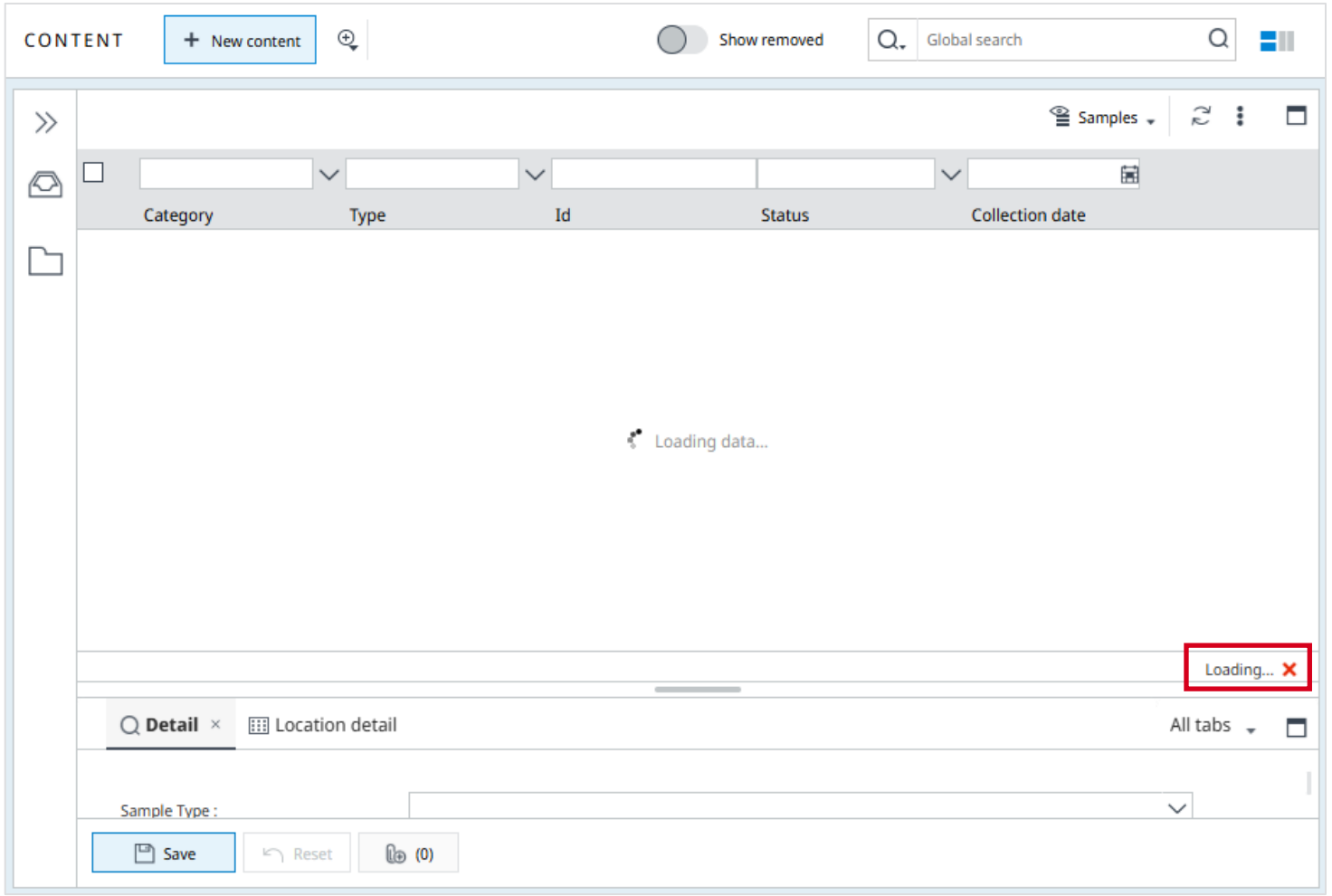


Quality of Life

Cancel Loading of Slow Grids

Grids with large amounts of records may load more slowly than those fewer records. Users can cancel the loading if they don't want to wait. The grid can be refreshed to reload the records.

"Cancel Loading" Icon



Quality of Life

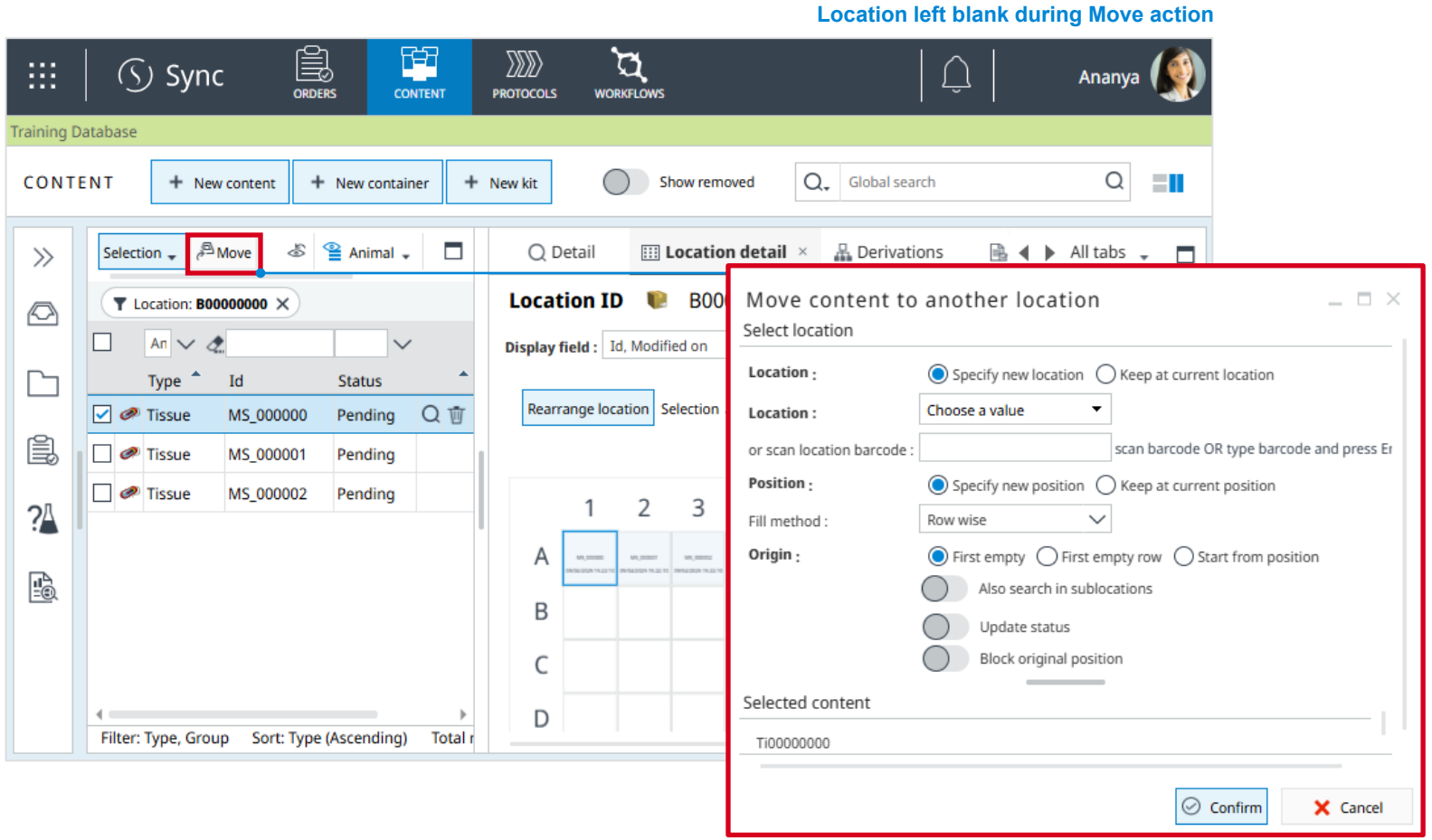
Remove Content from Location

Samples and sublocations can be removed from a location. It was possible to move various contents before, but the target location is no longer required. It can be left blank if the content will not be stored in a location.

You can see this change in:

- Move action in Content
- Move action in Locations
- Macro steps

Location left blank during Move action



Introduction to OpenLab Sync

Version 7.4 introduces the name OpenLab Sync (formerly known as SLIMS).

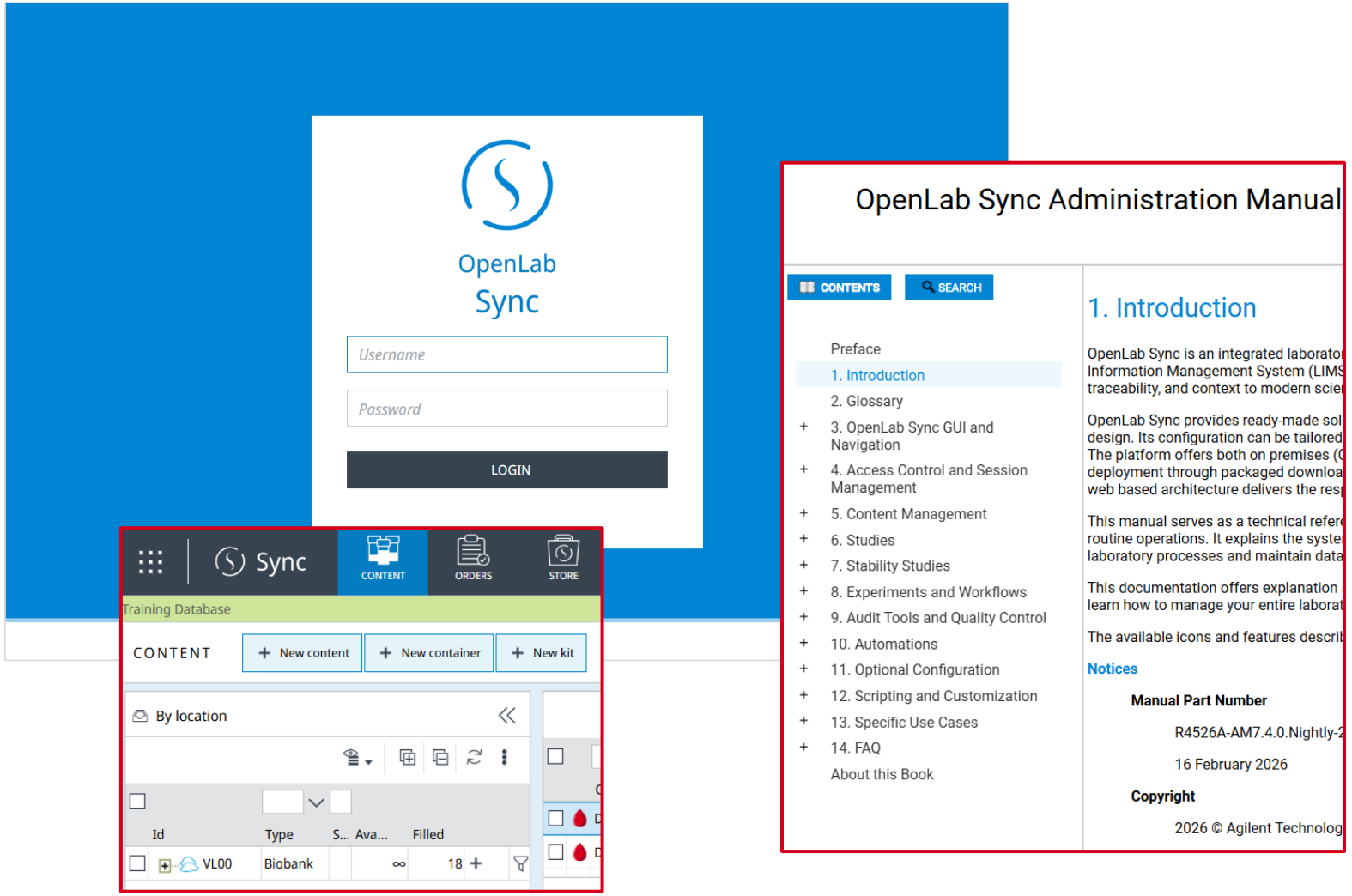
What changes:

- Name and logo
- Manuals and materials are for OpenLab Sync going forward
- Features introduced in v7.4 that support LES Pharma laboratories
- Store packages that support LES Pharma

What we keep:

- Existing features: Current customers lose nothing from SLIMS
- Existing Store packages: Generic packages and those for other lab industries are still available

A few references to SLIMS may remain in the Administration modules, but these legacy labels are cosmetic and do not impact functionality.

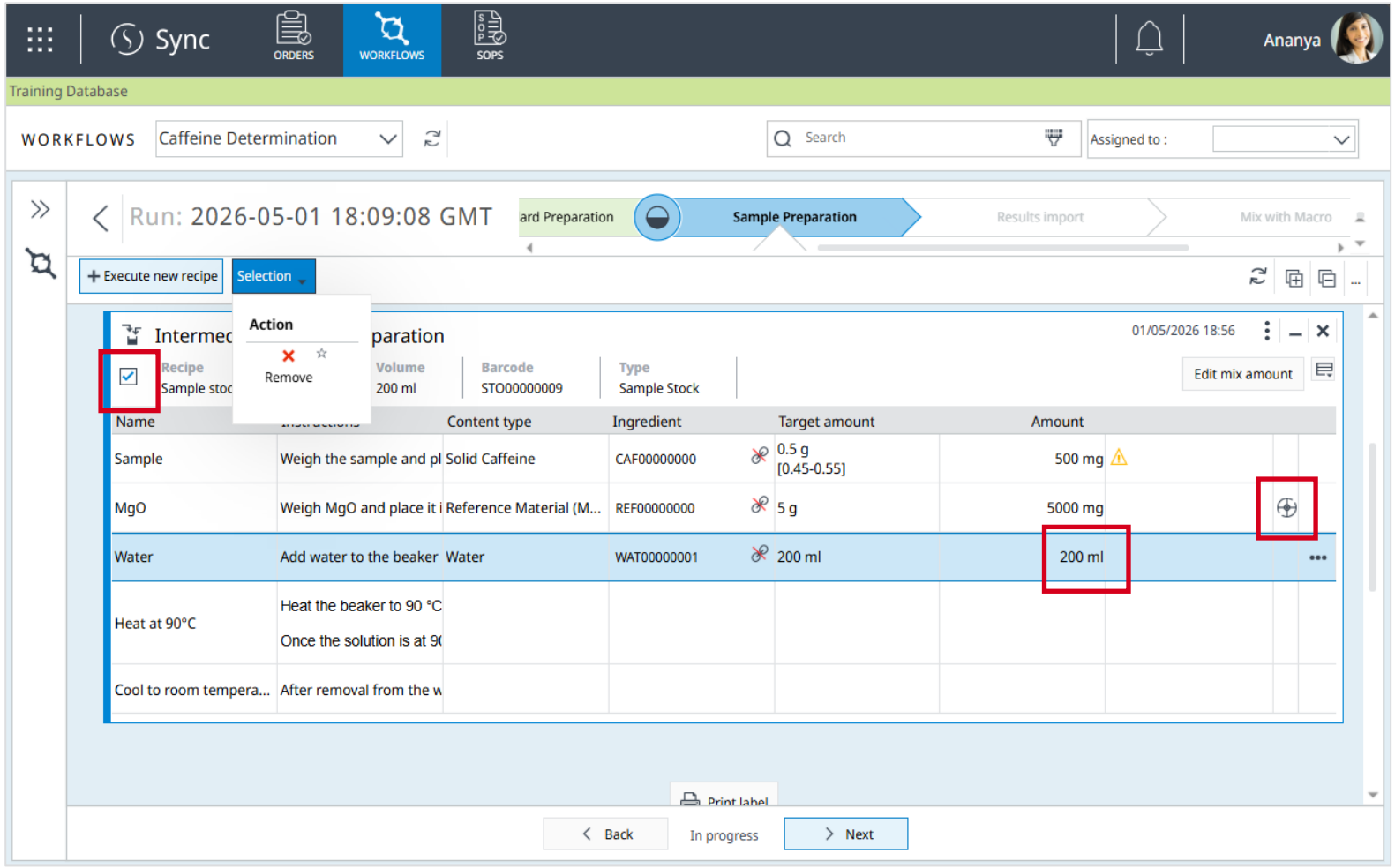


Recipe-Related Improvements

Updates were made to improve Recipes in core OpenLab Sync and Bench View.

- Recipes have a sequence number so recipes that depend on mixes from earlier recipes are executed after them.
- A default amount can be automatically filled for ingredients that don't need to be exact.
- Extensions flows can be created to take measurements from a balance and pull the ingredient weights into the amounts of the right recipe instructions.
- Executions of recipes can be selected to show more actions.

Recipe changes in OpenLab Sync



Recipe Blocks are Supported in Bench View

Bench View allows users to select a recipe to execute, run additional recipes (from the recipes permitted by the protocol), link ingredients, enter ingredient amounts, see range indications, and follow on-screen instructions.

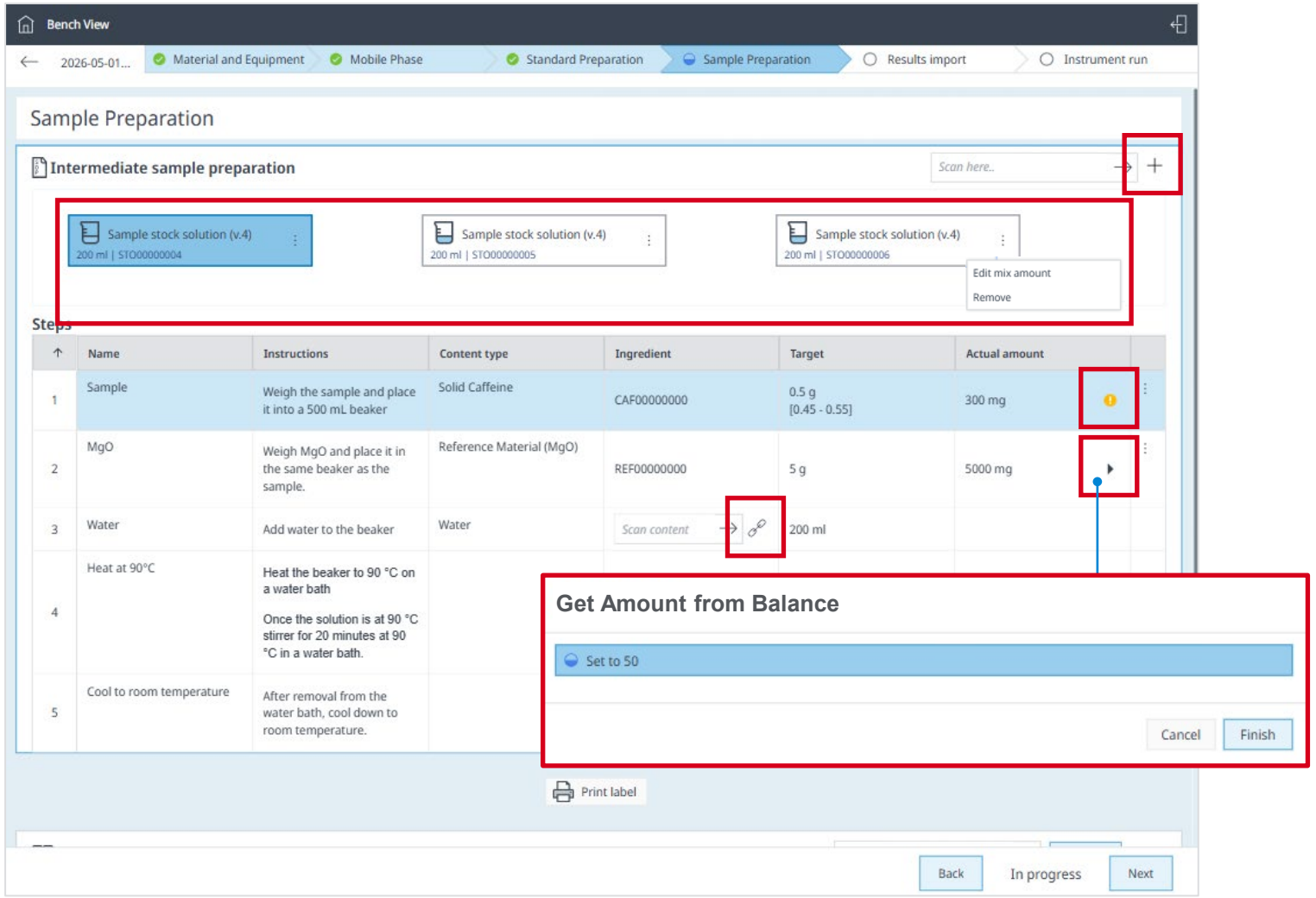
The carousel above shows the executed recipes. Users tap on one to select it and view its details.

Extensions flows can be used to automatically get amounts from integrated equipment by tapping the “Play” icon in the row.

Scanning an ingredient or mix will find the last executed recipe that used it and open it on the screen.

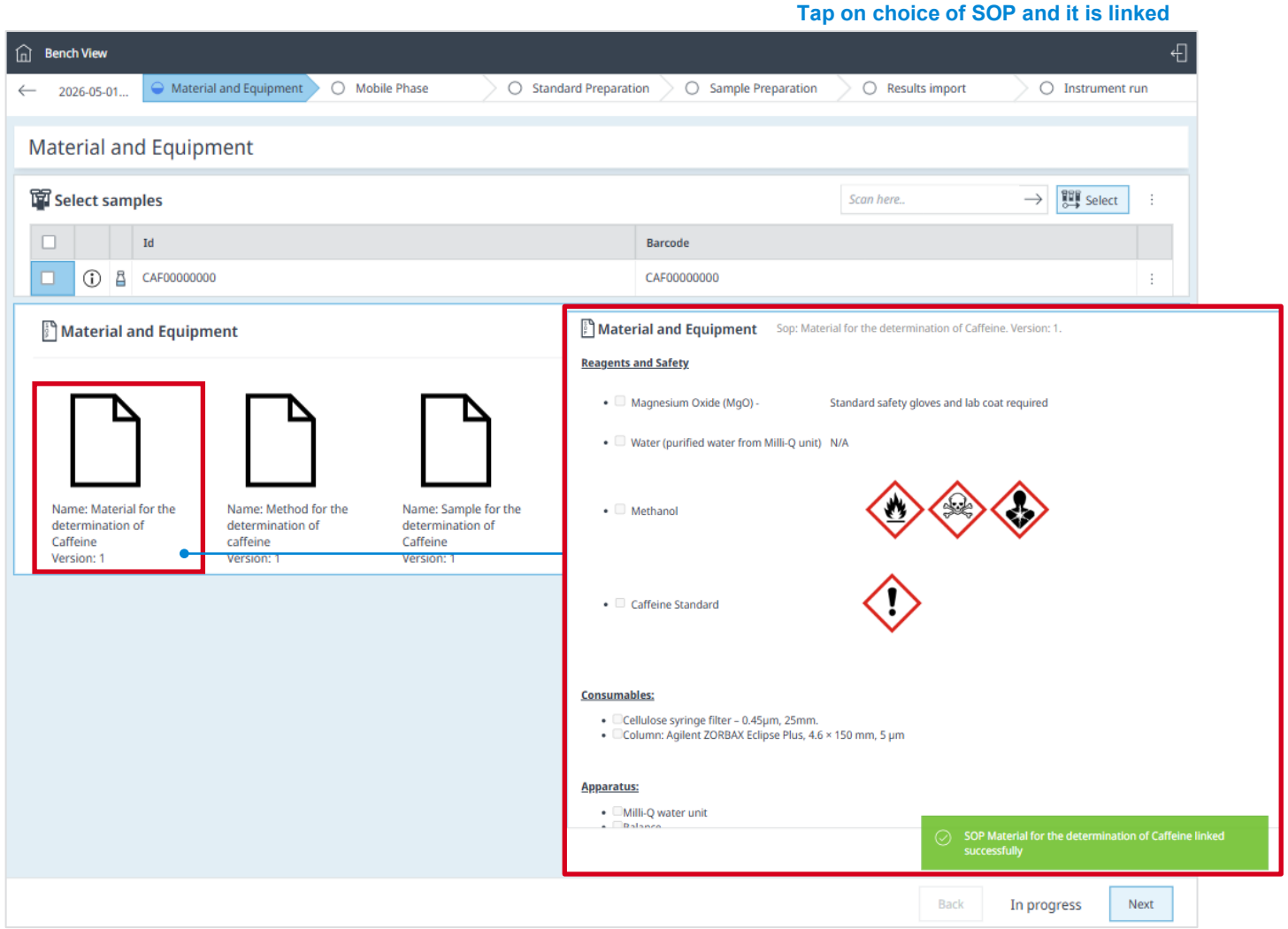
The Recipe execution menu lets users remove an execution or adjust the mix amount.

Navigation in a Recipe



SOP Blocks are Supported in Bench View

SOP blocks show up pre-selected if there is only one SOP possible for the block. Otherwise, the user taps on one of the desired SOPs to display it in the block and it becomes linked to the protocol run.



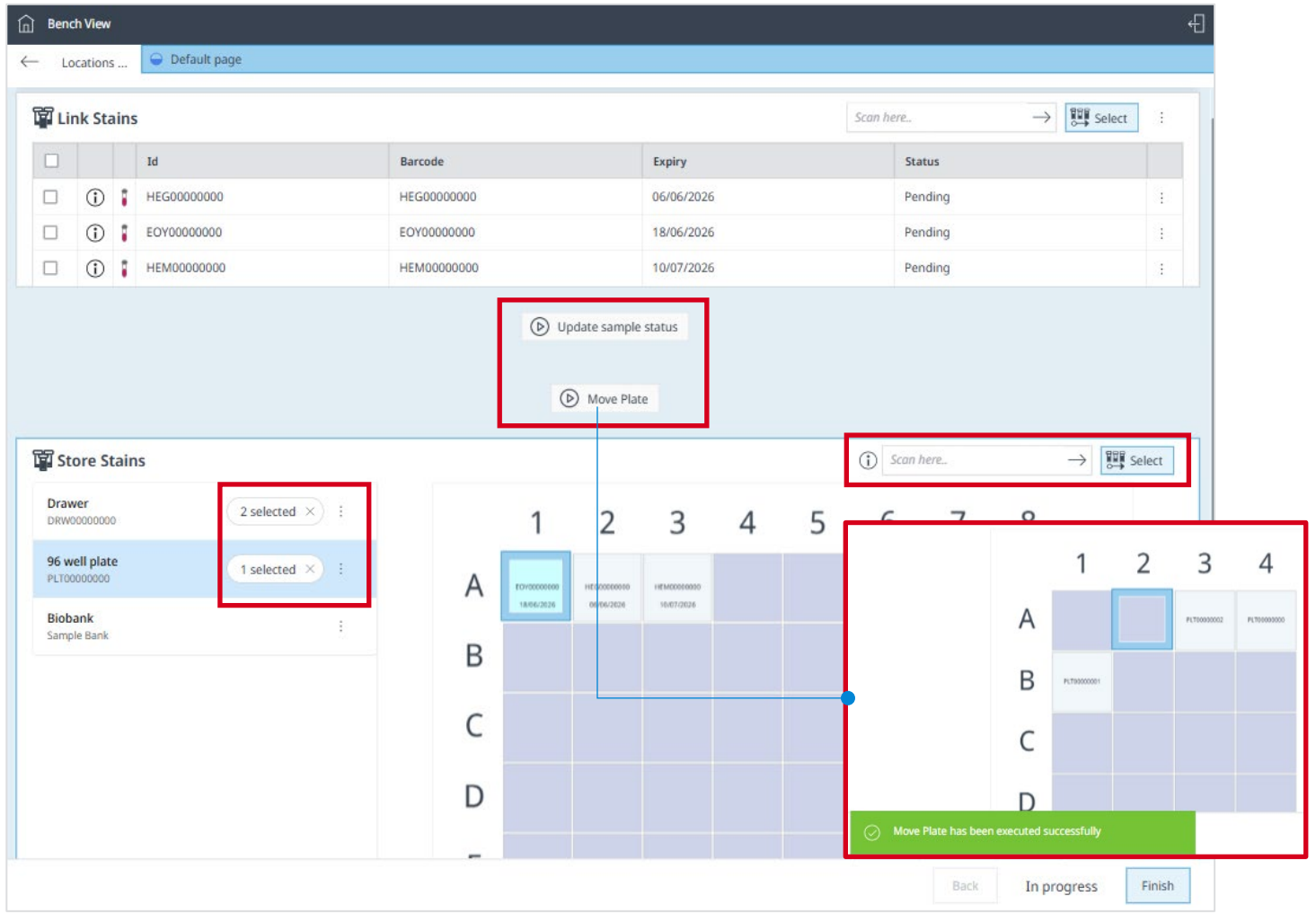
Link Location Blocks are Supported in Bench View

Link Location blocks offer a way to track locations in the lab by selecting them, scanning them, or by scanning samples to link the location they are stored in.

Location blocks allow multiple selections at a time with a display to show how many internal positions are selected. Users can tap the Info icon to see the detail panel.

Location blocks can be input to run macros and Extensions flows, such as to move a well plate from one drawer to another.

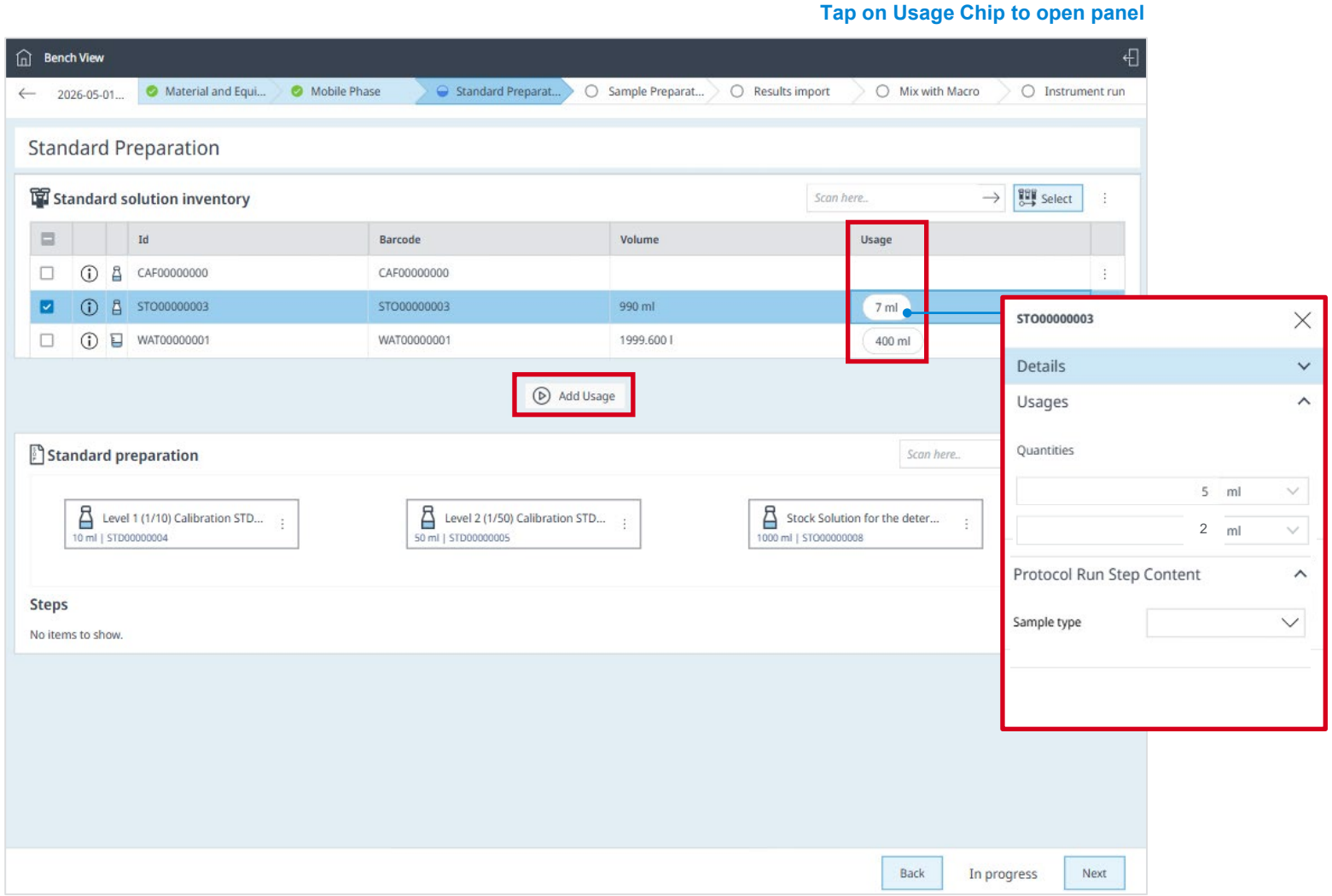
Location Block Navigation in Bench View



Usages are Improved in Bench View

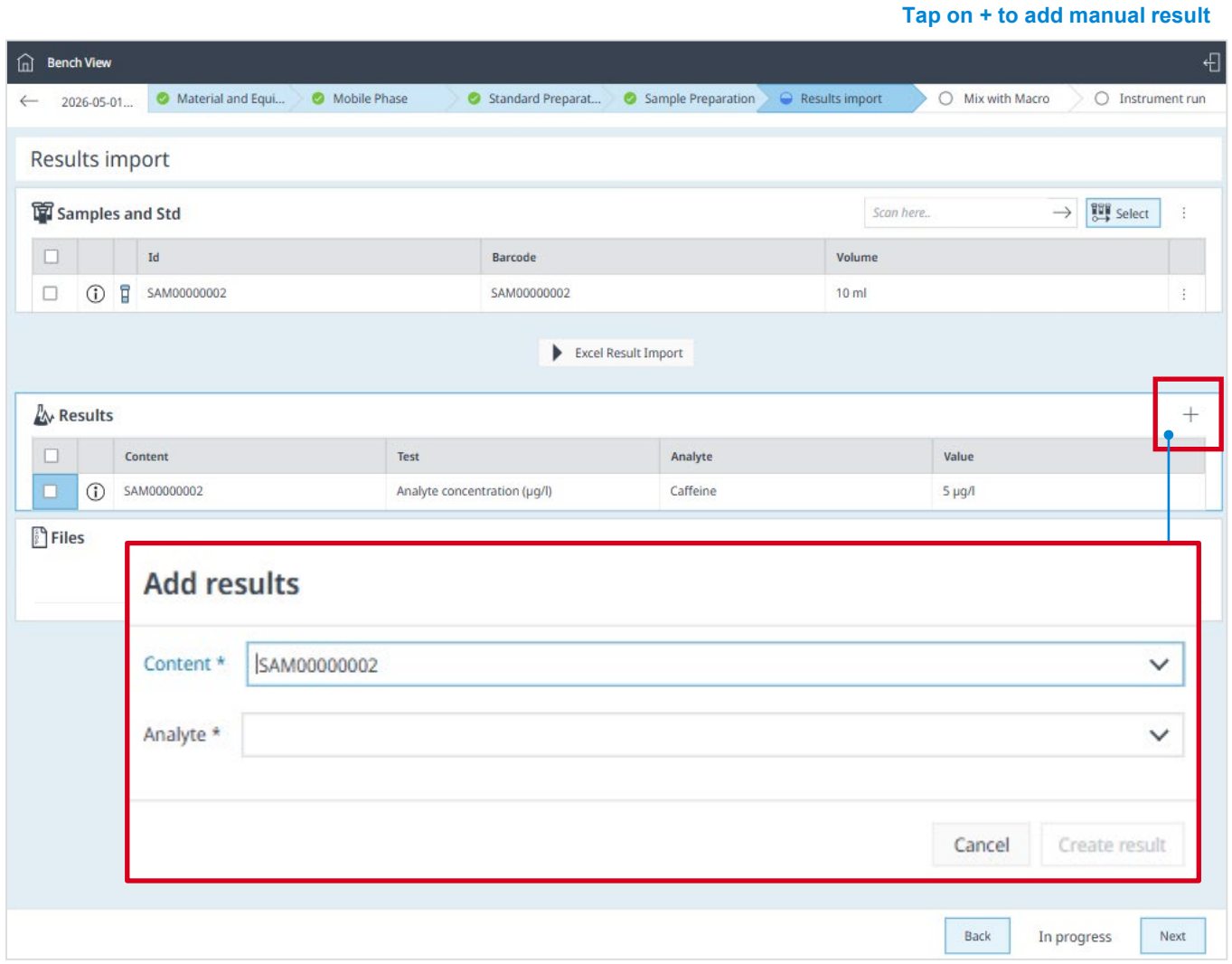
Default usages can be taken during a protocol run. The usages are summed and shown in the Usage column so the user can see what was used at a glance.

Tap on a chip to open the Usage detail. Add Usage macros can be used to quickly create new usages, and the panel can be opened to edit them afterward.



Manual Results are Supported in Bench View

Tests that allow manual results are supported in Bench View. Users can tap the + icon, choose a sample, and choose the test to create a new result.



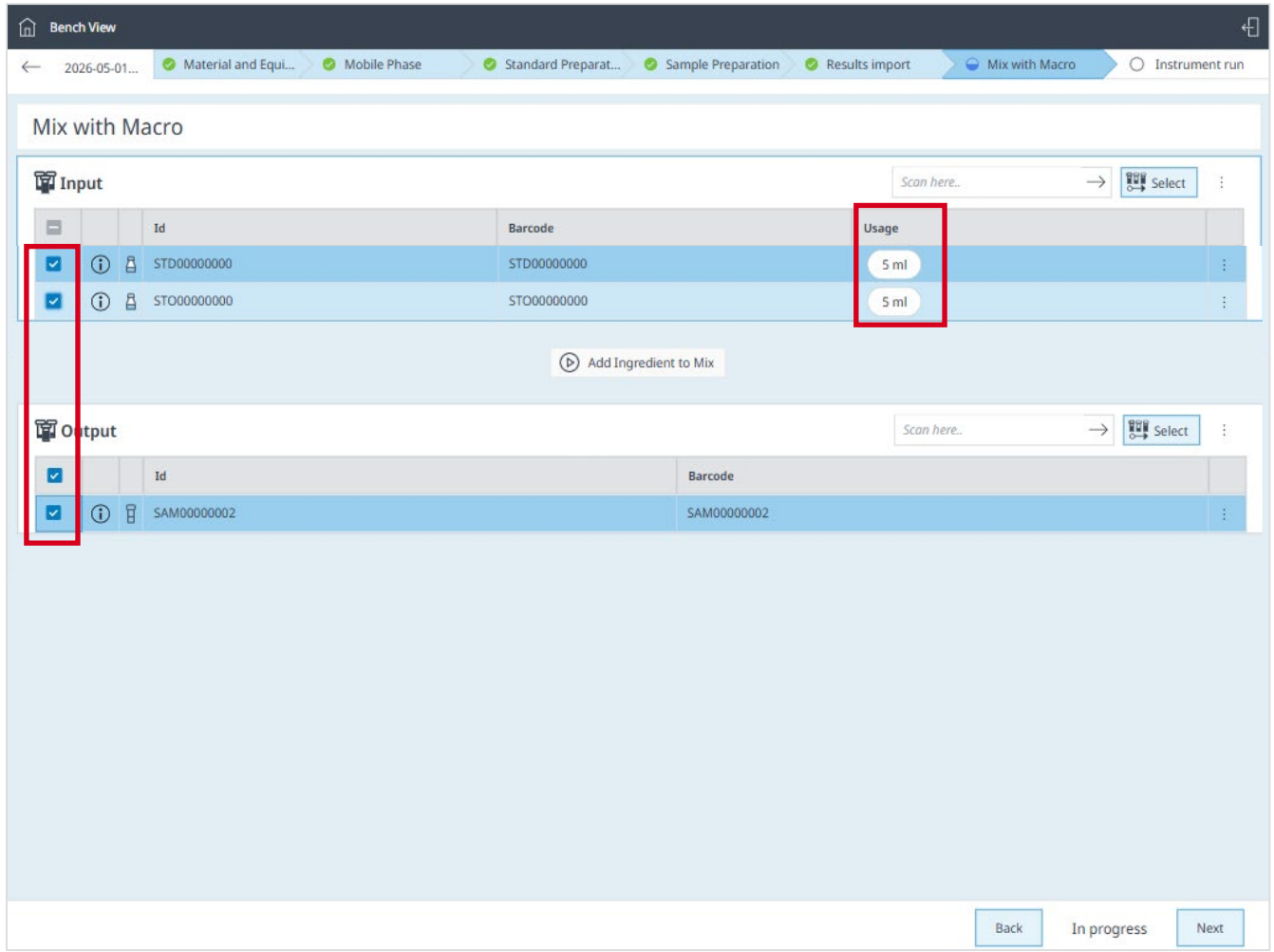
“Add Ingredient to Mix” Macro Works in Bench View

An “Add Ingredient to Mix” macro step can be used in an action block with two link content blocks.

The user selects the ingredient(s) in the input block and the mix in the output block, then taps the macro to run it.

Such macros are often paired with an “Add Usage” step to take predefined usage(s) from the ingredient(s) and add the ingredient(s) to the mix at the same time.

5 ml usages are taken from the ingredients

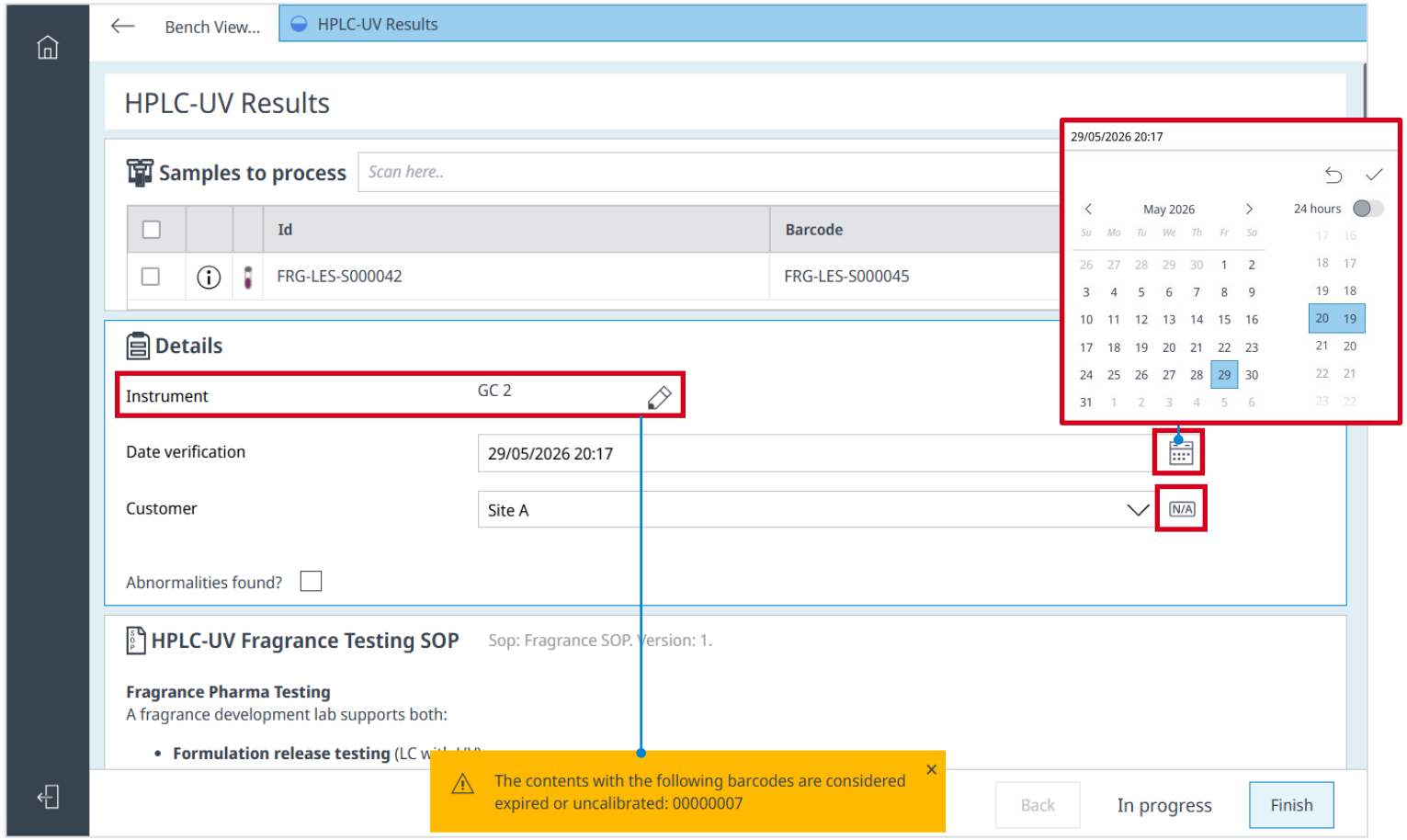


Bench View Consistency Improvements

Bench View received some general updates to improve consistency with the core software.

- Date and Date Time formats from Lab Settings are now supported, including European, Japanese, and US date styles
- N/A fields supported by adding an N/A button where enabled
- A configuration plugin allows administrators to add custom fields as columns to the Not Started and Runs grids in Bench View
- Content Detail panel allows users to edit data and view and edit the protocol run step fields
- Linked samples can be scanned to quickly find and focus on them in Link Content blocks
- Instruments can be selected in Form blocks
- Macros can run on the start of a page in Bench View
- Extensions Flows support password fields (with obfuscation), more multiple select datatypes, and feedback.

General supported functions in Bench View

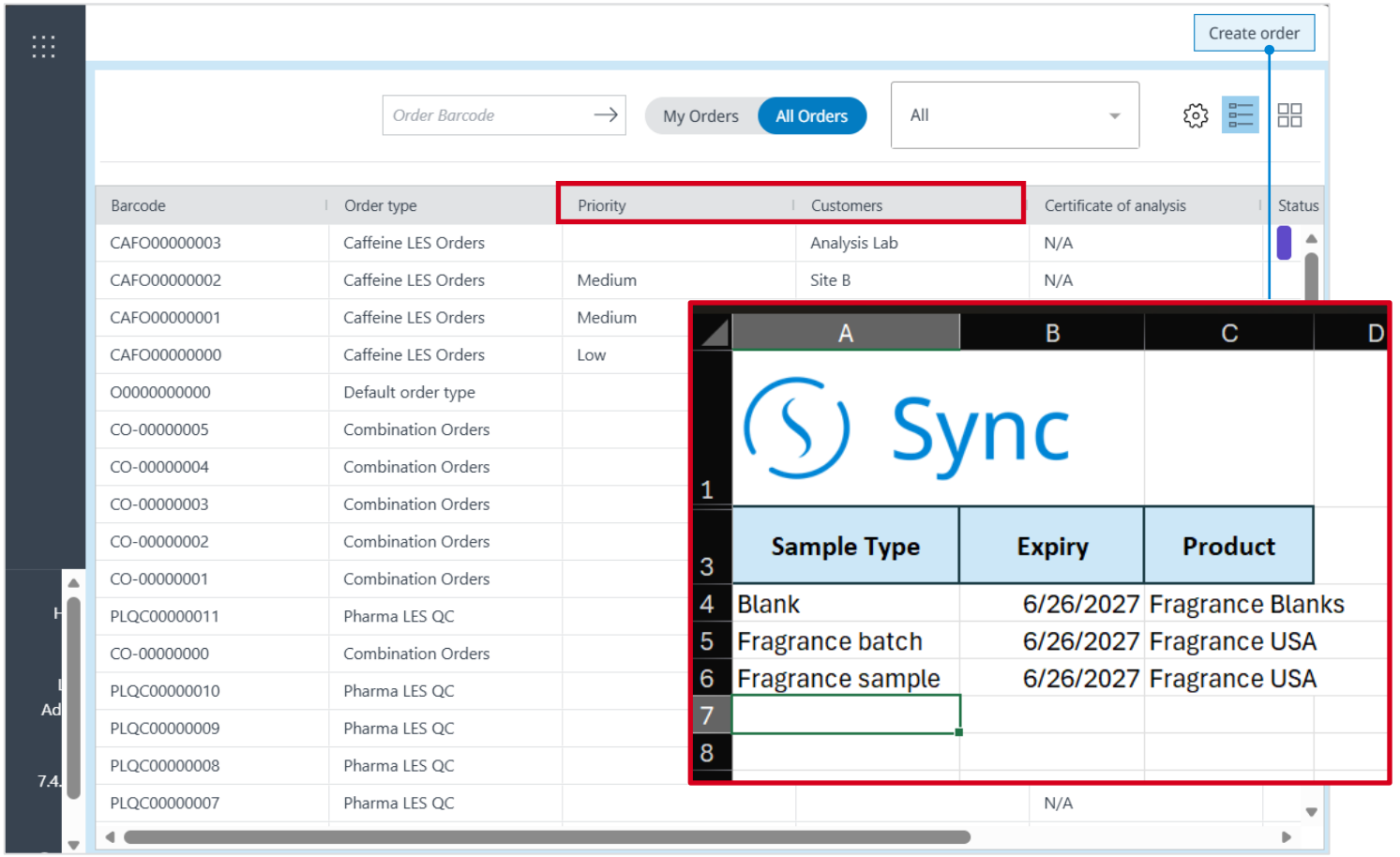


Requester Portal Consistency Improvements

Requester Portal received some general updates to improve usability and consistency.

- Users can now import multiple content types in one Excel sheet by using the “Undefined” Sample Type.
- A configuration plugin allows administrators to add custom fields as columns to the Orders table.
- Request custom fields appear in the sample details of submitted orders.

General supported functions in Requester Portal

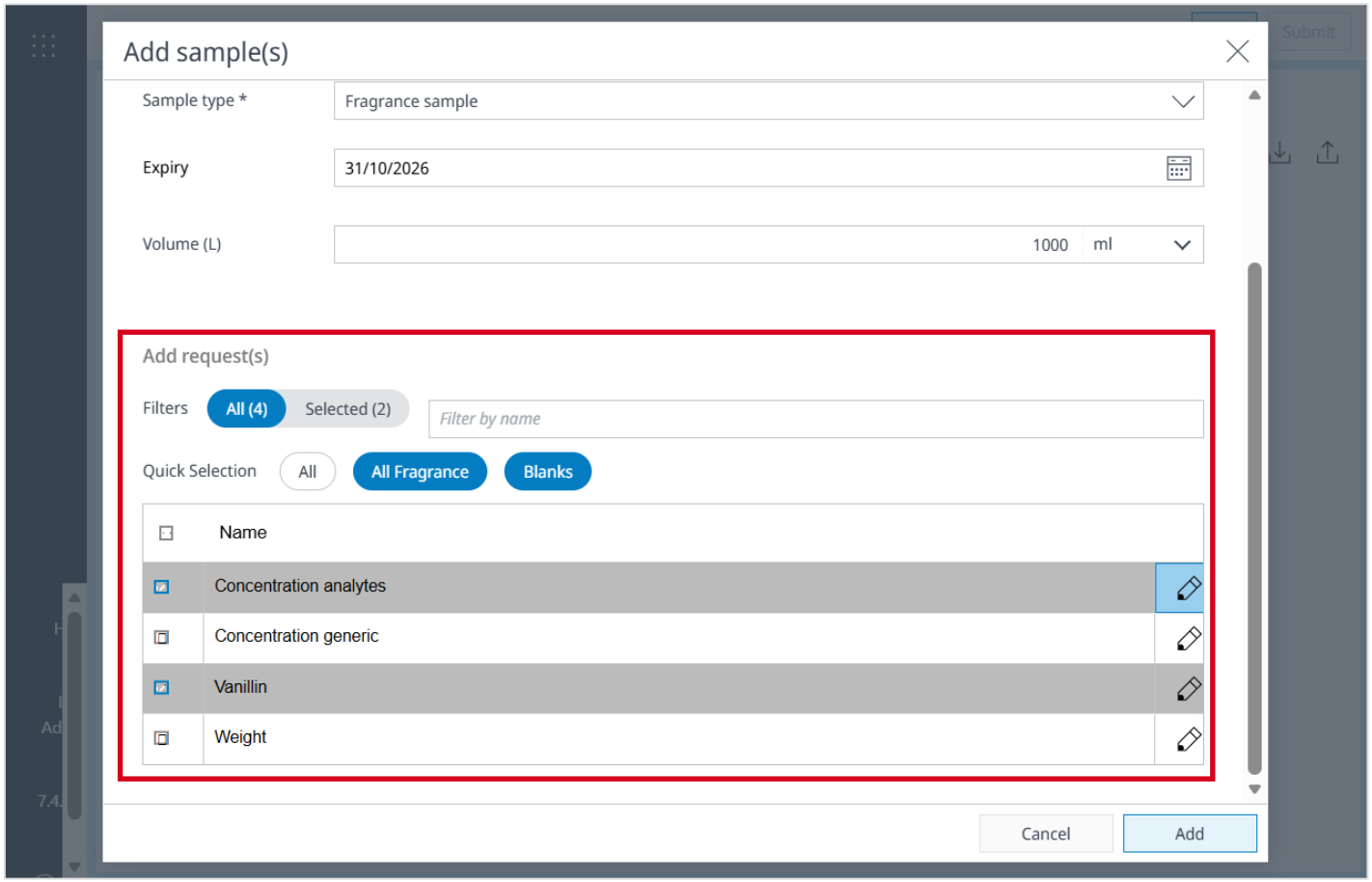


Requester Portal Add Requests Table

The table to add requests was improved to make selection easier when there are a lot of requests. Custom fields on requests can be included to add editable information as columns in the table. Users can:

- **Filter** by typing a request name
- See how many requests there are versus how many are currently selected
- Select **All** requests or one of the **Requestable Groups** to request grouped analyses with one click
- Check the boxes for individual requests to refine their selection.

Reworked add requests table



Reusable Simplified Protocols as Templates

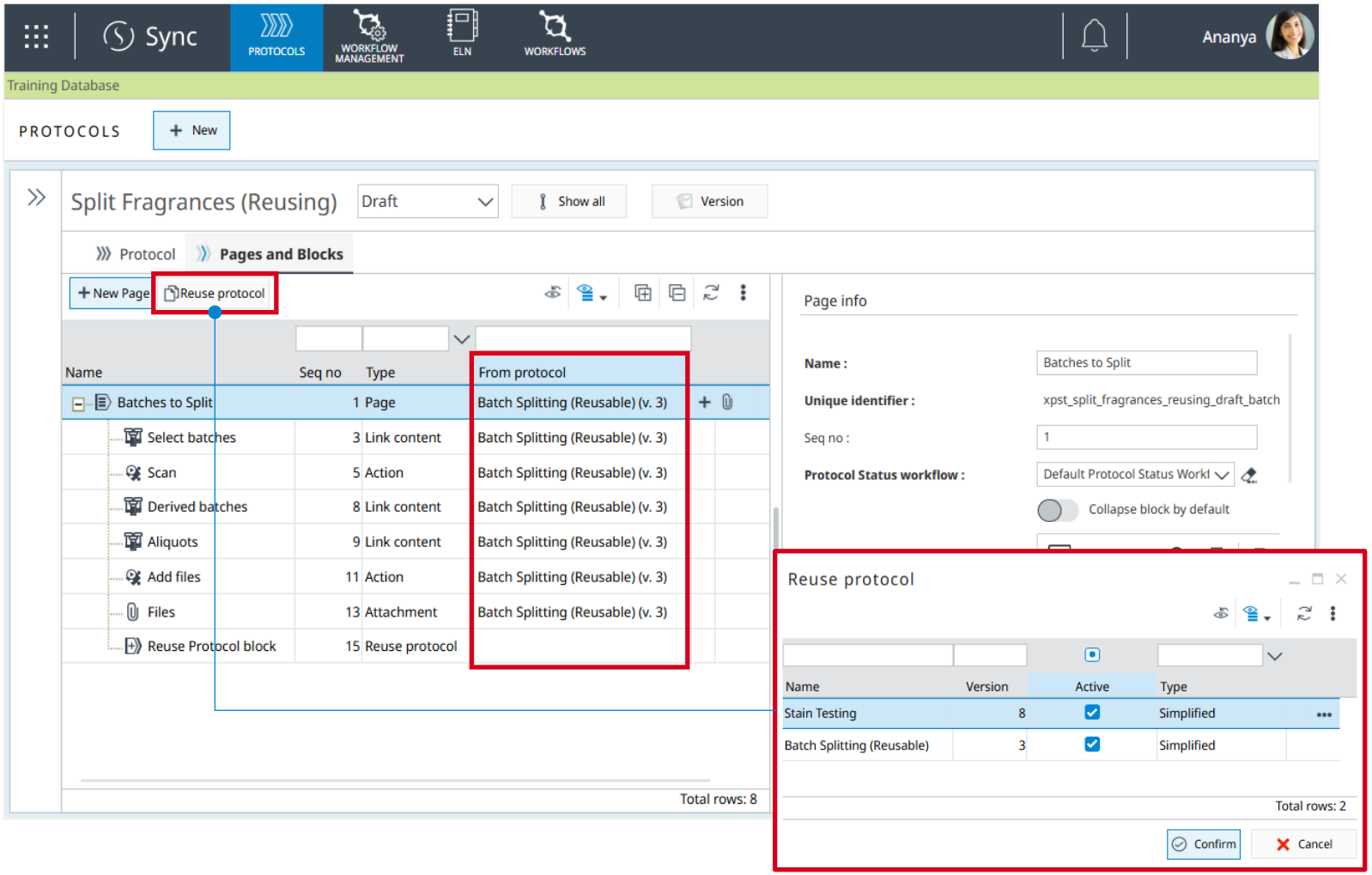
You can build simplified protocols once and reuse them across ELN and Workflow Management as templates to cut time on configuration.

- Reduces repeat work by letting lab managers reuse pages and blocks that have already been checked for correctness.
- Reused content stays connected to its source protocol, so lab managers can trace origin and see when a newer template version is available.

Name	Description	Version	
Batch Splitting (Reusable)		2	Update
Batch Splitting (Reusable)		2	Update

- ✓ Static reusable protocols for standardized templates (non-ad hoc).
- ✓ Planned reusable one-page protocols via a **Reuse Protocol** button that offers a curated list of template choices (planned ad hoc).
- ✓ Unplanned reusable one-page protocols that can be inserted like other ad hoc blocks, even without a preconfigured **Reuse Protocol** block (unplanned ad hoc).

Reusing a template protocol and tracking where the parts came from



Reusable Simplified Protocols for Users

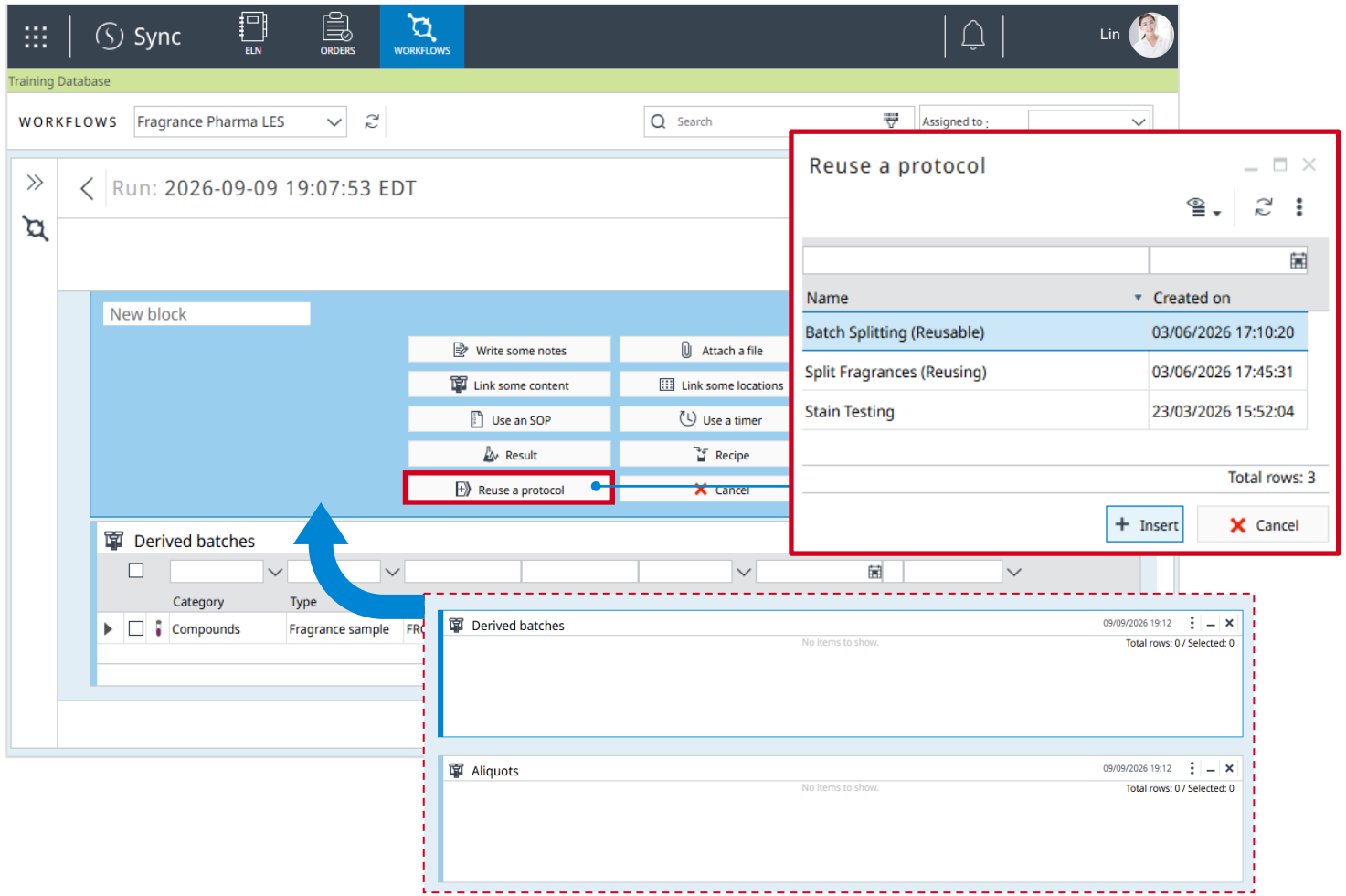
Unplanned ad hoc reusable protocols

Lab technicians can take advantage of previously made simplified protocols, even if they aren't preconfigured for reuse.

The selected protocol is placed where the blue placeholder block is. In the screenshot, it adds the whole protocol above the **Derived batches** block with a fragrance sample in it.

Only one-page protocols can be inserted. You can also restrict which protocols are reusable to prevent nonsensical ones from appearing as an option.

Lab Technician reusing a reusable protocol – True ad hoc



Use Flags in Simplified Protocols

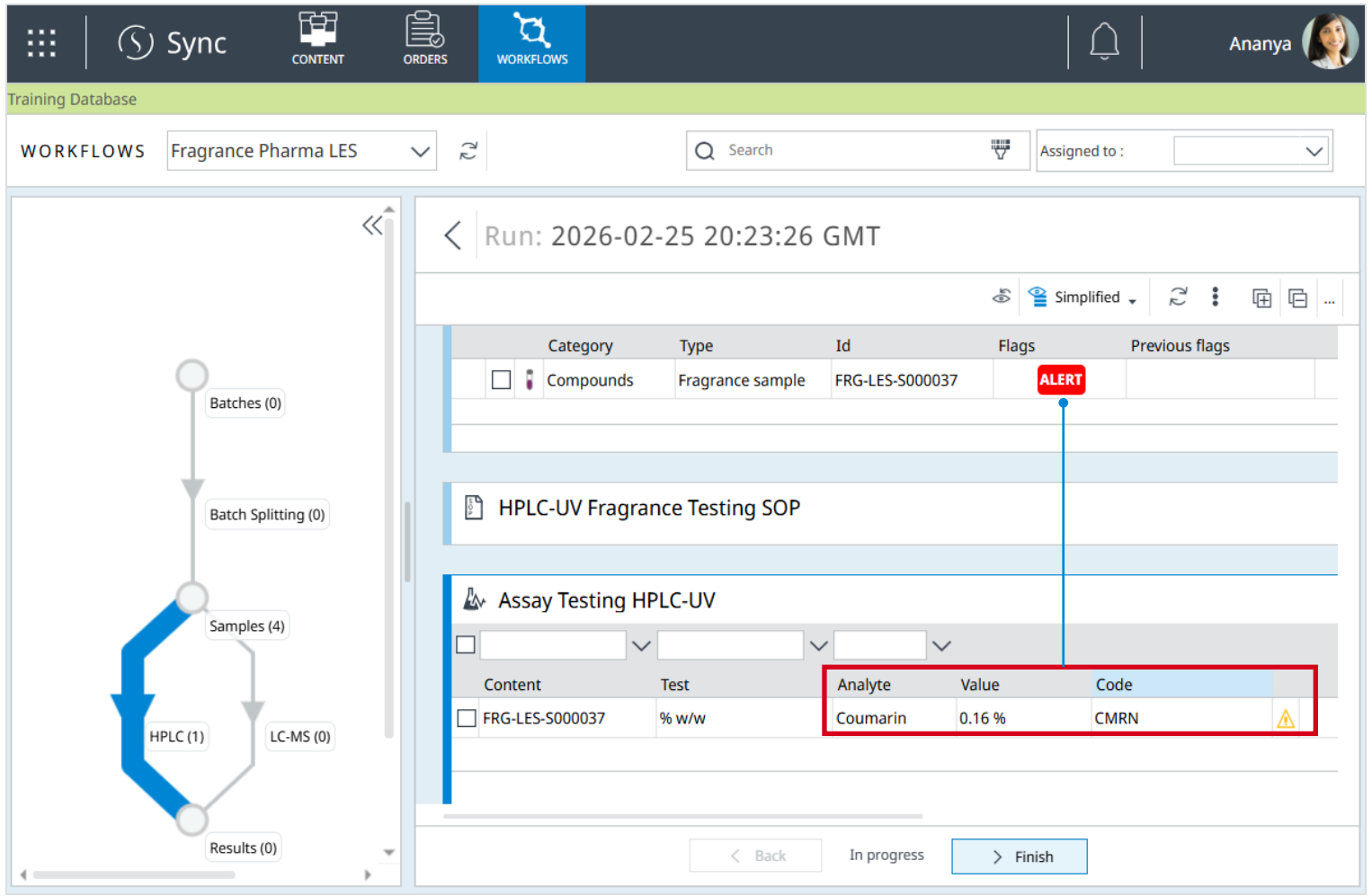
Flags can be used to flag samples and provide consequences when results are out of range. Flags could be used in Default Protocols but can also be used for Simplified Protocols within Workflows now.

Flags can be set manually or automatically (with scripting) on Pop blocks and Link Content blocks.

You can set consequences that:

- Just add an informational label
- Force samples to be requeued
- Force samples to be cancelled
- Forbid a set of protocols until samples are requeued
- Forbid a set of protocols indefinitely.

A flag is applied to the sample when the analyte's result is out of range



Better History for Protocol Runs

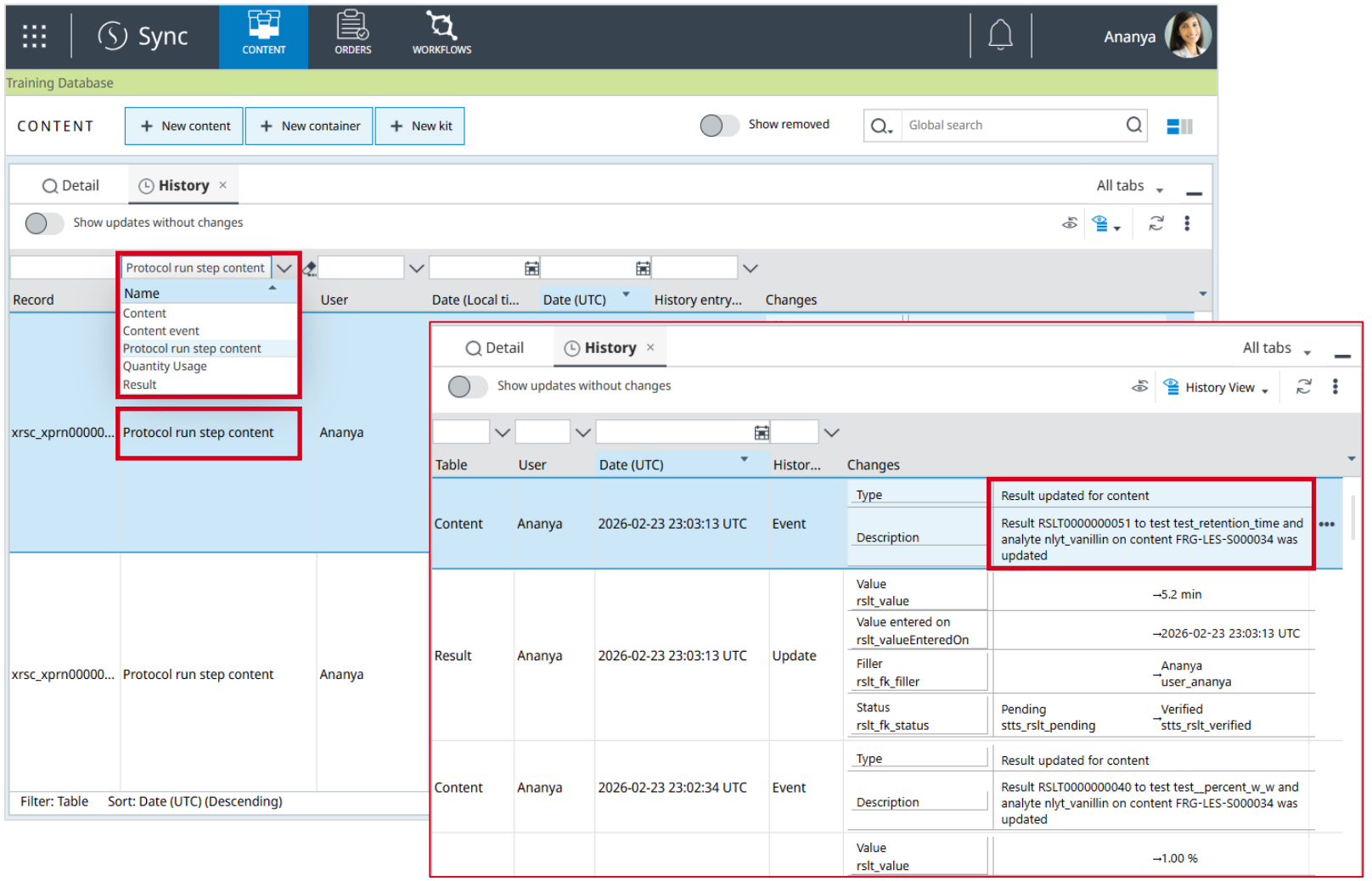
Audit trails for protocol runs are now aggregated so you can view the history of a sample in one place.

You can see information like samples linked to blocks in the run, quantities taken, results created, instruments used, recipes executed, and more depending on the context.

Aggregated history appears in these places:

- ELN and Workflows: Experiment/protocol runs
- ELN and Workflows: Protocol steps/blocks
- Content module: Content grid

Zoom on Protocol Run History in Content Module



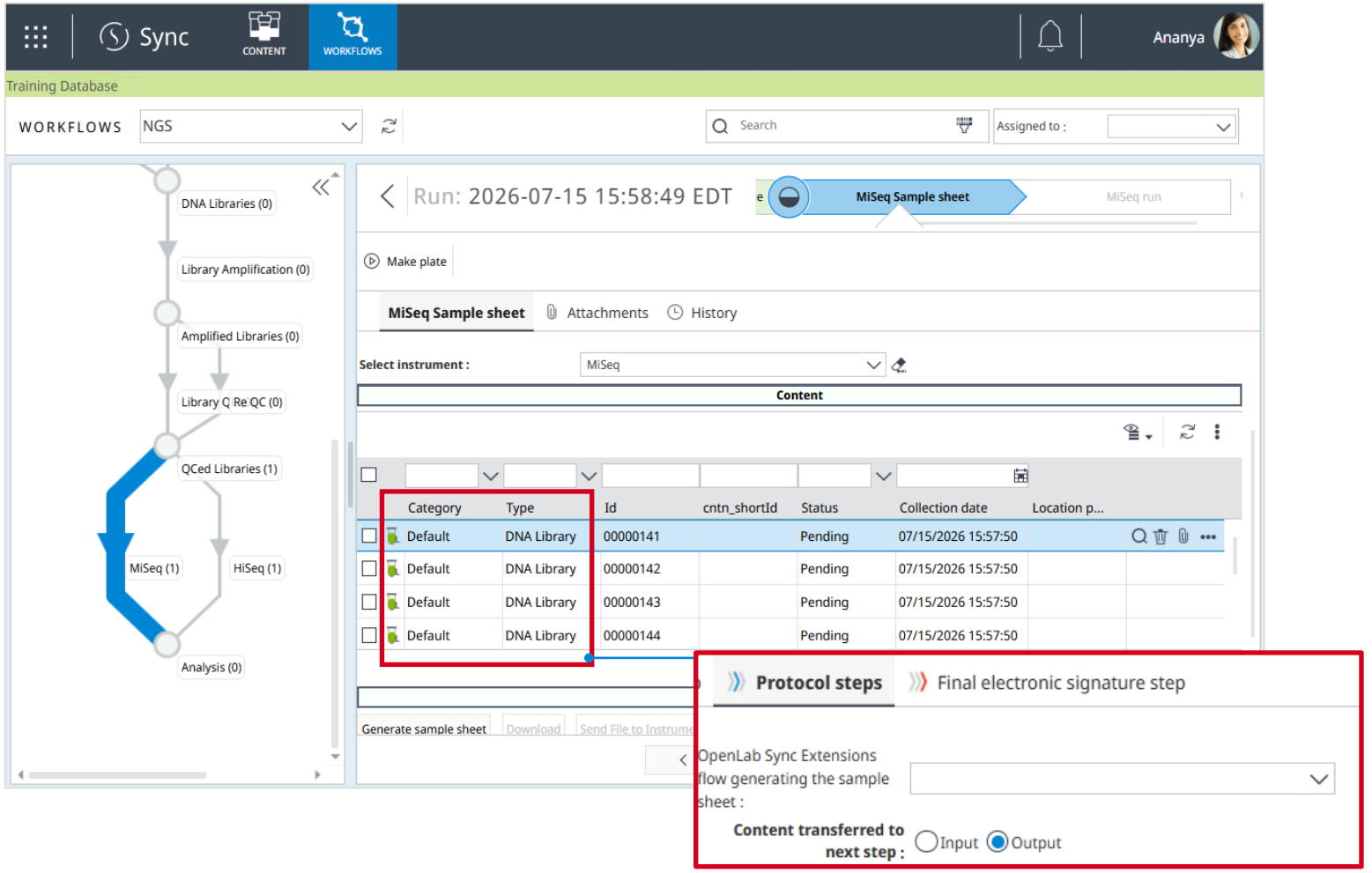
NGS Content Queue Progression

Administrators can set which content gets transferred from the MiSeq, NextSeq, NovaSeq, or HiSeq run step into the next protocol queue.

If **Input** is selected, the library pools continue to the next queue.

If **Output** is selected, the libraries continue to the next queue.

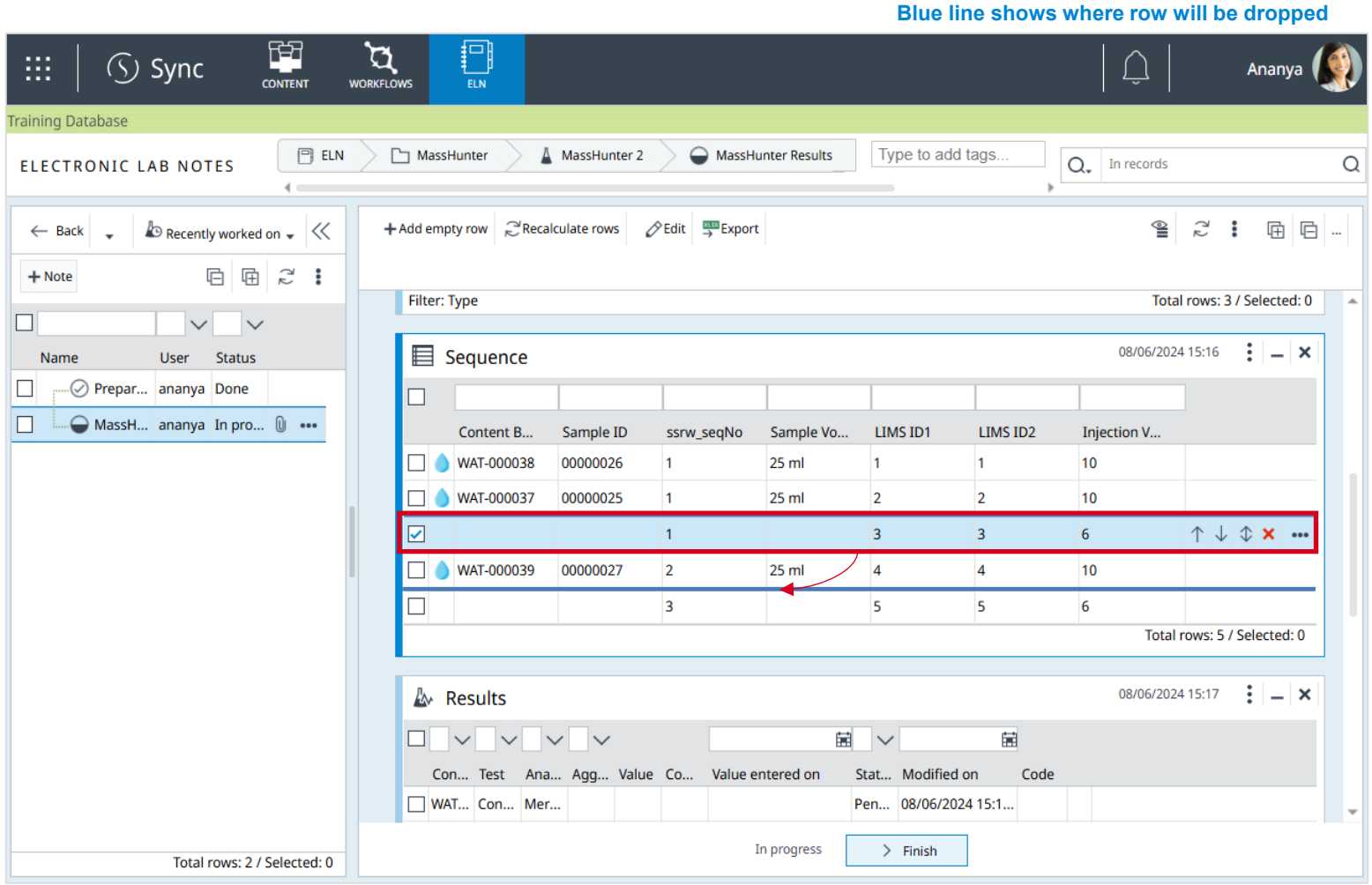
Choose what content gets transferred to output queue



Quality of Life

Drag and Drop to Reorder Sample Sheet Rows

Grid Template blocks can be used as editable sample sheets for equipment. The rows can now be reordered with drag and drop.

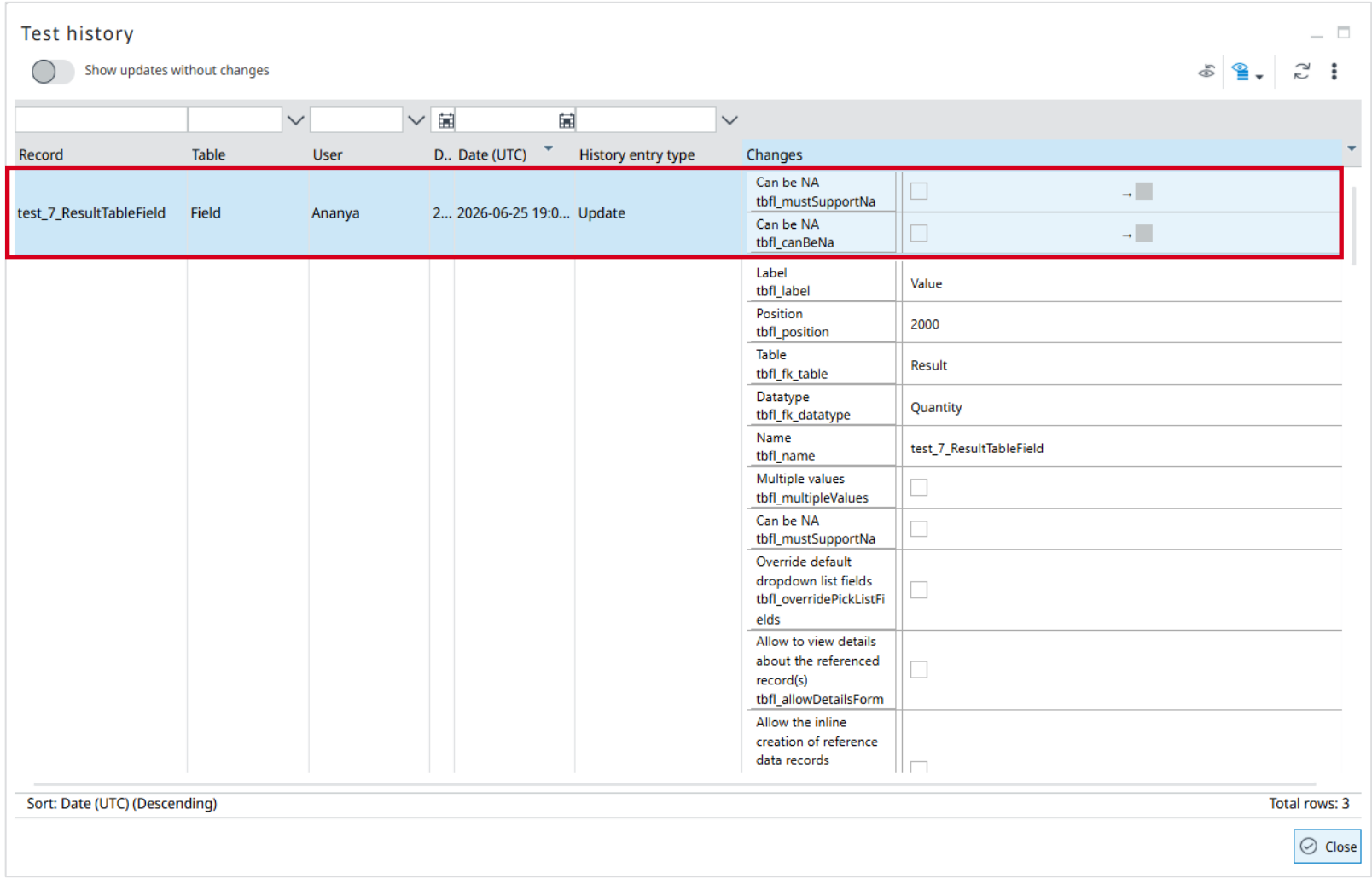


Quality of Life

Expanded History on Test Datatype

The history of a test now shows any changes made to its datatype. Users can also filter test history by the test or table field.

Zoom on datatype change in Test History

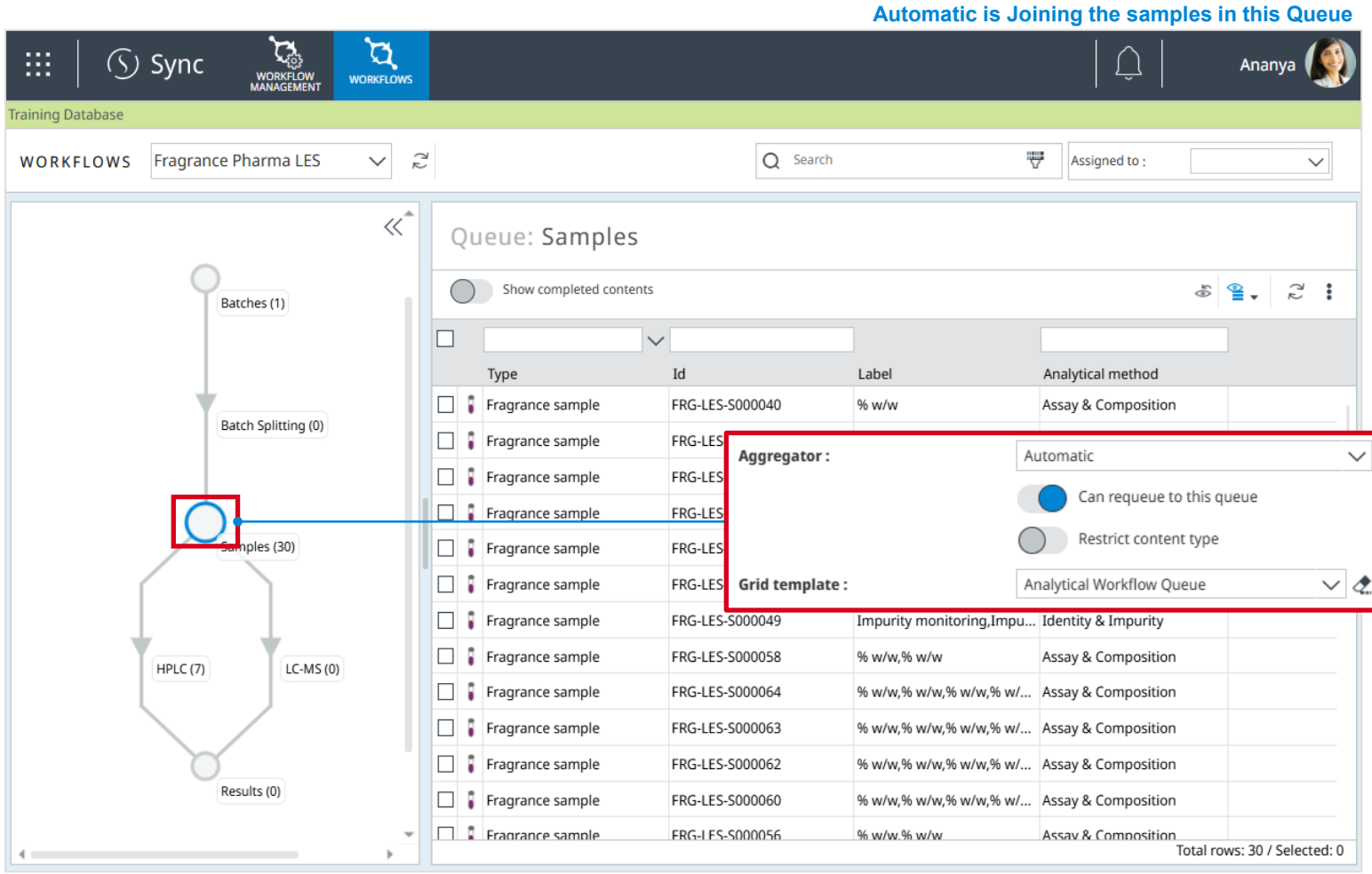


Quality of Life

New Queue Aggregator Type: Automatic

Workflows are easier to design with the **Automatic** queue aggregator type. Administrators can still choose between Keep, Join, and Split queues, but if the default Automatic queue is used, OpenLab Sync will intuitively choose the most appropriate behavior.

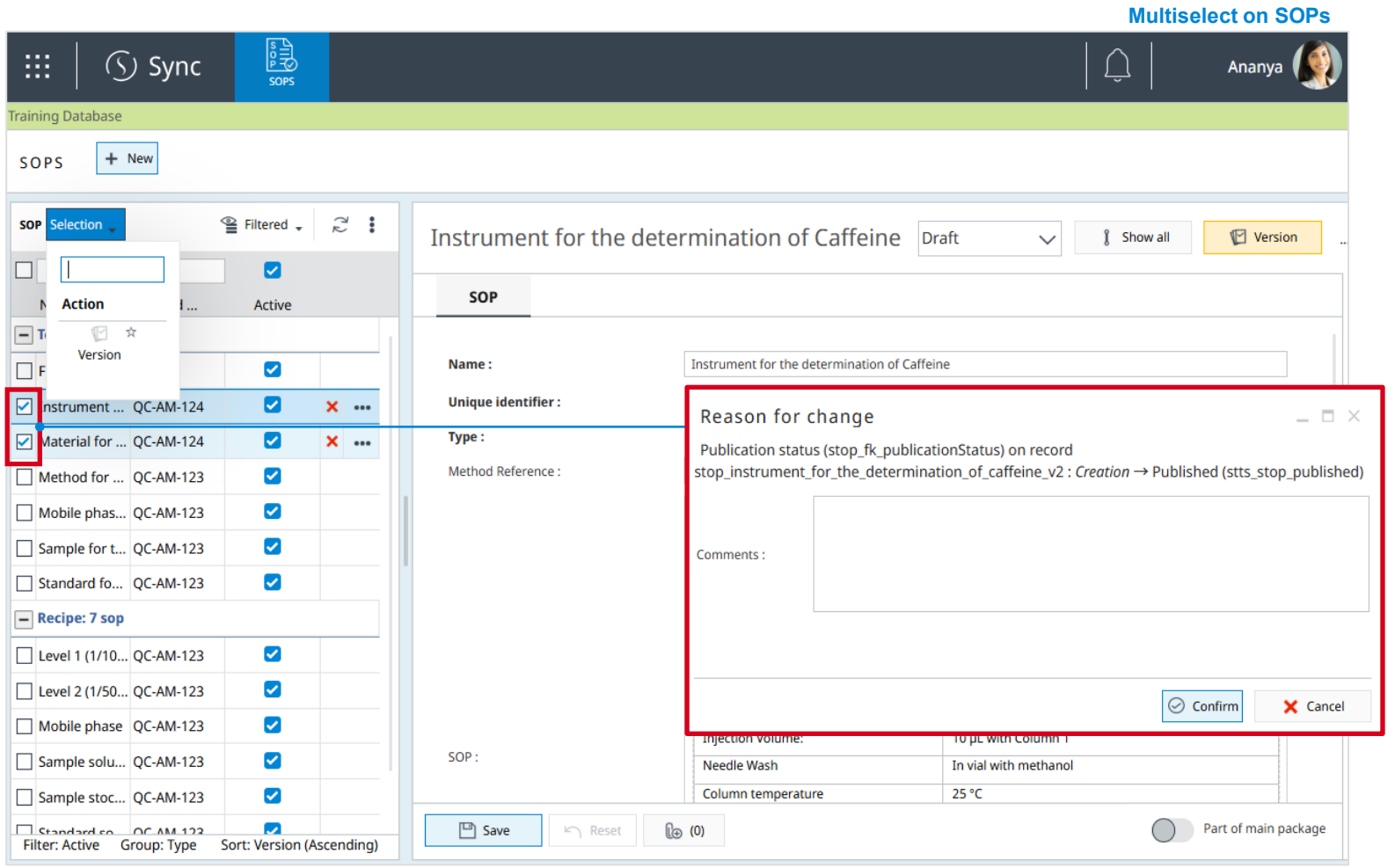
Automatic queues within analytical workflows use **Join** for queues where analytical samples enter the workflow and **Keep** for queues where samples continue through the workflow. Non-analytical workflows always use the **Keep** behavior.



Quality of Life

Version SOPs in Batch

Administrators can now select multiple SOPs and version them at one time. If versioning requires e-signature, the user only needs to enter their signature once for the batch.

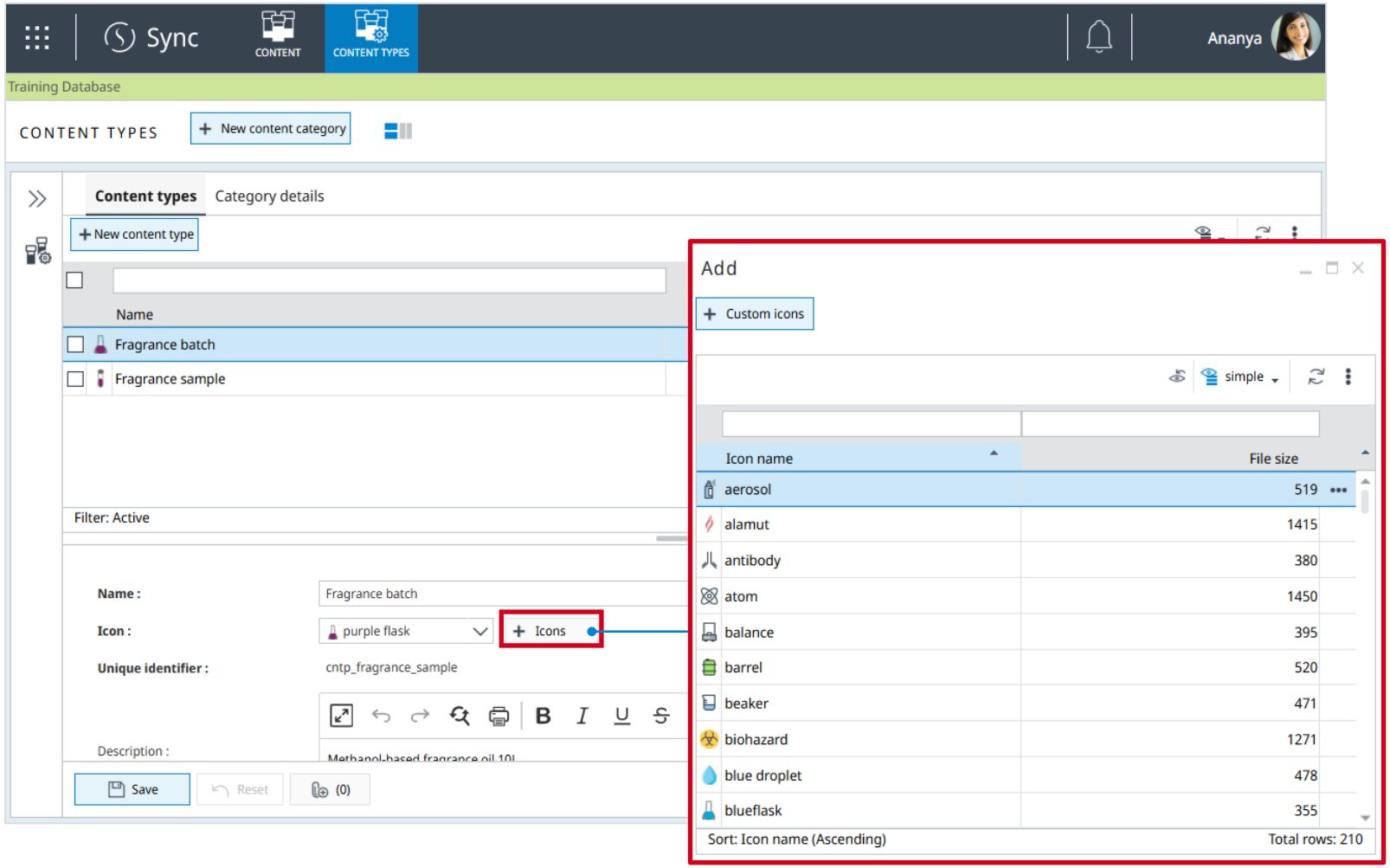


Quality of Life

Refreshed Content Type Icons

A new suite of content type icons and other system icons have been added with a refreshed look. Migrating customers will get the new icons by default and may view them in the Content Types module.

Attractive icon choices for content types



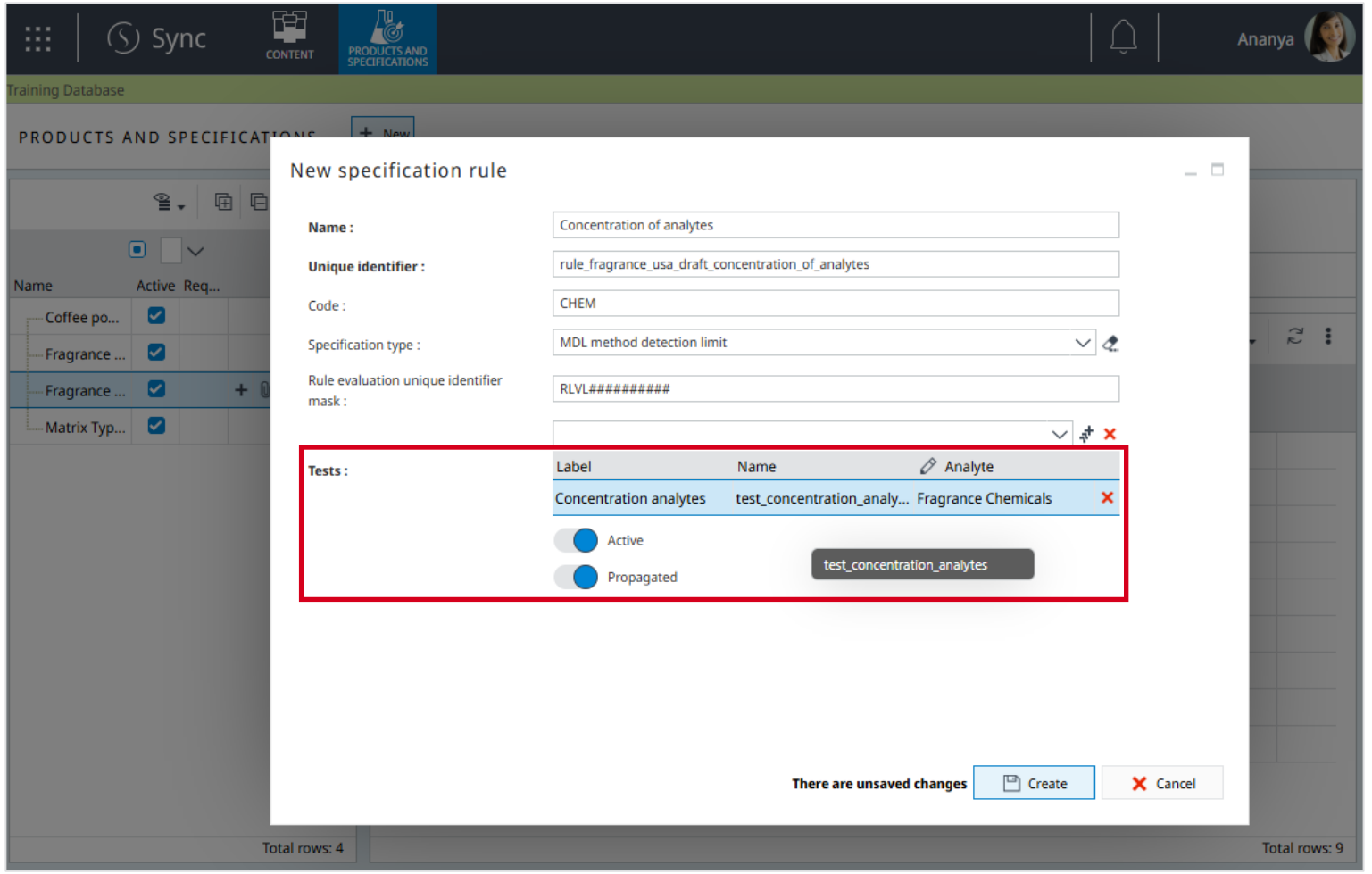
Quality of Life

Product Specifications Form Display Improvements

Product specification rules were decluttered to save screen space and improve readability.

- Show the most useful information on the specification rules grid
- Default Evaluation Mode to “Match Specification”
- Show Test table headers when user hovers

Specification headers consolidated, hover on test table



Quality of Life

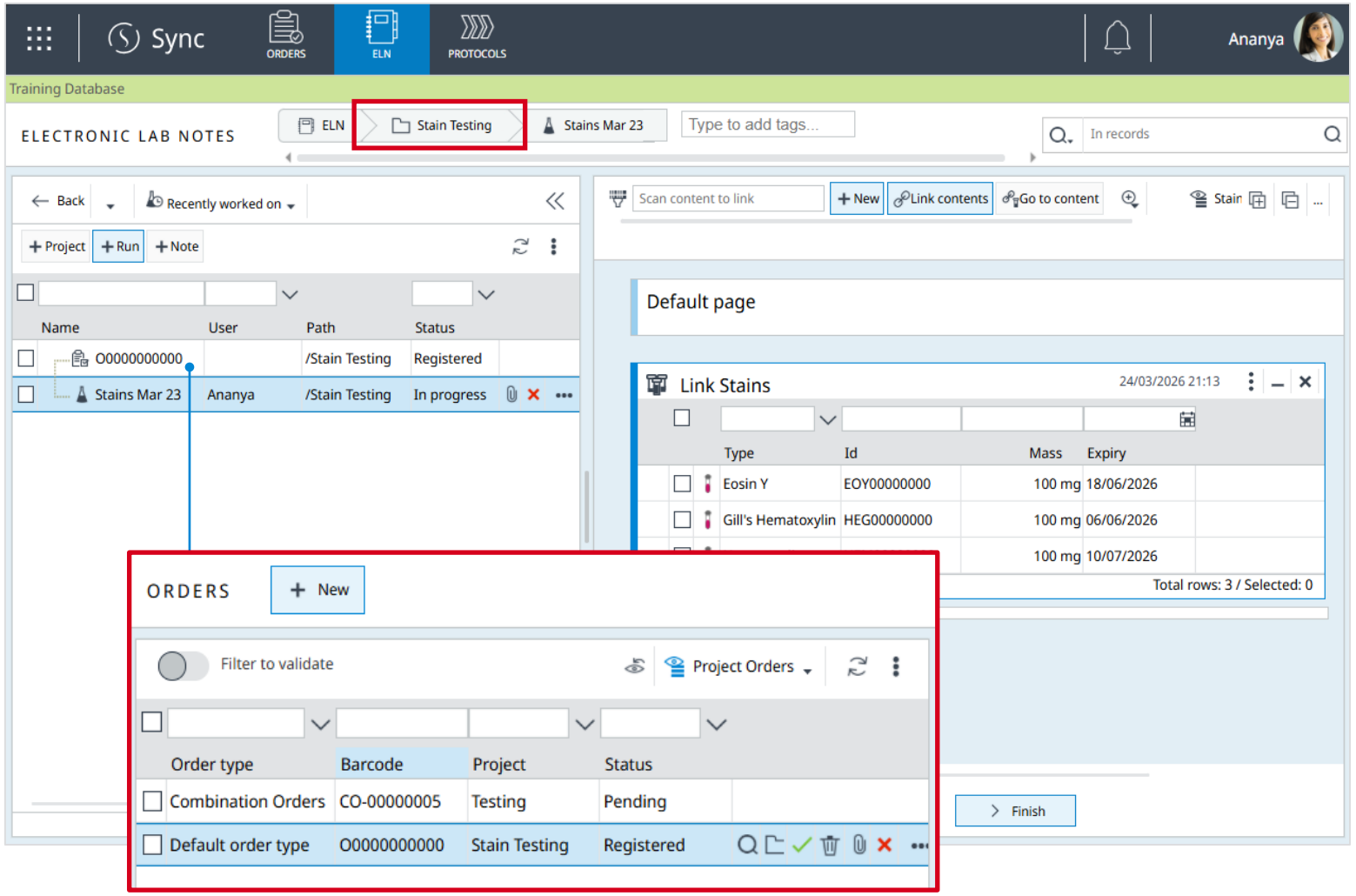
Orders Hidden in ELN by Default

The ELN (Electronic Lab Notebook) is less cluttered because Orders are now hidden.*

- Choose a Project in an order to show it in a Project folder in ELN
- Leave Project blank in an order so it will not appear in ELN.

*Does not affect legacy customers.

Order for "Stain Testing" project is displayed in the project in ELN

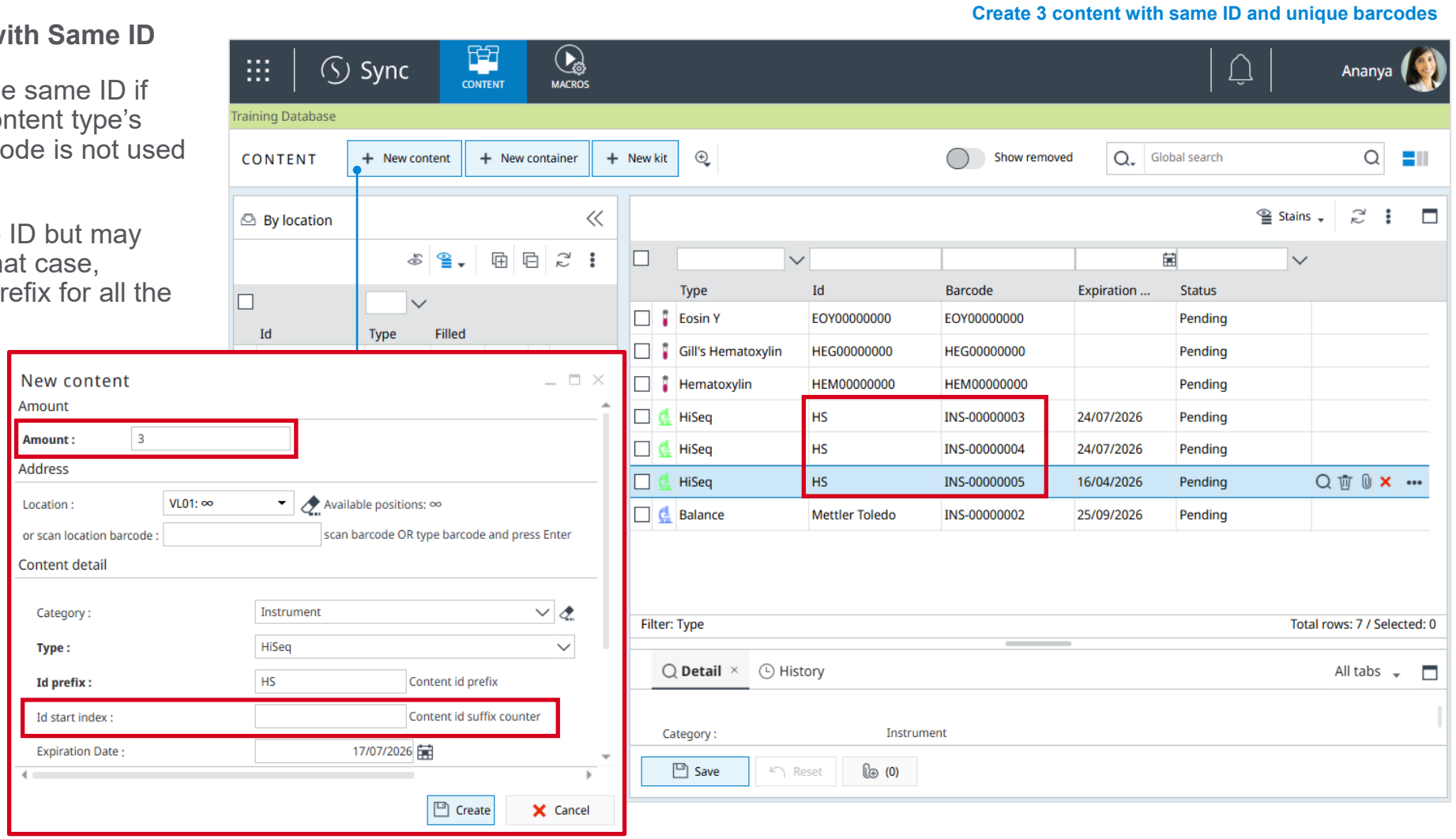


Quality of Life

Can Create Multiple Content with Same ID

Users can create content with the same ID if OpenLab Sync generates the content type's barcode, but the generated barcode is not used as the ID.

Users must enter a prefix for the ID but may leave the start index empty. In that case, OpenLab Sync uses the same prefix for all the content created in bulk.



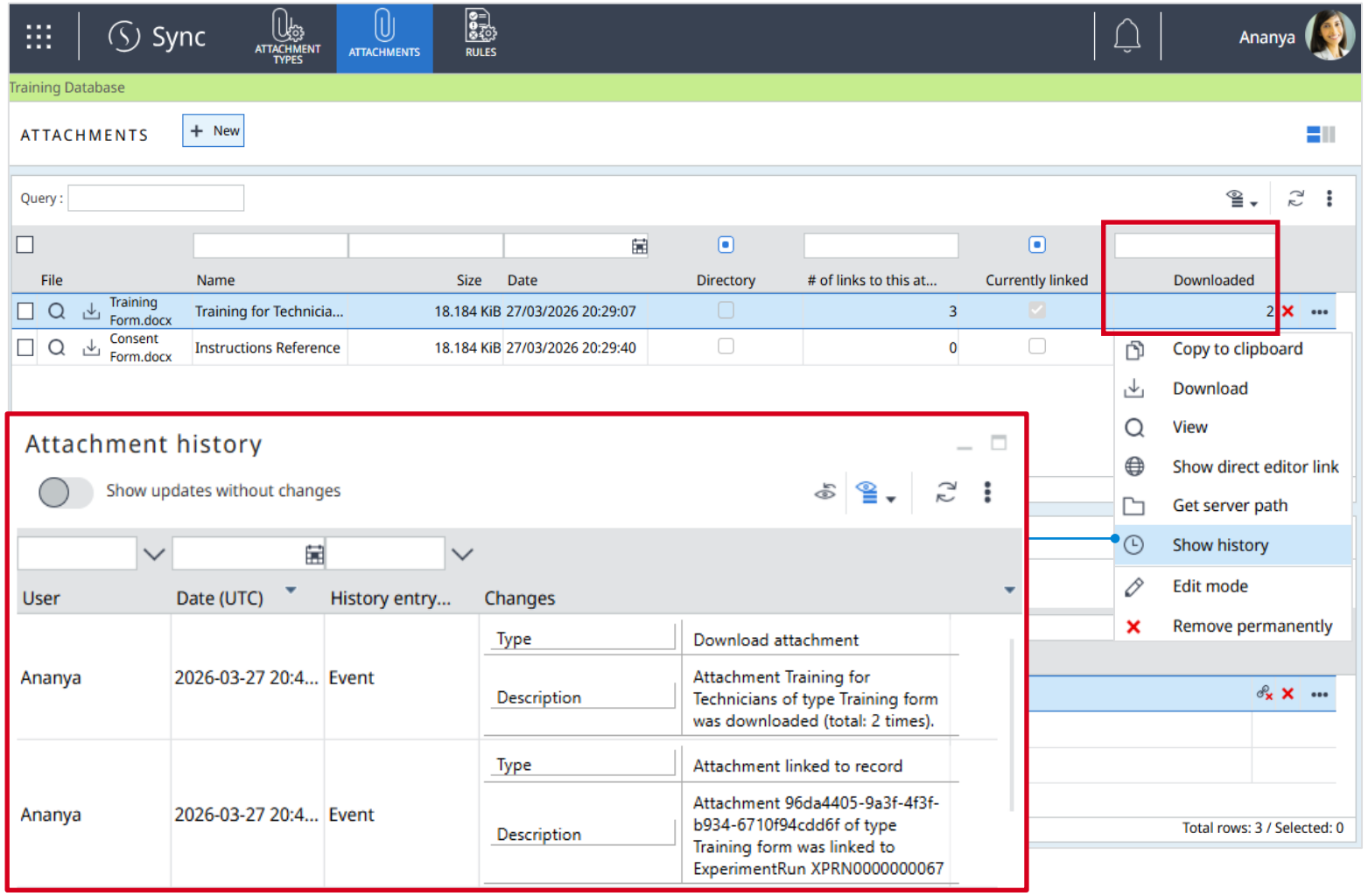
Quality of Life

Control the Download of Attachments

“Track Downloads” can be enabled on some attachment types so history will be recorded for how many times the attachment was downloaded and who downloaded it.

For attachments of tracked types, you can also write a conditional value expression rule; for example, to prevent them from being downloaded by certain roles or users.

Tracked attachment types show a “Downloaded” column



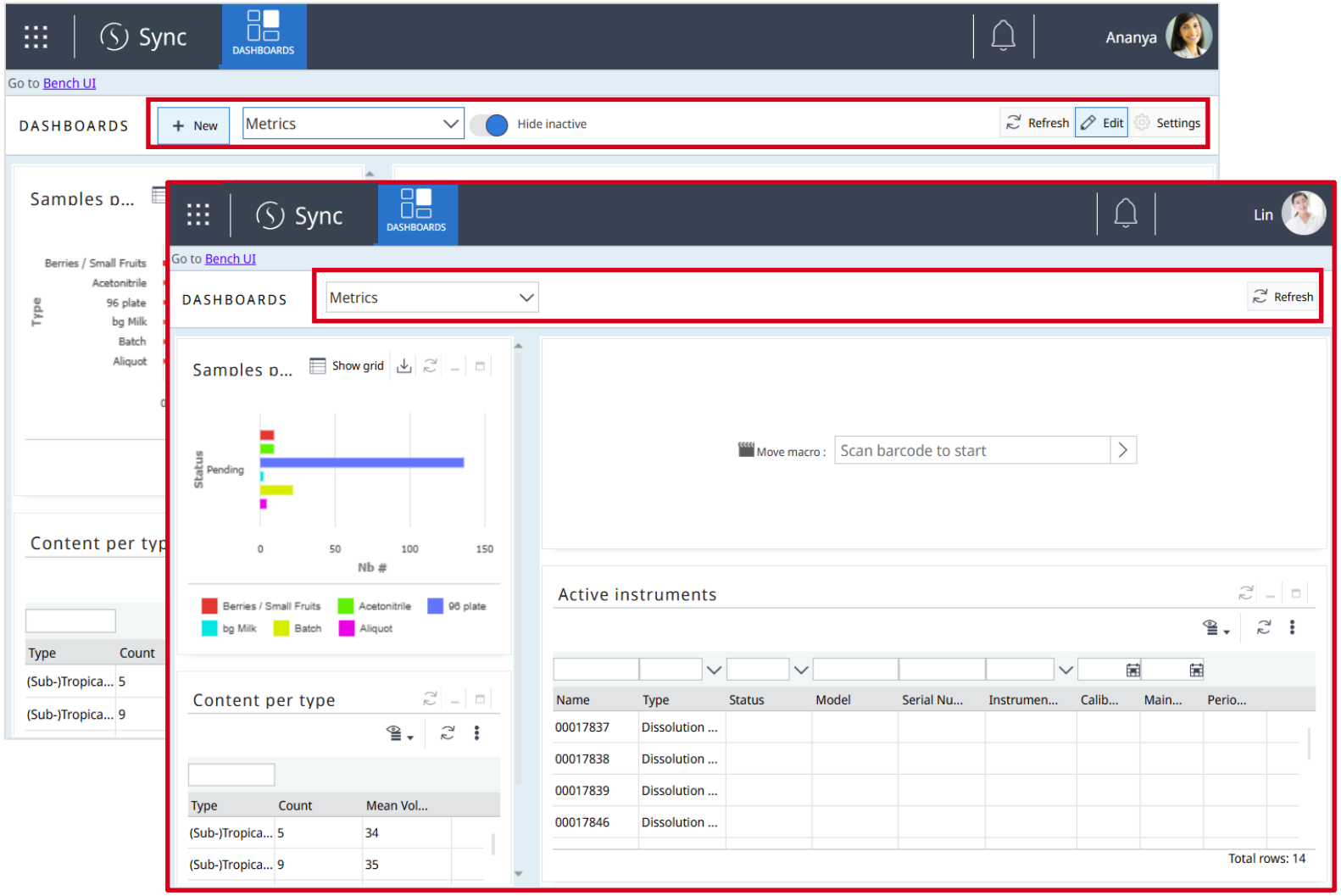
Quality of Life

Restrict Edition of Dashboards

The design of dashboards can be protected by restricting edition. Administrators can choose which roles manage dashboards and which roles may only access and view them.

- Roles with “Dashboards” can access the module and see dashboards as read-only.
- Roles that also have “Can edit dashboards” can access the edition and creation functions.

Ananya can edit and Lin can only view



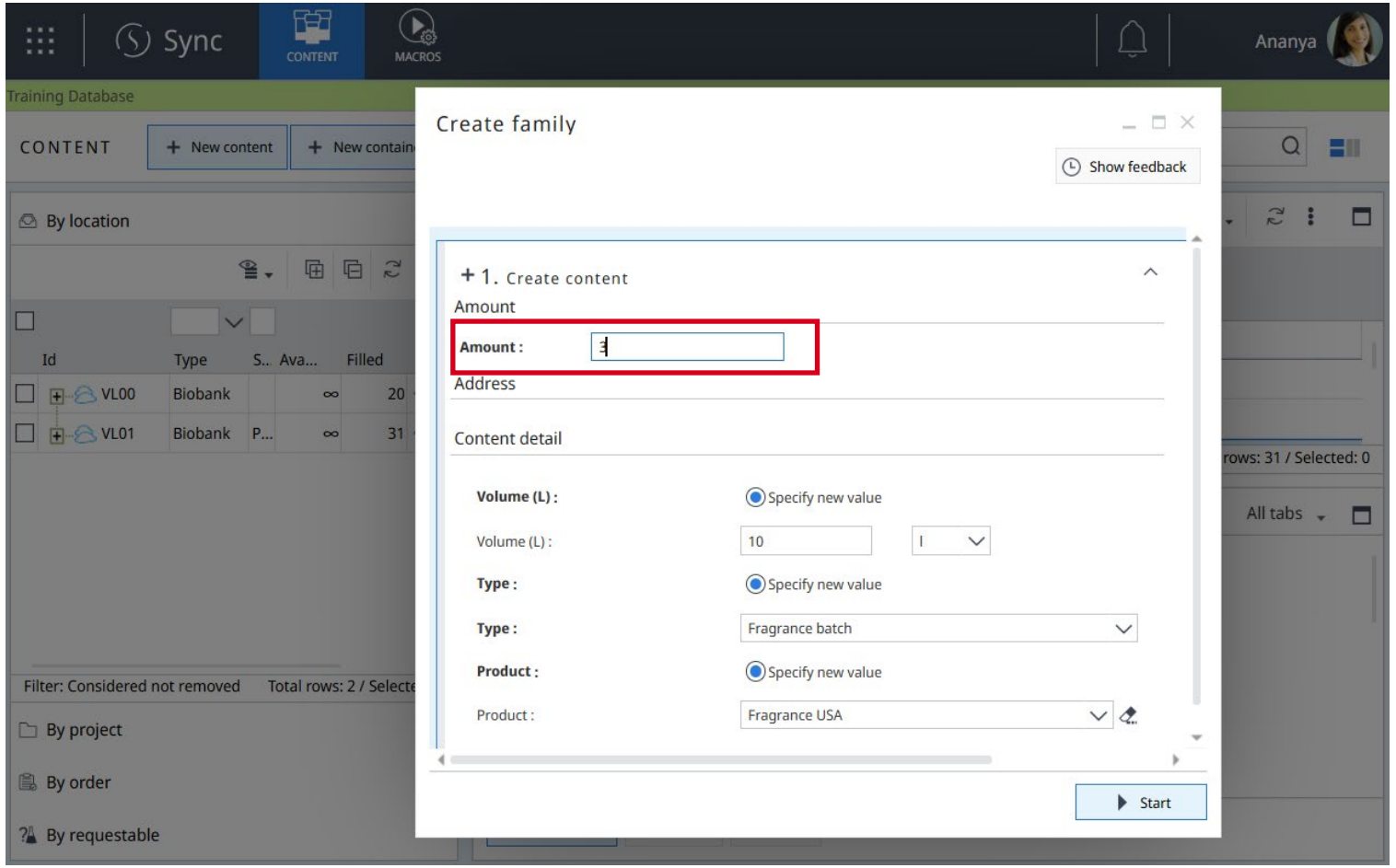
Quality of Life

Empty Number of Content is Allowed in Macro Configuration

Macros allow users to add multiple content through creation, derivation, aliquoting, dilution, copying, and creation of containers.

The macro step lets you configure a default amount of content to create. You can now also leave the field empty so the user is forced to enter the number to create at runtime.

Enter amount during the macro execution



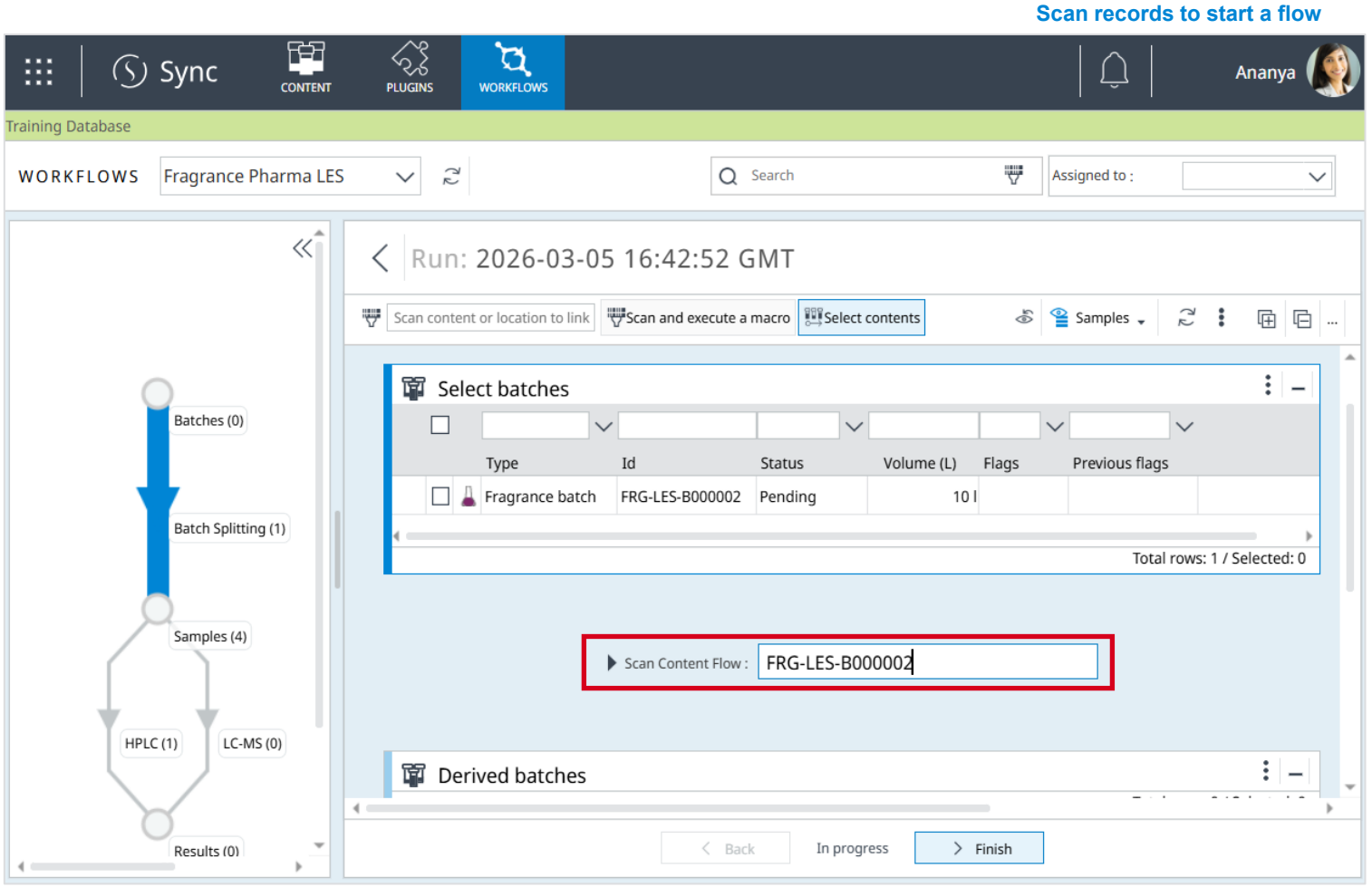
Quality of Life

Scan Content to Start Extensions

SLIMS GATE flows are renamed to OpenLab Sync Extensions.

When used in protocols, Extensions flows now have the same input selection options as macros.

- **All**: Run on all samples linked to the input block
- **Selected Samples**: Run the flow on the selection of linked samples
- **Scan**: Scan a barcode to run the flow on the scanned record (existing barcodes only)

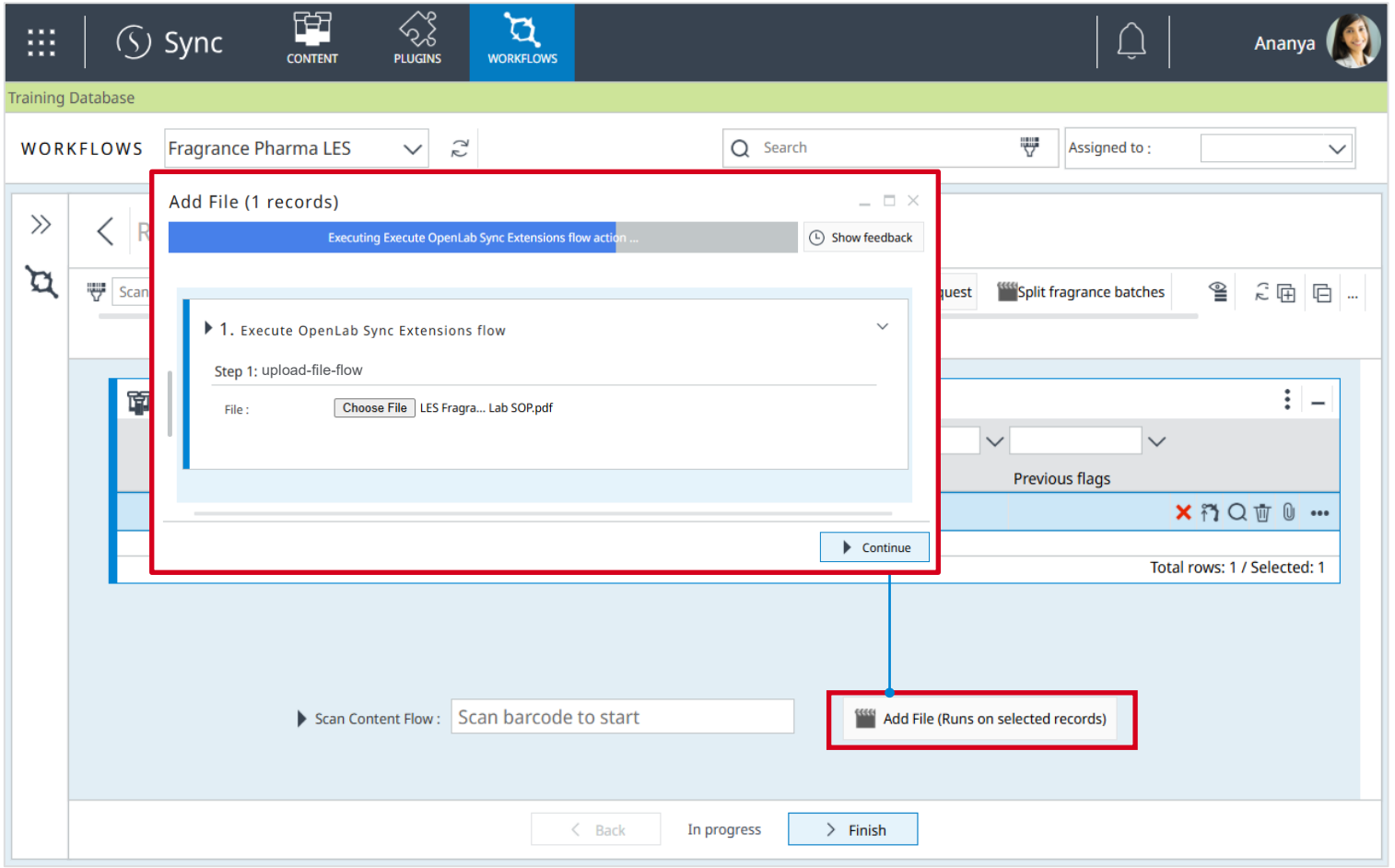


Quality of Life

Start Flows in Macros to Upload Files

It is now possible to use parameters in OpenLab Sync Extensions flows to upload files and start the flow with a macro.

Run a file upload flow in a macro



Quality of Life

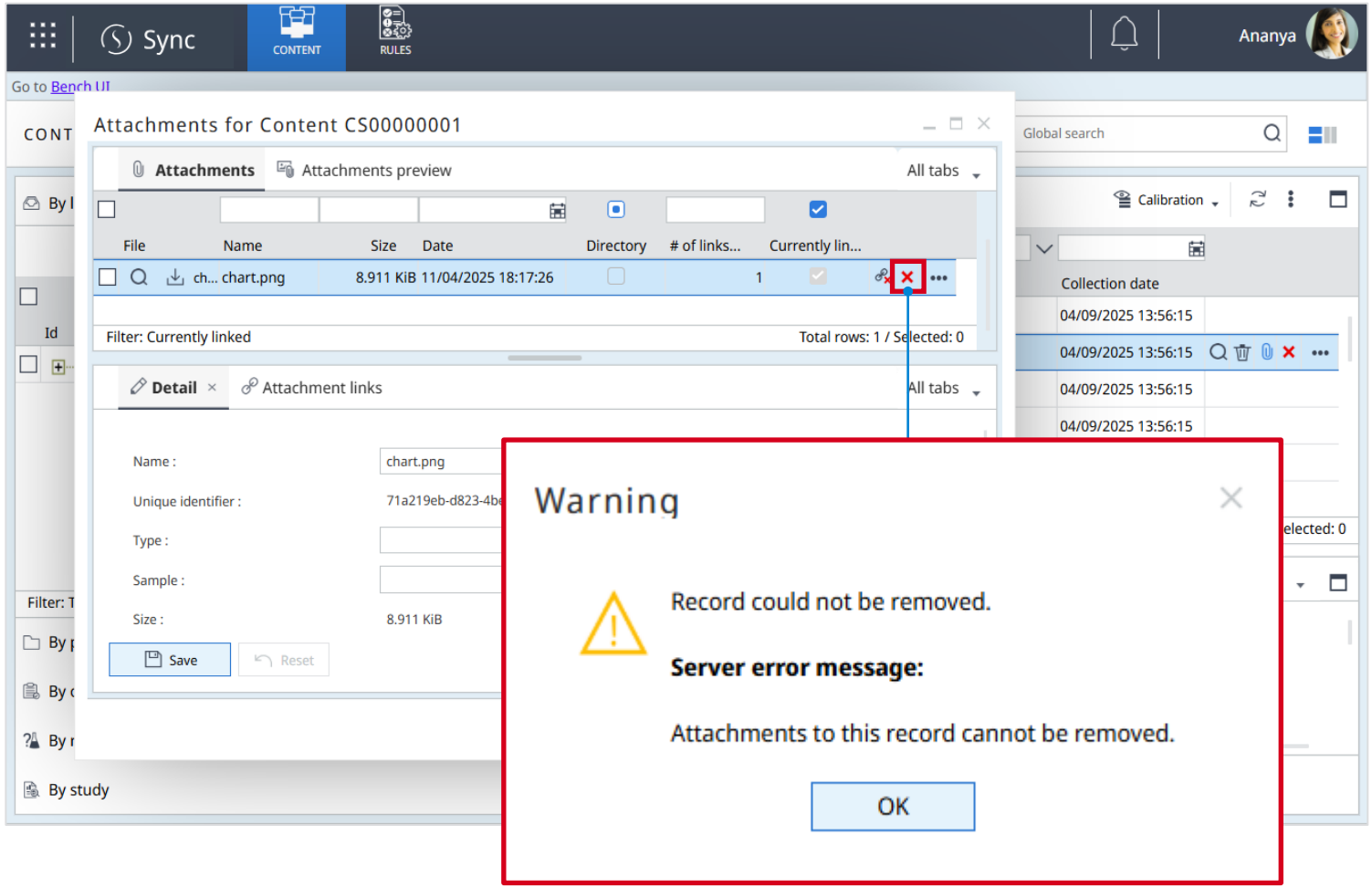
Tables Added for Conditional Value Expression Rules

Conditional value expression rules can now be created on the “Attachment link” and “Study Event Type” tables. Study event types are for the Study Design module.

By creating rules on those tables, you can do things like:

- Prevent link/unlink of attachments
- Prevent visit types from being added to a study design in certain conditions (ex: after the start date of a study).

A rule prevents unlink of attachments



Quality of Life

Update Values for Samples in a Run with Excel

There are actions users can take using Excel during a Simplified Protocol run. With these actions, they could already:

- Export linked samples or make a template file
- Import queued samples to link them to a content block
- Update custom fields on linked samples

They could not update custom fields on the protocol run step content table.

A new set of actions was added to allow users to interact with that table. They can now:

- Update custom fields on protocol run step content
- Export fields on the protocol run step content
- Make a template file for protocol run step content

