senaite.ast Documentation

Release 1.0.0

Riding Bytes
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CONTENTS

This add-on enables Antibiotic Sensitivity Testing (AST) for SENAITE LIMS by allowing the user to add analyses to a sample that are specifically designed for the measurement of the susceptibility of microorganisms to antibiotics. These analyses can be added either by means of pre-defined AST Panels or by direct assignment of Antibiotics and Microorganisms through a matrix.

senaite.ast also incorporates a default analysis for the identification of microorganisms present in a given sample. Once microorganisms are identified by means of this identification analysis, the system automatically populates the list of available AST Panels for selection with those that fit better with the identified microorganism(s).

Resistance analyses are qualitative and the supported results are: [R]esistant, [S]ensible, [+] positive and [-] negative. Although user can configure AST Panels for the automatic addition of analyses for the capture of diameter of the zone of inhibition, the system does not automatically calculate the qualitative results based on the diameter of zone and the minimum inhibitory concentrations (MICs).

Once installed, this add-on allows the laboratory to:

- Maintain microorganisms (via senaite.microorganism)
- Maintain antibiotics and antibiotic classes (via senaite.abx)
- Maintain pre-defined AST Panels
- Analysis for the identification of microorganisms
- Assignment of pre-defined AST Panels to a sample
- Sample-level customization of AST Panel
- Selective reporting of resistance results

This documentation is divided in different parts. We recommend that you get started with *Installation* and then head over to the *Quickstart*.

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ONE

INSTALLATION

Add `senaite.ast` in the eggs section of your buildout:

```
eggs =
    ...
    senaite.ast
```

Run `bin/buildout` afterwards. With this configuration, buildout will download and install the latest published release of senaite.ast from Pypi, as well as senaite.microorganism and senaite.abx if not yet installed.

Once buildout finishes, start the instance, login with a user with "Site Administrator" privileges and activate the add-on:

http://localhost:8080/senaite/prefs_install_products_form

Note: It assumes you have a SENAITE zeo client listening to port 8080

CHAPTER

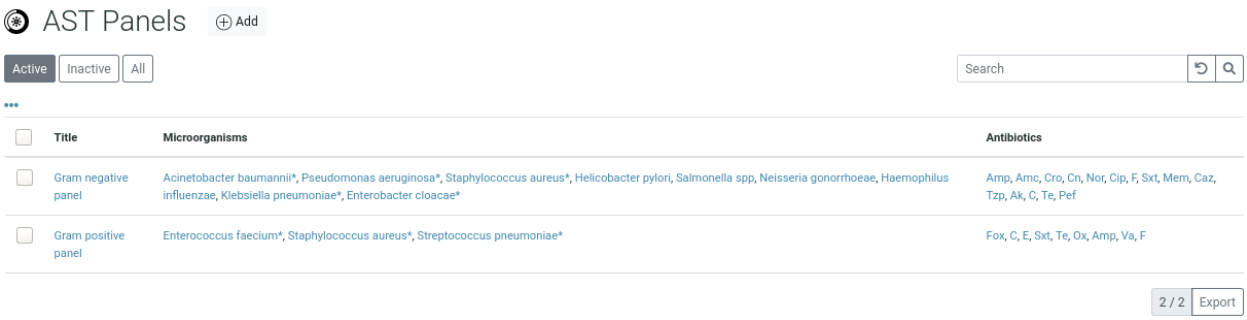
TWO

QUICKSTART

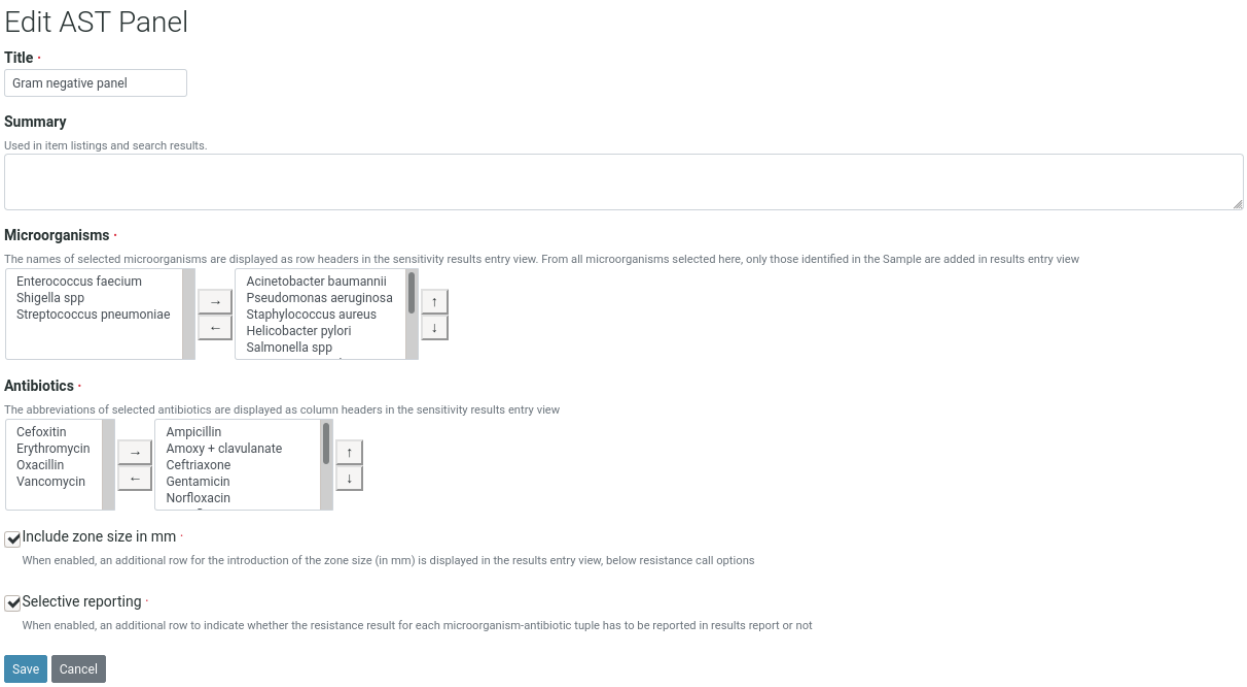
This section gives an introduction about senaite.ast. It assumes you have SENAITE LIMS and `senaite.ast` already installed. Please read the *Installation* for further details.

2.1 Adding a pre-defined AST Panel

To add pre-defined AST Panels, click the "gear" icon from top right, go to "AST Panels" view.



From this view, you can either create a new AST Panel or edit an existing one:



From this view, you can choose both the Microorganisms and the Antibiotics. Please read the documentation of senaite.microorganism and the documentation of senaite.abx for further details.

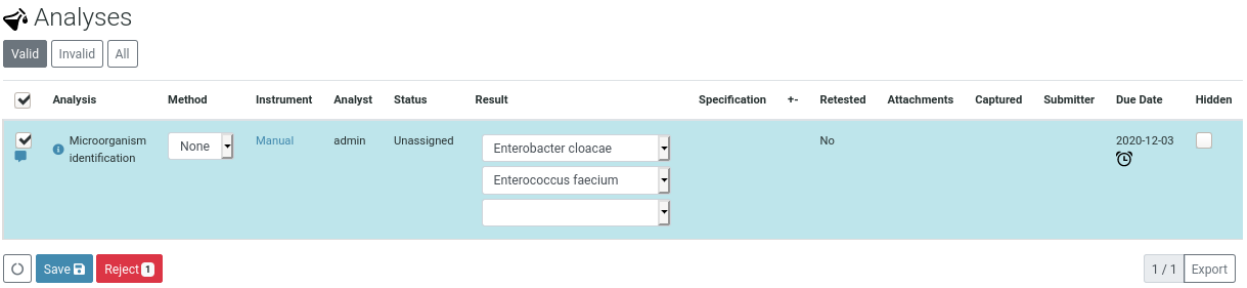
If the option "Include zone size in mm" is checked, besides the qualitative analysis for antibiotic susceptibility, the system will also add analyses for the capture of the zone of inhibition in mms automatically when this panel is selected.

If the option "Selective reporting" is checked, the system will also add an analysis to allow the user to indicate the resistance results to be displayed in results report. If unchecked, all resistance results will be rendered.

2.2 Microorganism identification analysis

Besides AST Panels, this add-on creates a new analysis service with name "Microorganism identification" and the category "Antibiotic Sensitivity Testing (AST)" as well.

When this "Microorganism identification" service is assigned to a Sample (either from Sample Add form or later, through "Manage analyses"), a new analysis with pre-defined result options is added.

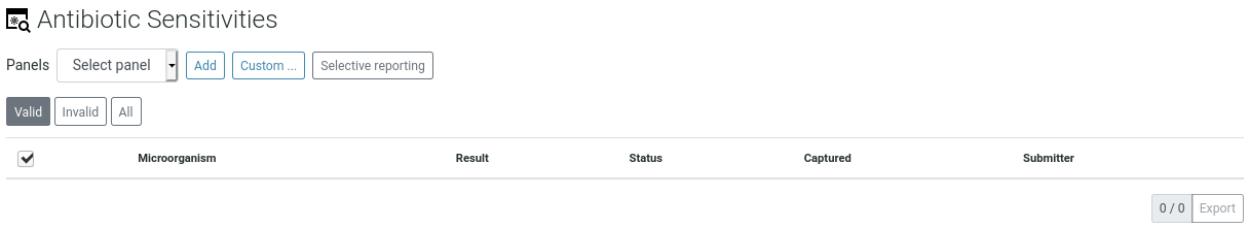


Note: The selection list of this type of analysis is populated with the microorganisms registered in the system that are in "active" status.

This analysis behaves as a multi-selection list, so the user can choose as many microorganisms as required.

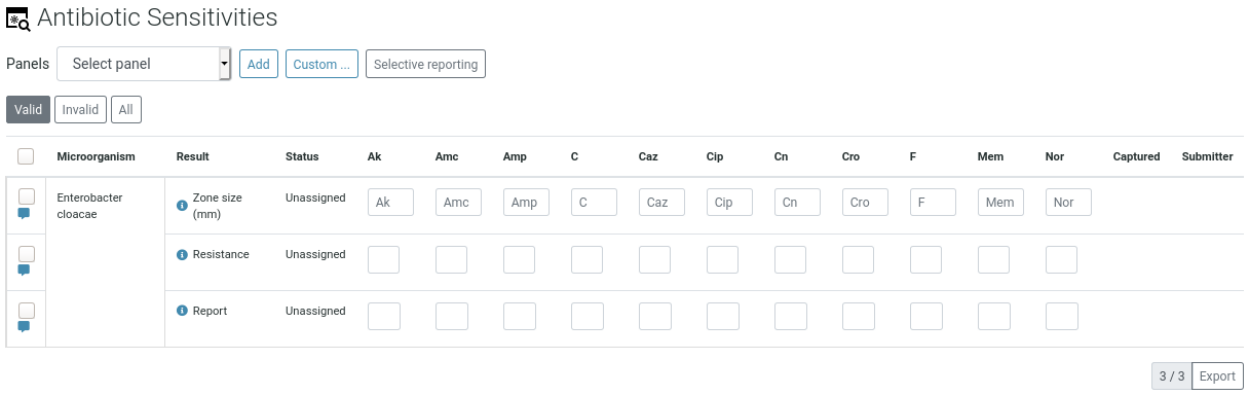
2.3 Assignment of an AST Panel to a Sample

For the assignment of an AST Panel to a sample, go to sample view. Below the analyses listing, a section for Sensitivity Testing is displayed:



Select one of the available AST Panels and press the button "Add". Analyses are added automatically based on the settings of the AST Panel of choice.

Note: If no AST Panels are displayed, please check that at least one of the microorganisms identified (see *Microorganism identification analysis*) is assigned to a pre-defined AST Panel.

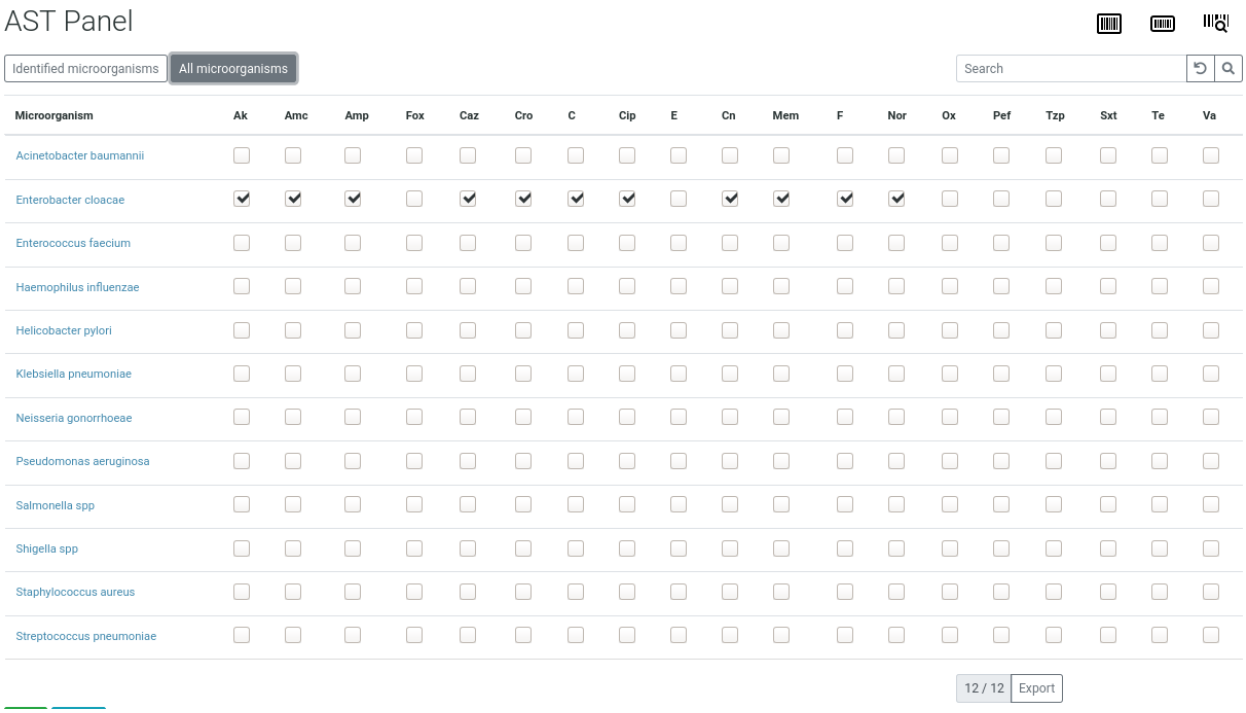


You can add as many AST Panels as you wish, but only identified microorganisms will be added by default. Microorganisms are displayed in rows and Antibotics (abbreviations) in columns.

2.4 Custom AST Panel for a Sample

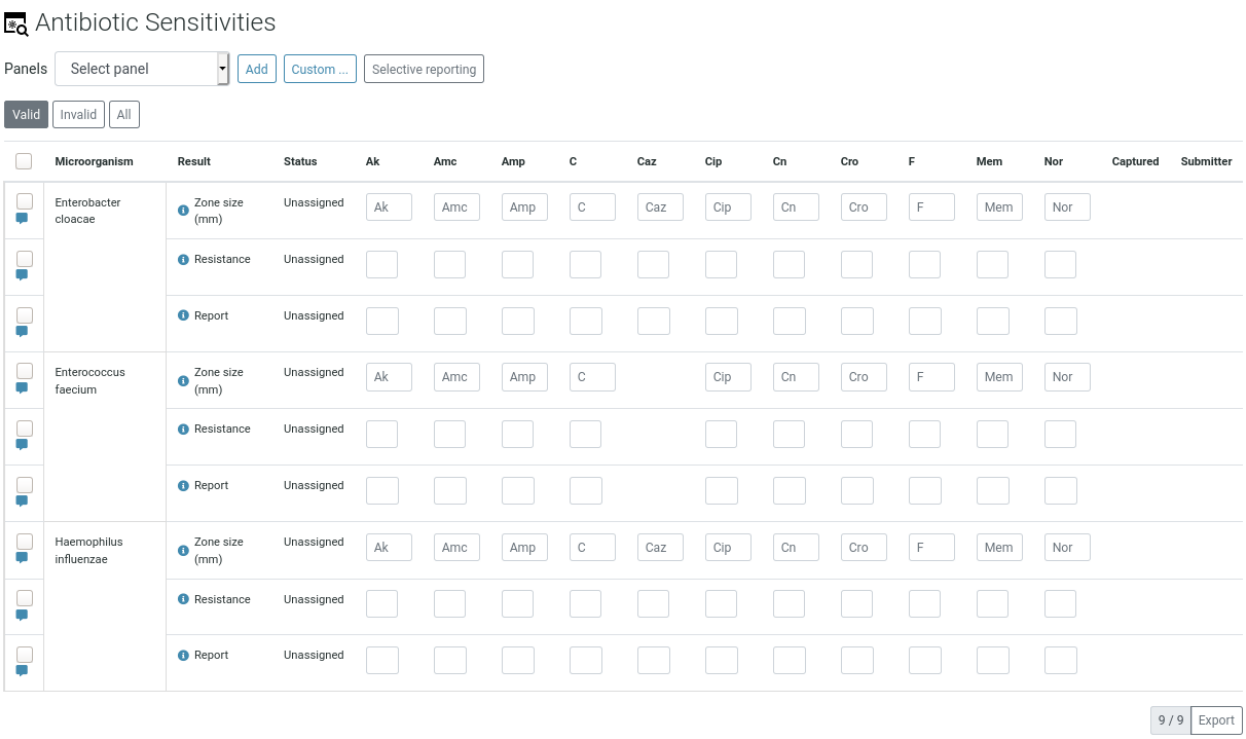
Sometimes user might want to add additional microorganisms, even if they were not initially identified or add new Antibiotics, even if they weren't defined in the pre-defined AST Panel of choice.

From same view, press the "Custom" button and a matrix with microorganisms as rows and antibiotics as columns is displayed for easy selection. By default, only microorganisms identified are displayed. However, user can press "All microorganisms" button to extend the list with the rest of microorganisms registered in the system:



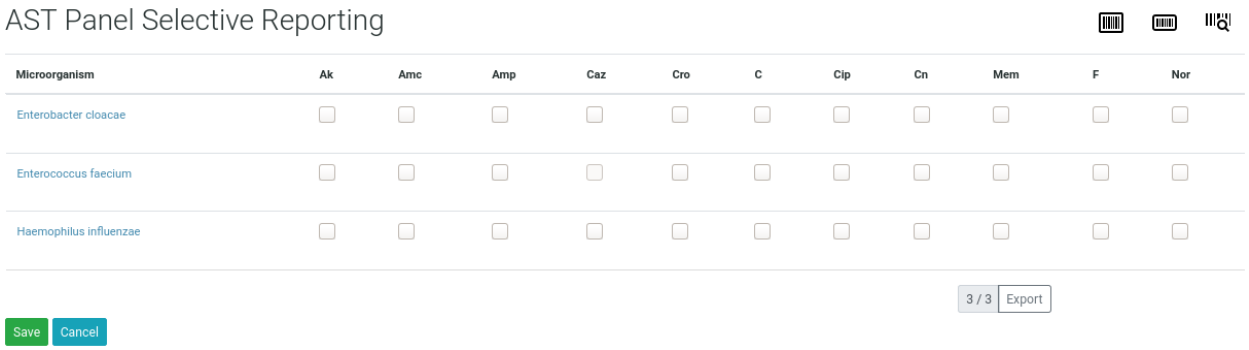
Note: System allows unbalanced entries, so user can choose different antibiotics for different microorganisms at will.

Once the button “Save” is pressed, the user is redirected to the Sample view and the list of AST analyses is updated accordingly:



2.5 Selective reporting

User can easily set the resistance results to be included in the results report by means of the "Report" analysis. However, there is also the option to define the selective reporting all-at-once. Press the "Selective reporting" button and a matrix with microorganisms as rows and antibiotics as columns is displayed for easy selection.



From this view, user can choose the tuples Microorganism-Antibiotic to be reported in results. Once the button "Save" is pressed, the value for analyses with name "Report" for all microorganisms are updated accordingly.

CHAPTER

THREE

CHANGELOG

3.1 1.0.0 (unreleased)

- Initial Release

CHAPTER

FOUR

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