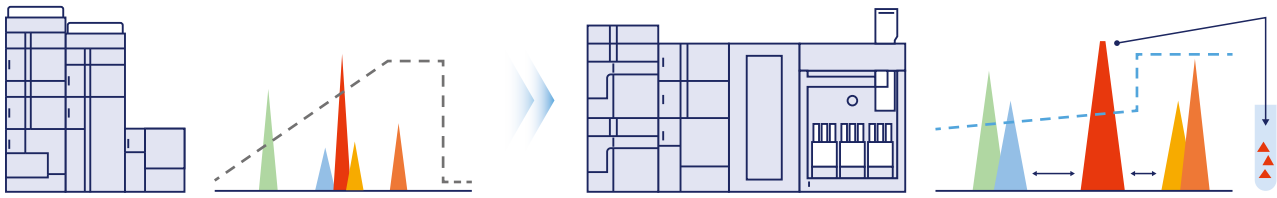
C190-E331

SHIMADZU
Excellence in Science

Analytical to Preparative Scale-up System

Nexera ASAPrep



Unique Algorithm Increases Efficiency of Compound Purification

During compound synthesis, both the target product and impurities are generated. These impurities must be removed in a subsequent purification step to ensure sufficient purity for actual use. Preparative liquid chromatography (preparative LC) is commonly used for this process. However, because it requires specialized expertise and takes a significant amount of time, there is a clear need to improve efficiency.
The Nexera™ ASAPrep™ (automated scaling-up from analytical to preparative chromatography) system is equipped with a unique algorithm that automatically evaluates the complexity of preparative chromatography and generates optimal conditions.
Furthermore, an intuitive UI design enables easy purification by anyone, regardless of experience level.
Because the system is able to help assign purification tasks depending on the difficulty level, it can enable a more efficient purification workflow.

Nexera ASAPrep Features

- **The complexity of preparative separation can be evaluated automatically from screening results.**
- **Intuitive software enables screening and purification operations to be executed with ease.**
- **Unique algorithm ensures accurate scale-up.**

Nexera™ ASAPrep™
Analytical System

Nexera™ ASAPrep™
Preparative System

Automatically Evaluates Difficulty Level of Preparative Separation

Specialized screening methods are executed to automatically evaluates the difficulty level of preparative separation. Based on that difficulty level, the software then automatically creates a preparative method.

Samples

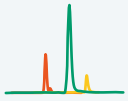
Screening Analysis

Execute

1	Sample A	Pass
2	Sample B	Check
3	Sample C	Fail

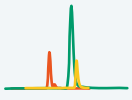
Multiple Methods
LC–PDA–MS Measurement

Decide analysis conditions



Automatically create preparative method

Preparative separation is possible



Automatically create preparative method

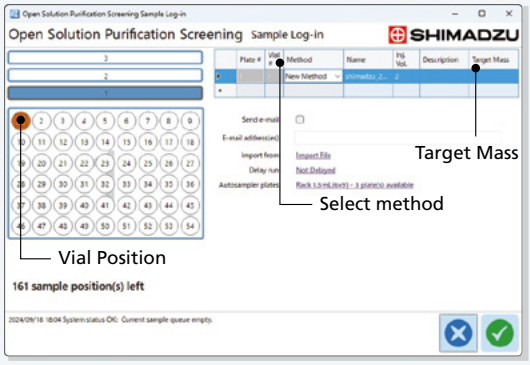
Inadequate separation

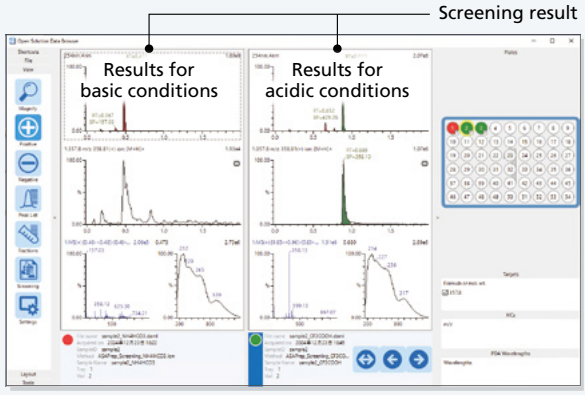
Target not detected

Review Analysis Conditions

Intuitive Analytical/Preparative Operation

Screening analysis can be executed by simply specifying the vial position, sample name, injection volume, and Target Mass.
The suggested optimal preparative method can be executed by simply importing the screening results obtained from the analytical system into the preparative system.

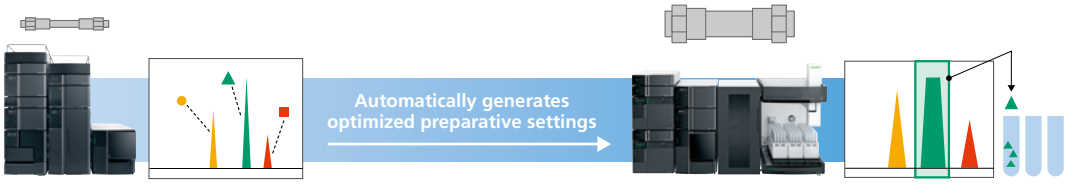




Unique Algorithm Ensures Accurate Scale-Up

Equipped with Shimadzu's unique chromatography scale-up algorithm, a focused gradient is used to automatically generate a preparative method from screening results.
In addition to using the standard algorithm, which supports a wide variety of compounds, users can create their own custom scale-up algorithm.

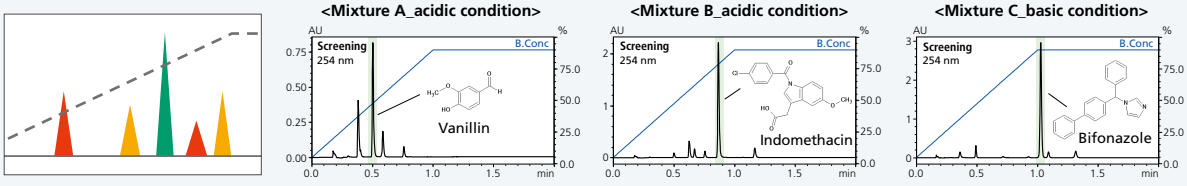
Application



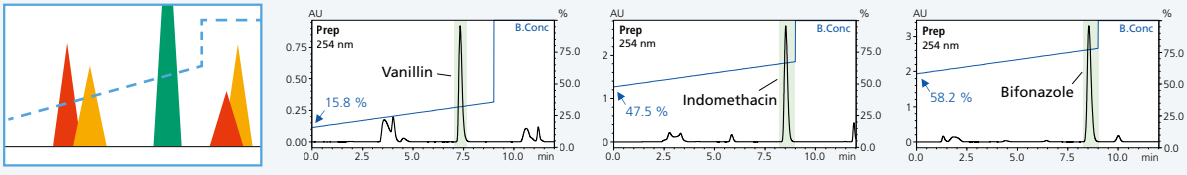
Screening Analysis

Purification Analysis

Screening Analysis Results



Purification Analysis Results



System Contents

Analytical System: For Screening Analysis

This Nexera ASAPrep-compatible system is configured with Nexera XR and LCMS-2050 units.
The system uses built-in solvent and column-switching valves to screen samples based on either acidic or basic conditions.

Preparative System: For Purification Analysis

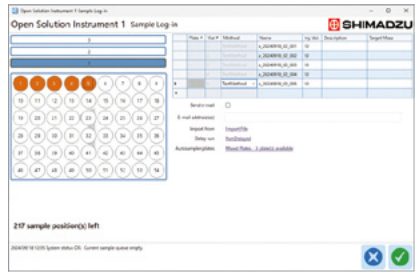
This Nexera ASAPrep-compatible system is configured with Nexera Prep and LCMS-2050 units.
The system uses built-in solvent and column-switching valves to switch between acidic and basic conditions. Optimized preparative condition are generated and executed based on screening results.

Shim-pack Scepter™

The columns used in the Nexera ASAPrep system must allow the use of acidic and basic mobile phases across a wide pH range, and enable seamless scale-up from analytical to preparative analysis.
Shim-pack Scepter C18 columns are packed with an organic silica hybrid base material that provides excellent pH resistance, allowing them to be used with the wide pH range required by the Nexera ASAPrep system.
The standard method included with Nexera ASAPrep systems has been optimized using the Shim-pack Scepter C18 column.

Open Solution

Open Solution software enables efficient analysis by multiple users sharing the same system in a research laboratory. It supports both LC and LC–MS analysis, allowing users to efficiently perform qualitative analysis and scale-up to purification simply by selecting from preset methods.
Remote data analysis using a personal computer helps minimize the exclusive use of analytical computers. Furthermore, built-in functionality helps maintain system performance.



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