

Pro *EZLC* Chromatogram Modeler Demo



What is the Pro-EZLC Chromatogram Modeler?

- Pro EZLC is an instrument-free, **VIRTUAL LAB DRAWER** for LC method development. It delivers a fast, no-cost starting point.
- **Develop and optimize your methods without setting foot in the lab sacrificing valuable instrument uptime:**
 - improve data quality,
 - Improve laboratory efficiency,
 - Improve profitability
- **Allows Restek to offer an on-demand consultative customer experience with Restek LC columns.**

Pro-EZLC Modeler Capabilities

What is the scope/scale of the Pro-EZLC Modeler today?

- Drugs of Abuse Library (DOA), ~ 290 compounds
- Nitrosamines Library, 16 compounds
- 1.8/2.7/5.0 um particle platform (SPP)
- Multiple column dimensions
- Mass Spec detection
- Available in Japanese, Italian, French, English

What will the scope/scale of the Pro-EZLC Modeler be in a year?

- Add PFAS, Pesticides, Mycotoxins, etc.
- Add the FPP particle platform
- Add UV detection
- EZLC is being translated into 8 other languages in total. The last ones should be available in the next 1-2 months (to support our global customers)

Location?



Home - Restek Chromatography x +

restek.com/en/

Update

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Pro EZLC Chromatogram Modeler

Now Available for Drugs of Abuse—Other Compound Libraries Coming Soon!

The new Pro EZLC chromatogram modeler is easy to use and offers powerful LC simulation capabilities. Simply input your compound list to generate an instrument-ready set of conditions. Or refine further to meet specific method requirements by changing the column phase and dimensions, mobile phase, and other optimization parameters.



Log In to Get Started!

Don't have an account yet? [Click here to register for free!](#)

Works in Your Browser

- Firefox (desktop or Android tablet)
- Chrome (Windows or Mac desktop or Android tablet)
- IE 8 or IE 9 and above (Windows desktop)
- Safari (desktop or iPad)
- Opera (desktop or mobile)

Learn About the New Pro EZLC Modeler

Watch our introductory video to take a quick tour of the Pro EZLC chromatogram modeler and learn how to use this easy-to-use, yet powerful method development tool.

[Learn More](#)

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Generating a Model

Pro EZLC Chromatogram Modeler

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Works in Your Browser

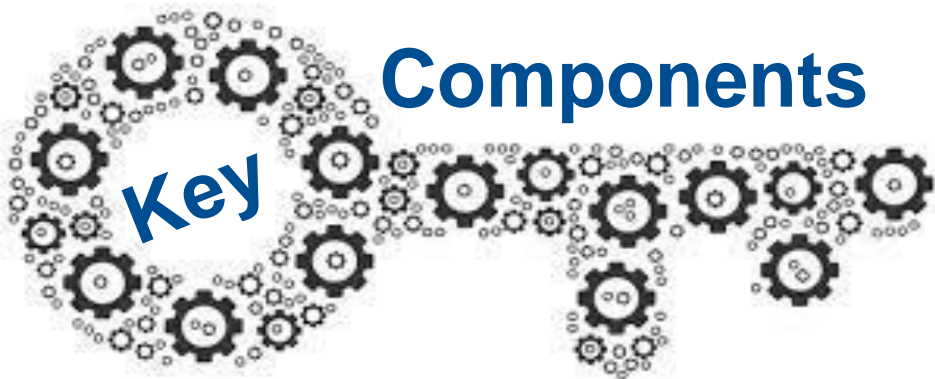
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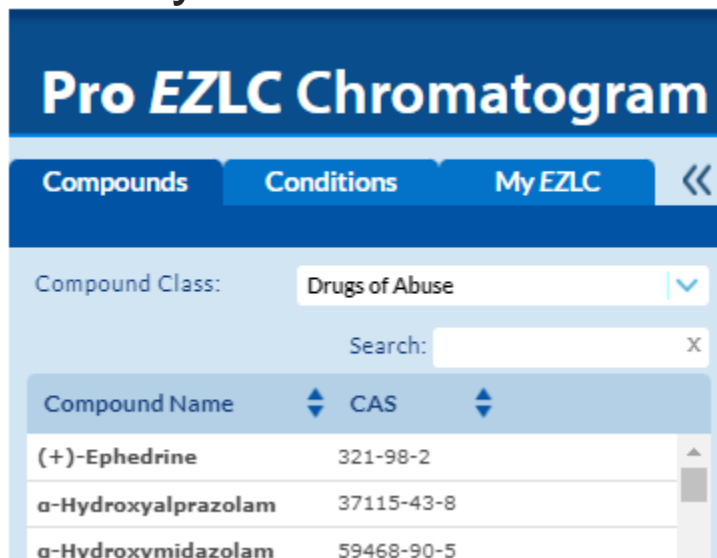
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Components

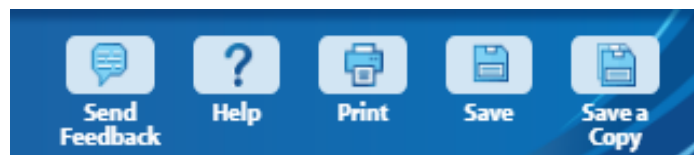
1. Three Important Tabs

1. Compounds
2. Conditions
3. My EZLC



2. Five Icons

1. Send Feedback
2. Help
3. Print
4. Save
5. Save a copy



3. Contact Us

1. 4 Ways

Compounds Tab

1. Search for compounds

- Scroll (alphabetical)
- Typing name into *Search* bar
- Typing CAS Number into *Search* bar

2. Determine Isobars

- Shown by a white checkmark in a blue box

3. Select stationary phase

- Raptor Biphenyl
- Raptor C18

The screenshot shows the RESTEK EZLC software interface. At the top, there are tabs for 'Compounds', 'Conditions', and 'My EZLC'. The 'Compounds' tab is active. Below the tabs, there is a 'Compound Class' dropdown menu set to 'Drugs of Abuse'. A 'Search' bar is present with a magnifying glass icon and a close button. Below the search bar is a table with two columns: 'Compound Name' and 'CAS'. The table lists several compounds, with some rows highlighted in blue and having a white checkmark in a blue box in the 'CAS' column. At the bottom of the table, there is a summary bar showing '14 Compounds Selected' and '5 Isobars To Resolve'. Below the summary bar, there are dropdown menus for 'Phase' (set to 'Raptor Biphenyl') and 'Detector' (set to 'MS'). A 'Generate Model' button is located at the bottom right of the interface.

Compound Name	CAS	Selected
Desmethyloanzapine	161696-76-0	
Desomorphine	427-00-9	✓
Dextromethorphan	125-71-3	✓
Dextrorphan	125-73-5	
Diazepam	439-14-5	
Diclofenac	15307-86-5	
Didesmethyloitalopram	62498-69-5	
Diethylpropion	90-84-6	
Dihydrocodeine	125-28-0	✓
Dihydromorphine	509-60-4	
Diphenhydramine	58-73-1	

14 Compounds Selected
5 Isobars To Resolve

Phase: Raptor Biphenyl
Detector: MS

Generate Model

Conditions Tab

1. Column

- a. Available Dimensions – (12)

2. Volume Effects

- a. Dwell Volume (0-2 mL)
- b. Extra-Column Volume (0 – 150 µL)

3. Mobile Phase

- a. Mobile Phase A – Water
- b. Mobile Phase B – Methanol or Acetonitrile
- c. Temperature – (30 – 60 °C)

4. Gradient Program

- a. Initial Isocratic Hold
- b. # of Gradient Steps – (3)
- c. Final Isocratic Hold
- d. Re-equilibration Time
- e. Target Resolution
- f. Optimize Gradient Slope

5. Results

- a. Undo/Redo

Compounds

Conditions

My EZLC

<<

Column

Length50.00 mm

Inner Diameter3.00 mm

Particle Size2.70 µm

Available Columns50, 3.00, 2.70

Volume Effects

Dwell Volume0.25 mL

Extra-Column Volume25.00 µL

Mobile Phase

Eluent AWater0.1% Formic Acid

Eluent BMethanol0.1% Formic Acid

Temperature30.00 °C

Back Pressurepsi2862 psi

Gradient Program

☐ Add Start Isocratic Hold

☐ Add Final Isocratic Hold

☐ Add Re-equilibration Time

of Gradient Steps1

Time (min)05

%B4100

Flow (mL/min)0.80.8

Target Resolution1.50

Optimize Gradient Slope

Results

Gradient Time + Delay / Run Time5.52 / 5.52 min

T00.21 min

Isobaric Compounds Separated12

Critical Pair2,4

Critical Pair Resolution4.85 (3.80 - 5.90) Rs

UndoRedo

When altering values, check that the back pressure does not exceed the LC instrument's maximum pressure. Resolution may vary with injection amount/technique/instrument.

Optimizing A Model

Restek Pro EZLC Chromatogram

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Compounds

Conditions

My EZLC

Compound Class: Drugs of Abuse

Search:

Compound Name

CAS

(+)-Ephedrine 321-98-2

α -Hydroxyalprazolam 37115-43-8

α -Hydroxymidazolam 59468-90-5

α -Hydroxytriazolam 37115-45-0

1-(3-Chlorophenyl)piperazine (mCPP) 6640-24-0

11-Nor-9-carboxy- Δ^9 -THC 56354-06-4

2-Hydroxyethylflurazepam 20971-53-3

2-Oxo-3-hydroxy-LSD 111295-09-1

25I-NBOMe 919797-19-6

6- β -Naltrexol 49625-89-0

14 Compounds Selected

5 Isobars To Resolve

Phase: Raptor Biphenyl

Detector: MS

Generate Model

What's Next?

Alter method conditions in the Conditions tab to

Interested in evaluating your modeled solution with the recommended column? [Contact us.](#)

Untitled. Click here to edit.

Available Isobars:

Select an Isobar

Reset

Column: Raptor Biphenyl (cat.# 9309A5E)

Dimensions: 50 mm x 3 mm ID

Particle Size: 2.7 μ m

Temp.: 30°C

Mobile Phase

A: Water, 0.1% Formic Acid

B: Methanol, 0.1% Formic Acid

Time (min)	Flow (mL/min)	%A	%B
0	0.8	96	4
5	0.8	0	100

Saving a Model

Restek Pro EZLC Chromatogram

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Pro EZLC Chromatogram Modeler

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CompoundsConditionsMy EZLC

Column

Length50.00 mmInner Diameter3.00 mmParticle Size2.70 μ mAvailable Columns50, 3.00, 2.70

Volume Effects

Dwell Volume0.25 mLExtra-Column Volume25.00 μ L

Mobile Phase

Eluent AWater0.1% Formic AcidEluent BMethanol0.1% Formic AcidTemperature30.00 $^{\circ}$ CBack Pressure2862 psi

Gradient Program

☐ Add Start Isocratic Hold

1

of Gradient Steps

0

Time (min)

4

%B

0.8

Flow (mL/min)

☐ Add Final Isocratic Hold

2.2

Time (min)

100

%B

0.8

Flow (mL/min)

☐ Add Re-equilibration Time

Target Resolution1.50

Optimize Gradient Slope

Results

Gradient Time + Delay / Run Time2.72 / 2.72 min

T00.21 min

Isobaric Compounds Separated12

Critical Pair2.4

Critical Pair Resolution3.04 (2.03 - 4.06) Rs

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Untitled. Click here to edit.

Available Isobars: Select an isobar Reset

Column

Raptor Biphenyl (cat.# 9309A5E)

Dimensions: 50 mm x 3 mm ID

Particle Size: 2.7 μ m

Temp.: 30 $^{\circ}$ C

Mobile Phase

A: Water, 0.1% Formic Acid

B: Methanol, 0.1% Formic Acid

Time (min)	Flow (mL/min)	%A	%B
0	0.8	96	4
2.2	0.8	0	100

Detector MS

Notes

T0: 0.21 min

Dwell Volume: 0.25 mL

Extra-Column Volume: 25 μ L

Back Pressure: 2862 psi

My EZLC Tab

Saved Models

Compounds	Conditions	My EZLC
Saved Models		
EZLC Training ✕		
Raptor Biphenyl N-Desmethyltapentadol, Dihydrocodeine, Dextromethorphan, O-Desmethyl-cis-tramadol, Methylone...		
5-12-2022		
Launch Compounds Optimized ✕		
Raptor Biphenyl Phentermine, N-Desmethyltapentadol, Dihydrocodeine, Dextromethorphan, Pentazocine...		
23-09-2022		
Biphenyl 50x3.0 76 compounds ✕		
Raptor Biphenyl 6-Acetylmorphine, 7-Aminoclonazepam, 7-Hydroxyquetiapine, Alprazolam, Amitriptyline...		
1-09-2022		
C 18 100x 3 for launch ✕		
Raptor C18 Phentermine, N-Desmethyltapentadol, Dihydrocodeine, Dextromethorphan, Pentazocine...		
29-07-2022		

Contacting

- 1. Send 1
- 2. Send 1
- 3. Tell Us
- 4. Conta

Restek Pro EZLC Chromatogram Modeler

Compounds

Conditions

My EZLC

Compound Class: Drugs of Abuse

Search: X

Compound Name

CAS

Desmethyloanzapine 161696-76-0

Desomorphine 427-00-9

Dextromethorphan 125-71-3

Dextrorphan 125-73-5

Diazepam 439-14-5

Diclofenac 15307-86-5

Didesmethyloitalopram 62498-69-5

Diethylpropion 90-84-6

Dihydrocodeine 125-28-0

Dihydromorphine 509-60-4

Diphenhydramine 58-73-1

14 Compounds Selected

5 Isobars To Resolve

Phase: Raptor Biphenyl

Detector: MS

Generate Model

What's Next?

Alter method conditions in the Conditions tab to see how changes affect the separation.

Need more help?

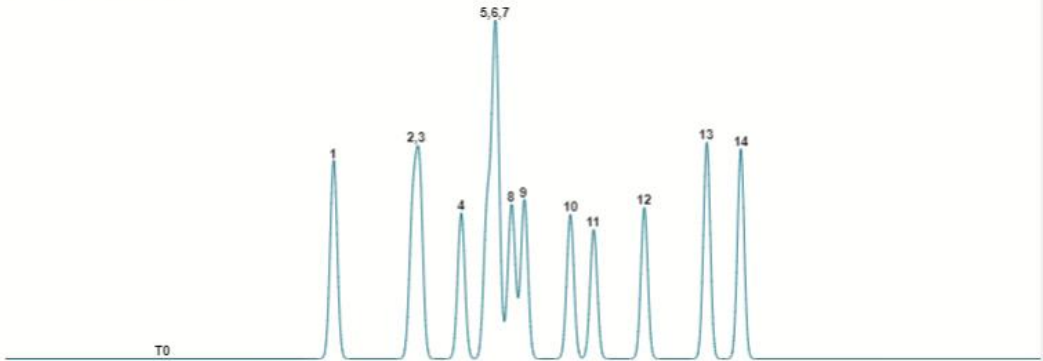
If you need further assistance, feel free to send this compound list and any questions you may have to Restek Technical Service.

Looking for other compounds?

Tell us what compound libraries you think Restek should focus on next.

Interested in evaluating your modeled solution with the recommended column? Contact us.

EZLC Training



Click and drag to zoom; double-click to reset. Mouse over peak numbers for compound info.

Available Isobars: Select an Isobar Reset

Column Raptor Biphenyl (cat.# 9309ASE)

Dimensions: 50 mm x 3 mm ID

Particle Size: 2.7 µm

Temp.: 30°C

Mobile Phase

A: Water, 0.1% Formic Acid

B: Methanol, 0.1% Formic Acid

Detector MS

Notes

T0: 0.21 min

Dwell Volume: 0.25 mL

Extra-Column Volume: 25 µL

Back Pressure: 2862 psi

Time (min)	Flow (mL/min)	%A	%B
0	0.8	96	4
2.2	0.8	0	100

ce, feel free to [send](#) questions you may rvice.

unds?

ries you think Restek

? [Contact us.](#)

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Pure Chromatography

16

Cool Features

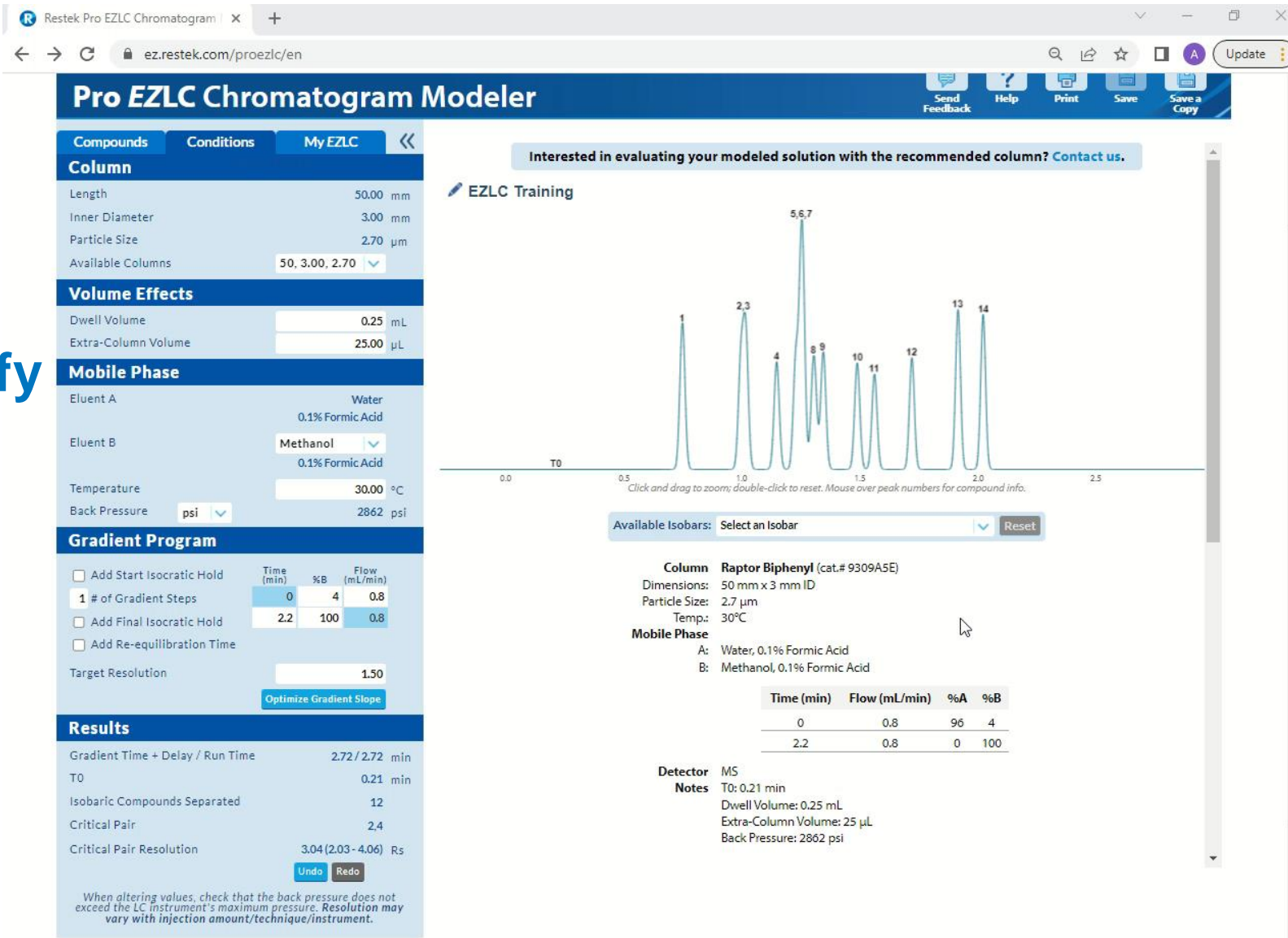
Model View

Zoom

Hovering over peaks to identify

Undo/Redo

View compound structures



Disadvantages

1. You cannot simulate matrix effects
2. You cannot simulate differences in concentration
3. You can only simulate known (measured by us) compounds...

What do you wish for next?

1. You cannot simulate matrix effects
2. You cannot simulate differences in concentration
3. You can only simulate known (measured by us) compounds...

➡ Which libraries would you be interested in next?

➡ please **FILL OUT** our **SURVEY!**

Beer, Beer, Alt...

When? TODAY, 4.30 pm

Where? Restek Booth No. 8

How? The RESTEK beer coaster is your invitation. 😊

