Chiral SFC Separation of Warfarin using a Lux® 3 µm i-Amylose-1 Column

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Overview

Warfarin is an anticoagulant medication composed of an equal mixture of two active enantiomers, R-form and S-form. Each is utilized by different pathways, with S-Warfarin being two-to-five times more potent in producing an anticoagulant response. Before its prominent use as a clotting medication, Warfarin was utilized by many as a form of rodent control. It was mixed with a corn base to form an effective rat poison. In contrast to public perception, Warfarin does not actually thin the blood; instead, it works by lengthening the amount of time necessary for blood to form clots. Because of its diverse uses in everyday life, it is necessary to have a reliable form of analysis. A fast and effective SFC method was developed to separate the enantiomers of Warfarin using a Lux i-Amylose-1 chiral column. This unique chiral selector efficiently separates these structurally similar compounds while maintaining a rapid analysis time.

Figure 1.
Chemical structure of Warfarin.

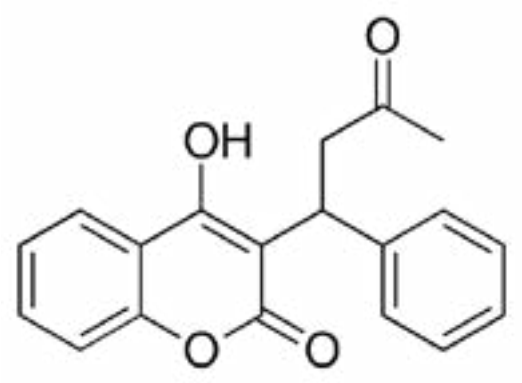
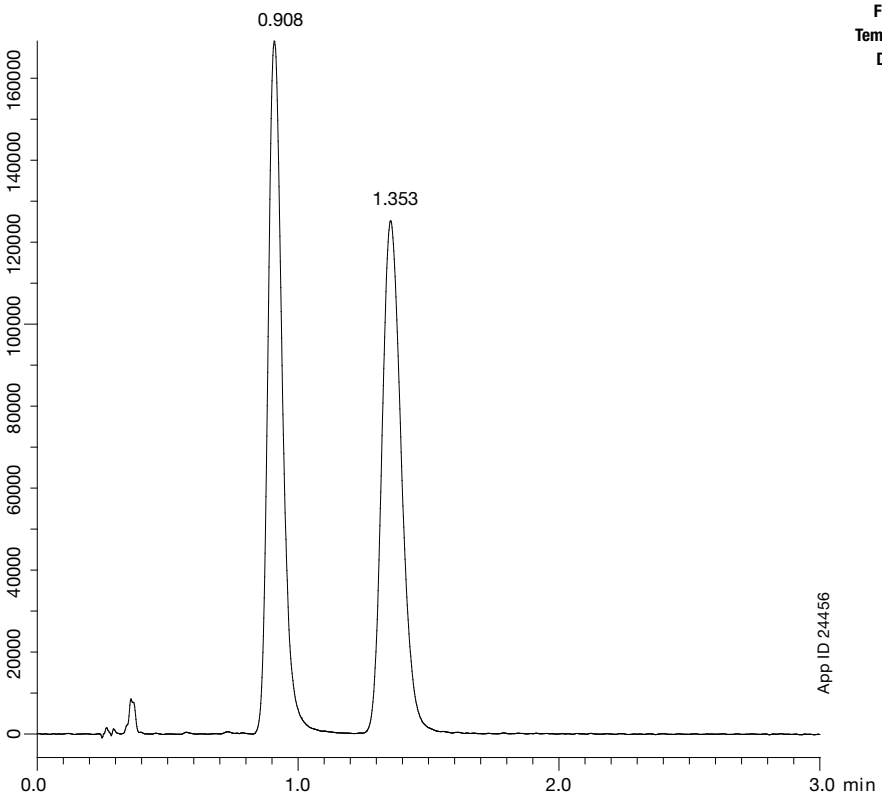


Figure 2.
Representative chromatogram of the separation of Warfarin enantiomers.



HPLC Conditions

Column: Lux 3 µm i-Amylose-1
Dimensions: 150 x 3.0 mm
Part No: 00F-4761-Y0
Mobile Phase: CO_2/Methanol (85:15)
Flow Rate: 4 mL/min
Temperature: 40 °C
Detection: UV @ 220 nm
Sample: Warfarin

APPLICATIONS

Lux® Chiral Column Ordering Information

3 µm Minibore, MidBore™, and Analytical Columns (mm)									SecurityGuard™ Cartridges (mm) 10/pk	
Phases	**50 x 2.0**	**150 x 2.0**	**100 x 3.0**	**150 x 3.0**	**50 x 4.6**	**100 x 4.6**	**150 x 4.6**	**250 x 4.6**	**4 x 2.0***	**4 x 3.0***
i-Amylose-1	00B-4761-B0	00F-4761-B0	00D-4761-Y0	00F-4761-Y0	00B-4761-E0	00D-4761-E0	00F-4761-E0	00G-4761-E0	AJ0-8640	AJ0-8641
								for ID:	2.0–3.0 mm	3.2–8.0 mm

5 µm Minibore and Analytical Columns (mm)					SecurityGuard™ Cartridges (mm) 10/pk	
Phases	**50 x 4.6**	**100 x 4.6**	**150 x 4.6**	**250 x 4.6**	**4 x 2.0***	**4 x 3.0***
i-Amylose-1	00B-4762-E0	00D-4762-E0	00F-4762-E0	00G-4762-E0	AJ0-8640	AJ0-8641
				for ID:	2.0–3.0 mm	3.2–8.0 mm

5 µm Semi-Prep Columns (mm)		SecurityGuard™ Cartridges (mm) 3/pk
Phases	**250 x 10.0**	**10 x 10.0‡**
i-Amylose-1	00G-4762-N0	AJ0-8642
	for ID:	9–16 mm

* SecurityGuard Analytical Cartridges require holder, Part No.: KJ0-4282
‡ Semi-Prep SecurityGuard Cartridges require holder, Part No.: AJ0-9281
** HPLC PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8223
SFC PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8617
♦ HPLC PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8277
SFC PREP SecurityGuard Cartridges require holder, Part No.: AJ0-8618

5 µm Axia™ Packed Preparative Columns (mm)					SecurityGuard™ Cartridges (mm) ea	
Phases	**150 x 21.2**	**250 x 21.2**	**250 x 30**	**250 x 50**	**15 x 21.2****	**15 x 30.0♦**
i-Amylose-1	00F-4762-P0-AX	00G-4762-P0-AX	00G-4762-U0-AX	00G-4762-V0-AX	AJ0-8634	AJ0-8635
				for ID:	18–29 mm	30–49 mm

guarantee

If Lux analytical columns (≤ 4.6 mm ID) do not provide at least an equivalent or better chiral separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.

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