



## EASY-Spray troubleshooting

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### Introduction

Nanospray LC-MS is subject to many of the same issues as High Performance Liquid Chromatography (HPLC); however, due to the low flow rates and small volumes involved, these issues are often more difficult to isolate. This document provides information for diagnosing common Thermo Scientific™ EASY-Spray™ column issues allowing the identification and resolution of many issues common to nanoLC and also describes preventative steps to prevent recurrence.

### Preventative action references

AB21900 Reverse phase SPE conditions optimized for peptide purification  
AB21955 EASY-Spray Best Practices

## AB21961 EASY-Spray Preventative Maintenance

Symptom	Solution	Preventative action
<b>Spray</b>		
Sputtering (no spray)	Replace column	Use positioning tool AB21955
No spray with visible organic material buildup on the tip	Cleaning gradients	Address sample quality AB21900
Spray tip visibly damaged (i.e. peeling, cracking, or missing tip)	Replace column	Use positioning tool AB21955
No flow at the tip	Ensure flow to column	Verify LC performance
<b>Pressure</b>		
Immediate high pressure error: usually observed due to the presence of particulates	Flush system, autosampler maintenance	Filter samples Use inline filter AB21961
Elevated operating pressure due to bed damage because column was not conditioned appropriately before use	Condition column	Condition column AB21955
Slow pressure increase due to insoluble or hydrophobic contaminants on stationary phase	Flush system, autosampler maintenance	AB21961 Address sample quality AB21900
Low/no pressure due to no flow or physical damage to column	Ensure flow to column	Verify LC performance
	Check for physical damage to column	Use positioning tool AB21955
<b>Chromatography</b>		
Background interference and noisy baseline	Cleaning gradients	AB21961
Slow creeping up of baseline - indicative of a hydrophobic contaminant such as a lipid or undigested protein	Flush system, autosampler maintenance	AB21961 Address sample quality AB21900
	Verify MS performance	Verify MS performance Address sample quality AB21900
Ion suppression (low signal intensity)	Cleaning gradients	Cleaning gradients and blanks between runs AB21961
	Resolution	Cleaning gradients AB21961
Peak shape	Cleaning gradients	AB21961
Retention time reproducibility – check column equilibration volume	Update method	Equilibrate appropriately AB21955
Retention time reproducibility – column contamination	Cleaning gradients	Address sample quality AB21900
		Cleaning gradients and blanks between runs AB21961

Current versions of product instructions are available at [separatedbyexperience.com/chromexpert](https://separatedbyexperience.com/chromexpert).

Learn more about EASY-Spray columns at

[thermofisher.com/EASYspray](https://thermofisher.com/EASYspray)

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