

Restoring the Initial Method Results Analyzing AMP ADP ATP UDP and GPT in Biological Extracts - Troubleshooting

Why Peak Shape May Deteriorate After a Few Days

If you notice that peak shape for AMP, ADP, ATP, UDP, and GPT in biological extracts worsens after a couple of days using a Cogent Diamond Hydride™ column, the issue may be related to sodium contamination in your LC-MS system.

Why This Happens:

Phosphate-containing metabolites are highly sensitive to sodium. Over time, sodium can leach from borosilicate glass mobile phase bottles, reaching levels that affect peak shape for this class of compounds.

Solutions:

- Option A: Prepare fresh mobile phase daily.
- Option B (Recommended): Switch to Teflon mobile phase reservoir bottles for a long-term fix.

If you have J.T. Baker Nitric Acid – ULTREX (Canada), it comes in ideal Teflon bottles. To prepare these bottles for LCMS use:

1. Rinse with DI water (3 times).
2. Fill with a 1:1 methanol/DI water solution and let sit overnight.
3. After this, the bottles are ready for LC-MS.

Additional Tips:

- Adjust aqueous ammonium acetate or formate mobile phase to pH 7.0 using ammonia.
- Add 0.1% ammonia to the sample diluent to improve peak shape (note: sample stability may decrease).
- Dedicate one column for ammonium acetate/formate and another for acidic mobile phases (e.g., formic acid).

[Diamond Hydride Product Page](#)

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