

Table 2

Recommendations for items to include in an LC-MS/MS maintenance calendar

Customize as needed based on vendor guidance, number of samples tested, extent of sample clean-up (minimal or extensive matrix removal during extraction)

Daily System Checks & Instrument Preparation	Periodic Checks (daily, weekly, monthly, as needed)	Best Practices
<ol style="list-style-type: none"> 1. Sufficient mobile phases & autosampler wash 2. Empty liquid waste 3. Prime mobile phases & auto-sampler wash 4. Record MS/MS vacuum pressures, verify in range 5. Sufficient MS/MS gas (N₂/Ar) inlet pressure 6. Record # of injections on columns & guard columns, change as indicated 7. Run SST & record results, compare to action limits 8. Record LC pressure during SST, compare to action limits 9. Check LC for leaks 	<ol style="list-style-type: none"> 1. Roughing pump oil level, ballast pump 2. Change filters in mobile phase, autosampler wash solutions 3. PC maintenance (reboot, disk cleanup & defragmentation, OS updates). Backup/delete data files. 4. Clean cones (curtain plate, skimmer, skimmer plate) 5. Check MS/MS resolution, calibration & response with infusion of a standard, compare to action limits. 6. Perform mass resolution & mass calibration following service or with frequency per vendor recommendations 	<ol style="list-style-type: none"> 1. Change mobile phase bottles frequently, avoid adding mobile phase to existing bottle when possible, follow guidelines to minimize mobile phase and container contamination. 2. After the run, wash columns and leave LC system in 100% organic solvent (e.g. acetonitrile) with no acid, no buffer. 3. Record all parts, tubing, fitting column, filter replacements 4. Autosampler, pump, flow switching valve preventative maintenance as needed with high volume testing (needle, needle seal, rotor seal, plunger seal, check valves) 5. Track solvent, chemical lot #s