



Checklist: 10 Signs Your Laboratory Instrument Needs Service

Applies to GC, HPLC, UHPLC, LC/MS, GC/MS Systems

	Symptom	Possible Cause	Action Recommended
1	Unstable Baseline	Detector drift, vacuum leaks, mobile phase contamination	Inspect detector, check for leaks, replace solvents
2	Retention Time Variability	Pump malfunction, column degradation, temperature fluctuation	Verify pump flow, inspect column, check oven control
3	Decreased Sensitivity	Ion source contamination, detector aging, blocked nebulizer	Clean ion source, check detector, inspect spray chamber
4	Irregular Peak Shapes	Column damage, injector issues, sample overload	Replace column or injector parts, review injection volume
5	Frequent Pressure Alarms	Clogged frits/seals, air in pump, solvent line blockages	Flush system, replace seals, degas solvents
6	Poor Reproducibility	Autosampler misalignment, pump inconsistency	Recalibrate or service autosampler, verify pump stability
7	System Leaks	Damaged tubing, loose connections	Tighten or replace fittings, check for solvent loss
8	Software/Communication Errors	Outdated firmware, faulty cables, power fluctuations	Update software, replace interface cables
9	High Background Noise (MS)	Dirty ion optics, source contamination	Perform full source cleaning and maintenance
10	Extended Warm-Up/Calibration	Aging lamps, failing sensors, drift in electronics	Replace components, recalibrate as needed

Tip: Perform regular preventive maintenance and log all observations. Early intervention can prevent data loss and extend equipment life.