

**UTAH DEPARTMENT OF HEALTH**  
**Division of Epidemiology & Laboratory Services**

**Liquid Chromatograph-Tandem Mass Spectrometer (LC/MS/MS)**

- One-time, supplement funding.....\$550,000

**Justification:** The Utah Public Health Laboratory (UPHL) needs funding to purchase a state-of-the-art laboratory testing instrument – a Liquid Chromatograph-Tandem Mass Spectrometer (LC/MS/MS) – to meet new standards and provide quality testing services to a variety of public and private agencies governed by local, state, and federal regulations. Many of these regulations have changed and the UPHL is currently unable to meet the needs of our customers. Additionally, this equipment will dramatically enhance staff safety.

The LC/MS/MS will permit the UPHL to meet:

- 1) New Environmental Regulations:** The EPA “Long Term 2 Enhanced Surface Water Treatment Rule (LT2)” requires an LC/MS/MS to identify new chemicals of concern in drinking water. UPHL, in its commitment to serve as the laboratory for the Department of Environmental Quality, has been designated as the “EPA Primacy Lab” for ensuring safe drinking water throughout the State.
- 2) Violence Against Women Act (VAWA) requirements:** Since 1994, VAWA has required forensic nurse examiners collect blood and urine specimens from sexual assault victims for alcohol and drug analyses. UPHL does not currently have the capability of assessing new “designer drugs” that are used with increasing frequency in “date rapes.” An LC/MS/MS provides that capability.
- 3) Bio-terrorism and Chemical Terrorism Preparedness requirements:** To ensure Utah is prepared to test for Chemical Terrorism agents (e.g., nerve agents, nitrogen mustards, sulfur mustards, etc.) and Bioterrorism agents (e.g., Ricin, Abrin, Botulinum, etc.), UPHL must purchase an LC/MS/MS.
- 4) Medical Examiner Requirements:** The Bureau of Forensic Toxicology could analyze for hundreds of novel prescription drugs implicated in autopsy overdose investigations and driving-under-the-influence cases. With existing UPHL instrumentation, only 18 prescription drugs are analyzed in-house. Others must be sent to external labs, increasing costs and extending the time needed to determine a cause of death.
- 4) Staff Safety Requirements:** Analysis via LC/MS/MS eliminates sample preparation steps that involve the use of noxious chemicals. Eliminating the use of these chemicals decreases employee chemical exposures while reducing expenses by minimizing the need for costly hazardous waste handling.
- 5) Increase productivity:** Because an LC/MS/MS eliminates steps in sample preparation and allows for simultaneous detection of many compounds, analyses could be conducted in less time. Analysis completion times would be reduced and productivity would increase, with no change in FTEs.

For more information, contact:

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