

# Resource Summary Report

Generated by [dkNET](#) on Sep 3, 2026

## U Mass - Electrolytes

DOI:10.17504/protocols.io.xwafpae

Type: Protocol

---

### Proper Citation

Jason Kim 2019. U Mass - Electrolytes. protocols.io  
[dx.doi.org/10.17504/protocols.io.xwafpae](https://doi.org/10.17504/protocols.io.xwafpae)

---

### Protocol Information

**URL:** <https://dx.doi.org/10.17504/protocols.io.xwafpae>

**Authors:** Jason Kim

**Group:** Mouse Metabolic Phenotyping Centers

**Summary:** Summary: This experiment provides the quantification of multiple cytokines and chemokines using multiplexed-Luminex technology based on beads containing specific antibodies. Serum cytokine levels reflect chronic or acute inflammation, and circulating cytokines and chemokines are altered in obesity. Cytokines Panel I include IL-1?, IL-1?, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, KC (IL-8 homologue), IL-9, IL-10 (interleukin-10), IL-12 (p40), IL-12 (p70), IL-13, IL-15, IL-17A, TNF? (tumor necrosis factor alpha), IFN? (interferon gamma), IP-10 (interferon gamma-induced protein 10; CXCL-10), Eotaxin (CCL-11), G-CSF (granulocyte colony stimulating factor), GM-CSF (granulocyte macrophage colony stimulating factor), LIF (leukemia inhibitory factor), LIX (LPS- induced CXC chemokine), MCP-1 (monocyte chemotactic protein-1; CCL-2), M-CSF (macrophage colony stimulating factor), MIG (monokine induced by gamma interferon; CXCL- 9), MIP-1? (macrophage inflammatory protein alpha; CCL-3), MIP-1? (macrophage inflammatory protein beta; CCL-4), and MIP-2/RANTES (macrophage inflammatory protein 2- alpha; CXCL-2). A service can be requested for all or any combination of listed cytokines/chemokines for customized multiplexed Luminex assay.

**Affiliations:** University of Massachusetts

**External URL:** <https://mmpc.org/shared/document.aspx?id=189&docType=Protocol>

**Version:** 1

**Publication Date:** 2019

**Proper Citation:** Jason Kim 2019. U Mass - Electrolytes. protocols.io  
[dx.doi.org/10.17504/protocols.io.xwafpae](https://doi.org/10.17504/protocols.io.xwafpae)

**Record Creation Time:** 20210329T220537+0000

**Record Last Update:** 20210329T221041+0000

---

## Data and Source Information

**Source:**