

Inside Meso Scale Discovery (MSD)

A Newsletter Series from [Aim Discovery Solutions](#) — Issue 1

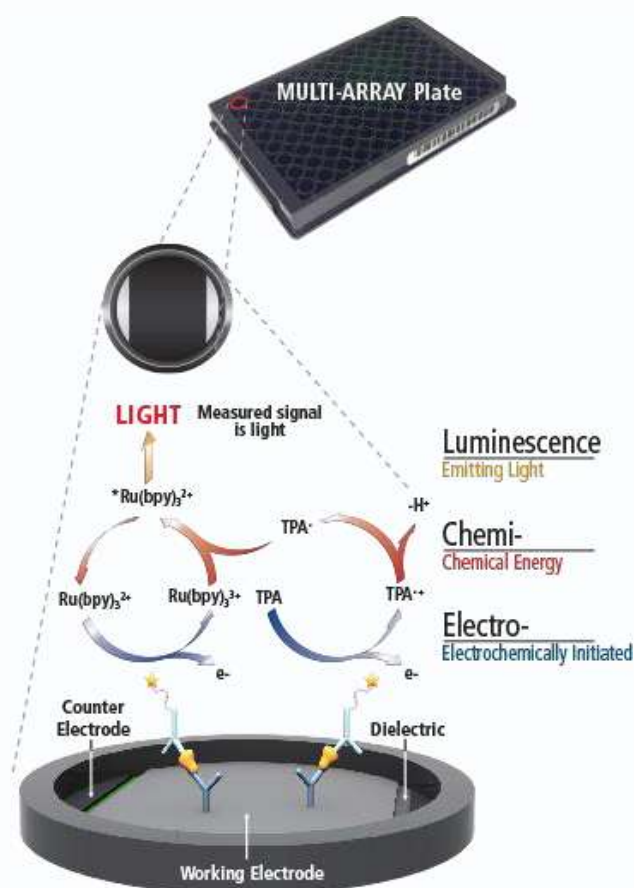
Welcome to the first [Meso Scale Discovery \(MSD\)](#) Technology newsletter from Aim Discovery Solutions. This series is designed to help researchers across Australia and New Zealand get to know the technologies, applications, and practical advantages behind MSD. Aim Discovery Solutions connects researchers with high-quality life science and diagnostic technologies, supported by personalised service and local expertise. In this first issue, we introduce MSD, a leading provider of highly sensitive multiplex immunoassays and innovative instruments for biological measurement and begin with the technology at the heart of MSD assays: electrochemiluminescence (ECL).

Why ECL technology matters

Electrochemiluminescence (ECL) is one of the reasons MSD assays can deliver sensitive, reliable biomarker measurements from complex biological samples. Electrochemiluminescent labels generate light when stimulated by electricity in the appropriate chemical environment. This reaction is incorporated into our immunoassays to provide the light signal used to measure important proteins and other biomedical molecules.

How does electrochemiluminescence work?

- *High binding carbon electrodes* in the bottom of MULTI-ARRAY and MULTI-SPOT microplates allow for easy attachment of biological reagents (10X greater binding capacity than polystyrene).
- *MSD assays use* electrochemiluminescent labels that are conjugated to detection antibodies. The labels are called SULFO-TAG and allow for ultra-sensitive detection.
- *Electricity is applied* to the plate electrodes by an MSD instrument leading to light emission by SULFO-TAG labels. Light intensity is then measured to quantify analytes in the sample.





Advantages of Electrochemiluminescence

- **High sensitivity:** Multiple excitation cycles can amplify signals to enhance light levels.
- **Broad dynamic range:** The wide dynamic range of our detection systems means high and low expression levels can be measured without multiple sample dilutions.
- **Low background:** The stimulation method (electricity) is decoupled from the signal (light) allowing only labels near the electrode surface to be detected.
- **Easy to use:** Immunoassay method similar to conventional ELISA, but quicker.
- **Great flexibility:** Labels are stable, non-radioactive, and conveniently conjugated to biological molecules.
- **Unsurpassed performance and quality:** Electrochemiluminescence is a highly successful detection system that achieves clinical quality data in a variety of sample types, including cell supernatant, serum, plasma, and whole blood.

Application Spotlight

ECL-powered multiplex biomarker profiling allows researchers to measure multiple proteins from a single sample while maintaining high sensitivity, broad dynamic range, and low background. This makes MSD assays especially useful in studies where sample volume is limited, such as cytokine profiling, inflammation research, oncology, neurology, metabolism, and translational studies. By generating more data from less sample, researchers can gain a clearer view of complex biological responses while preserving precious specimens for additional analysis.

Ready to explore what MSD technology can do for your research?

Contact Aim Discovery Solutions to discuss MSD ECL assays, multiplex panels, assay development options, and application support for your next biomarker study.

Contact

E: mesoscale@aimdiscovery.com

W: <https://aimdiscovery.com>