In vitro Cell Culture Models

Neuroinflammation

Immune activation in the CNS and production of neurotoxic mediators are linked to various neurodegenerative diseases including Multiple Sclerosis, Alzheimer's disease and Parkinson's disease.

General Approach:

LPS stimulation of *in vitro* cultures results in increased cytokine release into the supernatant. This effect can be monitored over time in the same cultures by single or multiplex MSD analyses. Up to 10 cytokines can be measured simultaneously from one sample. Create your own favorite combination from currently 38 available cytokines.

At QPS Austria currently 3 *in vitro* models for neuroinflammation based on LPS stimulation are established:

1) BV2 cells

The immortalized mouse microglia cell line BV-2 as fast and cost-efficient high-throughput tool.

2) Primary mouse microglia

Primary microglial cultures enable you to study the effect of your compound specifically on microglia, which are prepared from early postnatal mouse pups.

3) Organotypic hippocampal brain slices

This approach allows you to evaluate the effect of your compound in an intact neural/glial system. By maintaining the intact 3D structure and cell-cell interactions of the postnatal brain, this system comes closest to *in vivo* models.

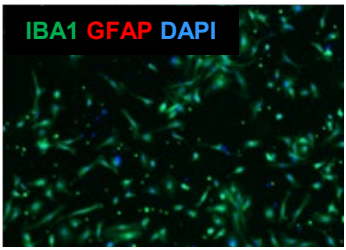

Figure 1. Representative image of mouse primary microglia. Microglial marker IBA1 (green), astrocytic marker GFAP (red) and nuclei stain DAPI (blue)

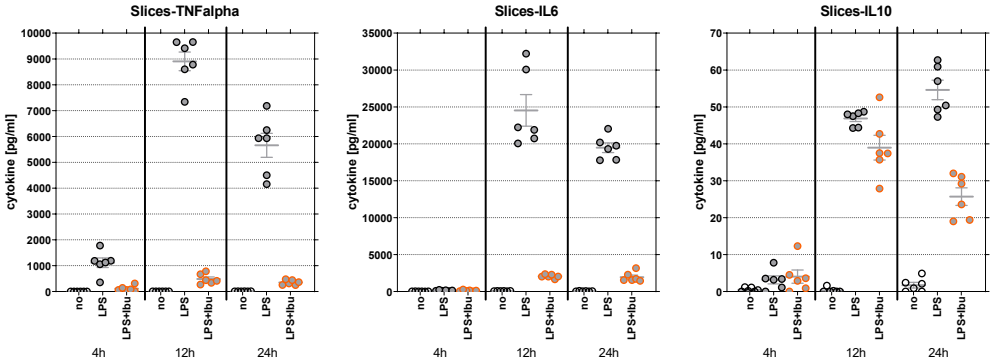

Figure 2. Exemplary data of cytokines in the supernatant of LPS stimulated brain slices at several time points; Ibudilast as reference item.

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