CASY^{VIVO} Cell Counter & Analyzer - Powering Breakthroughs in Cell Research

Tracking Growth and Vitality: Quantifying Cytokine Dependency in Murine MasT-cells

Capellmann et al. (2023). Transformation of murine mast cells by KIT activation; Frontiers in Immunology, 14. DOI: 10.3389/fimmu.2023.1123456.

Immunology; *peritoneal masT-cells;* PMC-306	
Index	IM14
Standardization	
Counting	X
Viability	X
Volume	

The Challenge:

Characterizing a novel murine masT-cell line (PMC-306) and understanding its proliferation dynamics compared to primary masT-cells required accurate and reliable cell count and viability measurements over time.

CASY's Contribution:

The CASY Cell Counter was utilized to precisely determine the cell count and viability of both PMC-306 cells and primary wild-type PMCs over a 72-hour period in proliferation experiments. This enabled accurate monitoring of proliferation rates and comprehensive tracking of cell growth and survival kinetics, even under varying cytokine concentrations.

Key Benefits to Researchers:

- **Accurate Proliferation Monitoring:** Precisely track cell growth rates by obtaining reliable cell counts over time, crucial for characterizing novel cell lines.

- **Simultaneous Viability Assessment:** Determine cell viability alongside counts, providing comprehensive insights into the impact of different culture conditions or treatments.

- **Comprehensive Time-Course Data:** Facilitate detailed tracking of cell growth and survival kinetics over extended periods, providing invaluable data on cell line behavior.

- **Reliable for Cell Line Characterization:** Supports the rigorous characterization of new cell lines, overcoming limitations of existing models.

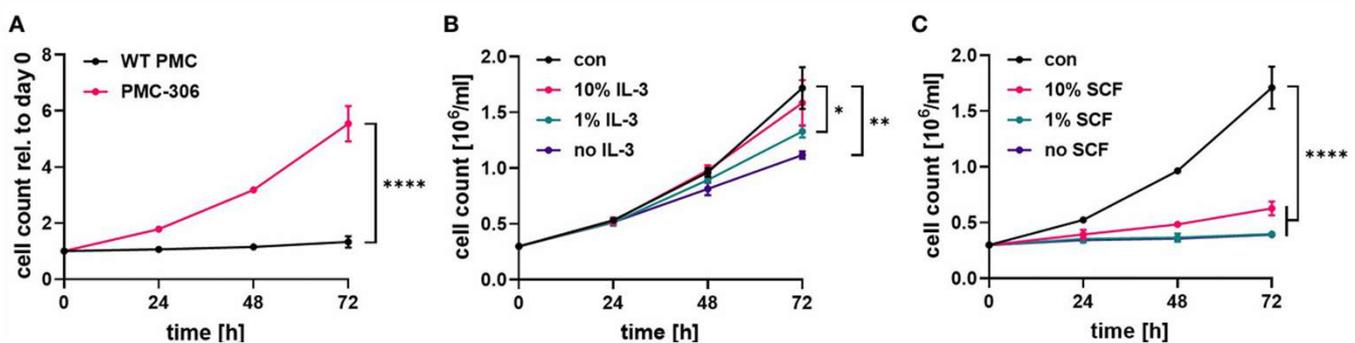**CASY-Quantified Growth Profiles of Wild-Type and PMC-306 Peritoneal MasT-cells**

Fig. 2: PMC-306 show faster proliferation compared to primary PMCs, which is dependent on IL-3 and SCF. (A)Cell number of primary WT PMCs and PMC-306 cells was measured every 24hours (B) reduced IL-3 (C) reduced SCF