Cell-ID Cisplatin-^{198}Pt

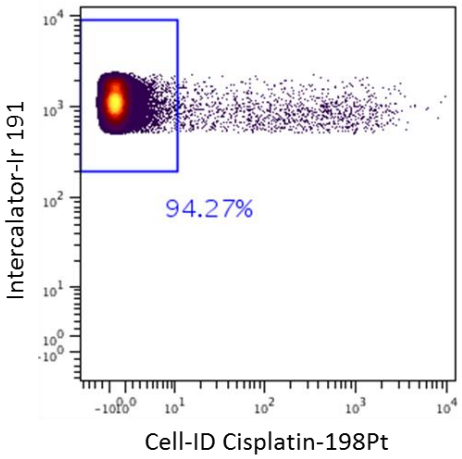
Catalog: 201198
Package size: 100 µL

Storage:
- Upon receiving this product, divide it into aliquots and freeze them at –20 °C.
- Frozen aliquots should be used only once after thawing.

WARNING Before handling any chemicals, refer to the Safety Data Sheet (SDS) provided by the manufacturer, and observe all relevant precautions.

Description

Cell-ID™ Cisplatin-^{198}Pt is a monoisotopic preparation of cisplatin containing the ^{198}Pt isotope. Cisplatin binds covalently to cellular proteins, and it labels cells with compromised cell membranes to a much greater extent than live cells. Therefore, Cell-ID Cisplatin-^{198}Pt specifically identifies dead cells when incubated prior to fixation, or identifies total cells when incubated following cell fixation and permeabilization. Because cisplatin binds covalently to protein, labeling remains strong through subsequent steps used in downstream mass cytometry staining protocols.



Live human PBMCs stained with Cell-ID Cisplatin-^{198}Pt. DNA+ cell singlet events are displayed in the analysis, and live cisplatin-cells are indicated in the gate.

Important Product Notes

- Prolonged storage at room temperature and multiple freeze/thaws should be avoided, because they may alter the chemical and cell-binding properties of Cell-ID Cisplatin-^{198}Pt.
- Cell-ID Cisplatin-^{198}Pt staining for five minutes at a final concentration of 1 µM is suggested in the protocols below, and has been found to work well for the majority of PBMC samples tested. However, these parameters should be optimized for individual cell types. We recommend titrating Cell-ID Cisplatin-^{198}Pt at concentrations between 0.2 and 1 µM for between 5 and 10 minutes.
- We recommend quenching Cell-ID Cisplatin-^{198}Pt staining with Maxpar® Cell Staining Buffer. However, other cell staining solutions that include protein may also be used.
- We have observed that cisplatin staining intensity increases with cell size. For example, cisplatin staining on monocyte populations is greater than staining on lymphocyte populations.

Viability Staining Protocol

1. Wash the cells with PBS, centrifuge them at 300–400 x *g* for five minutes and discard the supernatant by aspiration.
2. Resuspend the cells to 1x10^7/mL in PBS and add Cell-ID Cisplatin-^{198}Pt to a final concentration of 1 µM (1000X dilution of 1 mM stock solution, i.e., 1 µL Cell-ID Cisplatin-^{198}Pt added to 1 mL of cell suspension).
3. Mix well and incubate at room temperature for five minutes.
4. Quench staining with Maxpar Cell Staining Buffer using 5X the volume of the cell suspension (i.e., add 5 mL to 1 mL of cell suspension), centrifuge the cells and discard the supernatant by aspiration.
5. Repeat wash for a total of two wash steps.

6 Proceed with the usual procedure for staining surface or intracellular antigens for analysis by mass cytometry.

7 Detect Cell-ID Cisplatin-^{198}Pt in the ^{198}Pt channel of the CyTOF® system.

Total Cell Staining Protocol

1 Follow the usual Maxpar cell staining protocol for antigen staining.

2 During the final five minutes of DNA intercalation in Maxpar Fix & Perm Buffer, include Cell-ID Cisplatin-^{198}Pt at a final concentration of 1 µM (1000X dilution of 1 mM stock solution, i.e., 1 µL of Cell-ID Cisplatin-^{198}Pt added to 1 mL of cell suspension).

3 Wash the cells twice with Maxpar Cell Staining Buffer, and once with Maxpar Water.

4 Proceed with sample acquisition on mass cytometer, and detect Cell-ID Cisplatin-^{198}Pt in the ^{198}Pt channel of the CyTOF system.

References

Majonis, D., Ornatsky, O., Kinach, R., Winnik, M. A. Curious results with palladium- and platinum-carrying polymers in mass cytometry bioassays and an unexpected application as a dead cell stain. *Biomacromolecules*. 12(11) (2011): 3,997–4,010.

Fienberg, H. G., Simonds, E. F., Fantl, W. J., et al. A platinum-based covalent viability reagent for single-cell mass cytometry. *Cytometry A*. 81(6) (2012): 467–75.

For technical support visit www.fluidigm.com/support.

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