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1. Description

This product is for research use only.

Product format 25 mL Fixation/Permeabilization Solution 1:
Four-fold concentrated stock solution for use with Fixation/Permeabilization Solution 2.

2×40 mL Fixation/Permeabilization Solution 2:
For the dilution of Fixation/Permeabilization Solution 1 prior to use.

40 mL 10× Permeabilization Buffer:
Ten-fold stock solution for dilution prior to use.

Product size 100 tests or up to 10⁸ total cells.

Storage Store Fixation/Permeabilization Solution 1 and 2 protected from light at 2–8 °C. Do not freeze. Store 10× Permeabilization Buffer at room temperature. The expiration date is indicated on the vial label.

1.1 Background information

Transcription factors are a set of protein molecules, that bind to a specific DNA sequence (promoter) in the gene and thereby control transcription of DNA to messenger RNA. By activating or repressing the gene transcription, these proteins regulate numerous vital functions, such as cell division, cell growth, and cell death.^{1,2} Specifically in the immune system transcription factors govern crucial functions both during homeostasis and disease condition.^{3,4} The Transcription Factor Staining Buffer Set has been developed for use in conjunction with antibodies targeting various transcription factors.

1.2 Applications

- Fixation and permeabilization of human, mouse, or non-human primate cells. Optimized for flow cytometric detection of transcription factors and nuclear proteins.

For staining protocols refer to

www.miltenyibiotec.com/goto/97fc696bbade
www.miltenyibiotec.com/goto/806a1de1942e
www.miltenyibiotec.com/goto/29e7337f4a59

2. Transcription Factor Staining Buffer Set preparation

▲ Always prepare reagents freshly. Failure to do so may lead to sub-optimal results.

▲ The required total buffer volumes should be calculated beforehand; volumes will depend on the number of cells to be analyzed as well as the number of tests to be performed (for more information, please refer to the data sheets of specific MACS® Antibodies to detect transcription factors).

Fixation/Permeabilization Solution

To achieve the appropriate working concentration for safe fixation and permeabilization of cells, the Fixation/Permeabilization Solution 1 must be diluted 1:4 with the Fixation/Permeabilization Solution 2 (i.e. for 10⁶ cells use 0.25 mL of Fixation/Permeabilization Solution 1 and 0.75 mL of Fixation/Permeabilization Solution 2).

Permeabilization Buffer

To achieve the appropriate working concentration for safe permeabilization of cells, the 10× Permeabilization Buffer must be diluted 1:10 with deionized or distilled water before use (i.e. 1 mL of 10× Permeabilization Buffer and 9 mL of deionized/distilled water).

▲ **Note:** Before dilution make sure that buffer does not contain any precipitates.

3. References

1. Latchman, D. S. (1990) Eukaryotic transcription factors. *Biochem. J.* 270(2): 281–289.
2. Kadonaga, J. T. (2004) Regulation of RNA polymerase II transcription by sequence-specific DNA binding factors. *Cell* 116(2): 247–257.
3. Smale, S. T. (2014) Transcriptional regulation in the immune system: A status report. *Trends Immunol.* 35(5): 190–194.
4. Medzhitov, R. and Horng, T. (2009) Transcriptional control of the inflammatory response. *Nat. Rev. Immunol.* 9(10): 692–703.

Refer to www.miltenyibiotec.com for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com for local Miltenyi Biotec Technical Support contact information.

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