

Product Information

Monoclonal Anti-POU5F1 (Oct4), clone PF-29

produced in mouse, purified immunoglobulin

Catalog Number **P0082**

Product Description

Monoclonal Anti-POU5F1 (Oct4) (mouse IgG2a isotype) is derived from the hybridoma PF-29 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with human POU5F1 peptide (Gene ID: 5460; amino acids 20-37). The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-POU5F1 (Oct4) recognizes human POU5F1/Oct4. The antibody may be used in various immunochemical techniques including ELISA, immunoblotting (~ 43 kDa), and immunocytochemistry.

Stem cells exist in most adult organs, being best characterized in the bone marrow and gut. They are defined as pluripotent cells, whose self-renewal and pluripotency is regulated by multiple signaling molecules and transcription factors.¹ Members of the POU transcription factor family are expressed in pluripotent embryonic stem cells (ES) and germ cells. They recognize defined octamer DNA elements by a shared, conserved DNA-binding domain, namely the POU domain.² A member of this family, POU domain class 5 transcription factor 1 (POU5F1), also known as Oct4 or Oct3, functions as an early developmental control gene. POU5F1 has been recognized as fundamental in the maintenance of pluripotency in embryonic stem cells and in primordial germ cells. POU5F1 is downregulated in all differentiated somatic cell types both *in vivo* and *in vitro*. This is accomplished through increased DNA methylation and structural changes involving the immediate upstream regulatory region.³

POU5F1 has been proposed as a useful marker for germ cell tumors (GCTs) that can exhibit pluripotentiality, specifically seminoma/dysgerminoma/germinoma and embryonal carcinoma (EC).⁴⁻⁶ POU5F1 has also been established as a marker for extragonadal GCT and metastatic tumors.^{7, 8}

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze at -20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: working concentration of 0.5-1 µg/mL is recommended using NT2/D1 total cell extract.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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3. Cheng, L., et al., *J. Pathol.*, **211**, 1-9 (2007).
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5. Jones, T.D., et al., *Am. Surg. Pathol.*, **28**, 935-940 (2004).

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7. De Jong, J., et al., *J. Pathol.*, **206**, 242-249 (2005).

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