

Product Information

Anti-POU5F1 (Oct4)

produced in rabbit, affinity isolated antibody

Catalog Number **P0056**

Product Description

Anti-POU5F1 (Oct4) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 19-34 of human POU5F1 (Gene ID: 5460), conjugated to KLH. The corresponding sequence in rat is 81% homologous. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-POU5F1 (Oct4) recognizes human POU5F1. The antibody may be used in several immunochemical techniques including immunoblotting (~43 kDa), immunoprecipitation and immunofluorescence. Detection of the POU5F1 band by immunoblotting is specifically inhibited by the immunizing peptide.

Stem cells exist in most adult organs, being best characterized in the bone marrow and gut. They are defined as pluripotent cells, in which 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 element 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 (Octamer-binding transcription factor), functions as an early developmental control gene. It has been recognized as fundamental in the maintenance of pluripotency in embryonic stem cells and in primordial germ cells. It is down regulated in all differentiated somatic cell types both *in vivo* and *in vitro*. This is being 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 It 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 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 dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 1-2 µg/mL is recommended using NT2 cell lysate.

Immunoprecipitation: a working antibody amount of 5-10 µg is recommended using NT2 cell lysate.

Immunofluorescence: a working antibody concentration of 2-5 µg/mL is recommended using paraformaldehyde fixed F9 cells.

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

References

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5. Jones, T.D., et al., *Am. Surg. Pathol.*, **28**, 935-940 (2004).
6. Cheng, L., et al., *Am. Surg. Pathol.*, **28**, 1341-1346 (2004).
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