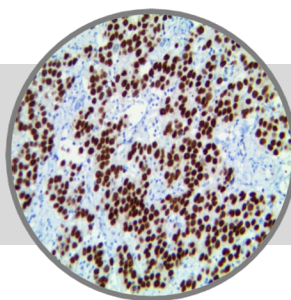


# Nanog, RMab

**Clone: EP225**

Rabbit Monoclonal


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*Inset: IHC of Nanog on a FFPE Seminoma Tissue*

## Intended Use

For In Vitro Diagnostic Use.

This antibody is intended for use in Immunohistochemical applications on formalin-fixed paraffin-embedded tissues (FFPE), frozen tissue sections and cell preparations. Interpretation of results should be performed by a qualified medical professional.

\* The Nanog antibody, clone EP225, has been manufactured using Eptomics RabMab® technology covered under Patent No.'s 5,675,063 and 7,402,409.

## Immunogen

A synthetic peptide corresponding to residues of human Nanog protein

## Summary and Explanation

Homeobox protein Nanog is a transcriptional factor that helps embryonic stem cells (ESCs) maintain pluripotency by suppressing cell determination factors. In humans, this protein is encoded by the *NANOG* gene. Nanog is thought to function in concert with other factors such as Oct-4 and SOX2 to establish ESC identity. Nanog is highly expressed in cancer stem cells and thus may function as an oncogene to promote carcinogenesis. High expression of Nanog correlates with poor survival in cancer patients.

Nanog is highly and specifically expressed in carcinoma in situ (CIS), embryonal carcinomas, and seminomas, but not in teratomas and yolk sac tumors. Additionally, it has been reported that Human embryonic stem cell genes *OCT4*, *NANOG*, *STELLAR*, and *GDF3* are expressed in both seminoma and breast carcinoma. Positive Nanog expression is significantly associated with high-grade ovarian serous carcinoma and is absent in benign, borderline, and low-grade serous lesions. A study suggests the expression of Nanog exhibiting cellular shuttling behavior and increasing stromal distribution during the progression of cervical cancer. Recently it was suggested that Nanog overexpression, a hazard factor of differentiation, lymph node metastasis, and tumor size, may predicate decreased overall survival (OS) and disease-free survival (DFS) for lung cancer.

<b>Antibody Type</b>	Rabbit Monoclonal	<b>Clone</b>	EP225
<b>Isotype</b>	IgG	<b>Reactivity</b>	Paraffin, Frozen
<b>Localization</b>	Cytoplasmic, Nuclear	<b>Control</b>	Testis, Cervix, Seminoma, Embryonal Carcinoma, TCC
<b>Species Reactivity</b>		Human	

## Presentation

Nanog is a Rabbit monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

<b>Catalog No.</b>	<b>Antibody Type</b>	<b>Dilution</b>	<b>Volume/Qty</b>
BSB 3581	Tinto Prediluted	Ready-to-Use	3.0 mL
BSB 3582	Tinto Prediluted	Ready-to-Use	7.0 mL
BSB 3583	Tinto Prediluted	Ready-to-Use	15.0 mL
BSB 3584	Concentrated	1:50 - 1:200	0.1 mL
BSB 3585	Concentrated	1:50 - 1:200	0.5 mL
BSB 3586	Concentrated	1:50 - 1:200	1.0 mL

## Control Slides Available

<b>Catalog No.</b>	<b>Quantity</b>
BSB 3587	5 slides

## Precautions

1. For professional users only. Results should be interpreted by a qualified medical professional.
2. This product contains <0.1% sodium azide (NaN<sub>3</sub>) as a preservative. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as laboratory coat, goggles and gloves when handling reagents.
4. Dispose of unused solution with copious amount of water.
5. Do not ingest reagent. If reagent is ingested, seek medical advice immediately.
6. Avoid contact with eyes. If contact occurs, flush with large quantities of water.
7. Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
8. For additional safety information refer to Safety Data Sheet for this product.
9. For complete recommendations for handling biological specimens, please refer to the CDC document, "Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" (see References in this document).

**Storage** Store at 2-8°C (Control Slides: Store at 20-25°C)

## Stability

**This product is stable up to the expiration date on the product label.** Do not use after expiration date listed on package label. Temperature fluctuations should be avoided. Store appropriately when not in use, and avoid prolonged exposure to room temperature conditions.

## Specimen Preparation

**Paraffin sections:** The antibody can be used on formalin-fixed paraffin-embedded (FFPE) tissue sections. Ensure tissue undergoes appropriate fixation for best results. Pre-treatment of tissues with heat-induced epitope retrieval (HIER) is recommended using Bio SB ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023), ImmunoDNA Retriever with EDTA (BSB 0030-BSB 0033) or ImmunoDNA Digestor (BSB 0108-0112). See reverse side for complete protocol. Tissue should remain hydrated via use of Bio SB Immuno/DNA Washer solutions (BSB 0029 & BSB 0042).

**Frozen sections and cell preparations:** The antibody can be used for labeling acetone-fixed frozen sections and acetone-fixed cell preparations.

## Staining Procedure

1. Cut and mount 3-5 micron formalin-fixed paraffin-embedded tissues on positively charged slides such as Bio SB Hydrophilic Plus Slides (BSB 7028).
2. Air dry for 2 hours at 58° C.
3. Deparaffinize, dehydrate and rehydrate tissues.
4. Subject tissues to heat induced epitope retrieval (HIER) using a suitable retrieval solution such as ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023) or EDTA (BSB 0030-BSB 0033).
5. Any of three heating methods may be used:

### a. TintoRetriever Pressure Cooker or Equivalent

Place tissues/slides in a staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA, and place on trivet in the pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high. Incubate for 15 minutes. Open and immediately transfer slides to room temperature.

### b. TintoRetriever PT Module or Water Bath Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA at 95°-99° C. Incubate for 30-60 minutes.

### c. Conventional Steamer Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA in a steamer, cover and steam for 30-60 minutes.

6. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
7. For manual staining, perform antibody incubation at ambient temperature. For automated staining methods, perform antibody incubation according to instrument manufacturer's instructions.
8. Wash slides with ImmunoDNA washer or DI water.
9. Continue IHC staining protocol. Wash slides between each step with ImmunoDNA washer solution.

## Abbreviated Immunohistochemical Protocol

Step	ImmunoDetector AP/HRP	PolyDetector AP/HRP	PolyDetector Plus AP/HRP
Peroxidase/AP Blocker	5 min.	5 min.	5 min
Primary Antibody	30-60 min.	30-60 min.	30-60 min.
1st Step Detection	10 min.	30-45 min.	15 min.
2nd Step Detection	10 min.	Not Applicable	15 min.
Substrate-Chromogen	5-10 min.	5-10 min.	5-10 min.
Counterstain / Coverslip	Varies	Varies	Varies

## Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMounter (BSB 0169-0174) or organic solvent based resin such as PermaMounter (BSB 0094-0097), refer to PI0174 or PI0097.





## Product Limitations

Due to inherent variability present in immunohistochemical procedures (including fixation time of tissues, dilution factor of antibody, retrieval method utilized and incubation time), optimal performance should be established through the use of positive and negative controls. Results should be interpreted by a qualified medical professional.

## References

1. Mitsui K, et al. "The homeoprotein Nanog is required for maintenance of pluripotency in mouse epiblast and ES cells". Cell. 2003; 113 (5): 631-42.
2. Chambers I, et al. "Functional expression cloning of Nanog, a pluripotency sustaining factor in embryonic stem cells". Cell. 2003; 113 (5): 643-55.
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## Symbol Key / Légende des symboles/Erläuterung der Symbole

<b>EC</b> <b>REP</b>	EMERGO EUROPE Prinsessegracht 20 2514 AP The Hague The Netherlands		Storage Temperature Limites de température Zulässiger Temperaturbereich		Manufacturer Fabricant Hersteller	<b>REF</b>	Catalog Number Référence du catalogue Bestellnummer
<b>IVD</b>	In Vitro Diagnostic Medical Device Dispositif médical de diagnostic in vitro In-Vitro-Diagnostikum		Read Instructions for Use Consulter les instructions d'utilisation Gebrauchsanweisung beachten		Expiration Date Utiliser jusque Verwendbar bis	<b>LOT</b>	Lot Number Code du lot Chargenbezeichnung



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