

# PGDH (H-3): sc-271418

## BACKGROUND

Prostaglandins are implicated in many physiologic and cellular processes, such as inflammation. NAD<sup>+</sup>-dependent 15-hydroxyprostaglandin dehydrogenase (PGDH) is the fundamental enzyme of prostaglandin degradation. PGDH, an ubiquitous enzyme, strongly reduces the biologic activity of these molecules by catalyzing the oxidation of the 15-hydroxyl group of prostaglandins to a keto group. Cortisol reduces PGDH activity in human placental cells. 11- $\beta$ -hydroxysteroid dehydrogenase type II (HSD11B2) converts cortisol to cortisone. In preeclampsia, a disorder characterized by high blood pressure and protein in the urine during pregnancy and the postpartum period, HSD11B2 mRNA expression is reduced, leading to a decrease in HSD11B2 activity. Therefore, the diminished conversion of placental cortisol may lead to reduced PGDH mRNA expression by means of an autocrine or paracrine mechanism.

## REFERENCES

- Han, X., et al. 1995. Localisation of 15-hydroxyprostaglandin dehydrogenase (PGDH) and steroidogenic enzymes in the equine placenta. *Equine Vet. J.* 27: 334-339.
- Van Meir, C.A., et al. 1996. Immunoreactive 15-hydroxyprostaglandin dehydrogenase (PGDH) is reduced in fetal membranes from patients at preterm delivery in the presence of infection. *Placenta* 17: 291-297.
- Gee, J.R., et al. 2003. Cytokeratin 20, AN43, PGDH and Cox-2 expression in transitional and squamous cell carcinoma of the bladder. *Urol. Oncol.* 21: 266-270.
- Johnson, R.F., et al. 2004. Regulation of 15-hydroxyprostaglandin dehydrogenase (PGDH) gene activity, messenger ribonucleic acid processing and protein abundance in the human chorion in late gestation and labor. *J. Clin. Endocrinol. Metab.* 89: 5639-5648.

## CHROMOSOMAL LOCATION

Genetic locus: HPGD (human) mapping to 4q34.1; Hpgd (mouse) mapping to 8 B2.

## SOURCE

PGDH (H-3) is a mouse monoclonal antibody raised against amino acids 1-263 of PGDH of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PGDH (H-3) is available conjugated to agarose (sc-271418 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271418 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271418 PE), fluorescein (sc-271418 FITC), Alexa Fluor<sup>®</sup> 488 (sc-271418 AF488), Alexa Fluor<sup>®</sup> 546 (sc-271418 AF546), Alexa Fluor<sup>®</sup> 594 (sc-271418 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-271418 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-271418 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-271418 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

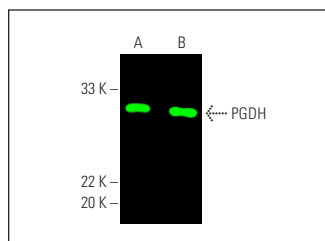
PGDH (H-3) is recommended for detection of PGDH of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PGDH siRNA (h): sc-61330, PGDH siRNA (m): sc-61331, PGDH shRNA Plasmid (h): sc-61330-SH, PGDH shRNA Plasmid (m): sc-61331-SH, PGDH shRNA (h) Lentiviral Particles: sc-61330-V and PGDH shRNA (m) Lentiviral Particles: sc-61331-V.

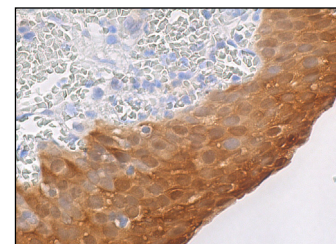
Molecular Weight of PGDH: 30 kDa.

Positive Controls: A549 cell lysate: sc-2413 or human placenta extract: sc-363772.

## DATA



PGDH (H-3): sc-271418. Near-infrared western blot analysis of PGDH expression in A549 whole cell lysate (A) and human placenta tissue extract (B). Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgG $\kappa$  BP-CFL 680: sc-516180.



PGDH (H-3): sc-271418. Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic and nuclear staining of urothelial cells.

## SELECT PRODUCT CITATIONS

- Petersen, C.H., et al. 2019. Possible predisposition for colorectal carcinogenesis due to altered gene expressions in normal appearing mucosa from patients with colorectal neoplasia. *BMC Cancer* 19: 643.
- Olshina, M.A., et al. 2020. Regulation of the 20S Proteasome by a novel family of inhibitory proteins. *Antioxid. Redox Signal.* 32: 636-655.
- Rempel, L.M., et al. 2021. Investigations on the potential role of prostaglandin E2 in canine uterine inertia. *Theriogenology* 175: 134-147.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.