Technical Data Sheet

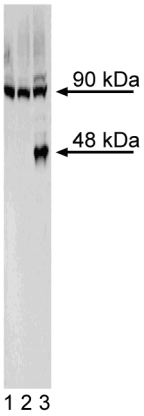
Purified Mouse anti-Human FoxA2

Product Information

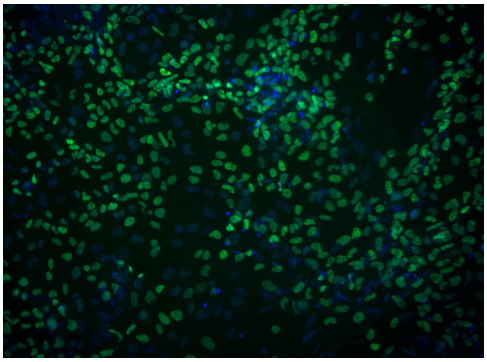
Material Number:	**561580**
Alternate Name:	Forkhead box A2, HNF3B, HNF-3B, HNF-3β, hepatocyte nuclear factor 3β
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	N17-280
Immunogen:	Human FoxA2 Peptide
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Testing: Human Predicted due to immunogen sequence identity: Mouse
Target MW:	48 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

FoxA2, forkhead box A2, is a member of the forkhead class of DNA-binding proteins that regulates gene expression in the liver, pancreatic islets, adipocytes and some neural cells. This hepatocyte nuclear factor is a transcriptional activator for liver-specific genes such as alpha fetoprotein, albumin, tyrosine aminotransferase and transthyretin. FoxA2 is expressed in embryonic endoderm, the germ layer that gives rise to the digestive system, and contributes to the specification of the pancreas and the regulation of glucose homoeostasis. FoxA2 also has roles in neural development. Specifically, FoxA2 cooperates with related FoxA1 in the specification and differentiation of midbrain dopaminergic neurons in a dosage-dependent manner.



Western blot analysis of FoxA2 in definitive endoderm derived from human embryonic stem (ES) cells. *H9 human ES cells (WiCell, Madison, WI) were differentiated to definitive endoderm for 3 days (D'Amour et al, 2005) in RPMI medium supplemented with 0.5% FBS, 1X L-glutamine, and 100 ng/ml Activin A (R&D Systems). Lysates from control ES cells (lane 1) and from day 1 (lane 2) and day 3 (lane 3) differentiated cells were probed with Purified Mouse anti-Human FoxA2 antibody at 1.0 µg/ml. The presence of FoxA2 is demonstrated by the 48-kDa band in human ES-derived definitive endodermal cells (Lane 3), which is absent in H9 human ES cells (Lane 1) and at day 1 of differentiation (Lane 2). Purified Mouse anti-Hsp90 monoclonal antibody (Cat. No. 610418) was used as a gel-loading control (MW 90 kDa).*



Immunofluorescent staining of FoxA2 in definitive endoderm derived from human embryonic stem (ES) cells. *H9 human ES cells (WiCell, Madison, WI) passage 35 grown on an irradiated mouse embryonic feeder layer were differentiated to definitive endoderm for 3 days (D'Amour et al, 2005) in RPMI medium supplemented with 0.5% FBS,1x L-glutamine, and 100 ng/ml Activin A (R&D Systems). The cells were fixed with BD Cytofix buffer (Cat. No. 554655), permeabilized with 0.1% Triton™ X-100, and stained with Purified Mouse anti-Human FoxA2 monoclonal antibody (pseudo-colored green) at 5 µg/mL. The second-step reagent was Alexa Fluor® 488 goat anti-mouse Ig (Life Technologies), and counter staining was with Hoechst 33342 (pseudo-colored blue). The image was captured on a BD Pathway™ 435 Cell Analyzer and merged using BD Attovision™ Software.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at 4°C.

BD Biosciences

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Application Notes

Application

Western blot	Routinely Tested
Bioimaging	Tested During Development
Intracellular staining (flow cytometry)	Tested During Development

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554655	Fixation Buffer	100 ml	(none)
353219	BD Falcon™ 96-well Imaging Plate	NA	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Sodium azide is a reversible inhibitor of oxidative metabolism; therefore, antibody preparations containing this preservative agent must not be used in cell cultures nor injected into animals. Sodium azide may be removed by washing stained cells or plate-bound antibody or dialyzing soluble antibody in sodium azide-free buffer. Since endotoxin may also affect the results of functional studies, we recommend the NA/LE (No Azide/Low Endotoxin) antibody format, if available, for in vitro and in vivo use.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
5. Triton is a trademark of the Dow Chemical Company.

References

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Clevidence DE, Overdier DG, Tao W, et al. Identification of nine tissue-specific transcription factors of the hepatocyte nuclear factor 3/forkhead DNA-binding-domain family. *Proc Natl Acad Sci U S A.* 1993; 90(9):3948-3952. (Biology)

D'Amour KA, Agulnick AD, Eliazer S, Kelly OG, Kroon E, Baetge EE. Efficient differentiation of human embryonic stem cells to definitive endoderm. *Nat Biotechnol.* 2005; 23(12):1534-1541. (Methodology)

Lai E, Prezioso VR, Tao WF, Chen WS, Darnell JE Jr. Hepatocyte nuclear factor 3 alpha belongs to a gene family in mammals that is homologous to the Drosophila homeotic gene fork head. *Genes Dev.* 1991; 5(3):416-427. (Biology)

Lin W, Metzakopian E, Mavromatakis YE, et al. Foxa1 and Foxa2 function both upstream of and cooperatively with Lmx1a and Lmx1b in a feedforward loop promoting mesodiencephalic dopaminergic neuron development.. *Dev Biol.* 2009; 333(2):386-396. (Biology)

Monaghan AP, Kaestner KH, Grau E, Schütz G. Postimplantation expression patterns indicate a role for the mouse forkhead/HNF-3 alpha, beta and gamma genes in determination of the definitive endoderm, chordamesoderm and neuroectoderm.. *Development.* 1993; 119(3):567-578. (Biology)

Thomson JA, Itskovitz-Eldor J, Shapiro SS, et al. Embryonic stem cell lines derived from human blastocysts. *Science.* 1998; 282:1145-1147. (Methodology)