Product Datasheet

AG-2/AGR2 Antibody - BSA Free
NBP2-27393

Unit Size: 0.1 mg

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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NBP2-27393

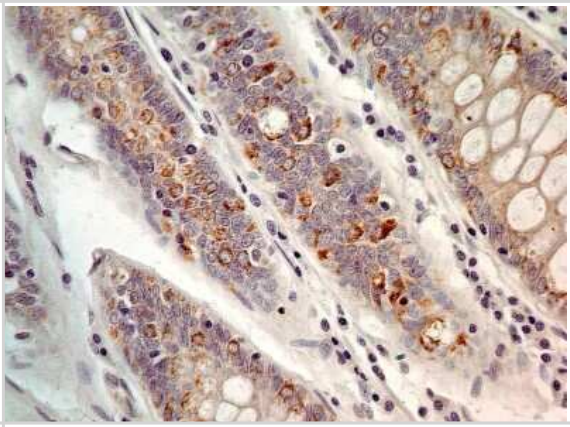
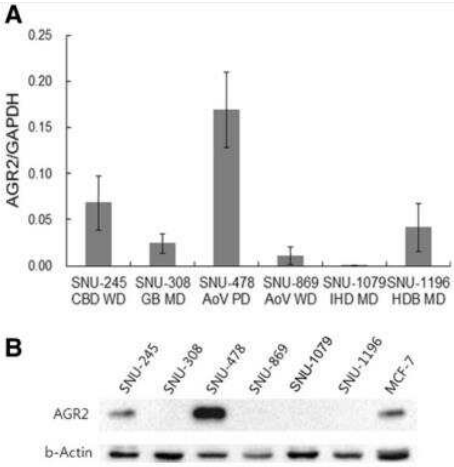
AG-2/AGR2 Antibody - BSA Free

Product Information	
Unit Size	0.1 mg
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.05% Sodium Azide
Isotype	IgG
Purity	Protein G purified
Buffer	PBS

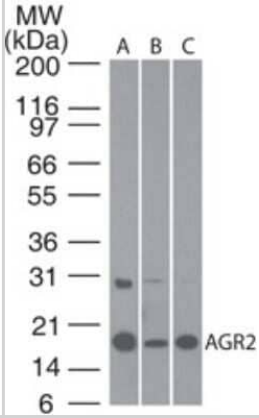
Product Description	
Description	Novus Biologicals Rabbit AG-2/AGR2 Antibody - BSA Free (NBP2-27393) is a polyclonal antibody validated for use in IHC, WB, ICC/IF, Simple Western and IP. Anti-AG-2/AGR2 Antibody: Cited in 18 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	10551
Gene Symbol	AGR2
Species	Human, Mouse
Specificity/Sensitivity	Researchers are encouraged to use the sequence and accession number (NP_006399.1) that were used to design the peptide immunogen in order to assess potential cross-reactivity of the antibody to their species of interest. The AGR2 antibody is specific to AGR2 and does not recognize AGR3 (Verma et al, 2012)
Immunogen	This antibody was developed against synthetic peptides corresponding to amino acids 55-72 of human AGR2.

Product Application Details	
Applications	Western Blot, Simple Western, Immunohistochemistry-Paraffin, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunoprecipitation, Knockdown Validated
Recommended Dilutions	Western Blot 1:100, Simple Western 1:50, Immunohistochemistry reported in scientific literature (PMID 22945649), Immunocytochemistry/ Immunofluorescence reported in scientific literature (PMID 22945649), Immunoprecipitation 1:10-1:500, Immunohistochemistry-Paraffin 1:100~, Immunohistochemistry-Frozen 1:20-1:1000, Knockdown Validated
Application Notes	In Simple Western only 10 - 15 uL of the recommended dilution is used per data point. See Simple Western Antibody Database for Simple Western validation: Tested in MCF-7 lysate 0.5 mg/mL, separated by Size, antibody dilution of 1:50, apparent MW was 22 kDa.

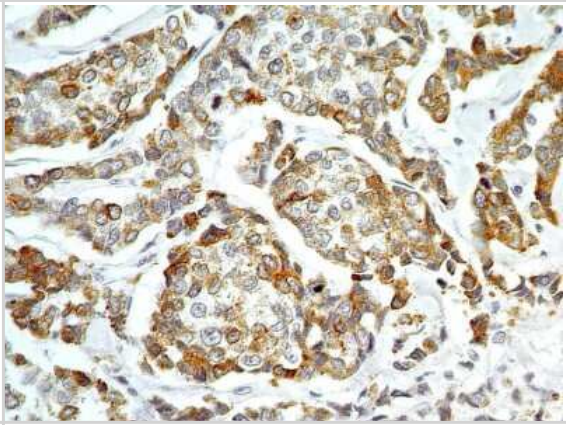
Images

Simple Western: AG-2/AGR2 Antibody [NBP2-27393] - Analysis using the Azide Free version of NBP2-27393. Simple Western lane view shows a specific band for AGR2 in 0.5 mg/ml of MCF-7 lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.	
Western Blot: AG-2/AGR2 Antibody [NBP2-27393] - Alterations of tumor-associated phenotypes in AG-2-silenced SNU-478 cells. AG-2 protein expression in SNU-478:VEC and SNU-478:KDs was detected by western blot analysis with beta-actin as a loading control. The result shown is a representative of three experiments. Image collected and cropped by CiteAb from the following publication (https://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-14-804), licensed under a CC-BY license.	
Immunohistochemistry-Paraffin: AG-2/AGR2 Antibody [NBP2-27393] - Analysis using the Azide Free version of NBP2-27393. Staining of human adenocarcinoma of the colon stained with AGR2 antibody (2-5 ug/ml), peroxidase-conjugate and DAB chromogen. Staining of formalin-fixed tissues is enhanced by boiling tissue sections in 10 mM sodium citrate buffer, pH 6.0 for 10-20 min followed by cooling at RT for 20 min.	
Western Blot: AG-2/AGR2 Antibody [NBP2-27393] - AGR2 expression in cancer cell lines of the biliary tract. AGR2 mRNA levels in six biliary tract cancer cell lines were measured by real-time RT-PCR. The AGR2 transcript levels were normalized against those of the GAPDH. Results shown are means +/- standard deviations of (1/2)CT of target - CT of GAPDH of three experiments. B. AGR2 protein expression was detected by western blot analysis with beta-actin as a loading control. The result shown is a representative of three experiments. Abbreviations: CBD, common bile duct; GB, gall bladder; AoV, ampulla of Vater; IHD, intrahepatic duct; HDB, hepatic duct bifurcation; WD, well differentiated; MD, moderately differentiated; PD, poorly differentiated [24]. Image collected and cropped by CiteAb from the following publication (https://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-14-804), licensed under a CC-BY license.	

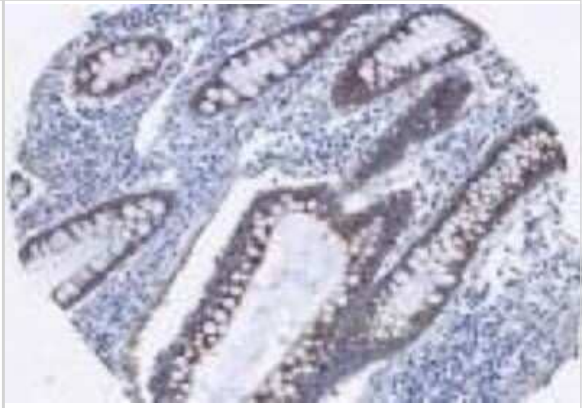
Western Blot: AG-2/AGR2 Antibody [NBP2-27393] - Analysis using the Azide Free version of NBP2-27393. Detection of AGR2 using AGR2 antibody. MCF7 (A), Caco-2 (B) and human stomach lysate (C) probed with AGR2 antibody at 1:100. were used for this test. The higher molecular weight band of variable intensity at ~30 kDa is uncharacterized and may represent a form of AGR2.



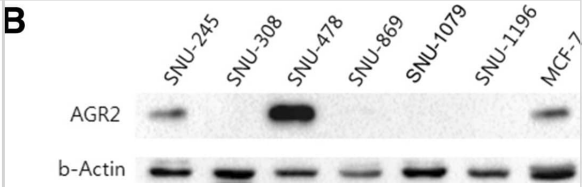
Immunohistochemistry-Paraffin: AG-2/AGR2 Antibody [NBP2-27393] - Analysis using the Azide Free version of NBP2-27393. Staining of human adenocarcinoma of the breast stained with AGR2 antibody (2 ug/ml), peroxidase-conjugate and DAB chromogen. Staining of formalin-fixed tissues is enhanced by boiling tissue sections in 10 mM sodium citrate buffer, pH 6.0 for 10-20 min followed by cooling at RT for 20 min.

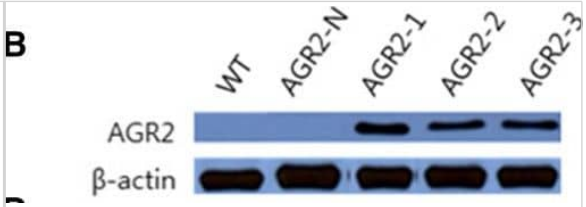


Immunohistochemistry-Paraffin: AG-2/AGR2 Antibody [NBP2-27393] - Staining of AGR2 using AGR2 antibody. Formalin-fixed, paraffin-embedded normal colon tissue probed with AGR2 antibody at 1:100 dilution.



Western Blot: AG-2/AGR2 Antibody [NBP2-27393] - AGR2 expression in cancer cell lines of the biliary tract. A. AGR2 mRNA levels in six biliary tract cancer cell lines were measured by real-time RT-PCR. The AGR2 transcript levels were normalized against those of the GAPDH. Results shown are means ± standard deviations of (1/2)CT of target - CT of GAPDH of three experiments. B. AGR2 protein expression was detected by western blot analysis with β-actin as a loading control. The result shown is a representative of three experiments. Abbreviations: CBD, common bile duct; GB, gall bladder; AoV, ampulla of Vater; IHD, intrahepatic duct; HDB, hepatic duct bifurcation; WD, well differentiated; MD, moderately differentiated; PD, poorly differentiated [24]. Image collected & cropped by CiteAb from the following publication (http://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-14-804), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western Blot: AG-2/AGR2 Antibody [NBP2-27393] - Alterations of tumor-associated phenotypes by overexpression of AGR2 in SNU-869 cells. A. AGR2 expression in the SNU-869 stable transfectants was verified by real-time RT-PCR. The AGR2 transcript level was normalized against that of GAPDH. Results shown are means ± standard deviations of (1/2)CT of target - CT of GAPDH of three experiments. B. AGR2 protein expression in the SNU-869 stable transfectants was detected by western blot analysis with β-actin as a loading control. The result shown is a representative of three experiments. C. Viability of the SNU-869 stable transfectants was measured by the MTT assay. Results shown are means ± standard deviations of three experiments (ANOVA P = 0.008; post hoc analysis by Bonferroni testing: AGR2-2 vs. AGR2-N, P = 0.013). D. The effect of AGR2 overexpression on cell proliferation. Pulsed BrdU incorporation into the SNU-869 stable transfectants was measured by flow cytometry. Percentage of BrdU-positive cells was shown in mean ± standard deviation of four experiments (ANOVA P = 0.053; post hoc analysis by Bonferroni testing: AGR2-2 vs. AGR2-N, P = 0.027). Results shown are representatives of four experiments. E. The effect of AGR2 overexpression on tumor cell invasion of SNU-869 cells. The numbers of invading cells in the transwell invasion assay were determined for SNU-869 stable transfectants. Results shown are means ± standard deviations of three experiments (ANOVA P = 0.003; post hoc analysis by Bonferroni testing: AGR2-2 vs. AGR2-N, P = 0.026). Image collected & cropped by CiteAb from the following publication (http://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-14-804), licensed under a CC-BY license. Not internally tested by Novus Biologicals.	
Alterations of tumor-associated phenotypes in AGR2-silenced SNU-478 cells. A. Expression of AGR2 mRNA in SNU-478:KD (AGR2 knockdown) clones was compared with that in SNU-478:VEC (vector control) by real-time RT-PCR. The AGR2 transcript level was normalized against that of GAPDH. Results shown are means +/- standard deviations of (1/2)CT of target - CT of GAPDH of three experiments. B. AGR2 protein expression in SNU-478:VEC and SNU-478:KDs was detected by western blot analysis with β-actin as a loading control. The result shown is a representative of three experiments. C. Viability of SNU-478:VEC and SNU-478:KDs was measured by the MTT assay. Results shown are means +/- standard deviations of three experiments (ANOVA P = 0.010; post hoc analysis by Bonferroni testing: KD2 vs. VEC, P = 0.016). D. Anchorage-independent growth was examined by colony formation assay in soft agar. The number of colonies formed in the soft agar assay with SNU-478:VEC and SNU-478:KDs. Results shown are means +/- standard deviations of three experiments (ANOVA P = 0.000; post hoc analysis by Bonferroni testing: KD1-3 vs. VEC, P = 0.000). E. The number of invading cells in the transwell invasion assay with SNU-478:VEC and SNU-478:KDs. Results shown are means +/- standard deviations of three experiments (ANOVA P = 0.042). F. Drug sensitivity of SNU-478:VEC and SNU-478:KDs was measured by the MTT assay. Cells plated in a 96-well plate were treated with gemcitabine (20 µg/mL), cisplatin (0.5 µg/mL), or 5-FU (50 µg/mL), and the MTT assay was carried out on day three of the treatments. (ANOVA P = 0.000 for gemcitabine; ANOVA P = 0.048 for cisplatin; ANOVA P = 0.001 for 5-FU). Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/25367337), licensed under a CC-BY license. Not internally tested by Novus Biologicals.	

Publications

Long Huang, Can Yang, Yaodong Wang, Ge Li, Jingjing Pan, Huatian Luo, Zhangwei Wu, Yifeng Tian, Shi Chen, Jiangzhi Chen, Zhixiang Jian Anterior gradient 2 is a novel pro-tumor factor in pancreatic cancer under NF-κB subunit RelA trans-regulation that can be suppressed by eugenic acid. Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie 2021-02-19 [PMID: 33059262]

Li YP, Liu Y, Xiao LM et al. Induction of cancer cell stemness in glioma through glycolysis and the long noncoding RNA HULC-activated FOXM1/AGR2/HIF-1 alpha axis Laboratory investigation; a journal of technical methods and pathology 2022-01-10 [PMID: 35013529] (WB, IF/IHC, Human)

Alonso-Curbelo D, Ho YJ, Burdziak C et al. A gene-environment-induced epigenetic program initiates tumorigenesis Nature 2021-02-01 [PMID: 33536616]

Pajdzik K, Wilamowski M, Zurawek D et al. Anterior gradient 2 promotes tumorigenesis through upregulation of CCAAT-enhancer binding protein beta and hypoxia-inducible factor-2 alpha and subsequent secretion of interleukin-6, interleukin-8, and vascular endothelial growth factor in the Caki-1 clea IUBMB Life 2020-08-01 [PMID: 32593213]

Kim N, Kim HK, Lee K et al. Single-cell RNA sequencing demonstrates the molecular and cellular reprogramming of metastatic lung adenocarcinoma Nat Commun 2020-05-08 [PMID: 32385277] (IHC-P, Human)

Kim Jihye, Chung Joon-Yong, Kim Tae-Joong et al. Genomic Network-Based Analysis Reveals Pancreatic Adenocarcinoma Up-Regulating Factor-Related Prognostic Markers in Cervical Carcinoma. Frontiers in Oncology 2018-10-23 [PMID: 30406031] (IHC-P, Human)

Mito K, Saito M, Morita K et al. Clinicopathological and prognostic significance of MUC13 and AGR2 expression in intraductal papillary mucinous neoplasms of the pancreas. Pancreatology 2018-04-03 [PMID: 29650332] (Human)

Dumartin L, Alrawashdeh W, Trabulo SM et al. ER stress protein AGR2 precedes and is involved in the regulation of pancreatic cancer initiation. Oncogene. 2016-12-12 [PMID: 27941872] (WB, Human)

Kim Sj, Jun S, Cho Hy et al. Knockdown of anterior gradient 2 expression extenuates tumor-associated phenotypes of SnU-478 ampulla of Vater cancer cells BMC Cancer et al. 2014-11-08 [PMID: 25367337] (WB, Human)

Details:
AG-2/alpha-AGR2 antibody used for WB on lysates of human biliary tract cancer cell lines - SnU-478:VEC and AGR2-silenced SnU-478 cells/ SnU-478:KDs (Figure 2B), and in SnU-869 stable transfectants/AGR2 overexpression SnU-869 cells (Figure 4B)

Mizuuchi Y, Aishima S, Ohuchida K et al. Anterior gradient 2 downregulation in a subset of pancreatic ductal adenocarcinoma is a prognostic factor indicative of epithelial-mesenchymal transition Lab. Invest. 2014-11-24 [PMID: 25418581] (IHC-P, WB, Human)

Details:
AG-2 / AGR2 antibody used for IHC at 1:100 dilution on formalin-fixed paraffin-embedded human pancreatic ductal adenocarcinoma (PDAC) tissues - endogenous peroxidase blocked with methanol and 0.3% H2O2 for 30 min, antigen retrieval by boiling slides in a microwave in 10 mM citrate buffer pH 6.0 for 20 min, primary incubated at 4C On followed by labelling with biotin-free horseradish peroxidase enzyme-labeled polymer - DAB. Antibody also used for WB on Aspc-1 and Hs766T cells treated with AGR2-specific siRnA (FIGURE 5b). AGR2 WB also performed on pancreatic ductal adenocarcinoma / PDAC cells with pancreatic stellate cell /PSCs and compared with monocultures (FIGURE 6D).

Park SW, Zhen G, Verhaeghe C et al. The protein disulfide isomerase AGR2 is essential for production of intestinal mucus. Proc Natl Acad Sci U S A. 2009-04-28 [PMID: 19359471] (IHC-P, IHC-Fr)

Details:
1. IHC (frozen): Mouse intestinal villi and colon mucous granules, Fig 1 & B. 2. IHC (paraffin): The specifity of the antibody was confirmed by IHC (p) in AGR2 wildtype and knock out mice. Staining was seen in AGR2 +/+ but not AGR2 -/- mice, Fig 2A-2D. 3.

Verma S, Salmans ML, Geyfman M et al. The estrogen-responsive Agr2 gene regulates mammary epithelial proliferation and facilitates lobuloalveolar development. Dev Biol. 2012-09-15 [PMID: 22819674] (WB, Mouse)

Details:
Product Cited: AGR2 (IMG-5279A). 1. WB: Recombinant AGR2 and AGR2, Fig S1. The AGR2 antibody recognized recombinant AGR2 but not recombinant AGR3. 2. IHC (paraffin): Wildtype (WT), transgenic AGR2 and knockout AGR2 Mouse mammary glands, Figs 1B, 2B, 4D. N

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NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

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