Product Datasheet

Survivin Antibody - BSA Free
NB500-201

Unit Size: 0.1 ml

Aliquot and store at -20C or -80C. Avoid freeze-thaw cycles.

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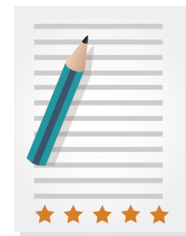


NB500-201

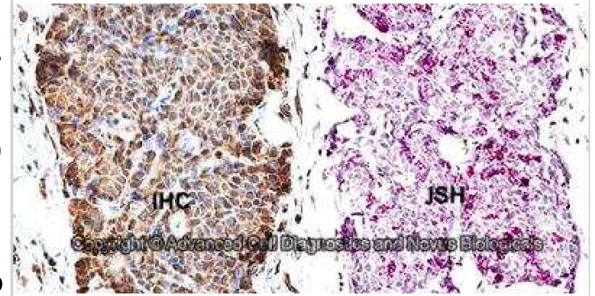
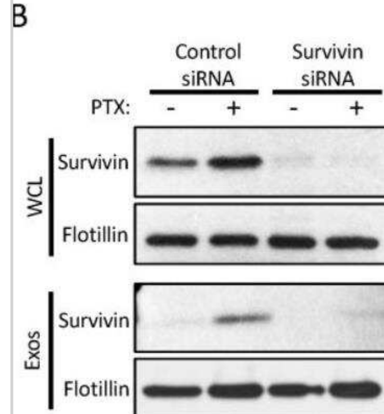
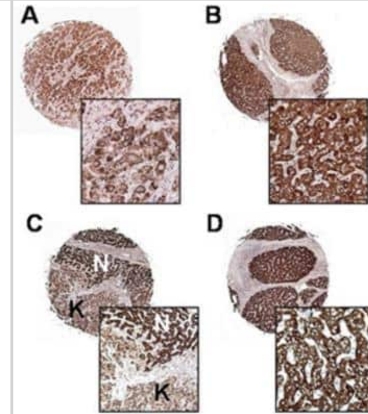
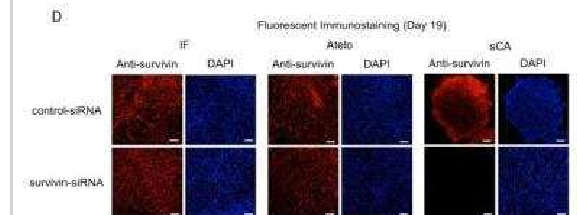
Survivin Antibody - BSA Free

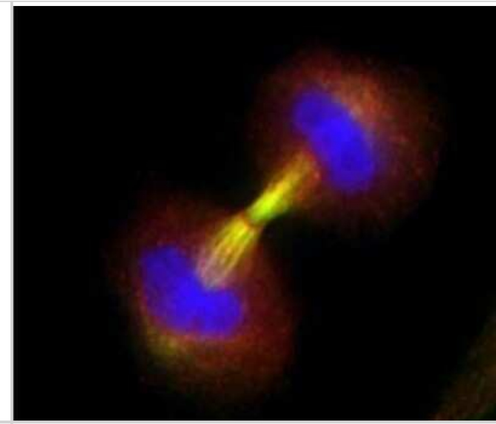
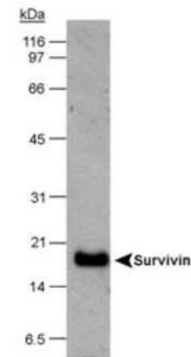
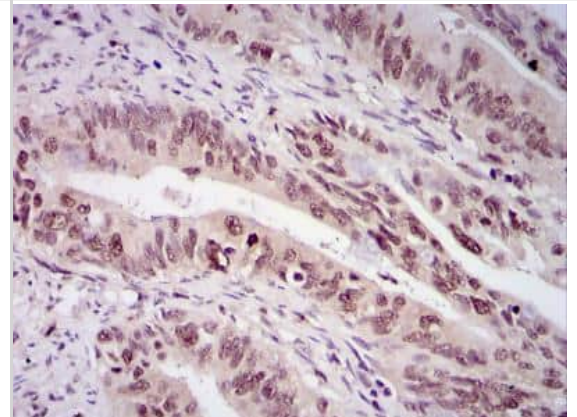
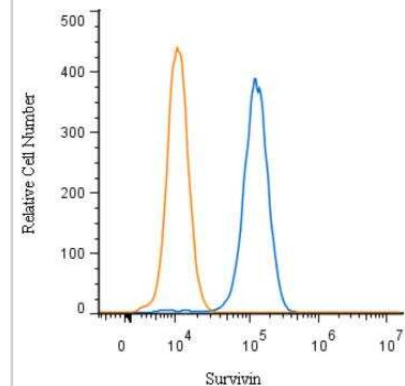
Product Information	
Unit Size	0.1 ml
Concentration	1 mg/ml
Storage	Aliquot and store at -20C or -80C. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS
Target Molecular Weight	16 kDa

Product Description	
Host	Rabbit
Gene ID	332
Gene Symbol	BIRC5
Species	Human, Mouse, Rat, Canine, Feline, Guinea Pig, Hamster
Reactivity Notes	Hamster reactivity reported in scientific literature (PMID: 23405201). Guinea Pig reactivity reported in scientific literature (PMID: 21364656).
Immunogen	This Survivin Antibody was developed against full length recombinant human Survivin [UniProt# O15392]

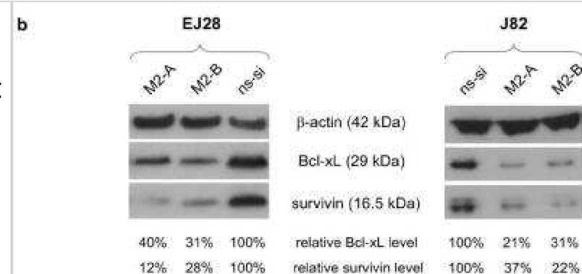
Product Application Details	
Applications	Western Blot, Simple Western, ELISA, Flow Cytometry, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin, Immunoprecipitation, Chromatin Immunoprecipitation (ChIP), Dual RNAscope ISH-IHC, Knockdown Validated
Recommended Dilutions	Western Blot 1:1000, Simple Western 1:25, Flow Cytometry reported in scientific literature (PMID 17875988; 33737139), ELISA reported in scientific literature (PMID 24102797), Immunohistochemistry 1:50-1:100, Immunocytochemistry/ Immunofluorescence 1:50-1:250, Immunoprecipitation 1:10-1:500, Immunohistochemistry-Paraffin 1:50-1:500, Immunohistochemistry-Frozen reported in scientific literature (PMID 12671708), Chromatin Immunoprecipitation (ChIP) 1:10-1:500, Knockdown Validated, Dual RNAscope ISH-IHC
Application Notes	In WB, a band at approx. 16.5 kDa can be seen. For IHC, prior antigen retrieval (pressure cooking) is recommended for cytoplasmic and nuclear detection of Survivin. In Simple Western only 10 - 15 uL of the recommended dilution is used per data point. Separated by Size-Wes, Sally Sue/Peggy Sue. The observed molecular weight of the protein may vary from the listed predicted molecular weight due to post translational modifications, post translation cleavages, relative charges, and other experimental factors.

Images

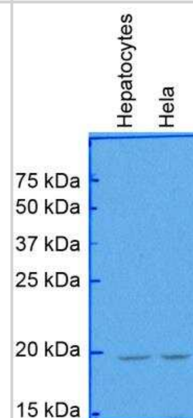
Dual RNAscope ISH-IHC: Survivin Antibody [NB500-201] - Formalin-fixed paraffin-embedded tissue sections of human esophagus squamous cell carcinoma were probed for Survivin mRNA (ACD RNAScope Probe, [465361]; Fast Red chromogen, ACD [322360]). Adjacent tissue section was processed for immunohistochemistry using rabbit polyclonal [NB500-201] at 1.5ug/mL with overnight incubation at 4 degrees Celsius followed by incubation with anti-rabbit IgG VisUCyte HRP Polymer Antibody [VC003] and DAB chromogen (yellow-brown). Tissue was counterstained with hematoxylin (blue). Specific staining was localized to tumor cells.	
Knockdown Validated: Survivin Antibody [NB500-201] - Western blot analysis using Survivin and flotillin antibodies was performed on lysates of DMSO- and PTX-treated MDAMB231 cells ectopically expressing either control siRNA or Survivin siRNA (panels labeled WCL), as well as on the exosomes these cells generated (panels labeled Exos). Image collected and cropped by CiteAb from the following publication (http://www.mdpi.com/2072-6694/8/12/111) licensed under a CC-BY license.	
Immunohistochemistry: Survivin Antibody [NB500-201] - Protein expression pattern of Survivin in HCC tissues and non-neoplastic liver parenchyma. IAP members immunoreactivity was estimated by tissue microarray in a subset of HCC patients (n = 40). A-D, Representative Survivin cytoplasmatic immunostaining in a tumor core (A), in a tumor proximal to cirrhosis (C, N: cirrhosis, K: HCC), and in adjacent and long-distance non-neoplastic parenchyma (B and D, respectively). Image collected and cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/19397802) licensed under a CC-BY license.	
Knockdown Validated: Survivin Antibody [NB500-201] - Anti-tumor effects and functional evidence of sCA-survivin-siRNA in HCT116 and HT29 solid tumor models. Immunostaining of survivin in the tumor tissues on day 19 using [NB500-201]. Scale bar, 50 um. Image collected and cropped by CiteAb from the following publication (http://dx.plos.org/10.1371/journal.pone.0116022) licensed under a CC-BY license.	

Immunocytochemistry/Immunofluorescence: Survivin Antibody [NB500-201] - Analysis using the HRP conjugate of [NB500-201]. Staining of Telophase with accumulation of survivin in the midbodies of two daughter cells. Survivin detection using [NB500-201].	
Western Blot: Survivin Antibody [NB500-201] - Analysis of 30ug of HeLa whole cell lysate [NB800-PC1] using rabbit polyclonal [NB500-201] at 1ug/ml. Detection was performed using ECL method with 1 minute exposure. Band detected at higher molecular weight than the predicted MW (16 kDa).	
Immunohistochemistry-Paraffin: Survivin Antibody [NB500-201] - Immunohistochemical staining of Survivin in human rectal cancer using [NB500-201] and DAB with hematoxylin counterstain.	
Flow Cytometry: Survivin Antibody [NB500-201] - An intracellular stain was performed on HeLa cells with [NB500-201] and a matched isotype control. Cells were fixed with 4% PFA and then permeablized with 0.1% saponin. Cells were incubated in an antibody dilution of 2.5 ug/mL for 30 minutes at room temperature, followed by Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, Dylight 550.	

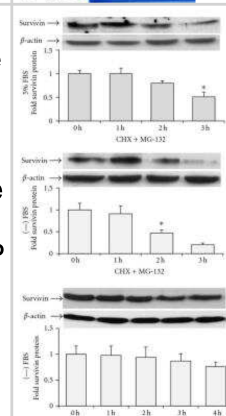
Western Blot: Survivin Antibody [NB500-201] - Western blot analysis using Survivin Antibody [NB500-201]. Effects of siRNA transfection on the expression of Bcl-xL and survivin. Bcl-xL and survivin protein content detected by Western Blotting 48 h after transfection. Bcl-xL and survivin levels are shown normalized to the reference protein beta-actin and relative to the ns-si control. Image collected and cropped by CiteAb from the following publication (http://www.mdpi.com/1422-0067/14/6/12297) licensed under a CC-BY license.



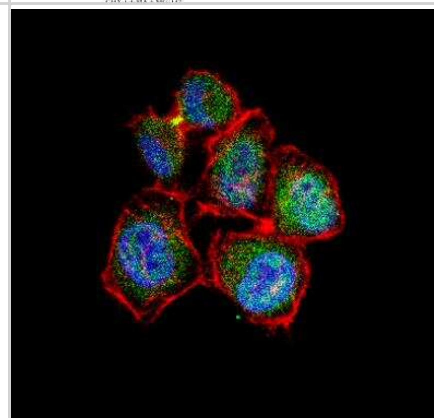
Western Blot: Survivin Antibody [NB500-201] - Analysis of Survivin in human hepatocytes from cancer patient (left) and HeLa cell lysate (right) using [NB500-201]. Image from verified customer review. Note: bands detected at higher molecular weight than predicted (16 kDa)

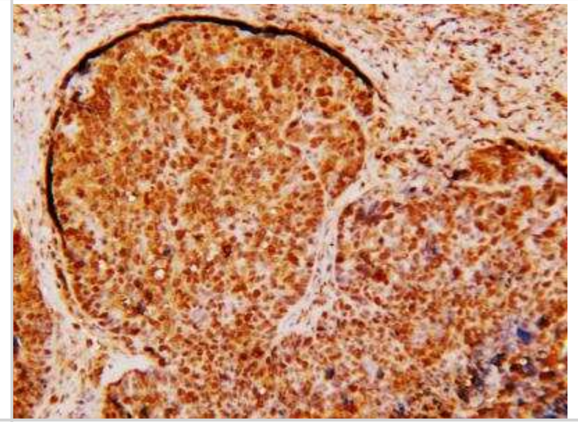
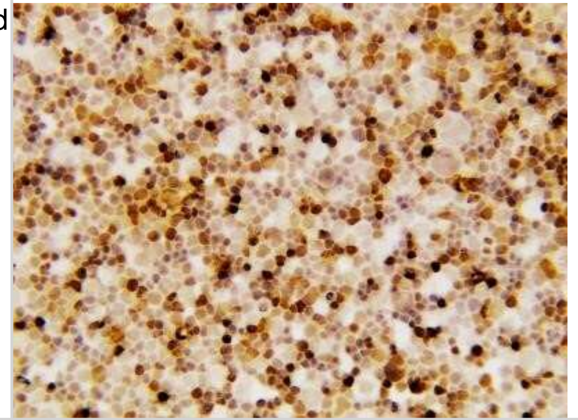
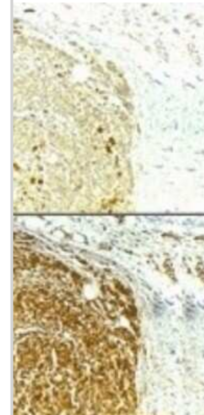
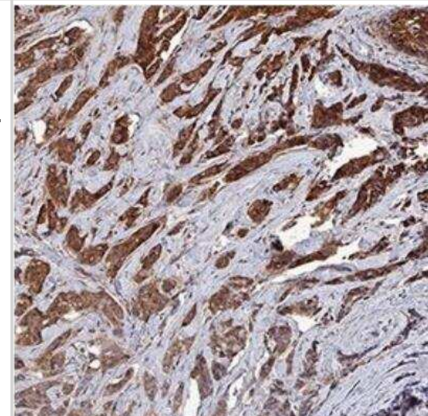


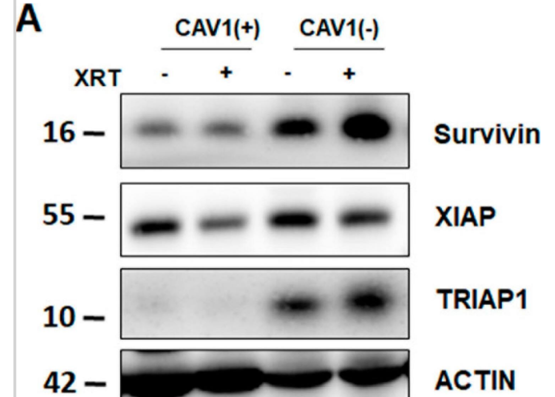
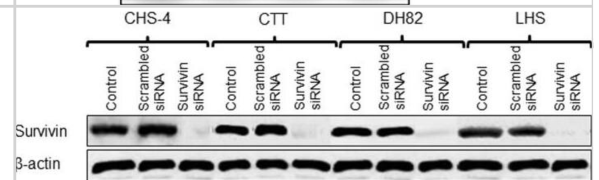
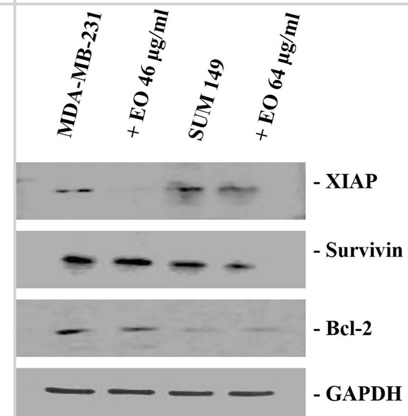
Western Blot: Survivin Antibody [NB500-201] - Western blot analysis using [NB500-201]. Survivin protein is degraded by ubiquitin proteasome in serum-free and serum-containing media. Western blots and protein quantitation graphs showing that addition of MG-132 proteasome inhibitor (10 uM) extended survivin protein half-life in serum-free and serum-containing media. One representative western blot out of triplicate experiments was shown for each treatment and condition. *Indicates the time at which survivin protein is half of the amount at 0 hours (half-life), P < 0.02. Image collected and cropped by CiteAb from the following publication (http://www.hindawi.com/journals/grp/2012/897678/) licensed under a CC-BY license.



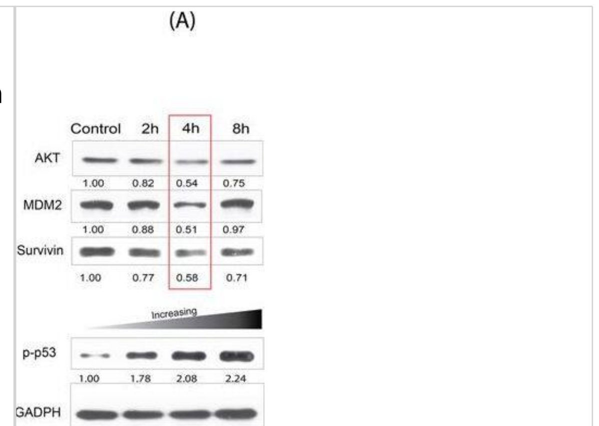
Immunocytochemistry/Immunofluorescence: Survivin Antibody [NB500-201] - Analysis of HeLa cells using Survivin Antibody ([NB500-201], 1:10). An Alexa Fluor 488-conjugated Goat to rabbit IgG was used as secondary antibody (green). Actin filaments were labeled with Alexa Fluor 568 phalloidin (red). DAPI was used to stain the cell nuclei (blue).



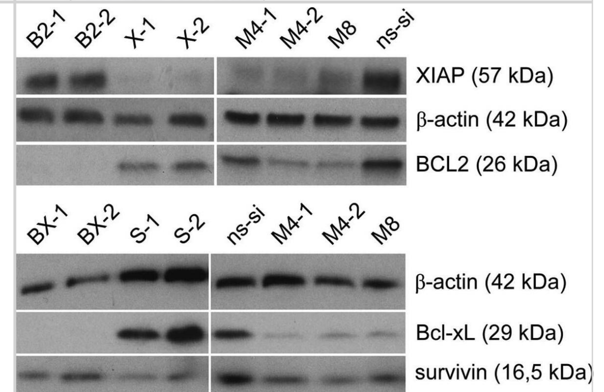
Immunohistochemistry-Paraffin: Survivin Antibody [NB500-201] - Analysis of Survivin in ovarian cancer tissue using [NB500-201]. Image from verified customer review.	
Immunohistochemistry: Survivin Antibody [NB500-201] - HRP conjugated Survivin expression in BIRC5 transfected 293T cells using Survivin Antibody [NB500-201]. Image from verified customer review.	
Immunohistochemistry: Survivin Antibody [NB500-201] - Immunohistochemical analysis using [NB500-201]. The top photo is a control stain and the bottom photo is anti-survivin staining of melanoma. Photo courtesy of Dr. Dario Altieri, Yale University.	
Immunohistochemistry-Paraffin: Survivin Antibody [NB500-201] - Survivin shows lysates of human neuroblastoma cell line. Polyvinylidene fluoride (PVDF) membrane was probed with 1:200 dilution of 0.5 ug/mL of rabbit polyclonal [NB500-201], followed by 1:2000 dilution of goat anti-rabbit IgG.	

Simple Western: Survivin Antibody [NB500-201] - Simple Western analysis using [NB500-201]. Lane view shows a specific band for Survivin in 1.0 mg/ml of HeLa lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system. Theoretical molecular weight: 16 kDa.	
Radiation-resistant Caveolin-1 (CAV1)-silenced fibroblasts differentially express and secrete the apoptosis inhibiting protein TP53-regulated inhibitor of apoptosis 1 (TRIAP1).	
Expression of survivin protein in cell lines after transfection with siRNA.Survivin protein expression in CHS cell lines was evaluated by western blotting at 48 h after transfection with scrambled and survivin siRNA.	
Western blotting analysis in MDA-MB-231 cells and SUM 149 cells.The cells were treated for 24 h with C. juttae essential oil (EO) (46 and 64 µg/ml, respectively). The data shown are the results of a representative experiment.	

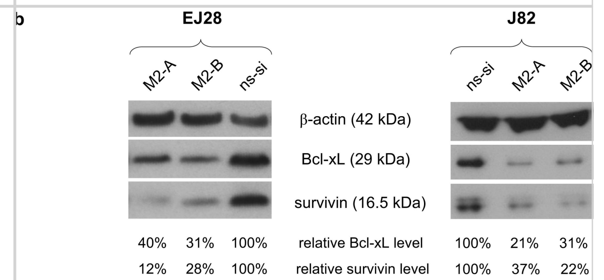
(A) Levels of suppression of Survivin and expression of p53 for 2 h, 4 h and 8 h for MBA-MD 231 cells. (B) Light microscopy images of the three cell types using nanoconstruct with the AS1411 aptamer. Cell population had been observed to reduce for the MBA-MD 231 cells and AGS while the non-tumorigenic cells MCF-10a did not exhibit any appreciable loss in cell number as well as cell morphology.



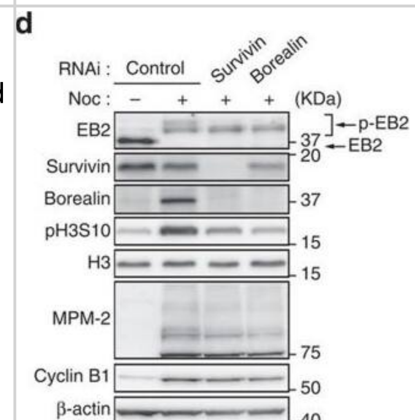
Detection of BCL2, Bcl-xL, XIAP and survivin protein content by western blotting 48 h after transfection with a total of 40 nM siRNA in EJ28 bladder cancer cells. Beta-actin was used for loading control.



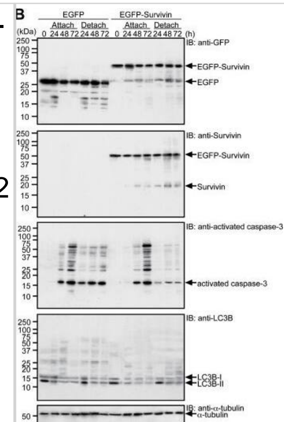
Effects of siRNA transfection on the expression of Bcl-xL and survivin. (a) Relative mRNA expression levels of Bcl-xL and survivin in EJ28 and J82 bladder cancer cells, 48 h after transfection. Expression values are normalized to the reference gene TBP and are shown relative to the control siRNA "ns-si" (=100%). Values represent averages of two independent experiments with their mean deviation; (b) Bcl-xL and survivin protein content detected by Western Blotting 48 h after transfection. Bcl-xL and survivin levels are shown normalized to the reference protein beta-actin and relative to the ns-si control. Image collected and cropped by CiteAb from the following publication (http://www.mdpi.com/1422-0067/14/6/12297), licensed under a CC-BY licence.



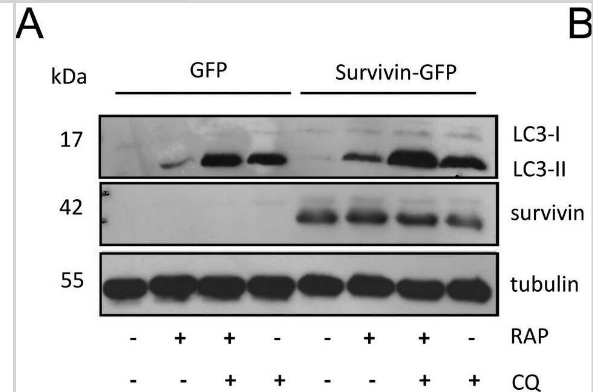
Aurora B phosphorylates EB2.(c,d) HeLa cells were transfected with siRNAs as indicated; after 24 h, the cells were treated with nocodazole for 4 h. Mitotic cells were harvested by mitotic shake-off. Image collected and cropped by CiteAb from the following publication (https://www.nature.com/articles/ncomms11117), licensed under a CC-BY licence.



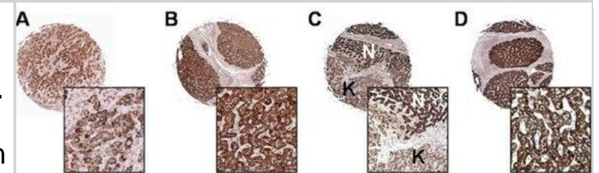
Overexpression of Survivin predominantly protects anoikis. B). Caspase-3 activation in EGFP- and EGFP-Survivin-expressing cells after serum starvation under attached or detached culture conditions. The experimental protocol was illustrated in Figure S1. Transfection frequencies were checked by using fluorescence microscopy and confirmed to be 80-90%. Cells were kept in serum-free medium for 24-72 h, harvested, and lysed in Laemmli SDS-sample buffer for immunoblot analysis with anti-GFP, anti-Survivin, anti-activated caspase-3 antibody, anti-LC3B, and anti-alpha-tubulin. Image collected and cropped by CiteAb from the following publication (https://dx.plos.org/10.1371/journal.pone.0055710), licensed under a CC-BY licence.



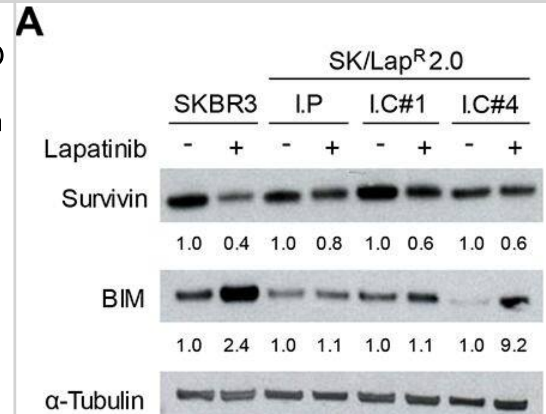
Survivin regulates autophagic flux. (A) U2OS cells stably expressing survivinWTGFP or GFP alone were treated with RAP (200 nM) and CQ (120 uM) for 2 h, then lysed and immunoblotted with anti-LC3, anti-survivin and anti-tubulin antibodies. Immunoblot shown is representative of four independent experiments. Image collected and cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/30348810), licensed under a CC-BY licence.

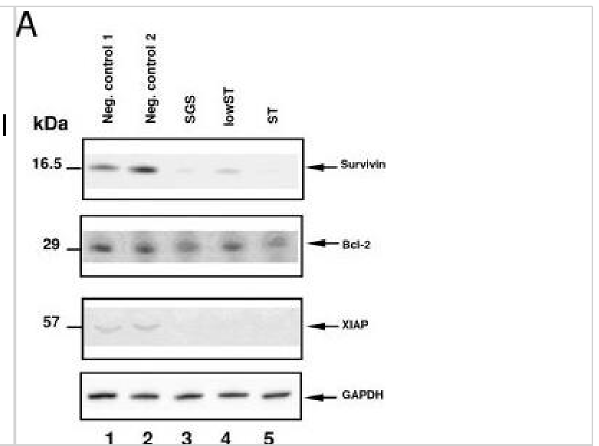


Protein expression pattern of Survivin, XIAP and XAF1 in HCC tissues and non-neoplastic liver parenchyma. IAP members immunoreactivity was estimated by tissue microarray in a subset of HCC patients (n = 40). A-D, Representative Survivin cytoplasmatic immunostaining in a tumor core (A), in a tumor proximal to cirrhosis (C, N: cirrhosis, K: HCC), and in adjacent and long-distance non-neoplastic parenchyma (B and D, respectively). XIAP marked (score 12) and moderate (score 8) immunoreactivity is shown for HCC (E and I, respectively) as well as for cirrhosis (F and L, respectively). G and H, Nuclear XAF1 staining is shown for tumor and non-neoplastic liver whereas XAF1 cytoplasmatic expression in HCC and cirrhosis is shown in panels M and N, respectively. Original magnification x50 and x250, for tissue cores and insets, respectively. Image collected and cropped by CiteAb from the following publication (https://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-9-125), licensed under a CC-BY licence.

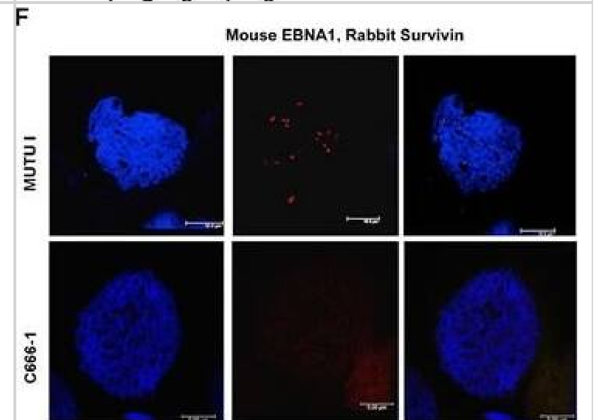


Survivin and BIM expression in response to lapatinib. Western analysis of Survivin and BIM protein levels after 24 hour exposure to 0.1% DMSO (-) or 2 uM lapatinib (+) in lapatinib-resistant cells (A), cells overexpressing t-Darpp (B), or SK/HerR cells transiently transfected with siRNA targeted to GFP (siCtrl) or Darpp-32/t-Darpp (siDp) for 72 hours (C). alpha-Tubulin was used as a loading control. Protein expression was quantified using ImageJ software. Data was normalized to alpha-Tubulin levels and expressed as the fold change in protein level after lapatinib treatment, relative to the DMSO control, for each cell line. Image collected and cropped by CiteAb from the following publication (https://www.oncotarget.com/lookup/doi/10.18632/oncotarget.5311), licensed under a CC-BY licence.

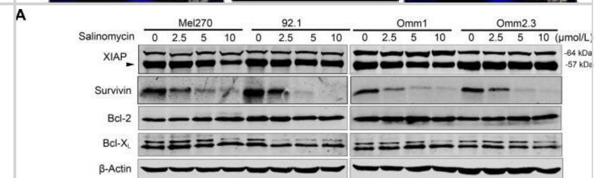




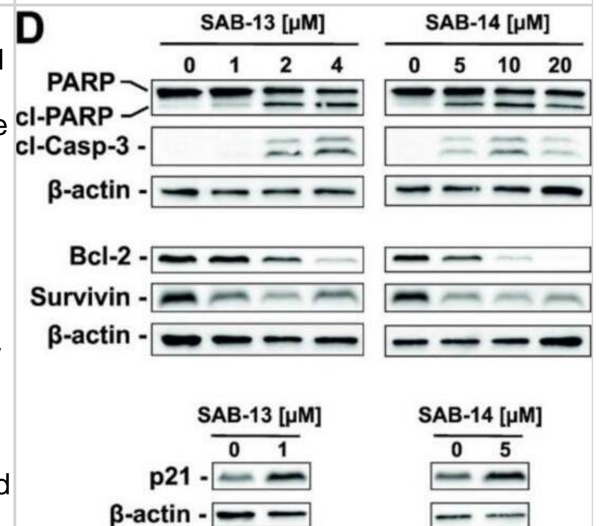
Gene-silencing of Bcl-2, Survivin and XIAP. Western blot showed efficient silencing in transfected MiaPaCa-2 (A) and AsPC-1 cells (B). 50,000 cells/well were single-transfected with carrier solution (lane 1) and siRNA against Luciferase (lane 2) as control. SGS, lowST and ST all effectively silenced the three target genes (lane 3-5). Efficient knock-down was also shown in the lowST group by RT-PCR in MiaPaCa-2 (C) and AsPC-1 cells (D). White bars show controls, grey bars signify transfected cells. All samples were normalized to beta-Actin as a house-keeping gene. SGS = Simultaneous gene silencing; lowST = Low dose siRNA transfection; ST = Standard dose siRNA transfection. Image collected and cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/20646298), licensed under a CC-BY licence.



NPC-derived EBNA1 is compromised for interaction with Survivin. F). In situ Proximity Ligation Assay (in situ PLA) is shown for interphase cells from either MUTU-I or C666-1 using mouse anti-EBNA1 and rabbit anti-Survivin. Image collected and cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/28077791), licensed under a CC-BY licence.

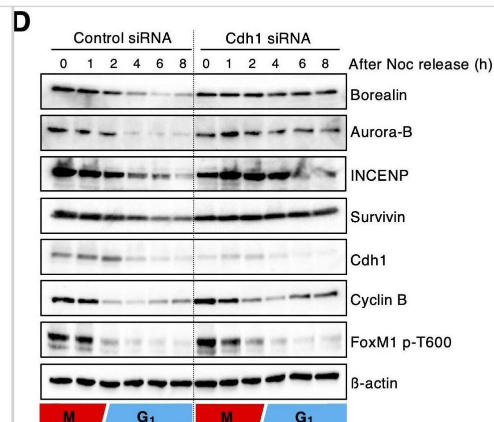


Survivin is essential for the salinomycin-induced apoptosis in UM cells. A) UM cells were treated with salinomycin for 24 h and the protein levels of apoptosis-related proteins were detected by Western blot. Image collected and cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/31718679), licensed under a CC-BY licence.

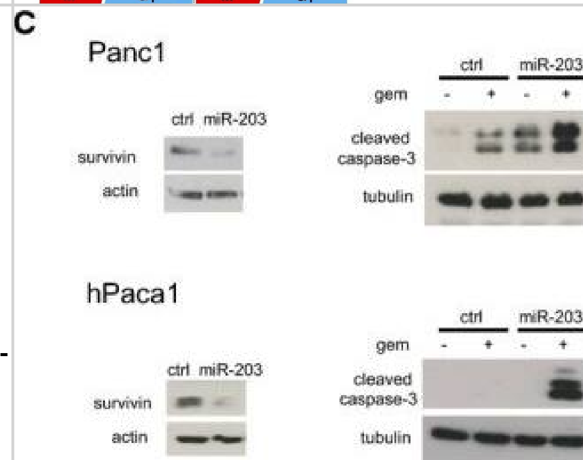


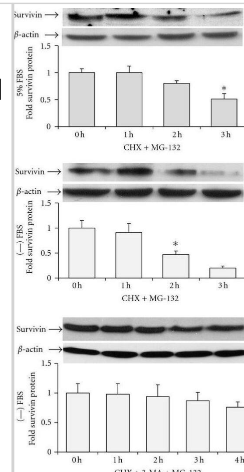
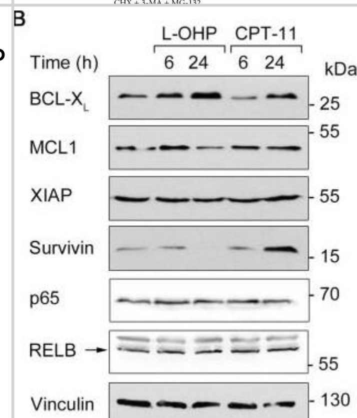
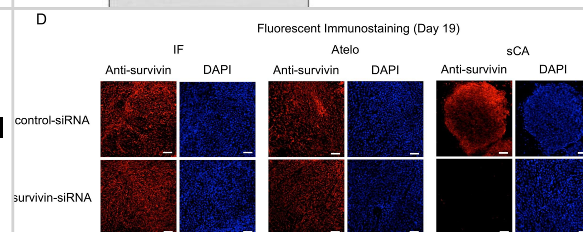
Pro-apoptotic activity of SAB-13 and SAB-14. (A-C,E,F), FACS analysis of the cells after 48 h treatment. Analysis of apoptosis induction in 22Rv1 (A) and PC-3 cells (B) using Annexin-V-FITC/propidium iodide (PI) double staining. PC-3 cells were pre-treated with 100 uM of pan-caspase inhibitor z-VAD(OMe)-fmk (zVAD) for 1 h and then treated with indicated concentrations of the drugs for 48 h (B). Viable cells (Annexin-V-FITC (-)/PI(-), LL quadrant) or early apoptotic cells (Annexin-V-FITC(+)/PI(-), LR quadrant) were quantified using the Cell Quest Pro software (C) (mean +/- SEM; n = 3; * $p < 0.05$, Student's t-test). (D) Western blotting analysis of the protein expression in 22Rv1 cells after 48 h of treatment. beta-actin was used as a loading control (mean +/- SEM; n = 3; one-way ANOVA test). Anisomycin (Aniso; treatment with 10 uM for 48 h) was used as a positive control. (E,F) Cell cycle analysis of 22Rv1 cells using PI staining, apoptotic cells were detected as sub-G1 population (E) (mean +/- SEM; n = 3; * $p < 0.05$, one-way ANOVA test). Image collected and cropped by CiteAb from the following publication (https://pubmed.ncbi.nlm.nih.gov/32403427), licensed under a CC-BY licence.

Short□term nicotine exposure does not alter Lypd6, Lynx1, or Ly6H levels in the brain. Lypd6, Lynx1, Ly6H, and β2 nAChR subunit protein levels were analyzed in (a) frontal cortex (FC) and hippocampal (HIP) tissue from rats administered nicotine (0.4 mg/kg s.c., twice daily) or vehicle (0.9% saline) for 7 days from day 8–14 or (b) 54–60 (n = 8). (c and d) Representative images of western blots summarized in (a) and (b), respectively. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/27344019), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

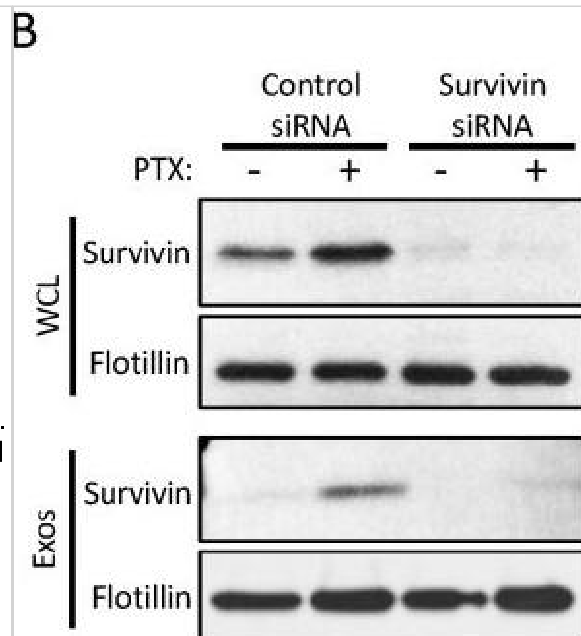


UroA/UAS03 enhance tight junction proteins in AhR-dependent manner. a HT29 cells were treated with vehicle (DMSO-0.01%)/UroA/UAS03 (50 μM) for 24 h. mRNA levels of Cytochrome P450 1A1 (Cyp1A1) was measured by RT PCR. b Cyp1A1 protein levels were measured using immunoblots and quantified band intensities by Image J software. c Cyp1A1 enzyme activity was measured by P450-Glo Cyp1A1 assay. HT29 cells were treated with UroA or UAS03 (0.1, 1, 10, 25, 50 μM) or FICZ (0.1, 1, 10, 25, 50 nM) for 24 h and enzyme Cyp1A1 activity was measured. d C57BL/6 and AhR−/− (n = 3) mice were treated orally with Vehicle (0.25% CMC), UroA or UAS03 (20 mg/kg) for 1 week and Cyp1A1 activity was measured in colons and livers by ethoxyresorufin-O-deethylase (EROD) assay. e The cells expressing AhR-reporter (luciferase) were treated with Veh or UroA/UAS03 or ellagic acid (EA) or MeBio (AhR high affinity ligand) for 6 h and fold change of luminescence over vehicle treatment was measured. f Immunofluorescence confocal images of HT29 cells treated with vehicle/UroA/UAS03 (50 μM) for 6 h. The cells were stained with anti-AhR antibody (red) and DAPI (blue). Relative fluorescence (n = ~20 cells) in the cytosol and nucleus was measured. The scale bar indicates 10 μm. g AhR levels in cytosol and nuclear fractions of HT29 cells treated for 2 h with Veh or UroA/UAS03 (50 μM). h AhR or i Cyp1A1 was knocked down using siRNA in HT29 cells and the cells were treated with vehicle/UroA/UAS03 (50 μM) for 24 h and immnunoblots were performed to detect expression of AhR, Cyp1A1, and Cldn4. Scrambled (Sc) siRNA transfections were used as controls. Immunoblots were quantified using Image J software. The data is representative of two independent repeats with triplicate wells for each treatment. Statistics performed using unpaired t-test using Graphpad Prism software. All in vitro studies were performed in triplicates. Error bars, ±SEM; ***p < 0.001; **p < 0.01; **p < 0.05. Source Data are provided as a Source Data File Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/30626868), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

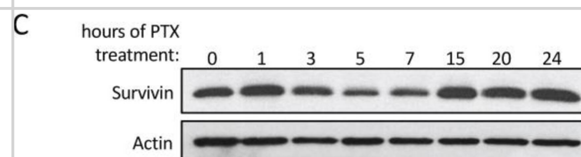


Characterization of MSCmix and NCSCmix isolated from the bone marrow of adult Wnt1-CRE/R26R-LacZ mice. After recombination, NCSCs from Wnt1-CRE/R26R-LacZ mice express LacZ gene. MSCs did not undergo Cre/Lox recombination and conserved the PGK-Neo cassette (a). MSCmix are adherent fibroblast-like cells, do not express β-galactosidase (b) or Sox2 c (red), slightly express Nestin (c) (green), p75NTR (d) (red), and Sca-1 (d) (green). NCSCmix have a similar morphology, express β-galactosidase (e), Nestin (f) (green), Sox2 (f) (red) and p75NTR (g) red), but not Sca-1(g) (green). Scale bar = 20 μm. MSC mesenchymal stem cell, NCSC neural crest stem cell Image collected and cropped by CiteAb from the following open publication (https://stemcellres.biomedcentral.com/articles/10.1186/s13287-015-0202-2), licensed under a CC-BY license. Not internally tested by Novus Biologicals.	
Aryl hydrocarbon receptor interacting protein (AIP) immunostaining.A and B—Examples of low AIP expression; C and D: Examples of high AIP expression; E—Normal human pituitary staining with omitting primary antibody (negative control); F—Normal human pituitary staining with AIP (positive control); Scale bar = 1000 μm. Image collected and cropped by CiteAb from the following open publication (https://dx.plos.org/10.1371/journal.pone.0117107), licensed under a CC-BY license. Not internally tested by Novus Biologicals.	
Repression of p21 by APE1 in p53-null cells and effect of ectopic p53 in this repression.(A & B) Real Time RT-PCR analysis showing relative quantitation of p21 transcript level in (A) HCT116p53null cells with WT and NΔ42 APE1 overexpression; *: p value (n=4) calculated from control (empty vector transfection) vs. WT or NΔ42 APE1 overexpression, and (B) control (control siRNA) vs. APE1-depleted HCT116p53null cells; *: p value <0.05 (n=4) calculated from control vs. APE1-depleted cells. (C) Effect of ectopic p53 expression on p21 transcript level in control vs. APE1-depleted HCT116p53null cells. First, cells were transfected with control siRNA or APE1 siRNA, the next day both the cell types were again transfected with empty vector or p53 expression vector and after 48 hrs the cells were harvested; signal from empty vector transfection in both control and APE1-depleted cells were set as reference samples; *: p value <0.05 (n=3) calculated based on the effect of ectopic p53 expression over empty vector transfection in control vs. APE1-depleted cells. (D) Effect of APE1 depletion in control (empty vector transfected) vs. ectopic p53-expressing HCT116p53null cells; the same experiment was performed as in C but analyzed differently; signal from control siRNA-transfected cells in both empty vector transfected and ectopic p53 expressing cases were set as reference samples; *: p value <0.05 (n=3) calculated based on the effect of APE1-depletion in empty vector transfected vs. ectopic p53 expressing cells. (E) Representative Western analysis of p53, APE1, p21 and α-Tubulin levels in the same HCT116p53null cells as in B–D. (F & G) Real Time RT-PCR analysis of p21 level in Saos2 cells as in C & D. *: p value <0.05 (n=2). Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/23874636), licensed under a CC-BY license. Not internally tested by Novus Biologicals.	

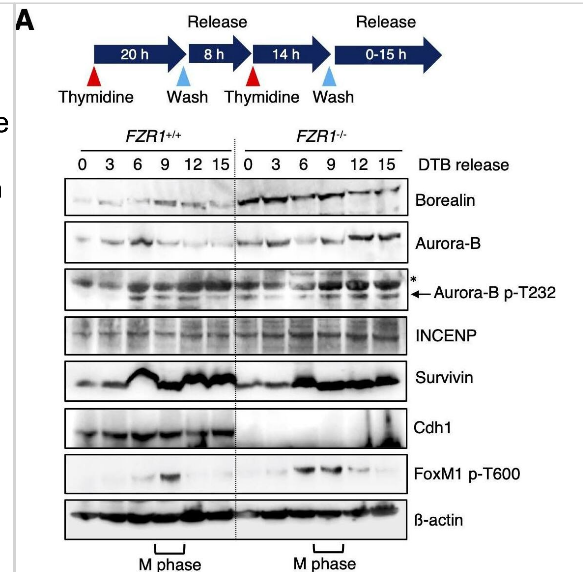
Pre-treatment with 0.5 mM sodium arsenite (SA) enhances permissivity in a cell-type-specific manner across reovirus strains. (A) CV-1, HeLa, L929, or HPDE cells were left untreated (no SA) or were treated with 0.5 mM SA for 30 min prior to infection (Pre-SA). Following this, cells were infected with T3D such that ~20% to 50% of cells were infected and at 18 h p.i. cells were fixed and immunostained for μNS and DAPI to visualize viral factories (VFs). The percent of cells containing VFs was quantified ((# of cells containing VFs/total # of cells) × 100) from three independent experiments. The expression level of μNS (B) and μ1 (C) was determined in CV-1, L929, or HeLa cells either left untreated (no SA) or treated with 0.5 mM SA for 30 min (Pre-SA) before infection with T3D at MOI = 1. At 18 h p.i., cells were harvested and the expression level of the indicated proteins was determined by immunoblot. M = mock. Densitometry analysis of the band intensity for μNS and μ1 was adjusted to the matched α-tubulin loading control for two independent experiments. Columns represent mean ± SEM. (D) CV-1; (E) L929; or (F) HeLa cells were left untreated (no SA) or were treated with 0.5 mM SA prior to infection (Pre-SA). Cells were then infected with the reovirus strains, T3D, T1L, or T3A, as described in (A). At 18 h p.i., cells were fixed and immunostained for μNS and DAPI to detect VFs. The percent of cells containing VFs was quantified ((# of cells containing VFs/total # of cells) × 100) from at least two independent experiments. * $p < 0.05$; ** $p < 0.01$; two-tailed unpaired t test. The error bars indicate S.D. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/31216693), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



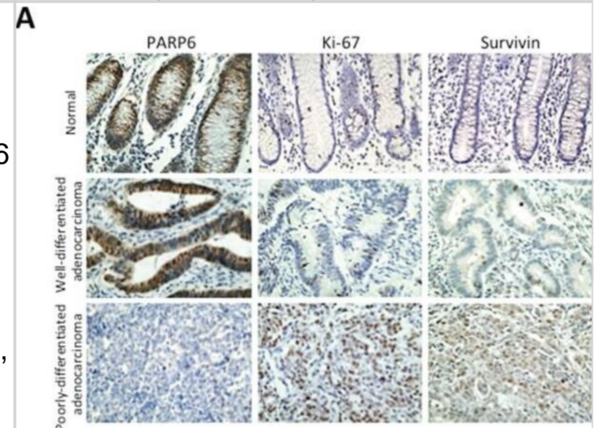
Inhibition of Rac1 by N17Rac1 mutant or Rac1 siRNA diminishes IR-induced G2/M checkpoint activation. (A) MCF-7 cells were infected with Ad.N17Rac1 or Ad.Control for 24 hours and exposed to 15-Gy IR. Left panel: the cells were analyzed for DNA content 24 hours after IR. The result depicts the percentage of cells with 4N-DNA content and is shown as mean ± SD of quadruplicate samples. *$P < 0.001$ (n = 4), significant difference from the irradiated Ad.Control-infected cells. Right panel: Inset: at 15 minutes after IR, the infected cells were analyzed for Rac1 activities (Rac1-GTP) and protein levels (total Rac1). Bar graph: mitotic cells in the cell samples were analyzed 2 hours after IR. The result depicts the percentage of mitotic cells and is shown as mean ± SD of triplicate samples. **$P = 0.002$ (n = 3), significant difference from the irradiated Ad.Control-infected cells. (B) Upper panel: MCF-7 cells transfected with Rac1 siRNA (Rac1) or control siRNA (Control) were incubated for the indicated times and analyzed for protein levels of Rac1 and Actin. Lower panel: After 2-day incubation, the siRNA-transfected cells were exposed to IR, incubated for 24 hours, and assessed for DNA content. Results depict the percentage of cells with 4N-DNA content and represent the mean ± SD of three separate experiments in duplicate samples. *$P < 0.001$ (n = 6), significant difference from the irradiated Control-siRNA transfected cells. (C) After 2-day incubation, siRNA-transfected cells were treated with/without 20-Gy IR, incubated for 1 hour, and analyzed for ATM, ATR, Chk1, and Chk2 activities. Image collected and cropped by CiteAb from the following open publication (http://breast-cancer-research.biomedcentral.com/articles/10.1186/bcr3164), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Myocardial infarction (MI) increased TLR3 expression and its physical association with Trif in mouse myocardium. Heart samples were taken from infarct area at 4 weeks after MI. (A) and (B) show mRNA and protein levels of TLR3 in sham and MI hearts. n = 4 mice/group. Data are means ± S.D. AP < 0.01 versus sham. (C) Representative immunohistochemistry images of heart sections stained for TLR3 (brown colour). An isotype IgG control was performed to verify the specificity of TLR3 reactivity. (D) Lysates of heart tissue were immunoprecipitated with anti□TLR3 antibodies (IP: TLR3), followed by SDS–PAGE and immunoblotting (IB) with indicated antibodies. IP with isotype IgG (IP: IgG) was performed as a control to exclude the non□specific binding of antibodies to cellular proteins. Green arrows indicate non□specific bands. The association between TLR3 and Trif, but not MyD88, was detectable in sham myocardium and was increased in infarct myocardium. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/28945004), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Vps13 co-fractionates with Rab7 and Rab5.(A) Western blot analysis of control fly head samples fractionated into a cytosolic and membrane fraction from postnuclear supernatant (PNS). EGFR was used as a membrane marker and GAPDH as a cytosolic marker. (B) Membrane fractions from control fly heads treated with 1 M KCl, Na2CO3 pH 11 or 6 M urea were centrifuged to separate the soluble and insoluble (membrane containing) fractions. The level of Vps13 was determined in these fractions. Markers for peripheral membrane proteins (GM130), integral membrane proteins (EGFR) and the cytosolic proteins (GAPDH) were used. The “Vps13 lysate” lane contains a lysate derived from Vps13 homozygous mutant fly heads, as expected no Vps13 is detected, demonstrating the specificity of the antibody against Vps13. (C) Membranes from control fly heads were fractionated on a sucrose gradient. Western blot analysis was performed to analyze the distribution of Vps13 in relation to markers associated with membranes of various organelles: Rab7 (late endosomes), Rab5 (early endosomes), GM130 (golgi), Lamp1 (lysosomes) and ATP5A (mitochondria). (D) Immunoisolation of membranes from fraction 14 of the sucrose gradient using Vps13 NT, Rab7 and Rab5 antibodies. (E) Quantification of the sucrose gradient fractionation of Fig 2C. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/28107480), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Krajnik A, Nimmer E, Brazzo JA et al. Survivin regulates intracellular stiffness and extracellular matrix production in vascular smooth muscle cells APL bioengineering 2023-12-01 [PMID: 37868708] (WB, Human)

Rice K Survivin Is a Mediator of Stiffness-Induced Migration of Vascular Smooth Muscle Cell Thesis 2023-01-01 (ICC/IF, Human)

Details:
1:100 dilution

Breder-Bonk C, Docter D, Barz M et al. The Apoptosis Inhibitor Protein Survivin Is a Critical Cytoprotective Resistor against Silica-Based Nanotoxicity Nanomaterials (Basel, Switzerland) 2023-09-12 [PMID: 37764575] (IHC, Mouse, Human)

Dyshlovoy SA, Busenbender T, Hauschild J et al. Cytotoxic N-Methylpretrichodermamide B Reveals Anticancer Activity and Inhibits P-Glycoprotein in Drug-Resistant Prostate Cancer Cells Marine Drugs 2022-09-23 [PMID: 36286421] (B/N)

Drpic Danica, Almeida Ana C, Aguiar Paulo et al. Chromosome Segregation Is Biased by Kinetochore Size. Current Biology : Cb 2018-01-01 [PMID: 29706521] (B/N)

Krieg S, Roderburg C, Fung S et al. Nuclear survivin is a prognosticator in gastroenteropancreatic neuroendocrine neoplasms: a meta-analysis Journal of Cancer Research and Clinical Oncology 2022-09-01 [PMID: 35428913] (IHC)

Dyshlovoy SA, Pelageev DN, Jakob LS et al. Activity of New Synthetic (2-Chloroethylthio)-1,4-naphthoquinones in Prostate Cancer Cells Pharmaceuticals (Basel) 2021-09-22 [PMID: 34681173]

Fuller RN, Kabagwira J, Vallejos PA et al. Survivin Splice Variant 2? Enhances Pancreatic Ductal Adenocarcinoma Resistance to Gemcitabine OncoTargets and Therapy 2022-10-10 [PMID: 36238134] (WB)

Kwon M, Park J, Ko E et al. Ibulocydine inhibits migration and invasion of TNBC cells via MMP-9 regulation Research Square 2023-07-07 (WB, Human)

Ryan M Investigating Induction of DNA Damage and Angiogenic Processes as Therapeutic Targets in the Treatment of Anaplastic Thyroid Cancer Thesis 2023-01-01

Stahl P, Kollenda S, Sager J et al. Tuning Nanobodies' Bioactivity: Coupling to Ultrasmall Gold Nanoparticles Allows the Intracellular Interference with Survivin Small (Weinheim an der Bergstrasse, Germany) 2023-04-10 [PMID: 37035950] (ICC/IF, PLA, WB, Human)

Dyshlovoy S, Shubina L, Makarieva T et al. New Guanidine Alkaloids Batzelladines O and P from the Marine Sponge Monanchora pulchra Induce Apoptosis and Autophagy in Prostate Cancer Cells Marine Drugs 2022-11-25 [PMID: 36547885] (WB, Human)

More publications at http://www.novusbio.com/NB500-201

Procedures

Western Blot protocol for Survivin Antibody (NB500-201)

Western Blot Procedure
1) Cells were pelleted, washed in 1XPBS, suspended in ice water (~ 5 x 10(6) cells/ml), and placed on ice
2) Lysates were prepared with the addition of 2X lysis buffer [2% SDS/ 50mM Tris-HCl / 10% glycerol]
3) Lysates were heated to 95 degrees C for 3 minutes and then microfuged at room temperature for 10 minutes
4) 50 ug of lysate were electrophoresed (150 V) through a 4-15% PAGE
5) Proteins were transferred (60 V) onto an Immobilon-P membrane (Millipore Corp.) for 45 minutes
6) The blot was blocked overnight at 4 degrees C in blocking buffer [1XPBS, pH 7 / 5% nonfat milk / 0.1% Tween-20]
7) Washed the blot in 1XPBS / 0.1% Tween-20
8) Incubated the blot with 1 ug/ml of (NB500-201) anti-Survivin antibody, diluted in blocking buffer, for 2 hours at room temperature
9) Washed the blot in 1XPBS / 0.1% Tween-20
10) Reacted the blot with HRP-conjugated donkey anti-rabbit Ig, diluted in 1XPBS / 0.1% Tween-20, for 30 minutes at room temperature
11) Washed the blot in 1XPBS / 0.1% Tween-20
12) Visualized blot by ECL and autoradiography
NOTE: HeLa whole cell extracts (NB800-PC1) were used as a positive control for this antibody.

Immunohistochemistry-Paraffin protocol for Survivin Antibody (NB500-201)
Survivin Antibody:
Materials

1) 1 Phosphate buffered saline (pH 7.6): NaCl 137mmol/L, KCl 2.7mmol/L, Na2HPO4 4.3mmol/L, KH2PO4 1.4 mmol/L
2) Citrate buffer, 0.01 M, pH6.0, Sodium Citrate 3g, Citric acid 0.4g
3) 3% Hydrogen peroxide
4) Primary antibody
5) Blocking serum (normal serum)
6) Biotinylated secondary antibody
7) DAB staining kit

Methods

1. Dewax and hydration of slides using xylene and EtOH:
Dry slides for 20 min in a 60 C oven
Add Xylene, 2 x 10 min
100%, 95%, 80%, and 70% EtOH, 5 min each EtOH concentration
Rinse in PBS, 5'

2 Antigen retrieval method (only for paraffin slides)
1a. High-pressure antigen retrieval procedure (recommended method)
Place slides in a glass slide holder (ensure that the slide holder is completely filled with slides, slides without sections if necessary, to ensure even heating. The entire slide holder is immersed in 1000 ml of Citrate buffer (0.01M, pH6.0) within a pressure cooker
Once steam is produced, and ONLY when steam is visible, from the pressure cooker (usually 15-20 min), the required high-pressure will have been reached, and slides will be incubated for 2 min.
Turn off heat, and allow buffer and slides to cool to room temperature
Slides are then rinsed in PBS for 5 minutes
2. Add 3% hydrogen peroxide solution, 10'at RT, then PBS, 3X5'
3. Normal blocking serum, 20'at RT
4. Incubate with Primary Ab, 4C overnight or 1.5 hours at 37C
5. Rinse with PBS, 3 X 5' each rinse
6. Add Biotin-conjugated second antibody, 10'at RT
7. Rinse with PBS, 3 X 5' each rinse
8. Add Streptavidin-Peroxidase, 10'at RT
9. Rinse with PBS, 3 X 5' each rinse
10. Staining with DAB solution, 2-5'under microscope
11. Stop the reaction by washing in tap water
12. Counterstain in Haematoxylin for 3-5 minutes
13. 75%, 80%, 95% and 100% ethanol, 5x2', xylene 2 x 10'

Immunoprecipitation protocol for Survivin Antibody (NB500-201)

Survivin Antibody:

Immunoprecipitation Procedure

1) Lyse cells plated in a 60mm dish:

a) 300 ul CHAPS buffer [50mM Tris-HCl, pH 7.5/50mM NaCl/1mM EDTA/1% NP-40/0.1% CHAPS/1mM NaVO4/1mM PMSF]

b) Rock for 20 minutes at 4 degrees C

2) Harvest lysate and spin down the insoluble material at 14K rpm

3) Collect soluble fraction

4) Pre-clear lysate with 40 ul of 50:50 slurry of Protein A beads, rocking for 1 hour at 4 degrees C

5) Spin down beads at 2K rpm, at 4 degrees C

6) Collect pre-cleared lysate

7) Incubate lysate with 5-7ug of anti-Survivin (NB 500-201) overnight, rocking at 4 degrees C

8) Add 50 ul of Protein A 50:50 slurry for 2 hours, rocking at 4C

9) Wash beads with 200 ul of CHAPS buffer, three times

10) Denature immune complex by adding 2x Sample Buffer, containing 2-ME

11) Boil for 10 minutes and load onto an SDS-gel.

Novus Biologicals USA
10730 E. Briarwood Avenue
Centennial, CO 80112
USA
Phone: 303.730.1950
Toll Free: 1.888.506.6887
Fax: 303.730.1966
nb-customerservice@bio-techne.com

Bio-Techne Canada
21 Canmotor Ave
Toronto, ON M8Z 4E6
Canada
Phone: 905.827.6400
Toll Free: 855.668.8722
Fax: 905.827.6402
canada.inquires@bio-techne.com

Bio-Techne Ltd
19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB, United Kingdom
Phone: (44) (0) 1235 529449
Free Phone: 0800 37 34 15
Fax: (44) (0) 1235 533420
info.EMEA@bio-techne.com

General Contact Information
www.novusbio.com
Technical Support: nb-technical@bio-techne.com
Orders: nb-customerservice@bio-techne.com
General: novus@novusbio.com

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NB800-PC1	HeLa Whole Cell Lysate
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NBP2-24891	Rabbit IgG Isotype Control

Limitations
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