

Product Datasheet

SCP1 Antibody - BSA Free NB300-229

Unit Size: 0.1 ml

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

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NB300-229

SCP1 Antibody - BSA Free

Product Information	
Unit Size	0.1 ml
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	0.02% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS
Product Description	
Host	Rabbit
Gene ID	6847
Gene Symbol	SYCP1
Species	Mouse, Rat, Chicken, Mammal, Parasite, Monkey, Human (Negative)
Reactivity Notes	Mammal reactivity reported in scientific literature (PMID: 25981592). Parasite reactivity reported in scientific literature (PMID: 27084479). Chicken reactivity reported in scientific literature (PMID: 28174243). Use in Monkey reported in scientific literature (PMID: 31907447). This antibody has not been shown to have human reactivity.
Immunogen	A synthetic peptide made to the C-terminus of the mouse SCP1 protein sequence. [UniProt# Q62209]
Product Application Details	
Applications	Western Blot, Simple Western, Chromatin Immunoprecipitation, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin, Immunoprecipitation, Chromatin Immunoprecipitation (ChIP)
Recommended Dilutions	Western Blot, Simple Western 1:100, Chromatin Immunoprecipitation 1:10 - 1:500. Use reported in scientific literature (PMID 27486799), Immunohistochemistry 1:750, Immunocytochemistry/ Immunofluorescence 1:100 - 1:750, Immunoprecipitation, Immunohistochemistry-Paraffin 1:750, Immunohistochemistry-Frozen 1:750, Chromatin Immunoprecipitation (ChIP) 1:10-1:500
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 Human Testis and Mouse Testis lysate 0.5 mg/mL, separated by Size, antibody dilution of 1:100. Separated by Size-Wes, Sally Sue/Peggy Sue.

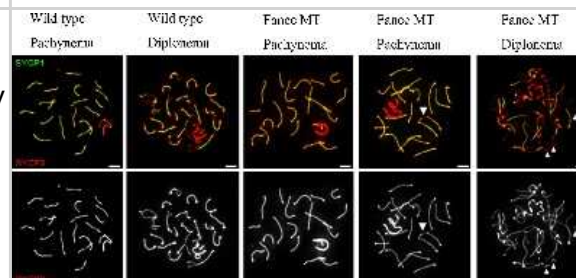


Images

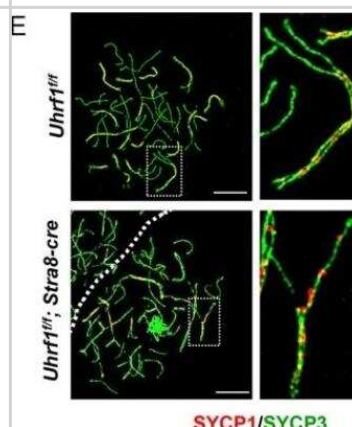
Simple Western: SCP1 Antibody [NB300-229] - Simple Western lane view shows a specific band for SCP1 in 0.5 mg/ml of Human Testis (left) and Mouse Testis (right) lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.



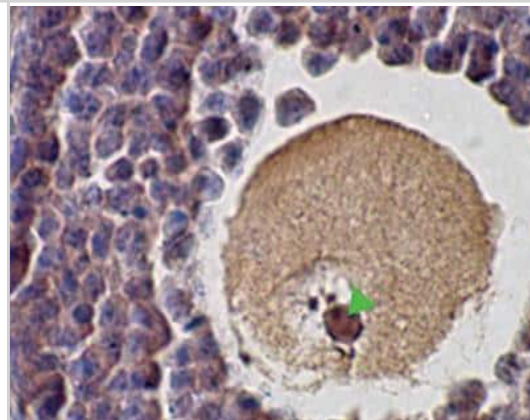
Western Blot: SCP1 Antibody [NB300-229] - Meiotic chromosome spreads from wild type and Fance mutant (MT) primary spermatocytes isolated from the testes at 20 dpp. Each chromatin spread was staged by analyzing SYCP3 (red) and SYCP1 (green), which are axial element and central region components of the synaptonemal complex respectively. Most of the Fance mutant spermatocytes displayed normal synapsis (middle panels); however a sub-set displayed synapsis abnormalities including an association between non-homologous chromosome ends (arrow head) and abnormal SYCP3 structures (arrows). Dearth and Delayed Maturation of Testicular Germ Cells in Fanconi Anemia E Mutant Male Mice. *PLoS One* (2016)



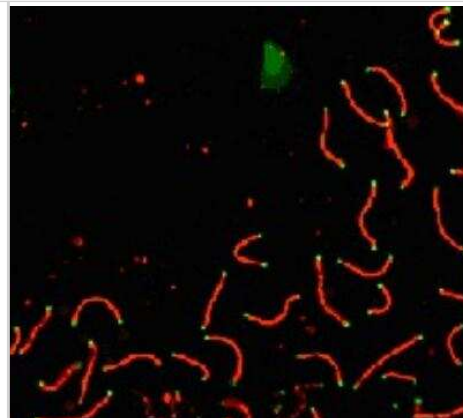
Immunocytochemistry/Immunofluorescence: SCP1 Antibody - BSA Free [NB300-229] - Double immunofluorescence of testicular spread preparations of the adult mice, SYCP3 (green) and SCP1 (red). Image collected and cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/32081844/>) licensed under a CC-BY license.



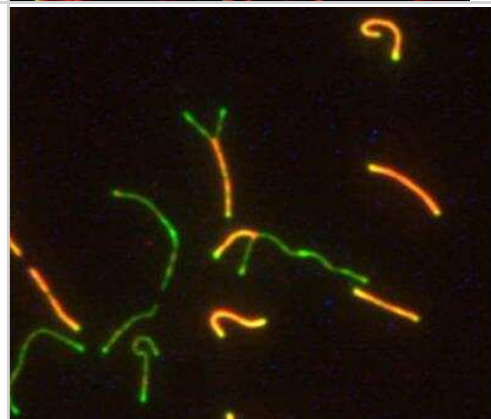
Immunohistochemistry-Paraffin: SCP1 Antibody [NB300-229] - Punctate staining of murine SCP1 in mouse ovary using NB300-229.



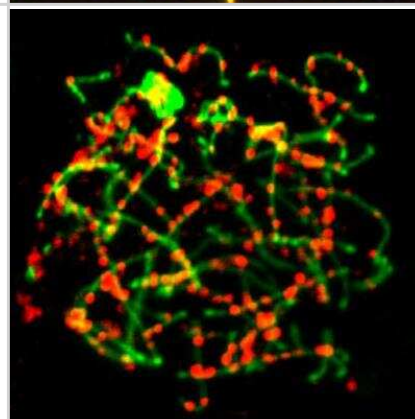
Immunocytochemistry/Immunofluorescence: SCP1 Antibody [NB300-229] - SCP1 labeled in mouse pachytene preparation (red), using NB300-229. CDK2 staining, near telomeres, is also present (green).



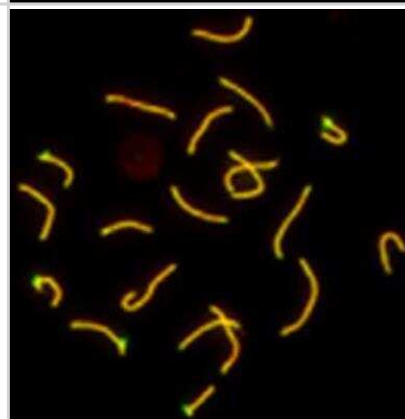
Immunocytochemistry/Immunofluorescence: SCP1 Antibody [NB300-229] - Spermatocytes cells fixed in PFA. Detected with anti-mouse 594. ICC/IF image submitted by a verified customer review.



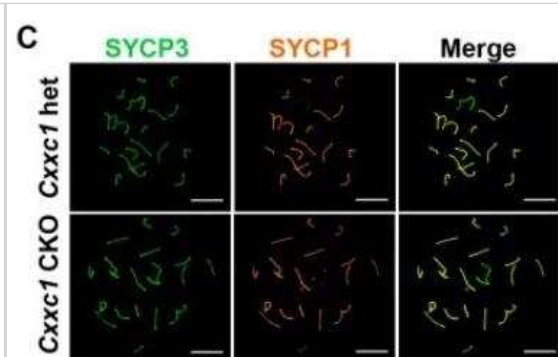
Immunocytochemistry/Immunofluorescence: SCP1 Antibody [NB300-229] - Mouse spermatozoa. Green: SCP1 staining. ICC/IF image submitted by a verified customer review.



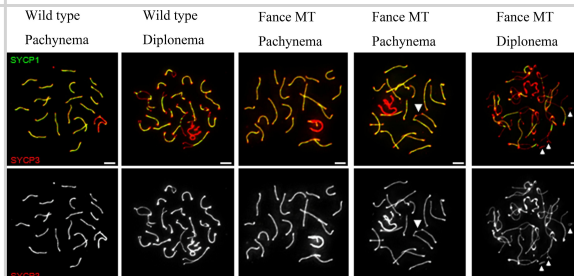
Immunocytochemistry/Immunofluorescence: SCP1 Antibody [NB300-229] - Mouse spermatocyte. Red: scp1 colocalized with scp3 (green). ICC/IF image submitted by a verified customer review.



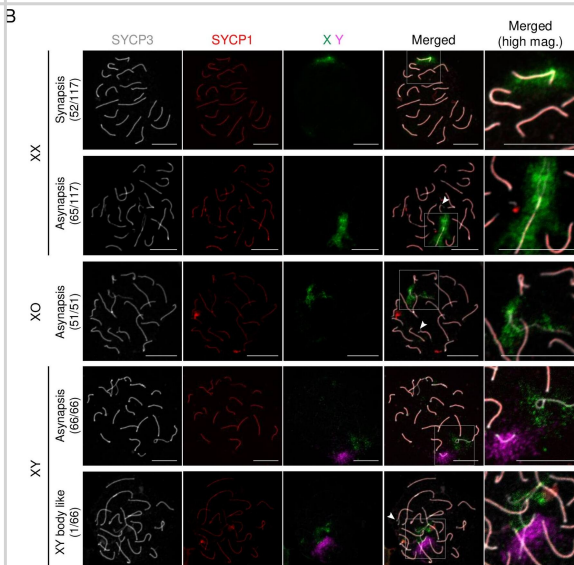
Immunocytochemistry/Immunofluorescence: SCP1 Antibody - BSA Free [NB300-229] - Immunostaining of SCP3/SYCP3 (NB300-231) and SCP1 on adult *Cxxc1* het and CKO chromosome spreads. Green, SCP3/SYCP3; orange, SCP1. Scale bar, 10 μ m. Image collected and cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/30365547/>) licensed under a CC-BY license.



Chromatin Immunoprecipitation: SCP1 Antibody - BSA Free [NB300-229] - Meiotic spreads. Meiotic chromosome spreads from wild type & Fance mutant (MT) primary spermatocytes isolated from the testes at 20 dpp. Each chromatin spread was staged by analyzing SYCP3 (red) & SYCP1 (green), which are axial element & central region components of the synaptonemal complex respectively. Most of the Fance mutant spermatocytes displayed normal synapsis (middle panels); however a sub-set displayed synapsis abnormalities including an association between non-homologous chromosome ends (arrow head) & abnormal SYCP3 structures (arrows). Image collected & cropped by CiteAb from the following publication (<https://dx.plos.org/10.1371/journal.pone.0159800>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

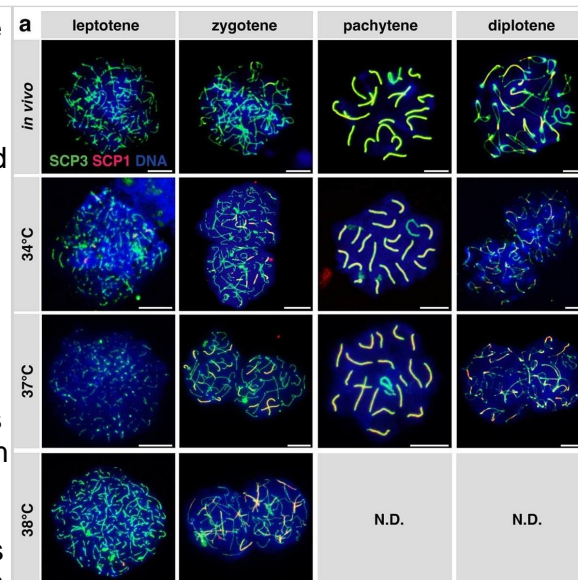


Immunocytochemistry/ Immunofluorescence: SCP1 Antibody - BSA Free [NB300-229] - Meiotic progression & chromosome pairing in XX, XO & XY oocytes. (A) Meiotic progression in XX, XO & XY oocytes. The graphs show the percentages of the meiotic stage at the day of culture indicated. L, leptotene; Z, zygotene; P, pachytene; D, diplotene. (B) Pairing of homologous chromosomes in XX, XO & XY oocytes. Images show the immunofluorescence analysis of SYCP3 (white) & SYCP1 (red), & FISH analysis of the X chromosome (green) & Y chromosome (purple). The dashed squares in the merged images are shown at high magnification (right). The numbers of samples showing the phenotype are shown with the total number tested (left). Arrowheads indicate asynapsed bivalents at the end of the chromosomes. Scale bars, 10 μ m. (C) Pairing rates of autosomes & sex chromosomes. Each value was calculated from three independent experiments (see also Materials & Methods). P values were calculated by Tukey's HSD test. ***P<0.001, **P<0.01, *P<0.05; NS, not significant. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/32214314/>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



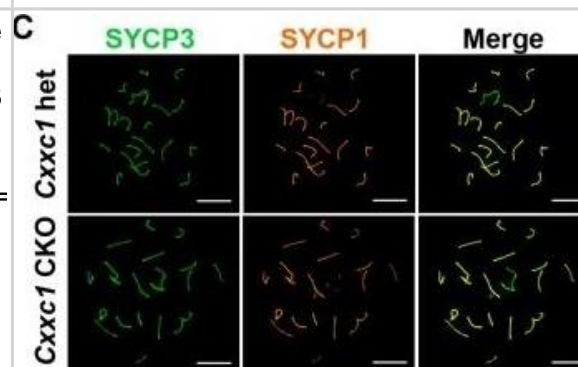
Immunocytochemistry/ Immunofluorescence: SCP1 Antibody - BSA Free [NB300-229] - Meiotic prophase I progression & apoptosis in spermatocytes in ex vivo culture at different temperatures.

a Representative images of chromosomal spreads at different stages of meiotic prophase I, prepared from in vivo-developed testes of 5-week-old Acr-GFP mice & from testis explants cultured at 34, 37, or 38 °C for 5 weeks as indicated. Samples were stained for SCP3, SCP1, & DNA (Hoechst 33342). Scale bars, 10 μ m. **b** Proportions of spermatocytes in the leptotene (lep), zygotene (zygo), pachytene (pachy), & diplotene (diplo) stages, found in explants cultured for 5 weeks at the indicated temperatures classified visually on the chromosome spreads after immunofluorescence-staining for SCP1 & SCP3 as (a), according to the criteria described in the text. Values obtained from chromosome spreads prepared from pooled testicular cells of two in vivo-developed testes from different individuals & those from 6 to 7 ex vivo-grown explants are summarized. The total number of spermatocyte nuclei counted is indicated at the upper right of each panel. Percentages of spermatocytes nuclei in which all the autosomes have completed synapsis (i.e., the sum of pachytene & diplotene spermatocytes) were 63, 52, 16, & 0.5% for in vivo & ex vivo samples at 34, 37, & 38 °C, respectively. **c** Detection of cleaved Caspase-3 (red) & SCP3 (green) in testis explants following the temperature shift from 34 to 38 °C. Double-stained images overlaid with DNA staining (gray) & the signals for cleaved Caspase-3 alone are shown in the upper & lower panels, respectively. Enlarged images at positions indicated by rectangles are also shown below. Yellow arrowheads, Caspase-3+/SCP3+ double-positive cells (the dying spermatocytes). Scale bars, 40 μ m. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/35618762>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.

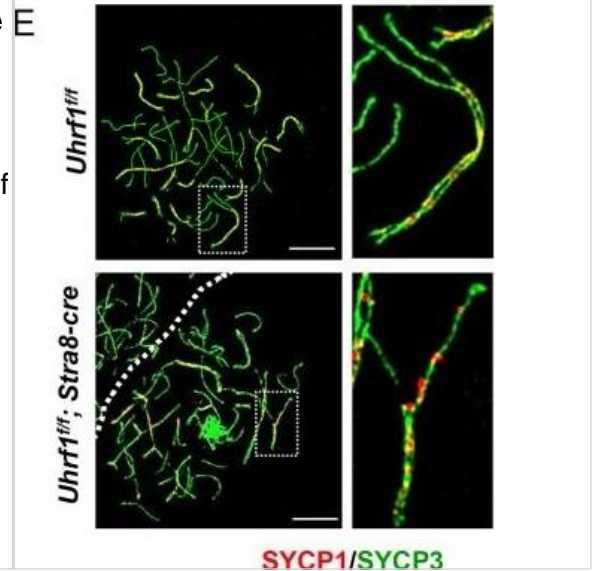


Immunocytochemistry/ Immunofluorescence: SCP1 Antibody - BSA Free [NB300-229] - No major meiotic DSB repair or chromosome synapsis defects are observed in Cxxc1 CKO testis.

(A) Immunostaining of SYCP3 & γ H2AX on adult Cxxc1 het & CKO chromosome spreads. Green, SYCP3; magenta, γ H2AX. Scale bar, 10 μ m. **(B)** Spermatocyte stage proportion in adult Cxxc1 het (n = 1,062 from two individuals) & CKO (n = 1,105 from two individuals) spermatocytes based on SYCP3/SYCP1/ γ H2AX staining. p = 0.7 by Chi-square test. **(C)** Immunostaining of SYCP3 & SYCP1 on adult Cxxc1 het & CKO chromosome spreads. Green, SYCP3; orange, SYCP1. Scale bar, 10 μ m. **(D)** Crossover number measured by MLH1 staining on chromosome spreads of adult Cxxc1 het & CKO spermatocytes. Left, magenta, SYCP3; green, MLH1. Scale bar, 10 μ m. Right, number of MLH1 foci per late pachynema in Cxxc1 het (n = 32 from two individuals) & CKO (n = 33 from two individuals). Bars represent mean \pm SD. p = 0.4 by Student's t-test. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/30365547>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunocytochemistry/ Immunofluorescence: SCP1 Antibody - BSA Free [NB300-229] - UHRF1 deletion disrupted the meiotic progression & synaptonemal complex assembly. a Relative amounts of four spermatocyte populations (leptotene stage, zygotene stage, pachytene stage, & diplotene stage) during the prophase I in testes based on analyzing >600 spermatocytes in each stage. b, c The immunostaining of SYCP3 in the testicular sections (b) & surface-spread chromatin preparations of Uhrf1 deletion & control mice (c); d the percentage of spermatocytes with abnormal SYCP3 location. e Double immunofluorescence of testicular spread preparations of the adult mice, SYCP3 (green) & SYCP1 (red). f The percentage of spermatocytes with abnormal SYCP1 location. Lep leptotene, Zyg zygotene, Pac pachytene, Dip diplotene. Data are presented as mean \pm SEM of three mice. *** $p \leq 0.001$. Scale bar, 25 μm in b, 5 μm in c, e. Image collected & cropped by CiteAb from the following publication (<https://pubmed.ncbi.nlm.nih.gov/32081844>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Li Q, Yang G, Ren B, Liu X et Al. ZC3H14 facilitates backsplicing by binding to exon-intron boundary and 3' UTR Mol Cell 2024-10-26 [PMID: 39461343]

Liu M, Wang L, Li Y et Al. HSF5 Deficiency Causes Male Infertility Involving Spermatogenic Arrest at Meiotic Prophase I in Humans and Mice Adv Sci (Weinh) 2024-07-03 [PMID: 38958533]

Moreno-Irusta A, Dominguez EM, Iqbal K et Al. TAF7L regulates early stages of male germ cell development in the rat FASEB J 2024-07-08 [PMID: 38112167]

Zhang P, Zhang L, Yu L et Al. EP300-interacting inhibitor of differentiation 3 is required for spermatogenesis in mice Andrology 2024-11-17 [PMID: 39551708]

Premkumar T, Paniker L, Kang R et al. Genetic dissection of crossover mutants defines discrete intermediates in mouse meiosis Molecular cell 2023-08-17 [PMID: 37595556]

Jessica Hopkins, Grace Hwang, Justin Jacob, Nicklas Sapp, Rick Bedigian, Kazuhiro Oka, Paul Overbeek, Steve Murray, Philip W. Jordan, Neil Hunter Meiosis-Specific Cohesin Component, Stag3 Is Essential for Maintaining Centromere Chromatid Cohesion, and Required for DNA Repair and Synapsis between Homologous Chromosomes PLoS Genetics 2014-07-01 [PMID: 24992337]

Tian H, Billings T, Walker M et al. EWSR1 affects PRDM9-dependent histone 3 methylation and provides a link between recombination hotspots and the chromosome axis Mol Biol Cell 2020-11-11 [PMID: 33175657]

Davies B, Zhang G, Moralli D et al. Characterization of meiotic recombination intermediates through gene knockouts in founder hybrid mice Genome research 2023-11-17 [PMID: 37977820] (IHC, Mouse)

Details:

Sample type: Testis

Zhang J, Zhou X, Wan D et al. Tmprss12 Functions in Meiosis and Spermiogenesis and Is Required for Male Fertility in Mice Frontiers in Cell and Developmental Biology 2022-04-25 [PMID: 35547804]

Hirano K, Nonami Y, Nakamura Y et al. Temperature sensitivity of DNA double-strand break repair underpins heat-induced meiotic failure in mouse spermatogenesis Communications Biology 2022-05-26 [PMID: 35618762] (In vivo assay)

Larose H, Kent T, Ma Q et al. Regulation of meiotic progression by Sertoli-cell androgen signaling Molecular Biology of the Cell 2020-12-01 [PMID: 33026960] (Immunocytochemistry/ Immunofluorescence)

Faber EB, Sun L, Tang J et al. Development of allosteric and selective CDK2 inhibitors for contraception with negative cooperativity to cyclin binding Nature communications 2023-06-03 [PMID: 37270540] (ICC/IF, Mouse)

Details:

ICC/IF (on chromosome spreads): antibody incubation at 1:100)

More publications at <http://www.novusbio.com/NB300-229>



Procedures

Serum protocol for SCP1 Antibody (NB300-229)

Immunofluorescence Procedure

1. Freshly prepared slides are soaked in 1X ADB for 75 minutes.
2. Primary antibodies are added concurrently (SCP1 and CDK2).
3. The primary antibodies are incubated overnight in a humid chamber (37 degrees Celcius).
4. The slides are washed for 40 minutes in 1X ADB.
5. The slides are detected with the appropriate secondary antibodies (RDAR for SCP1 and FDAM for CDK2).
6. The slides are incubated for 4 hours in a humid chamber (37 degrees Celcius).
7. The slides are washed for 20 minutes in 1X ADB, followed by 3 washes, 10 minutes each, in 1X PBS.
8. The slides are counterstained with DAPI.
9. Images are captured after allowing the slides to remain in the dark overnight at RT.





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Products Related to NB300-229

NB300-229PEP	SCP1 Antibody Blocking Peptide
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

Limitations

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

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