

HUMAN HEALTH

ENVIRONMENTAL HEALTH

SEE IHC TARGETS MORE CLEARLY



TSA Signal Amplification for Immunohistochemistry (IHC)
Immunocytochemistry (ICC), Immunofluorescence (IF)



SEE WHAT YOU'VE BEEN MISSING

The extraordinary sensitivity of the Tyramide Signal Amplification (TSA™) kits from PerkinElmer lets you see previously undetectable levels of protein and nucleic acid. The resolution is remarkable.

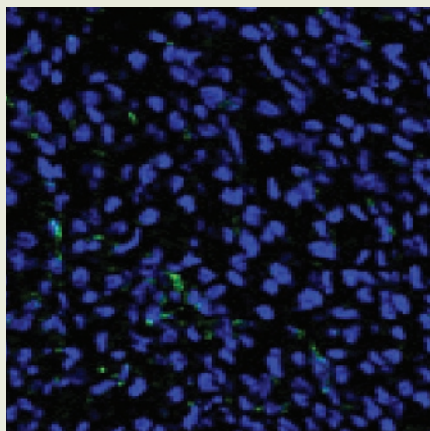
And with multi-target detection, you can get more information from each experiment. It's clear to see. TSA makes it easy to gain valuable insight from your immunohistochemistry (IHC) and immunocytochemistry (ICC) results.

- See previously undetectable low-abundance targets
- Achieve outstanding resolution and clarity
- Conserve precious antibody while improving specificity
- Add to current protocol with minimal disruption
- Eliminate background problems with TSA's biotin-free formats
- Investigate co-localization with multi-target detection kits

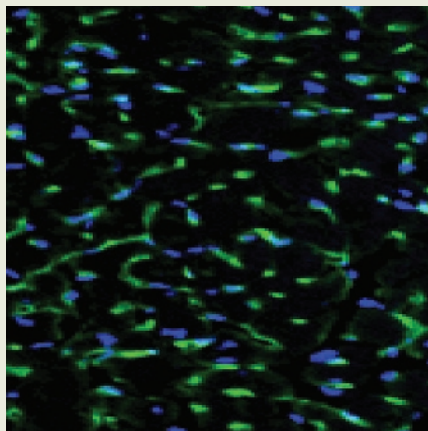
TSA is ideal for use with PerkinElmer's Cellular Imaging and Analysis solutions.

REACH NEVER-BEFORE-SEEN LEVELS OF DETECTION

TSA can increase sensitivity up to 1000-fold.



Standard IHC with Anti-CD31 dilution 1:100, secondary antibody fluorophore labeled and counterstained with DAPI.



TSA IHC with Anti-CD31 dilution 1:100, fluorescent detection (fluorescein) and counterstained with DAPI.

Detection of CD31 (PECAM-1) Mouse Embryo Heart Tissue.

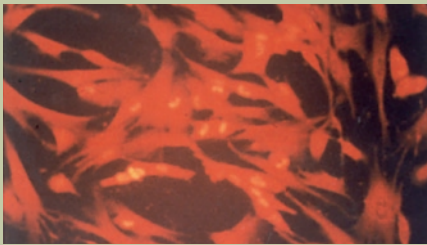
Sensitivity comes with excellent resolution – a combination critical to localizing low-abundance and previously unsuspected targets. It adds up to never-before-seen levels of detection.

Courtesy of Bin Zhao at Harvard Stem Cell Institute

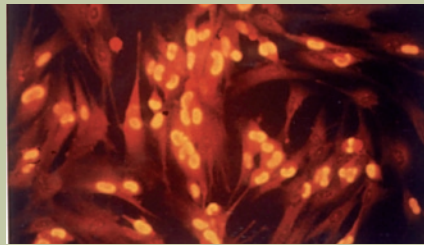
Use **TSA Plus** to enhance sensitivity 10-20-fold over standard TSA. 

IMPROVE SENSITIVITY AND RESOLUTION DRAMATICALLY

**TSA improves resolution while enhancing sensitivity.
Covalent labeling means sharper images with clearer results.**

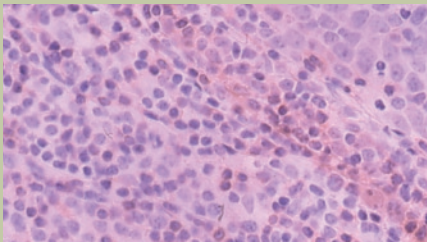


Direct fluorescent staining.

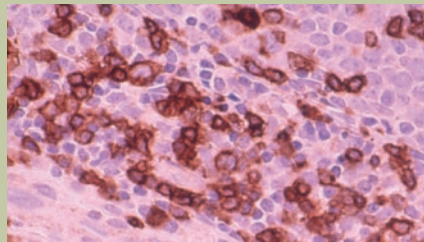


Direct fluorescent staining enhanced by TSA.

Comparison of direct immunofluorescent staining and TSA-enhanced direct fluorescent staining of CMV-infected cells.



Rabbit anti-CD3 1:400, biotinylated anti-rabbit, ABC, with DAB chromogenic detection.



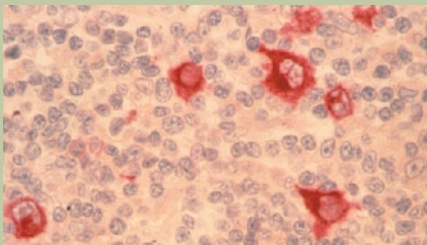
TSA biotin: rabbit anti-CD3 1:400, biotinylated anti-rabbit, SA-HRP, biotinyl tyramide, ABC, with DAB chromogenic detection.

IHC detection of CD3 antigen in serial sections of paraffin-embedded human tonsil.

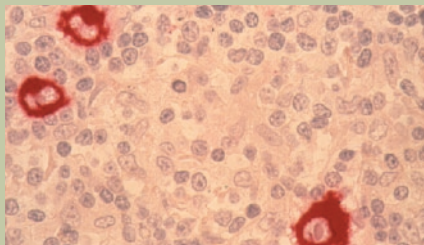
Courtesy of F. van den Berg and A. de Koning, Dept. Pathology, AMC, Amsterdam, the Netherlands

REDUCE PRIMARY ANTIBODY CONSUMPTION WHILE IMPROVING SPECIFICITY

Use up to 1000-fold less primary antibody while reducing non-specific detection and the cost of your assay.



Standard IHC with Anti-EBV dilution 1:25 and fluorescent detection with conjugated antibody.

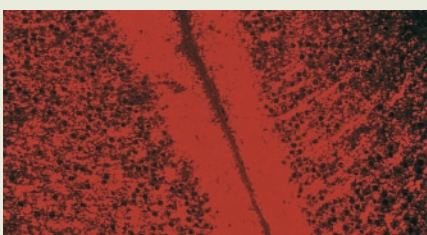


TSA IHC with Anti-EBV dilution 1:25,000 and fluorescent detection.

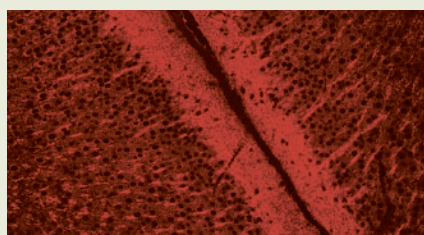
Comparison of standard IHC and TSA in the detection of Epstein-Barr Virus – Hodgkins Lymphoma Tissue.

Courtesy of R. Von Wasielewski and S. Gignac, Pathologisches Institut de Medizinischen Hochschule, Hannover, Germany

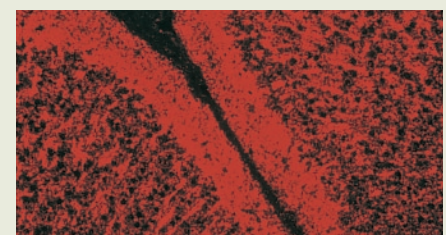
Mouse Brain, 20x magnification, 2-second exposure



Conventional detection with Cyanine 3 conjugated 2° antibody. Dilution 1:1,000.

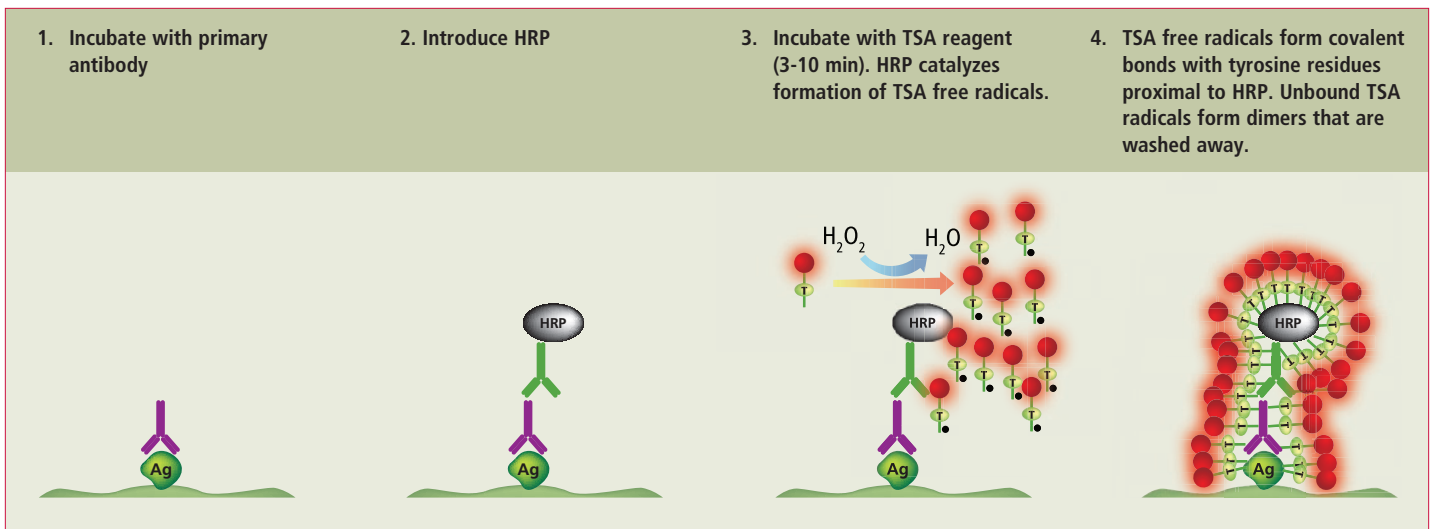


Standard TSA Cyanine 3. Dilution 1:100,000.



TSA Plus Cyanine 3. Dilution 1:10,000,000.

HOW DOES TSA WORK FOR IHC/IF/ICC?



ADDING TSA TO IHC / ICC / IMMUNOFLUORESCENCE ASSAYS

Antigen	Primary antibody	Introduction of HRP	TSA possibilities	Detection options
		<p>Hapten-labeled secondary antibody</p> <p>SA, Anti-FITC HRP conjugate...</p>	<p>Direct Fluorescence</p> <p>Indirect Fluorescence</p>	<p>Direct Fluorescence</p> <ul style="list-style-type: none"> Coumarin (ex. 402 nm, em. 443 nm) Fluorescein (ex. 494 nm, em. 517 nm) TMR (ex. 550 nm, em. 570 nm) Cyanine 3 (ex. 550 nm, em. 570 nm) Cyanine 5 (ex. 648 nm, em. 667 nm) <p>Chromogenic</p> <ul style="list-style-type: none"> Streptavidin-HRP or AP plus chromogen of choice Anti-DNP-HRP or AP with chromogen of choice Anti-fluorescein-HRP or AP with chromogen of choice <p>Indirect Fluorescence</p> <ul style="list-style-type: none"> Streptavidin-fluorophore conjugate Anti-DNP-fluorophore conjugate Anti-fluorescein-fluorophore conjugate
		<p>HRP-conjugated secondary antibody (other options include HRP polymer conjugates, ABC)</p>		

PerkinElmer, Inc.
 940 Winter Street
 Waltham, MA 02451 USA
 P: (800) 762-4000 or
 (+1) 203-925-4602
www.perkinelmer.com



For a complete listing of our global offices, visit www.perkinelmer.com/ContactUs

Copyright © 2009-2010, PerkinElmer, Inc. All rights reserved. PerkinElmer® is a registered trademark of PerkinElmer, Inc. All other trademarks are the property of their respective owners.