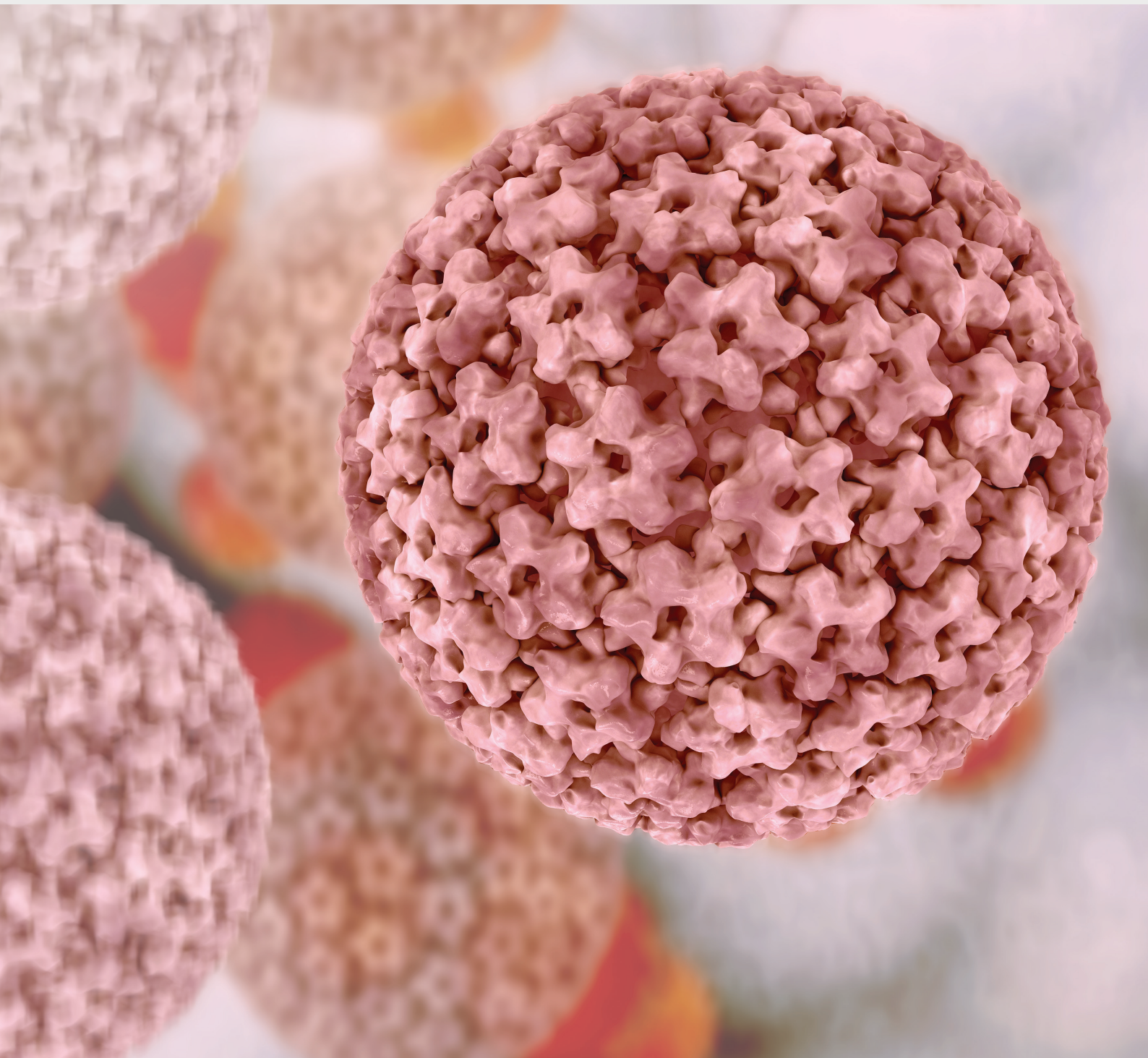




# Human Papillomavirus

Clear Results and Innovative  
Solutions for HPV Detection







***“Results with the Enzo probe were so good  
that we did not continue trying to optimize  
with a different probe.”***

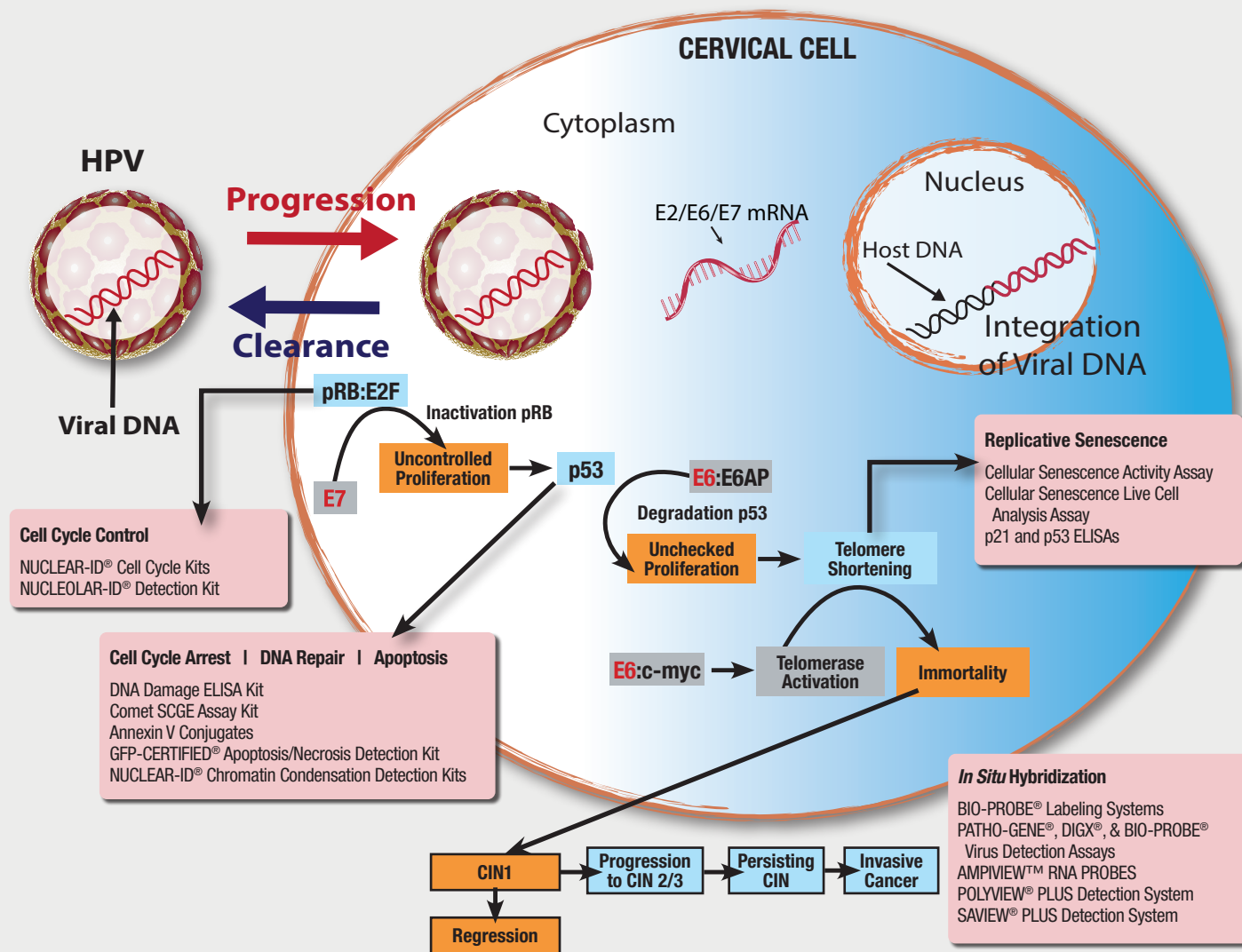
**– Momin T. Siddiqui, MD,  
Department of Pathology and Laboratory  
Medicine, Emory University Hospital**  
(excerpt from *Appl. Immunohistochem. Mol. Morphol.*  
2014; 22:619–622)



**HPV DETECTION SOLUTIONS**

# PIONEERS IN THE DEVELOPMENT OF HPV DETECTION

As a longtime contributor to the HPV market, Enzo developed the first non-radioactive HPV probes for *in situ* hybridization (ISH) detection in 1986. Today, Enzo continues to contribute to the field of HPV research. Utilizing our extensive knowledge of gene expression analysis and proficiency in nucleic acid labeling, we developed a novel RNA platform, AMPVIEW™ RNA probes powered by Enzo's LoopRNA ISH™ technology. As a pioneer in the development of HPV detection systems, Enzo continues to produce innovative technologies that provide relevant information to researchers studying human papillomavirus.



## Nucleic Acid Labeling & Amplification

Enzo Life Sciences is a recognized pioneer and innovator of life sciences tools, backed by patented DNA and RNA labeling chemistries for genomics research and development. Our panel of PATHO-GENE kits provides high-specificity probes used to classify human papillomavirus (HPV) genotypes in tissue sections by in situ hybridization. Flexible POLYVIEW PLUS detection system is optimized for use with biotin-labeled probes for in situ detection of specific endogenous or pathogen-expressed genes.

## Cell Analysis & Detection Reagents

Enzo's expertise in fluorescent probe chemistry and cellular analysis combine to provide high-quality, flexible detection platforms for stem cell profiling and functional analysis. Our unique fluorescent probe-based assays and widely cited antibodies enable multiplex detection of cellular markers and key parameters of cell viability, cell signaling, death pathways, and toxicity.

## Immunoassays & Antibodies

As a trusted manufacturer of thousands of widely cited and thoroughly validated ELISA kits and antibodies, we understand quality means delivering sensitivity, specificity, and consistency. With over 300 immunoassay and detection kits, 3,000 antibodies, and a complete set of IHC reagents, Enzo enables sensitive and specific analysis of biomarkers for immune dysfunction to determine the source and consequence of the immunological response.



# COMPLETE, EASY WORKFLOW FOR ISH DETECTION

## AMPIVIEW™ RNA Probes

### *Visualize Spatial Biology of Nucleic Acids at a Single Cell Level*

AMPIVIEW™ RNA probes are uniquely designed with the precision of targeted, sequence-specific RNA probes, powered by Enzo's LoopRNA ISH™ technology to deliver superior sensitivity. Sample morphology is preserved and the signal of the targeted biomarker can be seen under the light microscope.

- Detection of unique nucleic acid targets (DNA/RNA) at a single cell level
- High sensitivity and reliability (detection down to 2-3 target copies per cell)
- Mild pretreatment and flexible protocols to preserve tissue morphology

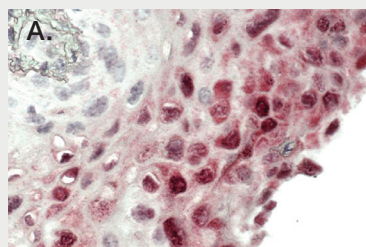
Product Name	Product #
AMPIVIEW™ HPV 6/11 RNA Probes Set	ENZ-GEN145
AMPIVIEW™ HPV 16/18 RNA Probes Set	ENZ-GEN146
AMPIVIEW™ HPV 31/33/55 RNA Probes Set	ENZ-GEN147
AMPIVIEW™ HPV High-Risk RNA Probes Set	ENZ-GEN148

AMPIVIEW™ RNA Probes sets come with targeted probes and AMPIVIEW™ Hybridization Buffer

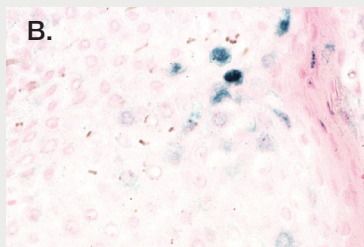
## ASK US ABOUT CUSTOM PROBES



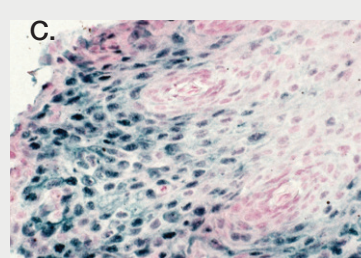
Enzo can design probes for practically ANY gene in ANY genome to be used in ANY tissue or cells.



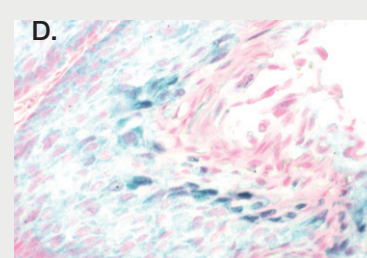
HPV High Risk RNA Probes



HPV 6/11 RNA Probes



HPV 6/18 RNA Probes



HPV 31/33/51 RNA Probes

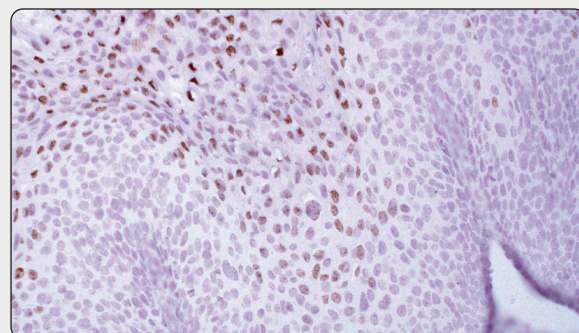
## PATHO-GENE® HPV Detection Assays and Specific Probes

### *HPV Probes and typing assays for sensitive detection of viral DNA from fresh or FFPE tissue sections*

Specific, sensitive probes detect a broad spectrum of HPV types ranging from low to high risk

- Complete assays provide comprehensive solution for identifying HPV DNA
- Amenable to high-throughput analysis on automated staining systems

Product Name	Product #
PATHO-GENE® HPV Type 6/11 Probe	ENZ-32885
PATHO-GENE® HPV Type 16/18 Probe	ENZ-32886
PATHO-GENE® HPV Type 31/33/51 Probe	ENZ-32887
PATHO-GENE® HPV Type 16/18/31/33/51 Probe	ENZ-32882
PATHO-GENE® Type 6/11/16/18/31/33/51 Screening Probe	ENZ-32884
PATHO-GENE® AIK Phos-NBT/BCIP HPV In Situ Typing Assay	ENZ-32895
PATHO-GENE® DAB HPV In Situ Typing Assay	ENZ-32874
PATHO-GENE® HPV In Situ Screening Assay	ENZ-32879



PATHO-GENE HPV Type 16/18/31/33/51 Probe (ENZ-32882) was hybridized to cervical tissue. Tissue sections were developed with HRP-DAB and counterstained with hematoxylin.

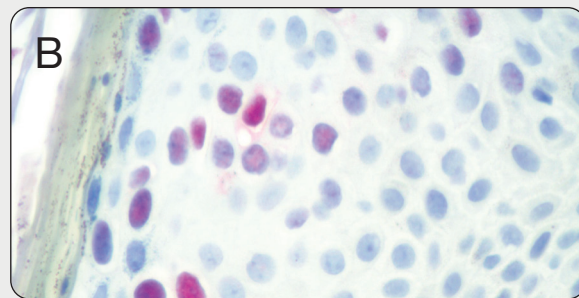
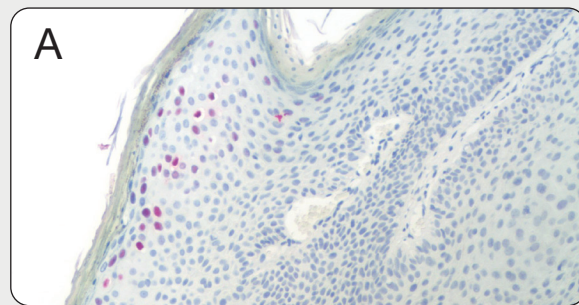


# SUPERIOR LABELING DELIVERS CLEARER RESULTS

## DIGX® HPV Probes and Linkers

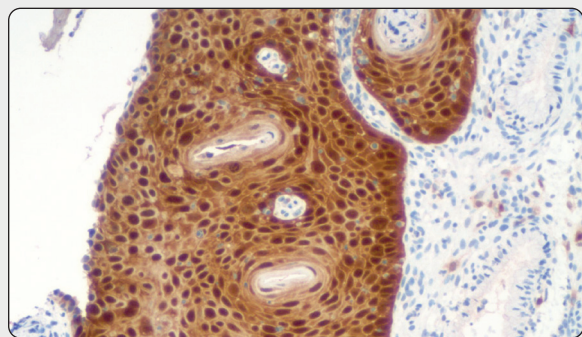
DIGX HPV probes are digoxigenin-labeled DNA probes. The DIGX probes are available in specific HPV genotypes, associated with different risks to cancer progression. Anti-digoxigenin linkers are used to adapt the DIGX probes to an antibody-based detection system, such as our POLYVIEW® PLUS kits.

Product Name	Product #
DIGX® HPV Type 6/11 Probe	ENZ-GEN112
DIGX® HPV Type 16/18 Probe	ENZ-GEN113
DIGX® HPV Type 16/18/31/33/51 Probe	ENZ-GEN114
DIGX® Rabbit Anti-Digoxigenin Linker	ENZ-ABS303
DIGX® Mouse Anti-Digoxigenin Linker	ENZ-ABS304
POLYVIEW® PLUS HRP-DAB (Anti-Rabbit) Kit	ENZ-KIT159
POLYVIEW® PLUS HRP-DAB (Anti-Mouse) Kit	ENZ-KIT160



DIGX HPV type 6/11 probe was used to assay cervical tissue using a Leica Bond III, showing strong staining and low background. Images were acquired with (A) 10X and (B) 40X objectives.

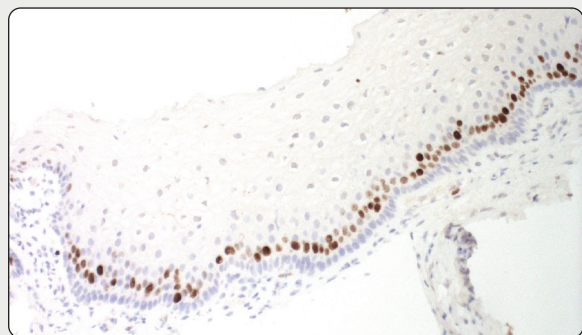
## High Quality Primary Antibodies for HPV Detection



Formalin-fixed paraffin-embedded cervical tissue stained using Enzo's p16 monoclonal antibody (ENZ-ABS377). IHC staining was performed on an automated Leica Bond III.

### p16<sup>INK4a</sup> Monoclonal Antibody (ENZ-ABS707)

p16<sup>INK4a</sup> (p16) plays the role of a tumor suppressor in normal cells controlling the transition between the G1 and S cell cycle phases. However, human papillomavirus (HPV) oncogene E7 disrupts p16 function in HPV-infected cells. Affected cells strongly express p16 to counteract the irregular cell cycle activation, but p16 remains inactive, making p16 levels a key marker for several cancers. The p16 antibody is used to qualitatively identify the presence of p16 protein in FFPE tissue sections using IHC test methods.



Cervical tissue stained with Ki-67 monoclonal antibody (ENZ-ABS678) on an automated Leica Bond III.

### Ki-67 Monoclonal Antibody (ENZ-ABS678)

Ki-67 is a nuclear, non-histone protein that is expressed only during active phases of the cell cycle (G1, S, G2 and M), but not in the resting phases (G0 and G1 early phase). Although the antigen has been associated with ribosomal RNA transcription, it is strongly linked to cell proliferation. The Ki-67 antibody can be used to qualitatively identify the presence of Ki-67 antigen in FFPE tissue sections using IHC test methods.

*You may also be interested in:*



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**Put our experience to work for you!**

Our broad range of scientific expertise and manufacturing capabilities enables us to provide innovative tools  
for HPV detection to save you time and money!