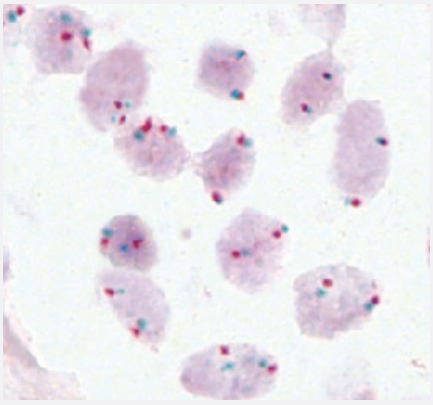
CDKN2A/CEN9 CISH Probe

Catalog # CG0004 Size 400 uL

Applications



Chromogenic *In Situ* Hybridization (Cells)

Normal interphase cells as indicated by two red and two green signals per nucleus.

Specification

Product Description	CDKN2A/CEN9 CISH Probe is designed for the qualitative detection of human CDKN2A gene deletions and the detection of chromosome 9 classical satellites III in formalin-fixed, paraffin-embedded specimens by chromogenic *in situ* hybridization (CISH).
Reactivity	Human
Recommend Usage	The product is ready-to-use. No reconstitution, mixing, or dilution is required. Bring probe to room temperature (18-25°C) and mix briefly before use.
Supplied Products	Reagent Provided: This Probe is available in one size and is composed of: Digoxigenin-labeled polynucleotides, which target sequences mapping in 9p21.3* (chr9:21,742,629-22,056,853) harboring the CDKN2A gene region. Dinitrophenyl-labeled polynucleotides, which target sequences mapping in chromosomal region 9q12 specific for the classical satellite III region D9Z3 of chromosome 9. Formamide based hybridization buffer. *according to Human Genome Assembly GRCh37/hg19
Probe Position	

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Regulatory Status	For research use only (RUO)
Storage Instruction	Store at 2-8°C in an upright position. Return to storage conditions immediately after use.
Note	The probe is intended to be used in combination with the CISH Implementation Kit 2 (Catalog #: KA5366), which provides necessary reagents for specimen pretreatment and post-hybridization processing. Interpretation of results: Using the CISH Implementation Kit 2 (Cat # KA5366), hybridization signals of Digoxigenin-labeled polynucleotides appear as dark green colored distinct dots (CDK4 gene region), and Dinitrophenyl-labeled polynucleotides appear as bright red colored distinct dots (CEN 12). **Normal situation**: In interphases of normal cells or cells without an amplification involving the CDK4 gene region, two distinct dot-shaped green and two distinct dot-shaped red signals appear. **Aberrant situation**: In cells with an amplification of the CDK4 gene region, an increased number of green signals or green signal clusters will be observed. Overlapping signals may appear as brown signals. Other signal patterns than those described above may be observed in some abnormal samples. These unexpected signal patterns should be further investigated. The digoxigenin-labeled probe and the formamide-based hybridization buffer are pre-mixed and provided in a single ready-to-use vial. Only one tube is included in the package.
Interpretation of Result	
Self-Attestation	Abnova self-attests to comply with the U.S. Framework for Nucleic Acid Synthesis Screening

Applications

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Gene Info — CDKN2A

Entrez GeneID	1029
Gene Name	CDKN2A
Gene Alias	ARF, CDK4I, CDKN2, CMM2, INK4, INK4a, MLM, MTS1, TP16, p14, p14ARF, p16, p16INK4, p16INK4a, p19
Gene Description	cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4)
Omim ID	151623 155601 155755 600160 606719
Gene Ontology	Hyperlink

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Gene Summary	This gene generates several transcript variants which differ in their first exons. At least three alternatively spliced variants encoding distinct proteins have been reported, two of which encode structurally related isoforms known to function as inhibitors of CDK4 kinase. The remaining transcript includes an alternate first exon located 20 Kb upstream of the remainder of the gene; this transcript contains an alternate open reading frame (ARF) that specifies a protein which is structurally unrelated to the products of the other variants. This ARF product functions as a stabilizer of the tumor suppressor protein p53 as it can interact with, and sequester, MDM1, a protein responsible for the degradation of p53. In spite of the structural and functional differences, the CDK inhibitor isoforms and the ARF product encoded by this gene, through the regulatory roles of CDK4 and p53 in cell cycle G1 progression, share a common functionality in cell cycle G1 control. This gene is frequently mutated or deleted in a wide variety of tumors, and is known to be an important tumor suppressor gene. [provided by RefSeq
Other Designations	CDK4 inhibitor p16-INK4|OTTHUMP00000021147|OTTHUMP00000021148|cell cycle negative regulator beta|cyclin-dependent kinase inhibitor 2A|cyclin-dependent kinase inhibitor p16|multiple tumor suppressor 1

Publication Reference

- CDKN2A Chromogenic In Situ Hybridization for Separating Benign From Malignant Mesothelial Proliferations.

  Andrew Churg, Tara Spence, Karina C Martin, Janine Senz, Stephen Yip, Julia R Naso.

  The American Journal of Surgical Pathology 2025 Mar; 0:0.

  Application: CISH-P, Human, Neoplastic specimens

Pathway

- Bladder cancer
- Cell cycle
- Chronic myeloid leukemia
- Glioma
- Melanoma
- Non-small cell lung cancer
- p53 signaling pathway
- Pancreatic cancer
- Pathways in cancer

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Disease

- Adenocarcinoma
- Alzheimer disease
- Aneuploidy
- Asthma
- Ataxia telangiectasia
- Atherosclerosis
- Barrett Esophagus
- Bile Duct Neoplasms
- Birth Weight
- Brain Ischemia
- Brain Neoplasms
- Breast cancer
- Breast Neoplasms
- Calcinosis
- Carcinoma
- Cardiovascular Diseases
- Chagas Disease
- Cholangiocarcinoma
- Cholangitis
- Chromosomal Instability
- Chromosome Aberrations
- Chronic Disease
- Colon cancer
- Colonic Neoplasms

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- Colorectal Neoplasms
- Coronary Artery Disease
- Coronary Disease
- Cystadenocarcinoma
- Diabetes
- Diabetes Complications
- Diabetes Mellitus
- Disease Progression
- Disease Susceptibility
- Dysplastic Nevus Syndrome
- Eczema
- Esophageal Neoplasms
- Eye Neoplasms
- Fetal Diseases
- Genetic Predisposition to Disease
- Glioblastoma
- Glioma
- Glucose Intolerance
- Glucose Metabolism Disorders
- Head and Neck Neoplasms
- Heart Diseases
- Hemorrhage
- HIV Infections
- Hyperglycemia
- Hyperlipidemias
- Hyperlipoproteinemia Type II

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- Hypersensitivity
- Hypertension
- Insulin Resistance
- Intracranial Aneurysm
- Kidney Failure
- Laryngeal Neoplasms
- Leukemia
- Leukoplakia
- Liver Cirrhosis
- Lung Neoplasms
- Lymphoma
- Malignant melanoma
- Malnutrition
- Melanoma
- Meningeal Neoplasms
- Meningioma
- Microsatellite Instability
- Mouth Neoplasms
- Multiple endocrine neoplasia
- Multiple Endocrine Neoplasia Type 1
- Multiple Myeloma
- Myelodysplastic Syndromes
- Myocardial Infarction
- Nasopharyngeal Neoplasms
- Neoplasm Invasiveness
- Neoplasm Recurrence

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- Neoplasms
- Neuroma
- Nevus
- Obesity
- Occupational Diseases
- Ovarian cancer
- Ovarian Neoplasms
- Pancreatic cancer
- Pancreatic Neoplasms
- Periodontitis
- Pharyngeal Neoplasms
- Precancerous Conditions
- Prostate cancer
- Prostatic Neoplasms
- Pulmonary Disease
- Rectal Neoplasms
- Retinoblastoma
- Rhinitis
- Schizophrenia
- Skin Neoplasms
- Starvation
- Stomach Neoplasms
- Stroke
- Sunburn
- Urinary Bladder Neoplasms
- Uveal Neoplasms

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- Vascular Diseases
- Weight Gain
- Werner syndrome
- Wolfram Syndrome

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