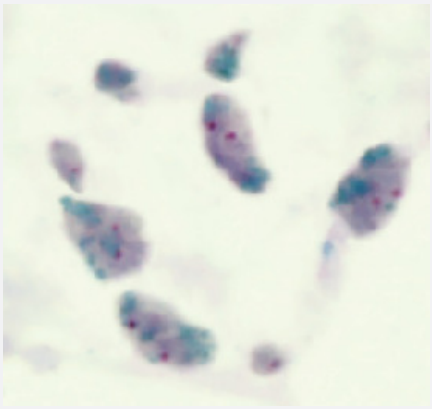
CDK4/CEN12 CISH Probe

Catalog # CG0003 Size 400 uL

Applications



Chromogenic *In Situ* Hybridization (FFPE Tissue)

Liposarcoma tissue section with CDK4 amplification as indicated by large green clusters.

Specification

Product Description	CDK4/CEN12 CISH Probe is designed for the qualitative detection of human CDK4 gene amplifications as well as the detection of chromosome 12 alpha satellites 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 12q13.3-q14.1* (chr12:58,004,553-58,313,271) harboring the CDK4 gene region. Dinitrophenyl-labeled polynucleotides, which target sequences mapping in 12p11.1-q11 specific for the alpha satellite centromeric region D12Z3 of chromosome 12. 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 (CDKN2A gene region), and Dinitrophenyl-labeled polynucleotides appear as bright red colored distinct dots (CEN 9). **Normal situation**: In interphases of normal cells or cells without a deletion involving the CDKN2A gene region, two distinct dot-shaped green and two distinct dot-shaped red signals appear. **Aberrant situation**: In a cell with deletion affecting the CDKN2A gene region, a reduced number of green signals will be observed. Deletions affecting only parts of the CDKN2A gene region might result in normal signal pattern with green signals of reduced size. 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

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Gene Info — CDK4

Entrez GeneID	1019
Gene Name	CDK4
Gene Alias	CMM3, MGC14458, PSK-J3
Gene Description	cyclin-dependent kinase 4
Omim ID	123829 609048
Gene Ontology	Hyperlink

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Gene Summary	The protein encoded by this gene is a member of the Ser/Thr protein kinase family. This protein is highly similar to the gene products of S. cerevisiae cdc28 and S. pombe cdc2. It is a catalytic sub unit of the protein kinase complex that is important for cell cycle G1 phase progression. The activit y of this kinase is restricted to the G1-S phase, which is controlled by the regulatory subunits D-typ e cyclins and CDK inhibitor p16(INK4a). This kinase was shown to be responsible for the phosph orylation of retinoblastoma gene product (Rb). Mutations in this gene as well as in its related prote ins including D-type cyclins, p16(INK4a) and Rb were all found to be associated with tumorigenes is of a variety of cancers. Multiple polyadenylation sites of this gene have been reported. [provide d by RefSeq
Other Designations	cell division kinase 4|melanoma cutaneous malignant, 3

Pathway

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

Disease

- Adenocarcinoma
- Birth Weight
- Brain Neoplasms
- Breast cancer

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- Breast Neoplasms
- Cardiovascular Diseases
- Diabetes Mellitus
- Edema
- Esophageal Neoplasms
- Genetic Predisposition to Disease
- Glioblastoma
- Head and Neck Neoplasms
- Kidney Failure
- Leukemia
- Lung Neoplasms
- Lymphoma
- Malignant melanoma
- Melanoma
- Mouth Neoplasms
- Neoplasm Invasiveness
- Neoplasm Recurrence
- Neoplasms
- Obesity
- Ovarian cancer
- Ovarian Neoplasms
- Pancreatic cancer
- Pancreatic Neoplasms
- Precancerous Conditions
- Pulmonary Disease
- Retinoblastoma

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- Skin Neoplasms
- Urinary Bladder Neoplasms
- Uveal Neoplasms
- Werner syndrome

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