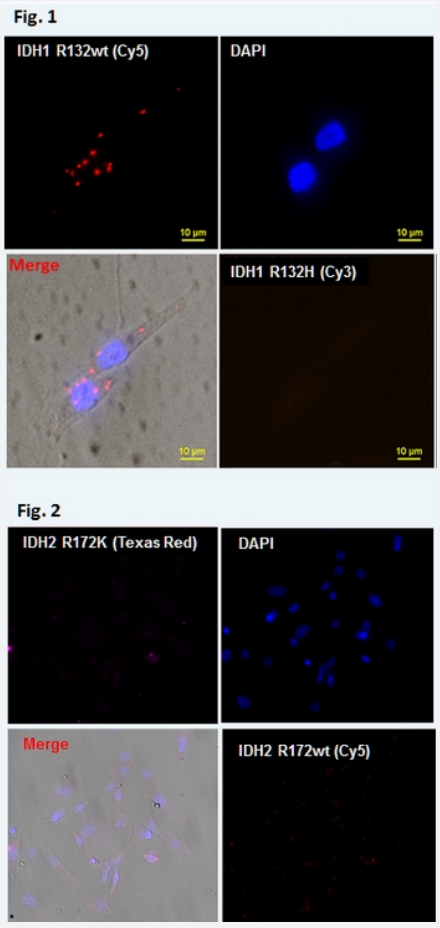
mutaFISH™ IDH1 R132H R132wt IDH2 R172K R172wt RNA Probes

Catalog # FP0012 Size 1 Probe Set

Applications



mutation specific, Fluorescence *In Situ* Hybridization (Cells)

Fig.1 mutaFISH™ staining was performed *in situ* in human SH-SY5Y cells. IDH1 R123H point mutation was not detected via orange signal (Cy3), IDH1 R123 wildtype was detected via red signal.

Fig.2 mutaFISH™ staining was performed *in situ* in human SH-SY5Y cells. IDH2 R172K point mutation was detected via purple signal (Texas Red), IDH2 R172 wildtype was detected via red signal.

Specification

Product Description	mutaFISH™ IDH1 R132H R132wt IDH2 R172K R172wt RNA Probes is designed to detect human IDH1 R132H gene mutation and IDH2 R172K gene mutation on single strand RNA in cells using padlock probe and *in situ* rolling-circle amplification technology.
Reactivity	Human

Supplied Product	Content: 1. RT IDH1 R132 Primer 2. RT IDH2 R172 Primer 3. mutaFISH™ IDH1 R132H RNA Probe 4. mutaFISH™ IDH1 R132wt RNA Probe 5. mutaFISH™ IDH2 R172K RNA Probe 6. mutaFISH™ IDH2 R172wt RNA Probe 7. Detection Probe-Aqua 431 8. Detection Probe-Texas Red X 9. Detection Probe-6-HEX
Technology	mutaFISH™ (mutation-specific Fluorescence *In Situ* Hybridization)
Comparison	FISH Probes vs mutaFISH™ Probes
Fluorophore	Aqua 431 (Excitation Peak (nm): 431; Emission Peak (nm): 480) Texas Red X (Excitation Peak (nm): 595; Emission Peak 613) 6-HEX (Excitation Peak (nm): 533; Emission Peak (nm): 559)
Probe Position	
Regulatory Status	For research use only (RUO)
Storage Instruction	Store at -20°C. Aliquot to avoid repeated freezing and thawing.
Note	We recommend mutaFISH™ RNA Accessory Kit (Catalog #: KA4915) which provides necessary re agents and enzymes for *in situ* reverse transcription, RNA digestion, mutaFISH™ hybridization, ligati on and amplication prior to mutaFISH™.
Video	

Applications

- mutation specific, Fluorescence *In Situ* Hybridization (Cells)

  Fig.1 mutaFISH™ staining was performed *in situ* in human SH-SY5Y cells. IDH1 R123H point mutation was not detected via orange signal (Cy3), IDH1 R123 wildtype was detected via red signal.

  Fig.2 mutaFISH™ staining was performed *in situ* in human SH-SY5Y cells. IDH2 R172K point mutation was detected via purple signal (Texas Red), IDH2 R172 wildtype was detected via red signal.

Gene Info — IDH1

Entrez GeneID	3417
Gene Name	IDH1
Gene Alias	IDCD, IDH, IDP, IDPC, PICD
Gene Description	isocitrate dehydrogenase 1 (NADP+), soluble
Omim ID	147700
Gene Ontology	Hyperlink
Gene Summary	Isocitrate dehydrogenases catalyze the oxidative decarboxylation of isocitrate to 2-oxoglutarate. These enzymes belong to two distinct subclasses, one of which utilizes NAD(+) as the electron acceptor and the other NADP(+). Five isocitrate dehydrogenases have been reported: three NAD(+)-dependent isocitrate dehydrogenases, which localize to the mitochondrial matrix, and two NADP(+)-dependent isocitrate dehydrogenases, one of which is mitochondrial and the other predominantly cytosolic. Each NADP(+)-dependent isozyme is a homodimer. The protein encoded by this gene is the NADP(+)-dependent isocitrate dehydrogenase found in the cytoplasm and peroxisomes. It contains the PTS-1 peroxisomal targeting signal sequence. The presence of this enzyme in peroxisomes suggests roles in the regeneration of NADPH for intraperoxisomal reductions, such as the conversion of 2, 4-dienoyl-CoAs to 3-enoyl-CoAs, as well as in peroxisomal reactions that consume 2-oxoglutarate, namely the alpha-hydroxylation of phytanic acid. The cytoplasmic enzyme serves a significant role in cytoplasmic NADPH production. [provided by RefSeq
Other Designations	NADP+-specific ICDH|NADP-dependent isocitrate dehydrogenase, cytosolic|NADP-dependent isocitrate dehydrogenase, peroxisomal|oxalosuccinate decarboxylase

Pathway

- Biosynthesis of alkaloids derived from histidine and purine
- Biosynthesis of alkaloids derived from ornithine
- Biosynthesis of alkaloids derived from shikimate pathway
- Biosynthesis of alkaloids derived from terpenoid and polyketide

- Biosynthesis of phenylpropanoids
- Biosynthesis of plant hormones
- Biosynthesis of terpenoids and steroids
- Citrate cycle (TCA cycle)
- Glutathione metabolism
- Metabolic pathways
- Reductive carboxylate cycle (CO2 fixation)

Disease

- Adenoma
- Astrocytoma
- Blast Crisis
- Brain Neoplasms
- Carcinoma
- Chronic Disease
- Cleft Lip
- Cleft Palate
- Disease Progression
- Disease Susceptibility
- Genetic Predisposition to Disease
- Glioblastoma
- Glioma
- Hematologic Diseases
- HIV Infections
- Leukemia
- Lung Neoplasms

- Lymphoma
- Melanoma
- Monosomy
- Myelodysplastic Syndromes
- Myeloproliferative Disorders
- Neoplasm Metastasis
- Nervous System Neoplasms
- Neuroectodermal Tumors
- Oligodendroglioma
- Pancreatic cancer
- Pancreatic Neoplasms
- Polycythemia Vera
- Primary Myelofibrosis
- Recurrence
- Skin Neoplasms
- Supratentorial Neoplasms
- Thrombocythemia
- Thyroid Neoplasms