

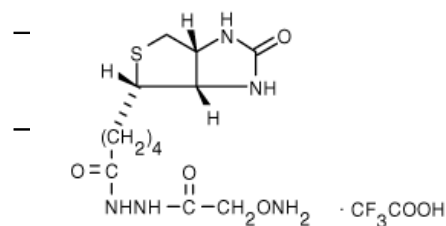
FT-R0756A

Nucleic acid biotinylation / study

AMCH-Biotin

Specifications

Catalog number:	UPR0756A, 10mg
Name:	AMCH-Biotin Aldehyde reactive biotin ARP
Formula :	<i>N</i> -(aminooxyacetyl)- <i>N'</i> -(D- biotinoyl) hydrazine, trifluoroacetic acid salt C ₁₄ H ₂₂ F ₃ N ₅ O ₆ S; MW= 445.41
Solubility:	10 mg/ml water, or soluble in DMSO
Appearance:	white powder
Packaging :	10 mg
Storage :	-20°C
Shipping :	Room Temperature



General information

- Abasic sites in DNA, generated spontaneously or caused by free radicals, ionizing radiation or mutagens like MMS (methyl methanesulfonate), are one of the most common lesions in DNA and are thought to be important intermediates in mutagenesis.
- Uptima AmcH-Biotin, a biotinylated hydroxylamine, reacts with the exposed aldehyde group at abasic sites (AP sites, depurine/depyrimidine sites) of DNA.
- AmcH-Biotin tags at the AP sites of DNA for detection purposes: the biotin can then be detected by peroxidase-labeled avidin and oxidative chromogenic dyes such as OPD or TMB (#UP66478), fluorescent labels or any other ([Sun 2001](#)). A quick and sensitive microplate assay for abasic sites can be performed ([Kow 2000](#)). It has been reported that less than one abasic site in 1x10⁴ nucleotides of DNA can be detected. Conjugated to PCR techniques, the current limit of detection is of one base aldehyde substitution in 7 Mb of DNA and increases the limit for unknown mutation scanning by two to three orders of magnitude ([Subrata 2000](#)).
- Biotinylated DNA can also be purified with monomeric avidin supports (UP29337) ([Sun 2001](#)).
- AMCH-Biotin is permeant to cell membranes, permitting detection of abasic sites in living cells ([Atamna 2000](#)).

Use

Considering the new and various applications, Uptima recommends to refer to the literature for information of uses.

Literature:

- **Asaeda A**, et al. Repair kinetics of abasic sites in mammalian cells selectively monitored by the aldehyde reactive probe (ARP); *Nucleosides Nucleotides* 17, 503-513 (1998) PN32235. [PubMed](#)
- **Atamna H**, et al.; A method for detecting abasic sites in living cells: age-dependent changes in base excision repair; *Proc Natl Acad Sci U S A* 97, 686-691 (2000) PN37700. [PubMed](#)
- **Atamna H**, et al.; N-t-butyl hydroxylamine, a hydrolysis product of alpha-phenyl-N-t-butyl nitron, is more potent in delaying senescence in human lung fibroblasts; *J Biol Chem* 275, 6741-6748 (2000) PN36657. [PubMed](#)
- **Ide H**, et al., *Biochemistry*, **32**, 8276 (1993).
- **Kow YW, Dare A**. ; Detection of abasic sites and oxidative DNA base damage using an ELISA-like assay; *Methods* 22, 164-169 (2000) PN41199. [PubMed](#)

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- **Kubo K., H.** et al., *Kow, Biochemistry*, **31**, 3703 (1992).
- **Lindahl T., B. Nyberg**, *Biochemistry*, **11**, 3610 (1972).
- **Nakamura J.**, et al., *J. A. Swenberg, Cancer Res.*, **58**, 222 (1998).
- **Subrata Chakrabarti**, et al.; Highly Selective Isolation of Unknown Mutations in Diverse DNA Fragments: Toward New Multiplex Screening in Cancer; *Cancer Research* 60, 3732-3737, July 15, 2000 ; [Article](#)
- **Sun HB**, et al.; Detection of abasic sites on individual DNA molecules using atomic force microscopy; *Anal Chem* 73, 2229-2232 (2001) PN42811. [PubMed](#)

Other information

Immobilized Avidins: immobilization of aldehyde bearing biomolecules (AND) for affinity purification or hybridization.

Related products :

CelluSep	Membranes	Dialysis
UPL7784	Psoralen-PEO4-Biotin	
UP29337	Monomeric avidin	
PLP	Labeled (Strept)Avidins	

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