

Papain In Vitro Transcribed mRNA-LNP

Catalog Number:SG-MRNA-LNP-1920

DESCRIPTION	
Product Name	Papain In Vitro Transcribed mRNA-LNP
Gene Name	Papain
Source	The ORF of Papain was cloned in our IVT vector and mRNA was prepared through in vitro transcription and purification. The purified mRNA was further encapsulated with LNP(DSPC:Cholesterol:DMG-PEG:SM102).
Alternative names	Papain
SPECIFICATIONS	
Cap	m7GpppN
5'-UTR	5' -untranslated region derived from human alpha-globin RNA with an optimized Kozak sequence
ORF	Papain
3'-UTR	3' UTR comprising two sequence elements derived from the aminoterminal enhancer of split (AES) mRNA and the mitochondrial encoded 12S ribosomal RNA
Poly(A) Tail	A 110-nucleotide poly(A)-tail consisting of a stretch of 30 adenosine residues, followed by a 10-nucleotide linker sequence and another 70 adenosine residues.
Modifications	N1-methyl-pseudouridine
Neutral Lipid	1,2-distearoyl-sn-glycero-3-phosphocholine (DSPC)
Cholesterol	Cholesterol
Ionizable Lipid	1,2-dimyristoyl-rac-glycero-3-methoxypolyethylene glycol-2000 (PEG2000-DMG)
PEG-lipid	Heptadecan-9-yl 8-((2-hydroxyethyl)(8-(nonyloxy)-8-oxooctyl)amino)octanoate)(SM-102)
Storage	-20 °C
Buffer	PBS, pH7.4
Cryoprotectant	Trehalose
BACKGROUND	
Gene Accession	
Gene Alias	Papain

papayas as a crude latex. Papain is used in food, pharmaceutical, textile, and cosmetic industries. While it has been used for the treatment of inflammation and pain via topical administration, papain has also shown to have anthelmintic and tooth-whitening properties. When topically applied, papain induces an allergen-like inflammatory response via recruiting neutrophils, mast cells, and CD3-positive cells and by induction of a TH2-biased antibody response. In vitro, treatment of papain resulted in the breakdown of tight junctions of primary human keratinocytes that maintain the epithelial barrier integrity. These tight junction proteins include zonula occludens-1, claudin-4, and occludin. It is proposed that papain induces allergic responses via activation of TLR4, leading to an increase in neutrophils, CD3+ cells, mast cells, and CCL8-positive cells.

Background

Papain, also known as papaya proteinase I, is a cysteine protease (EC 3.4.22.2) enzyme that is found in species of papaya, *Carica papaya* and *Vasconcellea cundinamaricensis*. The enzyme is found to be localized in the skin of papaya, and is collected from slashed unripe