

Hsa-miR-541 Probe

Catalog No. FM541-25

Description: one vial of 0.3 mL of probe in hybridization buffer

Intended Use:

This probe is intended for research use only.

Principle:

MicroRNAs (miRNAs) are endogenous, non-coding small RNA molecules that play important role in controlling gene expression. They are involved in multiple biological functions and disease progression including cancer. miRNAs either act as tumor suppressors or oncogenes depending on function of their target gene. Aberrant expression of miRNA has been reported in different cancer types; hence, *in situ* detection of miRNA provides important insight for diagnosis, prognosis, and disease management. miR-541 is located at 14q32 in the IDDM16 region and plays a crucial role in the development of pancreas. Its target genes include diabetes-related gene neurogenin3. Knockdown of human osteomiR miR-541 increased osteopontin/SPP1 expression and calcification in hMSC osteoblastic differentiation, indicating that miR-541 is a negative regulator of osteoblastic differentiation. These observations indicate stage-specific roles of osteomiR, especially miR-541 family on novel targets in osteogenesis. miR-541-3p downregulates endogenous telomerase activity in cells and significantly inhibit cell proliferation. miR-541-3p also have predicted binding sites within the 3'UTR of three genes involved in Wnt signaling (TCF7, MS11, and PAX5). This miRNA inhibits the expression of the luciferase reporter constructs containing 3'UTRs of these genes and downregulates protein expression of the TCF7 transcription factor, which mediates the canonical Wnt pathway.

Please visit the following link for more information about Hsa-miR-541. <https://www.ncbi.nlm.nih.gov/gene/100126308>

Summary and Explanation

miRNAs play an important role in many biological processes, including differentiation and development, cell signaling, and response to infection. Recent research have shown that human miRNA genes are frequently located in cancer-associated genomic regions, while perturbed miRNA expression patterns have been observed in many human cancers. A number of oncogenes and tumor suppressor genes were found to be the targets of miRNAs and global miRNA expression signatures were able to distinguish cancerous and non-cancerous tissues. Therefore, miRNA profiles can serve as highly specific markers for diagnosis, prognosis, disease monitoring, as well as prediction of therapeutic response. miRNAs are remarkably stable molecules and are well preserved in formalin-fixed, paraffin-embedded (FFPE) as well as frozen specimens. Early diagnosis, detection, and assessment of the disease progression are essential for disease management, especially in tumor patients, where timely therapeutic interventions are extremely critical.

Quality Control

This product is quality control tested at BioGenex according to the suggested procedure. The recommended positive control tissue(s) for this miRNA probe is pancreas (FB-HM541).

Recommended protocol and parameters for Hsa-miR-541 probe

Automated Protocol:

<https://omicsveu.com/wp-content/uploads/Brochures/914-0071.0.pdf>

Manual Protocol:

<https://omicsveu.com/wp-content/uploads/Brochures/914-0072.0.pdf>

For more information:

<https://omicsveu.com/wp-content/uploads/Brochures/914-0073.0.pdf>

Bibliography

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- [10.1261/rna.2006511](https://doi.org/10.1261/rna.2006511)
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- <https://doi.org/10.1371/journal.pone.0058796>

	Temperature Limitation		For Research Use Only
	Use By Date		Batch Code
	Non-Sterile		Consult Instructions for Use
	Catalogue Number		BioGenex

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