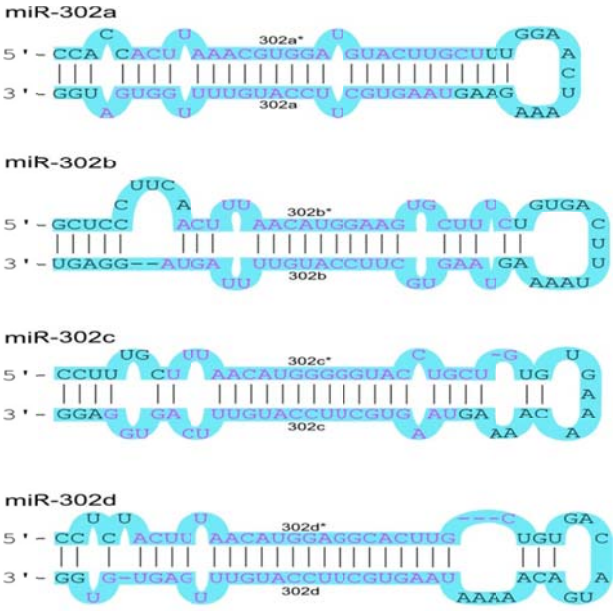
Natural miRNA Precursor
miR-302bcad Cell Extract/Purified

Product Data Sheet

Natural microRNA Precursors are microRNA transcripts that have not been processed into mature microRNA. Once in the cell of interest, they will be processed into mature microRNAs. These mature microRNAs perform the same functions and contain the same hairpin constructs seen in natural cellular counterparts. Natural microRNA Precursor facilitates research of authentic microRNA function. It does so by delivering natural microRNA function through a natural biogenesis mechanism. This will allow researchers the ability to study the cellular effects of microRNA on cell development, the overall effect of microRNA on gene silencing, as well as expand the boundaries of stem cell research.



Key Features

- **Natural**: Natural microRNA precursors, not synthetic siRNA or shRNA mimics
- **Quality**: Microarray certified composition quality
- **Quantity**: High quantity available for in vivo research (HPLC grade)
- **Validated**: Corresponding siRNA/shRNA mimics are validated by publications

Potential Uses

- **Enhancing**: Researches have shown miR-302 precursors promote iPS cell reprogramming
- **Reprogramming**: Studies indicate transgenic delivery of miR-302 reprograms somatic cells
- **miRNA research**: The precursors can be used for the study of natural microRNA effects in in-vivo studies

Purified vs. Cell Extract

Natural microRNA precursors are provided in two forms: Cell Extract and Purified. Although both contain ample amount of precursors for use, each version provides different benefits. The raw extract form contains the hairpin constructs, as well as other total RNA molecules. The plasmid, which contains a GFP reporter, can be used as a reporter to identify transfected cells. In addition, total RNA protects microRNA precursors from degradation by RNAses, providing a more stable shelf life. The cell extract contains roughly 16-20% precursors. The Purified form is pure microRNA precursor, without any vectors or debris. This ensures that only microRNA precursor is present, hence minimizing experimental variables. However, removal of other RNA contents in cell extract decreases the shelf-life of mircoRNA precursors, and increases their susceptibility to RNAse degradation.

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Quality & Stability

Natural microRNA precursors generated from miR-302 plasmids undergo quality analysis to ensure sequence integrity. These mircoRNA precursors contain the same sequence as naturally occurring cellular precursors and can therefore be used in experiments to learn about the direct effects of microRNA on cellular processes. The precursors have been isolated from dicer-negative microRNA expressing competent cells that are capable of expressing ample amount of specific microRNA precursors. Since cells are dicer-negative, they only produce miRNA precursors but not mature microRNAs. Multiple purification processes are performed to ensure a high concentration of precursors in its pure state.

Single-stranded RNase first is introduced to digest any impurity RNAs. Since microRNA precursors hairpins contain double-stranded regions, only undesired single stranded RNAs are removed. The microRNA precursor size and purification is confirmed by electrophoresis.

In addition, the exact sequence and presence of the microRNA precursors are microarray certified to ensure that only pure population of specific natural microRNA precursors are present.

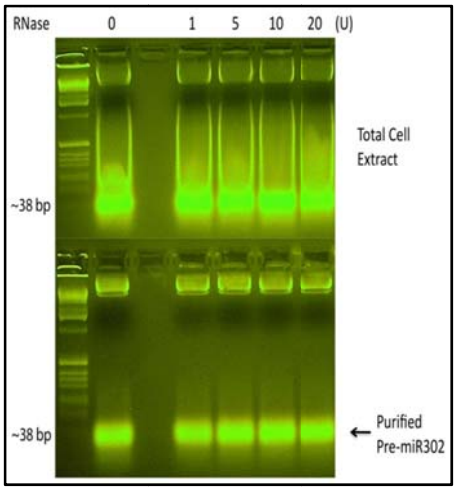

Fig. 1 - Electrophoresis confirms size and resistance to single-stranded RNAse contamination

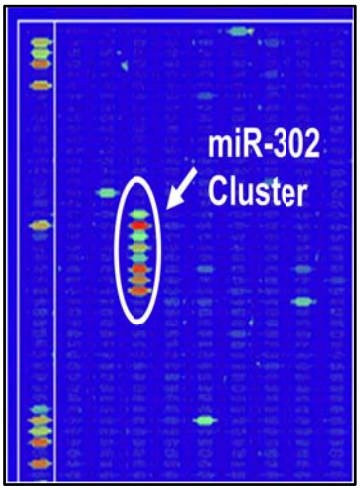

Fig. 2 - microarray data: Control and mir-302bcad Precursors

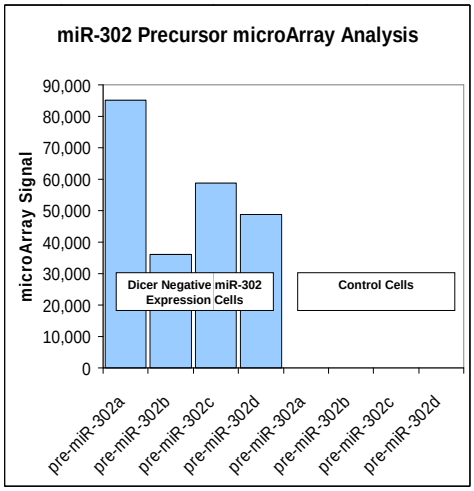

Fig. 3 - Quality of microRNA precursors based on microarray analysis (Dicer-negative miR-302 Expression Cells vs. Control Cells)

Product Catalog

Cat No.	Product Name	Quantity	Price
M-410-302-EX	mir-302bcad Cell Extract	1.7 mg 6.8 mg 86 mg	$260 $760 $2,250
M-410-302-PF	mir-302bcad Purified	10nmol 40nmol 500nmol	$285 $850 $2,500

Visit www.mellobiotech.com for more information or call us at (562) 946-0131

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