

miRCURY LNA™ microRNA

Detection Probes for *in situ* hybridization

LNA™-enhanced microRNA *in situ* hybridization probes with a wide selection of labels. Sensitive and specific detection of microRNAs from a wide range of sample sources.

At a glance

- LNA™-enhanced probes with a wide selection of labels
- Probes available for all known microRNAs as well as custom sequences
- Unmatched sensitivity and specificity
- Fully developed protocols available

Product coverage

There are two kinds of products available for microRNA *in situ* hybridization:

- **Pre-designed miRCURY LNA™ microRNA Detection Probes** are available for all invertebrate, vertebrate and plant microRNAs annotated in miRBase.
- **Custom miRCURY LNA™ microRNA Detection Probes** are available for any other microRNA or small RNA, including precursor microRNAs. Our experts will design the optimal probe for you.

In addition, we offer positive and negative control probes.

Sensitive microRNA detection

miRCURY LNA™ microRNA Detection Probes for *in situ* hybridization bind to their targets with high affinity, resulting in very specific and sensitive detection of microRNAs in whole mounts, single cells and sections from frozen or formalin-fixed paraffin-embedded (FFPE) tissues (including archived samples). For FFPE samples, we recommend using the probes in conjunction with one of our miRCURY LNA™ microRNA ISH Optimization Kits.

The miRCURY LNA™ microRNA Detection Probes for *in situ* hybridization have been used with great success in a variety of samples (Figures 1-4). This is evident from the large number of peer-reviewed publications based on results obtained using these probes in various cells and tissues. Our detection probes help researchers to accurately address “when” and “where” a particular microRNA is expressed.

Figure 1. Detection of a brain-specific microRNA. LNA™ probes (red) were used to detect miR-38 in mouse hippocampus. DNA is labeled with DAPI (blue). Image kindly provided by Dr. Javier Martinez, IMBA, Vienna, Austria.

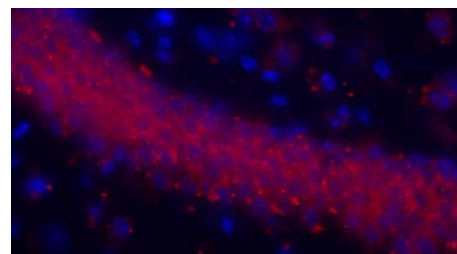


Figure 2. MicroRNA detection in zebrafish. Detection of miR-122a (top), miR-206 (middle) and miR-124a (bottom) using LNA™ probes in whole mount zebrafish embryos. Image kindly provided by Dr. Ronald Plasterk, Hubrecht Laboratory, The Netherlands.



Double DIG labels for higher sensitivity

Double (5' and 3') DIG-labeled probes offer substantially higher sensitivity than single labeled probes. A cooperative effect of the two DIG labels results in greatly increased signal to noise ratio (up to 10-fold higher) which means that even low abundance microRNAs can be reliably detected (Figure 5). We recommend this labeling option for optimal results.

Selected publications

Scheider *et al.* J. Mol. Histol. 2011, 42: 289-99

Nuovo GJ. Methods 2010, 52: 307-15

Sweetman D. Methods Mol. Biol. 2011, 732: 1-8

Ordering information

miRCURY LNA™ microRNA Detection Probe	Product no.
Ready-to-Label*, 250 pmol	xxxxx-00
5' and 3' DIG Labeled, 250 pmol	xxxxx-15
5'-DIG Labeled, 250 pmol	xxxxx-01
5'-amino Labeled, 250 pmol	xxxxx-02
5'-biotin Labeled, 250 pmol	xxxxx-03
5'-fluorescein Labeled, 250 pmol	xxxxx-04
3'-DIG Labeled, 250 pmol	xxxxx-05
3'-amino Labeled, 250 pmol	xxxxx-06
3'-biotin Labeled, 250 pmol	xxxxx-07
3'-fluorescein Labeled, 250 pmol	xxxxx-08
Custom probe, 250 pmol	99999-xx
U6 Positive Control, 250 pmol	99002-xx
Sense miR-159, Negative Control, 250 pmol	99003-xx
Scramble-miR, Negative Control, 250 pmol	99004-xx

Other modifications are also available. Learn more at www.exiqon.com/oligonucleotide-modifications

*"Ready-to-label" means that the miRCURY LNA™ microRNA Detection Probe can be enzymatically labeled with the detection moiety of choice. For example DIG, radiolabel, biotin or fluorophores.

DIG is licenced from Roche Diagnostics GmbH

For more publications and updated product information, please visit
www.exiqon.com/ish

Visit our microRNA ISH gallery
Nearly 1000 images are on display at:
www.exiqon.com/gallery-of-in-situ-hybridization-images

Contact information

Outside North America

Phone: +45 45 65 09 29 · Fax: +45 45 66 18 88

North America

Phone: +1 781 376 4150 · Fax: +1 781 376 4152

www.exiqon.com

Figure 3. MicroRNA detection in chick. Specific detection of miR-206 in a *Gallus gallus* embryo using an LNA™ probe. miR-206 is detected in myotomal muscle cells (Ason *et al.* 2006).



Figure 4. This microRNA is clearly up-regulated in the tumor (A) compared to normal tissue (B). Moreover, it is specifically located in the stromal fibroblast compartment. The miRCURY LNA™ microRNA Detection Probe is FITC labeled (green) and nuclei are counterstained in DAPI (blue).

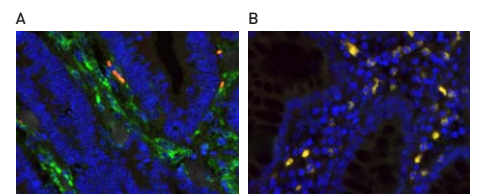


Figure 5. Double DIG labeling is more sensitive than single DIG labeling. hsa-miR-21 detection in tissue sections using an LNA™ probe with a double DIG (5' and 3') label at 40nM (A) or a single 3' DIG label at 80nM (B).

