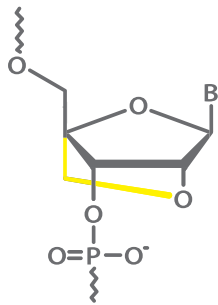


Locked Nucleic Acid™ technology

The structure of LNA



LNA™ properties

T_m increase/monomer against DNA [°C]	2.0-6.0
T_m increase/monomer against RNA [°C]	3.0-8.0
ΔT_m at single mismatch against DNA [°C]	LNA >> DNA
Compatible with standard molecular biology	Yes
Water solubility	High



See how LNA™ works

To learn more about the properties and advantages of LNA™ in the study of microRNAs, view the 3D LNA™ animation at exiqon.com/lna

Introduction to LNA™

Locked nucleic acid (LNA™) nucleosides are a class of nucleic acid analogues in which the ribose ring is “locked” by a methylene bridge connecting the 2'-O atom with the 4'-C atom (Figure 2). LNA™ nucleosides contain the six common nucleobases (T, C, G, A, U and mC) that appear in DNA and RNA and are able to form base pairs according to standard Watson-Crick base pairing rules. However, by “locking” the molecule with the methylene bridge the LNA™ is constrained in the ideal conformation for Watson-Crick binding. LNA™ therefore makes the pairing with a complementary nucleotide strand more rapid and increases the stability of the resulting duplex.

Benefits of LNA™ technology

- Ideal for the detection of short RNA and DNA targets
- Increases the thermal stability of duplexes
- Capable of single base pair discrimination
- Resistant to exo- and endonucleases resulting in high stability *in vivo* and *in vitro* applications
- Increased target specificity
- Strand invasion properties enables detection of “hard to access” samples
- Compatible with standard enzymatic processes

Proven LNA™ applications

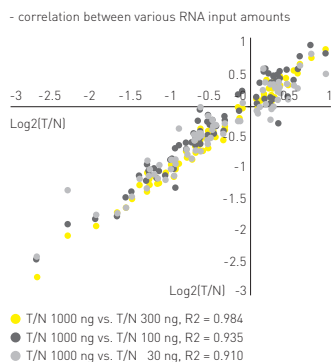
LNA™ probes (oligonucleotides incorporating LNA™ nucleosides) are a powerful tool to be used in any application targeting a short RNA or DNA sequence where standard oligonucleotides do not show sufficient affinity or specificity.

- MicroRNA and small RNA research
- Real-time PCR
- SNP genotyping
- *In situ* hybridization
- Microarray gene expression profiling
- RNAi
- Antisense oligonucleotides
- Allele specific PCR
- Cytogenetics
- DNAzymes
- Gene repair/exon skipping
- mRNA isolation
- Splice variant detection
- Comparative Genome hybridization (CGH)

MicroRNA expression profiling

Exiqon's miRCURY LNA™ Arrays produce highly reliable microRNA profiles from just 30 ng total RNA.

Learn more at:
exiqon.com/array



Precise visualization of microRNAs in tissue

Exiqon's miRCURY LNA™ Detection Probes address the "when" and "where" a particular microRNA is expressed.

Learn more at:
exiqon.com/insitu



Visualization of miR-206 expression in the skeletal precursors of a Gallus Gallus embryo.

Cytogenetics

Fast and specific detection of chromosomal sequences performed directly on intact chromosomes.

Learn more at:
exiqon.com/cytogenetics

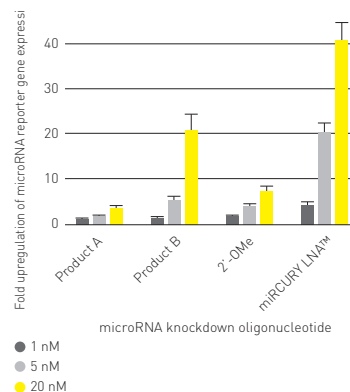


Specific telomere detection using LNA™ FISH probes. Image kindly provided by Dr. R. W. Dirks, Leiden University Medical Center, Leiden, The Netherlands.

Determination of microRNA function

With Exiqon's miRCURY LNA™ Knockdown Probes, you can achieve comprehensive inhibition of microRNA activity.

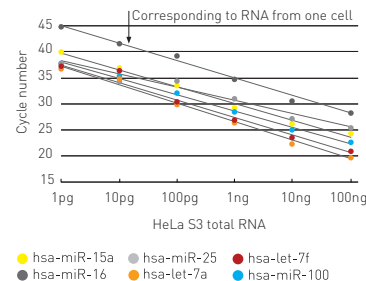
Learn more at:
exiqon.com/knockdown



Sensitive real-time microRNA quantitation

With our miRCURY LNA™ PCR System*, your discovery starts from just 10 pg total RNA – you only need a single cell.

Learn more at:
exiqon.com/pcr

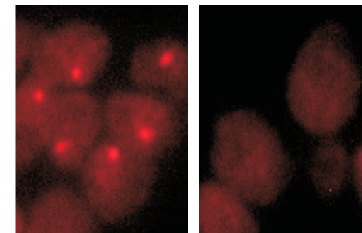


Dilution series of 6 different miRCURY LNA™ PCR assays showing accurate quantitation from total RNA amounts equivalent to a single cell.

mRNA *in situ* hybridization

Fast and specific mRNA detection using an LNA™ oligonucleotide for *in situ* hybridization in fixed cells.

Learn more at:
exiqon.com/mrnainsitu



Improved signal and less background using an LNA™ mRNA *in situ* hybridization probe (left picture) compared to a DNA probe (right picture). Images from Thomsen et al., RNA 2005, in press.

Outside North America Exiqon A/S

Business hours

8:30 a.m. - 4:30 p.m. Central European Time (GMT +100)

General inquiries and technical assistance

Phone: +45 45 65 09 29

Fax: +45 45 65 04 59

Email (form): exiqon.com/contact

www.exiqon.com

North America Exiqon Inc.

Business hours

8:30 a.m. - 4:30 p.m. Eastern Standard Time

General inquiries and technical assistance

Phone: +1 781 376 4150

Fax: +1 781 376 4152

Toll free (US): +1 888 miRCURY

Email (form): exiqon.com/contact

EXIQON
Seek Find Verify