

TaqMan® Non-coding RNA Assays

Specific and reproducible quantification of long non-coding RNA transcript expression levels

- Based on proven TaqMan® Assay technology and uses the existing assay design pipeline
- Enables specific and reproducible quantification of long non-coding RNA expression levels
- Available for human, mouse, and rat species



Non-coding RNA

Non-coding RNAs (ncRNAs) are RNAs that are transcribed from the genome but are not translated into proteins. Although much of the protein-coding portion of the transcriptome has been extensively studied and characterized, ncRNAs represent a largely open and undiscovered area that has tremendous potential to advance understanding of cell regulatory and disease mechanisms. Some estimates indicate that up to half of all transcription in human and mouse may result in non-coding RNAs [1].

Non-coding RNA has been implicated in a broad variety of cellular functions, including transcriptional regulation, messenger RNA stability and translation, epigenetic regulation, and assembly of macromolecular complexes. Based upon these functionalities, this class of RNA can be broken into two main categories: Regulatory ncRNAs (e.g., miRNA, piRNA, Xist) Structural/

housekeeping ncRNAs (e.g., tRNA, snRNA, rRNA) The regulatory ncRNA category can be further subdivided according to ncRNA size. Long ncRNAs are transcripts that are longer than 200 nucleotides, distinguishing them from small regulatory RNAs such as miRNAs. Having genomic tools to better characterize and profile these long ncRNAs will help elucidate their involvement in cellular regulatory networks and disease etiology.

TaqMan® Non-coding RNA Assays

TaqMan® Non-coding RNA Assays enable specific and reproducible quantification of long ncRNA expression levels. These assays are based on proven TaqMan® Assay technology, leveraging the existing TaqMan® Gene Expression Assay design pipeline to generate gold-standard assays designed to accurately detect ncRNA targets. Only we offer TaqMan® Assays for measuring expression of long ncRNAs.

Table 1 shows the number of available TaqMan® Non-coding RNA Assays for human, mouse, and rat species. New assays will continually be added to the collection.

Table 1. Available numbers of TaqMan® Non-coding RNA Assays for human, mouse, and rat.

Species	No. of assays*
Human	15,726
Mouse	11,510
Rat	363
Total	27,599

*As of July 2014

Assay design and selection

TaqMan® Non-coding RNA Assays are designed using algorithms similar to those used for TaqMan® Gene Expression Assays.

One of the main differences between our gene expression assays and non-coding RNA assays is that the non-coding assays were designed to only detect non-coding transcript targets. In contrast, coding assays are designed to detect one or more coding transcripts of the same gene. Annotation for the non-coding assays comes from NCBI and the RNAdB (<http://research.imb.uq.edu.au/rnadb/>), the most comprehensive non-coding RNA database available. In addition, to help facilitate the microarray validation workflow, we have designed a number of assays for transcripts that are available on NCode™ Non-coding RNA Arrays.

Workflow

As with the TaqMan® Gene Expression Assays collection, new TaqMan® Non-coding RNA Assays can be used with or without preamplification. Figure 1 shows examples of workflows with recommended master mixes and reagents.

Finding and ordering TaqMan® Non-coding RNA Assays
TaqMan® Non-coding RNA Assays can be searched for at lifetechnologies.com/taqmannocrna using an interface similar to that of TaqMan® Gene Expression Assays. Users can search for non-coding assays, gene expression assays, or all assays (Figure 2).

References

1. Mattick JS (2005) The functional genomics of noncoding RNA. *Science* 309:1527–1528.

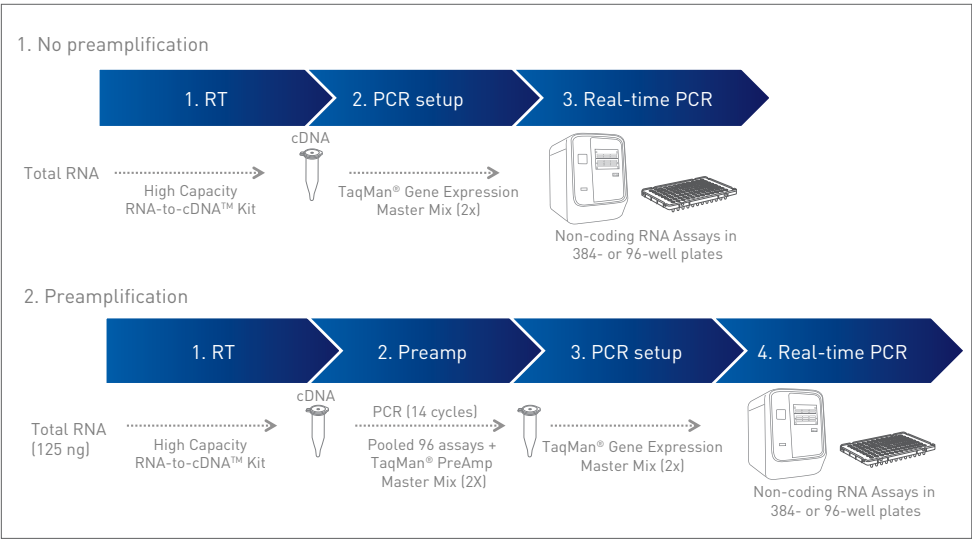


Figure 1. TaqMan® Non-coding RNA Assay workflow options.

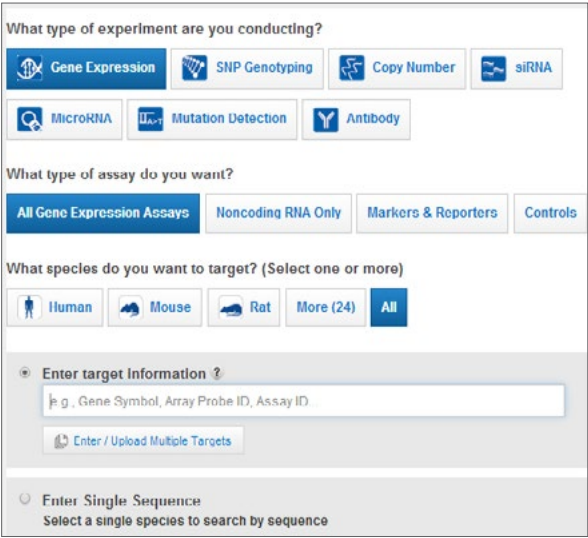


Figure 2. TaqMan® Non-coding RNA Assays use an online search interface similar to that of TaqMan® Gene Expression Assays.

Ordering information

Product	No. of 20 µL reactions	Cat. No.
TaqMan® Non-coding RNA Assays	360	4426961
TaqMan® Non-coding RNA Assays	750	4426962
TaqMan® Non-coding RNA Assays	2,900	4426963

Find out more at lifetechnologies.com/taqmannocrna

