



## UltraMarathonRT

### See RNA as Nature Wrote It

Unlock direct insight into RNA biology with RNAConnect's **UltraMarathonRT® (uMRT) Direct RNA-Seq Kit**, the first complete, ready-to-use solution for preparing native RNA libraries for Oxford Nanopore Technologies® (SQK-RNA004) sequencing.

Powered by helicase-driven processivity, uMRT brings greater coverage and sensitivity to direct RNA sequencing workflows, revealing longer transcripts, modification patterns, and transcript structures that other RTs simply miss.

### Why Choose the uMRT Direct Kit?

#### Higher CPMs & Longer Read Lengths

This kit delivers >10% higher mapped reads from  $\geq 2$  kb RNAs. uMRT works at 30°C, which preserves the integrity of longer transcripts.

#### Generate Higher cDNA Yields from your Sample

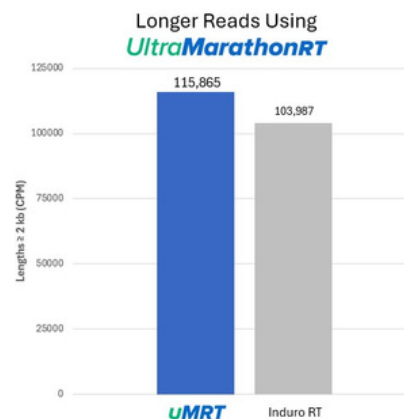
uMRT efficiently converts even low-abundance, structured transcripts, increasing long-read cDNA yields > 25% and improving transcript-level quantification.

#### Optimized for Native RNA

uMRT's high processivity and gentle 30 °C reaction temperature preserves full length, RNA integrity and base modifications— making it ideal for studying epitranscriptomic marks, RNA dynamics, and full-length isoforms.

#### All-in-One Simplicity

Eliminate the need to source multiple enzymes and reagents from different vendors. Our 6 & 48 reaction kits and standardized, validated workflow mean you no longer have to order multiple reagents from different vendors in quantities that may not match your experimental requirements.



**Figure 1.** Number of mapped read counts per million (CPM) for read lengths ranging from 2 kb - 30 kb. Direct RNA sequencing performed on Human Brain Total RNA (Thermo, Cat# AM7962) using SQK-RNA004, N=2. All trials were down-sampled to 2.7M reads using SEQTK, then analyzed using NanoPlot.

### See the data: longer reads, more novel transcripts

Compared to the existing ONT® protocol, the uMRT Direct RNA-Seq Kit shows:

- 5–10% longer read lengths (with big gains >2 kb)
- 25–50% higher cDNA yield
- 1–2% more total genes and 15–20% more novel transcripts (NIC/NNIC)
- 25–30% more intron retention events

[Publication](#)



## Typical Workflow for uMRT Direct

1. **RNA Preparation & Conditioning** – Total RNA or poly(A)+ RNA
2. **Adapter Ligation & Cleanup**
3. **uMRT-Powered Reverse Transcription at 30 °C & RT Cleanup**
4. **ONT RNA Ligation Adapter Addition & Cleanup** – Single-step protocol with optimized buffers
5. **Flow cell Loading & Sequencing** – PromethION / MinION / GridION

## Comparison: ONT Standard vs uMRT Direct

	ONT Workflow (Reagent Mix Required)	uMRT Direct RNA-Seq Kit
<b>Vendors Needed</b>	NEB + TFS + ONT	RNAConnect
<b>Reaction Temperature</b>	60 °C	30 °C
<b>Yield / Read Length</b>	Standard	Improved CPM & long-read coverage
<b>Ease of Ordering</b>	Multiple vendors for individual reagents required	All non-ONT reagents in a single kit.

## UltraMarathonRT® (uMRT) Direct RNA-Seq Kit

### Kit Components:

- UltraMarathonRT® (20 U/μL)
- 2x RT Reaction Buffer
- dNTP mix (10 mM each)
- RNA Conditioner
- 5x Ligation Buffer Q
- DNA Ligase (2,000,000 U/mL)
- RNase Inhibitor (40 U/μL)
- Quenching Buffer
- Nuclease-free Water

Catalog# R1008S (6 rxns), R1008M (48 rxns)

For purchase orders contact us at [sales@rnaconnect.com](mailto:sales@rnaconnect.com).

### Applications:

- Direct RNA Sequencing (ONT)
- RNA Modification Mapping
- Long-Read Isoform Discovery
- Viral RNA and lncRNA Analysis

ORDER NOW



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