



Catalog # **RTS01-E011-100**
Aliquot Size **100 Rxn**

Super Mix For qPCR (+gDNA Wiper)

Catalog # **RTS01-E011**
Lot # **A4647-9**

Product Description

Super Mix for qPCR (+gDNA Wiper) is a reverse transcriptase kit for cDNA synthesis in qPCR applications. It includes a gDNA wiper solution for completely removing residual genomic DNA from the RNA template, ensuring more reliable quantitative results.

Components

	Component Name	100 Rxn
	5 × Super Mix RT ^a	400 µl
b	4 × gDNA wiper Mix	400 µl
c	RNase-free ddH ₂ O	2 × 1ml
d	5 × No RT Control Mix ^b	40 µl

a. Contains Buffer, dNTP, Reverse Transcriptase, RNase inhibitor, Random primers/Oligo (dT)20VN primer Mix.

b. Used for No RT control preparation; except for Reverse Transcriptase, other components are the same as 5 × Super Mix RT

Storage and Stability

Store at -30 ~ -15°C and transport at ≤0°C.

Scientific Background

Super Mix for qPCR (+gDNA Wiper) consists of an upgraded reverse transcriptase (RT) in an optimized buffer. This kit further improves the efficiency of cDNA synthesis and is suitable for two-step qRT-PCR detection. The 4 × gDNA wiper Mix in the kit can remove residual genomic DNA from the RNA template, ensuring more reliable quantitative results. It simplifies qPCR primer design without the need to design primers across introns. 5 × Super Mix RT contains all components required for the reverse transcription reaction and can be started rapidly after the addition of template RNA and RNase-free ddH₂O. This product is suitable for reverse transcription of animal, plant and microbial RNA, and the reaction products are compatible with dye-based and probe-based qPCR, enabling high-performance gene expression analysis.

Super Mix For qPCR (+gDNA Wiper)

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Lot #	A4647-9
Storage & Shipping	Store at -30 to -15°C protected from light. Transport at ≤0 °C. Aliquot product into smaller quantities after centrifugation and store at recommended temperature. Avoid repeated handling and multiple freeze/thaw cycles. Product shipped on dry ice.

This product is manufactured in an ISO 9001 and ISO 13485 certified facility.

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RT Protocol

Self-Prepared Materials:

Materials:

- RNase-free centrifuge tube (1.5 ml), RNase-free PCR tube (0.2 ml), RNase-free tips
- Pipette, PCR instrument, ice or ice box

RNA:

- High quality RNA is essential for obtaining high quality cDNA. Please verify the RNA integrity by electrophoresis before the experiment

qPCR Reagent Selection Guide:

- The 1st strand cDNA product can be used as the template for qPCR directly. For PCR, it is recommended that the volume of the template cDNA product should not exceed 1/10 of the total volume of qPCR reaction.

Note:

1. The 4 × gDNA wiper Mix, 5 × Super Mix RT and 5 × No RT Control Mix contain high concentrations of glycerol. Please centrifuge briefly and pipette up and down to mix thoroughly before use.
2. It is recommended to add no more than 1 µg of total RNA to the 20 µl reverse transcription reaction system. If the target is a gene with low expression levels, the amount of total RNA can be up to 5 µg. Otherwise, if the amount of RNA added is too high, it may exceed the linear range of subsequent qPCR.
3. The cDNA products are only suitable for qPCR reactions and not suitable for long-fragment PCR amplification of downstream experiments such as cloning.
4. Reverse transcription can be performed directly with 5 × Super Mix RT without the genome removal step if there is no need to remove the genomic DNA. But do not use the 4 × gDNA wiper Mix without the 5 × Super Mix RT Reverse Transcription reaction module as the 5 × Super Mix RT mixture contains components to terminate the gDNA wiper reaction, which may affect subsequent qPCR results.

Protocol:

1. Removal of genomic DNA:

Mix the following components in an RNase-free centrifuge tube:

Component	Amount
RNase-free ddH ₂ O	to 16 µl
4 × gDNA wiper Mix	4 µl
Template RNA	Total RNA: 1 pg - 1 µg

Mix gently with a pipette and incubate at 42 °C for 2 min.

2. Preparation of Reverse Transcription Reaction Mixture:

Add Super Mix RT to the mixture from the previous step:

Component	Amount
5 × Super Mix RT	4 µl
Mixture from Step 1	16 µl

Mix gently with a pipette.

No RT Control Reaction (Optional)

No RT Control Reaction is a negative control which contains no Reverse Transcriptase and is used to indicate whether there is residual genomic DNA in RNA template.

Component	Amount
5 × No RT Control Mix	4 µl
Mixture from Step 1	16 µl

Mix gently with a pipette.

3. Perform the reverse transcription reaction under the following conditions:

37 °C	15 min
85 °C	5 sec

For template with complex secondary structures or high GC content, the temperature can be increased to 50 °C, which will benefit the yield.

The product can be directly used in qPCR reactions or be stored at -20 °C for 6 months. It is recommended to store in aliquots at -70 °C for long term storage, and cDNA should be avoided repeated freezing and thawing.

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SAFETY DATA SHEET

Article 1 - Product Identification

Product Name: Super Mix For qPCR (+gDNA Wiper)**Catalog # RTS01-E011**

This product is sold only for research use by qualified laboratory personnel, and is not to be used as a drug, medical device, food additive, cosmetic, nor household chemical. It is not to be used in diagnostic, therapeutic, consumer, agricultural, nor pesticidal applications.

Supplier's Name: SignalChem Biotech Inc.
Street Address: 110-13120 Vanier Place
City, Prov. Postal Code: Richmond, BC, V6V 2J2
Country: Canada
Fax: 604-232-4601
EMERGENCY PHONE: 604-232-4600

Article 2 - Hazard Identification

- **WHMIS Classification:** Not WHMIS controlled.
- **GHS classification:** Not GHS classified.
- **Hazard Pictograms:** No labeling applicable.
- **Signal words:** None.
- **Hazard statements:** None.
- **Other hazards:** May cause eye and skin irritation. May cause respiratory and digestive tract irritation.
- **Precautionary statements:** Wear protective gloves/protective clothing/eye protection/ face protection. Avoid breathing dust. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Article 3 – Composition/Information on Ingredients

Chemical Characterization: Mixture.

Description: This product consists of the substances listed below.

Component: 4 × gDNA wiper Mix

Common name	Chemical name	CAS-No.	Concentration
Glycerol	Glycerol	56-81-5	1%-10%

Component: RNase-free ddH₂O

Not a hazardous substance or mixture

Component: 5 × Super Mix RT

Not a hazardous substance or mixture

Component: 5 × No RT Control Mix

Not a hazardous substance or mixture

Article 4 – First-aid Measures

- **General information:** Consult a physician and provide this SDS.
- **After inhalation:** In case of irritation by inhaling this product, move affected person to fresh air and await recovery. If irritation persists, seek immediate medical attention.
- **After skin contact:** Wash with clean water, immediately.
- **After eye contact:** Flush eyes with clean water for more than 15 minutes and seek medical attention.
- **After swallowing:** Induce vomiting. If indisposition continues, seek medical attention.

Article 5 - Fire-fighting Measures

- **Suitable extinguishing media:** Water, Carbon Dioxide, Foam, Dry Chemical Powder
- **Specific hazards arising from the substance or mixture:** None known.
- **Special protective equipment and precautions for fire-fighters:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Article 6 – Accidental Release Measures

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- **Personal precautions, protective equipment, and emergency procedures:** Avoid substance contact.
- **Environmental precautions:** Do not discharge directly into sewers.
- **Methods and materials for containment and cleaning up:** Sweep up, place in a bag, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Article 7 - Handling and Storage

- **Precautions for safe handling:** Wear protective equipment and avoid contact with eyes and skin. Handle with ventilation and local exhaust system.
- **Conditions for safe storage:** Store in a dry and well-ventilated place at temperatures recommended on product datasheet. Keep container upright and tightly closed.

Article 8 - Exposure Controls/Personal Protection

- **Components with limit monitoring values at workplace:**
Glycerol (CAS-No: 56-81-5)

Values	Control parameters	Regulations
TWA	10 mg/m ³ for mist	British Columbia, Canada
TWA	3 mg/m ³ for respirable mist	British Columbia, Canada
TWA	10 mg/m ³	Alberta, Canada
TWAEV	10 mg/m ³	Ontario, Canada
TWAEV	10 mg/m ³	Quebec, Canada
TWA	10 mg/m ³	USA

- **Appropriate engineering controls:**
Apply adequate ventilation including mechanical exhaust or laboratory fume hood. Follow standard laboratory practices.
- **Individual protection measures:**
Respiratory protection:
Use appropriate respirator if there is inadequate ventilation by following the government standards.
Hand protection:
Wear gloves and use proper glove removal technique to avoid skin contact. Discard gloves after use by following the applicable laboratory regulations. Wash and dry hands.
Eye/face protection:
Safety goggles with side-shields approved under appropriate government standards.
Skin/body protection:
Use appropriate clothing, footwear and any additional protection measures to protect from splashing or contamination.

Article 9 – Physical and Chemical Properties

Appearance: Colorless Liquid.	Danger of explosion: Product does not present an explosion hazard.
Odour/Odour Threshold: None.	Explosion limits: Not determined
pH: Not determined.	Decomposition temperature: Not determined.
Melting point/freezing point: Not determined.	Vapor pressure at 20 °C: Not determined.
Boiling point/Boiling range: Not determined.	Density: Not determined.
Flash point: Not determined.	Relative density: Not determined.
Flammability (solid, gaseous): Not determined.	Vapor density: Not determined.
Ignition temperature: Not determined.	Evaporation rate: Not determined.
Auto-igniting: Product is not self-igniting.	Solubility in / Miscibility with Water: Soluble in water.

Article 10 - Stability and Reactivity

- **Reactivity:** Stable under recommended transport and storage conditions.
- **Chemical stability:** Stable under recommended transport and storage conditions.
- **Possible hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** Heat and moisture.
- **Incompatible materials:** Strong acids/bases, strong oxidizing agents.
- **Hazardous decomposition products:** Not available.

Article 11 - Toxicological Information

- **Acute toxicity:** Not available.
- **LD/LC50:** Not available.

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- **Skin corrosion/irritation:** Not available.
- **Serious eye damage/eye irritation:** Not available.
- **Respiratory or skin sensitization:** Not available.
- **Germ cell mutagenicity:** Not available.
- **Carcinogenicity:** No components are listed in IARC, or NTP, or OSHA, or ACGIH.
- **Reproductive toxicity:** Not available.
- **Teratogenicity:** Not available.
- **Specific target organ toxicity - single exposure/ - repeated exposure (GHS):** Not available.
- **Aspiration hazard:** Not available.
- **Potential health effects:**
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion: May be harmful if swallowed.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
- **Signs and Symptoms of Exposure:**
Prolonged or repeated exposure can cause: Nausea, Dizziness.
- **Synergistic effects:** Not available.

Article 12 - Ecological Information

- **Eco-toxicity:** No data available.
- **Biodegradability:** Not applicable.
- **Bio-accumulative potential:** Not applicable.
- **Mobility in soil:** Not applicable.
- **PBT and vPvB assessment:** Not applicable.
- **Other adverse effects:** Not applicable.

Article 13 - Disposal Considerations

- **Disposal methods:** In accordance to applicable national, regional, or local laws and regulations. For additional handling information and protection of employees please refer to Article 7 and 8.
- **Contaminated packaging:** Disposal should be made in accordance to applicable national, regional, or local laws and regulations.

Article 14 - Transport Information

- **DOT:** Not dangerous goods.
- **IMDG:** Not dangerous goods.
- **IATA:** Not dangerous goods.

Article 15 - Regulatory Information

- **WHMIS Classification:** Non-hazardous.
- **GHS label elements:** Not applicable.
- **Signal word:** Not applicable.
- **Hazard statements:** Not applicable.

Article 16 - Other Information

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SignalChem shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalog for additional terms and conditions of sale.

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