



Catalog #      Aliquot Size  
TQ03-E011-500      500 reactions

## Taq Pro Universal SYBR qPCR Master Mix

Catalog # TQ03-E011

Lot # Y4280-19

### Product Description

This product is a special premix for qPCR using the SYBR Green I chimeric fluorescence method. This product contains 2X master mix to which primers and template can be added.

### Formulation

This master mix contains dNTP, Mg<sup>2+</sup>, Taq Pro DNA Polymerase, SYBR Green I, Specific ROX Reference Dye, in a proprietary formulation.

### Storage and Stability

Store at -30 to -15 °C protected from light. Master mix can be stored stably at 2 to 8 °C for 6 months and protected from light after thawing.

### Scientific Background

The core component of Taq Pro Universal SYBR qPCR Master Mix, Taq Pro DNA Polymerase, has many advantages such as strong specificity, high detection sensitivity and high amplification yield compared to previous generations of polymerases. In combination with qPCR optimized buffer and specific enhancer, it is very suitable for qPCR reactions with high specificity and sensitivity. This kit contains Specific ROX Reference Dye, which is suitable for all qPCR instruments without adjusting the concentration of ROX on different instruments.

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

## Taq Pro Universal SYBR qPCR Master Mix

Catalog #	TQ03-E011
Lot #	Y4280-19
Stability	1yr at -70°C from date of shipment
Storage & Shipping	Store at -30 to -15 °C and protect from light. Master mix can be stored stably at 2 to 8 °C for 6 months and protected from light after thawing. For optimal storage and performance aliquot product into smaller quantities after centrifugation and store at recommended temperature. Avoid repeated handling and multiple freeze/thaw cycles. Product shipped on ice pack.

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601 or by email: [orders@signalchem.com](mailto:orders@signalchem.com) or [IVD@signalchem.com](mailto:IVD@signalchem.com) - [www.signalchem.com](http://www.signalchem.com)

**FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMAN OR ANIMALS.**

# Protocol

## Notes:

1. If white precipitate is found in the Master Mix after thawing, please place it at room temperature for a short while and invert it upside down several times to dissolve the precipitate before use.
2. Avoid repeated freezing and thawing, so as not to cause the decrease of enzyme activity. If the amount of each use is small, it is recommended to aliquot it to small portions.
3. Please invert the Master Mix upside down to mix thoroughly. Do not vortex to avoid air bubbles, which will affect the quantitative results. The Master Mix is ready to use after mixing and centrifuging briefly. Mix gently by pipetting. If the air bubbles are generated, please centrifuge again before use.
4. As this product contains a fluorescent dye SYBR Green I, it should be stored protect from light. Avoid strong light when preparing the reaction solution.
5. Because detection sensitivity of this product is very high, aerosols in the air can easily cause contamination. Therefore, the preparation of the reaction system should be carried out in a clean bench. Sterile tips and reaction tubes should be used in the preparation process. If laboratory conditions permit, special pipettes and tips with filtering element are recommended.

## Protocol:

1. Prepare the following mixture in a qPCR tube

Component	Volume
2 × Taq Pro Universal SYBR qPCR Master Mix	10.0 µl
Primer1 (10 µM)	0.4 µl
Primer2 (10 µM)	0.4 µl
Template DNA/cDNA	x µl
ddH <sub>2</sub> O	To 20.0 µl

The amount of each component in the reaction system can be adjusted according to the following principles:

- In general, a better amplification effect can be obtained when the final concentration of primers is 0.2 µM. When the reaction performance is poor, the primer concentration can be adjusted in the range of 0.1 - 1.0 µM.
- Due to the high sensitivity of qPCR, the accuracy of the amount of template added to the reaction system will greatly affect the final quantitative results. It is recommended to dilute the template and add it to the reaction system, which can effectively improve reproducibility of the experiment.
- The volume of undiluted cDNA template should not exceed 1/10 of the total volume of qPCR reaction.
- If white precipitate is found in the Master Mix after thawing, please place it at room temperature for a short while and invert it upside down to dissolve the precipitate before use.

2. Perform the qPCR reaction according to the following conditions

Stage	Condition	Reps	Temperature	Time
Stage 1	Initial Denaturation <sup>a</sup>	Rep:1	95 °C	30 secs
Stage 2	Cycling Reaction	Reps:40	95 °C	3-10 sec <sup>b</sup>
			60 °C	10-30 sec <sup>c</sup>
Stage 3	Melting Curve <sup>d</sup>	Rep:1	95 °C	15 sec
			60 °C	60 sec
			95 °C	15 sec

- a. Initial denaturation condition is suitable for most amplification reactions. If the template structure is complex, the initial denaturation time can be extended to 3 min to improve the initial denaturation effect.
- b. For standard program, select 10 sec, and 3 sec can be selected for fast program.
- c. Select 30 sec for standard program; Fast program: for amplicons within 200 bp, the shortest extension time can be set to 10 sec; for amplicons over 200 bp, the recommended extension time is 30 sec.
- d. Different qPCR instrument types of melting curve acquisition procedures are not the same, and please select the instrument default melting curve acquisition procedures.

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601 or by email: [orders@signalchem.com](mailto:orders@signalchem.com) or [IVD@signalchem.com](mailto:IVD@signalchem.com) - [www.signalchem.com](http://www.signalchem.com)

**FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMAN OR ANIMALS.**

# SAFETY DATA SHEET

## Article 1 - Product Identification

**Product Name: Taq Pro Universal SYBR qPCR Master Mix**

**Catalog # TQ03-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.*

Manufacturer'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:** Skin irritation (Category 3); Eye irritation (Category 2B).
- **Hazard Pictograms:** none.
- **Signal words:** Warning.
- **Hazard statements:** Causes mild skin irritation (H316); Causes eye irritation (H320).
- **Precautionary statements:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305 + P351 + P338).
- **Other hazards:** none known.

## Article 3 - Composition/Information on Ingredients

**Chemical Characterization:** Mixture.

**Description:** The components of this product which may be hazardous are listed below.

Common name	Chemical name	CAS-No.	Concentration
Glycerol	Glycerol	56-81-5	≤50%

## Article 4 - First-aid Measures

- **General information:** Consult a physician by providing the SDS.
- **After inhalation:** Breathe in fresh air. If cannot breathe, give artificial respiration and consult a physician.
- **After skin contact:** Immediately wash with soap and plenty of water and rinse thoroughly. Consult a physician.
- **After eye contact:** Rinse opened eyes with plenty of water for at least 15 minutes. Consult a physician.
- **After swallowing:** rinse the mouth with plenty of water and consult a physician.

## Article 5 - Fire-fighting Measures

- **Suitable extinguishing media:** Use water spray, extinguishing powder, carbon dioxide, or other appropriate measure that is suitable to the environment.
- **Specific hazards arising from the substance or mixture:** None known.
- **Special protective equipment and precautions for fire-fighters:** Self-contained breathing apparatus if necessary.

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601  
or by email: [orders@signalchem.com](mailto:orders@signalchem.com) or [IVD@signalchem.com](mailto:IVD@signalchem.com) - [www.signalchem.com](http://www.signalchem.com)

**FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMAN OR ANIMALS.**

# SAFETY DATA SHEET

## Article 6 – Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:** Apply standard laboratory practices and personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation.
- **Environmental precautions:** Do not allow to enter drains.
- **Methods and materials for containment and cleaning up:** Absorb on sand or vermiculite and place in closed containers for disposal.

## Article 7 - Handling and Storage

- **Precautions for safe handling:** Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.
- **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 <sup>3</sup> for mist	British Columbia, Canada
TWA	3 mg/m <sup>3</sup> for respirable mist	British Columbia, Canada
TWA	10 mg/m <sup>3</sup>	Alberta, Canada
TWAEV	10 mg/m <sup>3</sup>	Ontario, Canada
TWAEV	10 mg/m <sup>3</sup>	Quebec, Canada
TWA	10 mg/m <sup>3</sup>	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

<b>Appearance:</b> Colorless fluid.	<b>Danger of explosion:</b> Product does not present an explosion hazard.
<b>Odour/Odour Threshold:</b> Not determined.	<b>Explosion limits:</b> Lower: Not determined
<b>pH:</b> ~8.8.	<b>Decomposition temperature:</b> Not available.
<b>Melting point/freezing point:</b> Not determined.	<b>Vapor pressure at 20 °C:</b> Not determined
<b>Boiling point/Boiling range:</b> 106 °C.	<b>Density:</b> ~1.10g/cm <sup>3</sup> .
<b>Flash point:</b> Not determined.	<b>Relative density:</b> Not determined.
<b>Flammability (solid, gaseous):</b> Not determined.	<b>Vapor density:</b> Not determined.
<b>Ignition temperature:</b> Not determined.	<b>Evaporation rate:</b> Not determined.
<b>Auto-igniting:</b> Product is not self-igniting.	<b>Solubility in / Miscibility with Water:</b> Fully miscible.

## 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/reducing agents.
- **Hazardous decomposition products:** Carbon oxides may form under fire conditions; no known decomposition information for other decomposition products.

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601 or by email: [orders@signalchem.com](mailto:orders@signalchem.com) or [IVD@signalchem.com](mailto:IVD@signalchem.com) - [www.signalchem.com](http://www.signalchem.com)

**FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMAN OR ANIMALS.**

# SAFETY DATA SHEET

## Article 11 - Toxicological Information

- **Acute toxicity:** Not available.
- **LD/LC50:** Not available.
- **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 official regulations. Use water or cleansing agents to clean the area.

## 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.

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601  
or by email: [orders@signalchem.com](mailto:orders@signalchem.com) or [IVD@signalchem.com](mailto:IVD@signalchem.com) - [www.signalchem.com](http://www.signalchem.com)

**FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMAN OR ANIMALS.**