

# Material Safety Data Sheet

## recombinant human TGF- $\beta$ 1 protein (Qk010)

Recombinant TGF- $\beta$ 1 protein is an essential growth factor in many iPSC and ESC maintenance media, including the commonly used chemically-defined E8-based stem cell culture medias.

Qkine products are not for use in humans and are not for diagnostic or therapeutic use.

The protein is provided lyophilized, carrier protein free, sodium azide free and animal-derived component free.

### 1. Identification of the substance/mixture and of the supplier

Product name:	recombinant human TGF- $\beta$ 1 protein
Manufacturer:	Qkine Ltd 152 Cambridge Science Park, Cambridge, CB4 0GN, United Kingdom Phone: 01223 491486 Email: support@qkine.com
Country of Origin:	United Kingdom
Emergency telephone number:	in an emergency call 999 or 112  for medical advice in England, Scotland and Wales, call 111 or go online to <a href="http://111.nhs.uk">111.nhs.uk</a> (for people aged 5 and over only). For areas of Wales not covered by 111, call NHS Direct Wales (0845 46 47)  to use the NHS 111 British Sign Language (BSL) interpreter service go to <a href="http://www.interpreternow.co.uk/nhs111">www.interpreternow.co.uk/nhs111</a> . You can also call 18001 111 on a textphone.

### 2. Hazards identification

Classification of substance or mixture:	not a hazardous substance or mixture.
GHS classification:	does not meet the classification criteria of the EC Directives 67/548/EEC, 1999/45/EC or 1272/2008
GHS labelling:	does not need to be labelled in accordance with EC directives or respective national laws.
Special hazards:	none

### 3. Composition/information on ingredients

Ingredients:	highly purified recombinant protein originally produced in E.coli (non-pathogenic laboratory strain). Contains no material of animal or human origin. For research use only.  this product does not contain any hazardous substances at concentrations of 1% or greater. This product is not known to contain carcinogens at a concentration of 0.1% or greater. No MSDS is required.
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### 4. First aid measures

Eye contact:	may cause eye irritation. Immediately flush eyes with plenty of water, then remove any contact lenses and continue to flush eyes with water for 15 minutes. Seek immediate medical attention if irritation persists.
Skin contact:	may cause skin irritation. Immediately wash off with plenty of soap and water.
Inhalation:	no recognised inhalation hazard. If inhaled, remove to fresh air. If breathing becomes difficult, seek immediate medical attention.
Ingestion:	no recognised ingestion hazard. If ingested, rinse out mouth with plenty of water.

## 5. Fire-fighting measures

Classification of substance or mixture:	the product is non-flammable.
Suitable extinguishing media:	use extinguishing media appropriate to the surrounding environment
Specific hazards arising from substance:	no specific hazards arising from substance
Protective equipment:	no special precautions required

## 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	wear gloves and appropriate eye protection. Prevent inhalation of dust.
Environmental precautions:	do not allow product to enter the drains
Methods & material for containment and cleaning up:	prevent further leakage or spillage if safe to do so. Use absorbent material to soak up the spillage and dispose of in accordance with applicable laws, environmental legislation and good laboratory practices.

## 7. Handling and storage

Handling:	avoid inhalation. Avoid contact with eyes, skin, and clothing.
Storage:	keep vial tightly closed. Store at -80 °C until use.
Additional information:	see certificate of analysis for further information on handling and storage.

## 8. Exposure controls / personal protection

Control parameters:	contains no substances with occupational exposure limit values.
Engineering controls:	use in a laboratory fume hood
Eye:	wear appropriate eye protection.
Skin:	handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.
Inhalation:	respiratory equipment is not required.

## 9. Physical and chemical properties & safety characteristics

Physical state:	lyophilized
Colour:	clear
Odour:	none
Melting point/freezing point:	no data available
Boiling point:	no data available
Flammability:	no data available
Explosion limits:	no data available
Flash point:	no data available
Autoignition temperature:	no data available
Decomposition temperature:	no data available
pH:	no data available
Viscosity:	no data available
Solubility in water:	no data available
Partition co-efficient:	no data available
Vapour pressure:	no data available
Density:	no data available
Relative vapour density:	no data available
Particle characteristics:	no data available

## 10. Stability and reactivity

Reactivity:	no data available
Chemical stability:	stable under normal use conditions
Possibility of hazardous reactions:	none under normal handling and storage conditions
Conditions to avoid:	none
Incompatible materials:	none
Hazardous decomposition products:	none under normal use conditions

## 11. Toxicological information

Information on toxicological effects:	does not present an acute toxicity hazard based on known or supplied information
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## 12. Ecological information

Toxicity:	under normal use and conditions, this product is not expected to have an adverse environmental impact
Persistence and degradability:	no data available
Bioaccumulative potential:	no data available
Mobility in soil:	no data available
Results of PBT and vPvB assessment:	no data available
Other adverse effects:	no data available

## 13. Disposal considerations

Waste treatment methods:	dispose of in accordance with applicable laws, environmental legislation and good laboratory practices.
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## 14. Transport information

UN number:	not regulated
UN proper shipping name:	not regulated
Transport hazard class(es):	not regulated
Packing group:	not regulated
Environmental hazards:	not regulated
Special precautions for user:	not regulated
Transport in bulk:	not regulated

## 15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:	not applicable
Chemical safety assessment:	not applicable

## 16. Other information

Qkine products are not for use in humans and are not for diagnostic or therapeutic use. Customers agree to comply with the provisions of applicable international and local statutes, rules, regulations, ordinances and orders when using Qkine products.

Qkine products are for internal research purposes only and not for resale or transfer in any form (including as part of a kit) to a third party unless agreed with Qkine in writing.

Qkine is not responsible for patent infringement or other violations which may occur with the use of these products.