

# Plasmid Transfection Reagent: sc-108061

## PRODUCT

Plasmid Transfection Reagent is a highly efficient reagent for DNA transfection, with minimal cellular damage. Recommended for use with shRNA Plasmids. Sufficient reagent supplied for 50-100 transfections (per well in a 6-well plate); 0.2 ml. Store at 4° C; DO NOT FREEZE; protect from light.

**NOTE:** Although highly efficient in a variety of cell lines, Plasmid Transfection Reagent: sc-108061 may not be suitable for use with all cell lines.

**NOTE:** Transfection protocols are available for each specific product type.

## GENERAL PRODUCT INFORMATION

To the best of our knowledge, this material is not toxic, hazardous or dangerous to one's health according to OSHA regulations. Follow appropriate guidelines for proper laboratory precautions and procedures when handling product. Wear appropriate protective clothing to limit exposure to eyes, skin and mucous membranes, as irritation may occur while using dry powders or liquid media. Wash hands thoroughly after using this product. This information represents the best information available to date. We make no warranty or assume liability from its use. Users should make their own investigations to determine the suitability of the information.

## TRANSFECTION PROTOCOL

- In a six well tissue culture plate, grow cells to a 50-70% confluency in antibiotic-free normal growth medium supplemented with FBS.

**NOTE:** This protocol is recommended for a single well in a 6 well tissue culture plate. Adjust cell and reagent amounts proportionately for wells or dishes of different sizes.

**NOTE:** Healthy and subconfluent cells are required for successful transfection experiments. It is recommended to ensure cell viability one day prior to transfection.

- Prepare the following solutions:

**NOTE:** The optimal Plasmid DNA:Plasmid Transfection Reagent ratio should be determined experimentally beginning with 1 µg of Plasmid DNA and between 1.0 and 6.0 µl of Plasmid Transfection Reagent as outlined below. Once the optimal Plasmid DNA:Plasmid Transfection Reagent ratio has been identified for a given cell type, the appropriate amount of Plasmid DNA/Plasmid Transfection Reagent complex used per well should be tested to determine which amount provides the highest level of transfection efficiency. For example, if the optimal Plasmid DNA:Plasmid Transfection Reagent ratio is 1 µg:1 µl, then amounts ranging from 0.5 µg/0.5 µl to 2.0 µg/2.0 µl should be tested. Optimal results may be achieved by using siliconized microcentrifuge tubes.

**Solution A:** For each transfection, dilute 10 µl of resuspended Plasmid DNA (1 µg Plasmid DNA) into 90 µl Plasmid Transfection Medium: sc-108062.

**Solution B:** For each transfection, dilute 1-6 µl of Plasmid Transfection Reagent: sc-108061 with enough Plasmid Transfection Medium: sc-108062 to bring final volume to 100 µl.

**NOTE:** Do not add antibiotics to the Plasmid Transfection Medium: sc-108062.

## TRANSFECTION PROTOCOL CONT.

- Add the Plasmid DNA solution (Solution A) directly to the dilute Plasmid Transfection Reagent (Solution B) using a pipette. Mix gently by pipetting the solution up and down and incubate the mixture 15-45 minutes at room temperature.

- Gently wash the cells twice with 2 ml of Transfection Medium: sc-108062. Aspirate the medium and proceed immediately to the next step.

**NOTE:** Do not use PBS as the residual phosphate may compete with DNA and bind the Plasmid Transfection Reagent, thereby reducing the transfection efficiency.

- For each transfection, add 0.8 ml Plasmid Transfection Medium to well.
- Add the 200 µl Plasmid DNA/ Plasmid Transfection Reagent Complex (Solution A + Solution B) dropwise to well, covering the entire cell layer.
- Gently mix by swirling the plate to ensure that the entire cell layer is immersed in solution.
- Incubate the cells 5-7 hours at 37° C in a CO<sub>2</sub> incubator or under conditions normally used to culture the cells.

**NOTE:** Longer transfection times may be desirable depending on the cell line.

- Following incubation, add 1 ml of normal growth medium containing 2 times the normal serum and antibiotics concentration (2x normal growth medium).
- Incubate the cells for an additional 18-24 hours under conditions normally used to culture the cells.
- Aspirate the medium and replace with fresh 1x normal growth medium.
- Assay the cells using the appropriate protocol 24-72 hours after the addition of fresh medium in the previous step.

**NOTE:** Controls should always be included in transfection experiments. Control shRNAs are available as 20 µg. Each encode a scrambled shRNA sequence that will not lead to the specific degradation of any known cellular mRNA. Control shRNA Plasmids include: sc-108060, sc-108065 and sc-108066.

**NOTE:** For cell lysis, aspirate media, rinse cells with PBS, scrape and centrifuge cells to obtain pellet. For 100% confluent HEK 293 or HeLa cells, add 100 µl of RIPA Lysis Buffer System: sc-24948 to the pellet. For other cell lines or confluencies, the amount of RIPA Lysis Buffer System necessary may need to be determined experimentally. Sonicate or shear cells. Incubate sample on ice for 10 minutes, vortex, and incubate again for 10 minutes on ice. Spin cells at 10000 RPM for 20 minutes at 4° C. Run a protein assay using the BCA Protein Assay Kit: sc-202389 to determine protein concentration.

**NOTE:** For RT-PCR analysis isolate RNA using the method described by P. Chomczynski and N. Sacchi (1987). Single-step method of RNA isolation by acid guanidinium thiocyanate-phenol-chloroform extraction. Anal. Biochem. 162: 156-159) or a commercially available RNA isolation kit.



The Power to Question

# SAFETY DATA SHEET

Santa Cruz Biotechnology, Inc.

Revision date 30-Mar-2017

Version 1.2

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

Product Name Plasmid Transfection Reagent  
Product Code SC-108061

### Recommended use of the chemical and restrictions on use

For research use only. Not intended for diagnostic or therapeutic use.

### Details of the supplier of the safety data sheet

Santa Cruz Biotechnology, Inc.  
10410 Finnell Street  
Dallas, TX 75220  
831.457.3800  
800.457.3801  
scbt@scbt.com

### Emergency telephone number

Chemtrec  
1.800.424.9300 (Within USA)  
+1.703.527.3887 (Outside USA)

## 2. HAZARDS IDENTIFICATION

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122).

### Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

### Label elements

Signal word Not classified  
Hazard statements Not classified  
Symbols/Pictograms Not classified

Precautionary Statements - Prevention Wash hands thoroughly after handling  
Precautionary Statements - Response IF exposed or concerned: Get medical advice/attention

### Hazards not otherwise classified (HNOC)

Hazards not otherwise classified (HNOC) Not applicable

### Other Information

<b>NFPA</b>	Health hazards	-		<b>HMIS</b>	Health hazards	-
	Flammability	-			Flammability	-
	Stability	-			Physical hazards	-
	Physical and chemical properties	-			Personal protection	-

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight No information available  
Formula No information available

Chemical Name	CAS No	Weight %	Oral LD50	Dermal LD50	Inhalation LC50
Water	7732-18-5	>98	> 90 mL/kg ( Rat )	-	-
Polycationic lipids	-	<1	-	-	-

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## 4. FIRST AID MEASURES

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### First Aid Measures

General advice	Consult a physician if necessary. Remove to fresh air.
Eye contact	Wash with plenty of water.
Skin Contact	Wash skin with soap and water.
Inhalation	Remove to fresh air If breathing is difficult, give oxygen If not breathing, give artificial respiration
Ingestion	Never give anything by mouth to an unconscious person. Clean mouth with water.

### Most important symptoms and effects, both acute and delayed

Symptoms	No information available.
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### Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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## 5. FIRE-FIGHTING MEASURES

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### Suitable Extinguishing Media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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Unsuitable Extinguishing Media	None.
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### Specific hazards arising from the chemical

Specific hazards arising from the chemical	No information available.
Hazardous combustion products	No information available.

### Explosion data

Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.

### Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
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## 6. ACCIDENTAL RELEASE MEASURES

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### Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation, especially in confined areas.
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### Environmental precautions

Environmental precautions	See Section 12 for additional Ecological Information.
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### Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling**

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store at 4 °C.  
 Incompatible materials None known based on information supplied.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Appropriate engineering controls**

Engineering Controls Showers  
 Eyewash stations  
 Ventilation systems

**Individual protection measures, such as personal protective equipment**

Eye/face protection Wear safety glasses with side shields (or goggles).  
 Skin and Body Protection Wear protective gloves and protective clothing.  
 Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.  
 General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical State liquid  
 Appearance No information available  
 Odor No information available

**Property**

<b><u>Property</u></b>	<b><u>Values</u></b>
pH	No information available
Melting point/freezing point	No information available
Boiling point	No information available
Flash point	No information available
Density	No information available
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific gravity	No information available
Water solubility	No information available
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

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## 10. STABILITY AND REACTIVITY

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Reactivity	Not applicable
Chemical stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	No information available.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Strong oxidizing agents.
Hazardous Decomposition Products	None known based on information supplied.

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## 11. TOXICOLOGICAL INFORMATION

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### Information on likely routes of exposure

Inhalation	No data available.
Eye contact	No data available.
Skin Contact	No data available.
Ingestion	No data available.

### Information on toxicological effects

Symptoms	No information available.
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### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	No information available.
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### Numerical measures of toxicity - Product Information

Unknown acute toxicity	No information available
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## 12. ECOLOGICAL INFORMATION

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Ecotoxicity	May cause long lasting harmful effects to aquatic life
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0.1% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Persistence and degradability	No information available.
Bioaccumulation	No information available.
Mobility	No information available.

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## 13. DISPOSAL CONSIDERATIONS

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Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.

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## 14. TRANSPORT INFORMATION

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**DOT** Not regulated

**IMDG** Not regulated

IATA Not regulated

## 15. REGULATORY INFORMATION

### International Inventories

All of the components in the product are on the following Inventory lists

No information available

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Water	X	X	-	X	-	-	X	X	X	X

X - Listed

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

### US Federal Regulations

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

#### **SARA 311/312 Hazard Categories**

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

### US State Regulations

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

#### **U.S. State Right-to-Know Regulations**

## 16. OTHER INFORMATION

Revision note No information available

### **Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**