



1.1 Product Identification

Product Name(s)

The information in this data sheet pertains to mRNA products manufactured by phaRNA LLC.

Catalog Numbers

All phaRNA mRNA products, including:

1000101-POU5F1, 1000201-KLF4, 1000301-SOX2, 1000401-MYC, 1000501-LIN28A, 1000601-NANOG, 1000701-CDH5, 1000801-ETV2, 1000901-FLI1, 1001001-GATA2, 1001101-MYB, 1001201-PECAM1, 1001301-RUNX1, 1001401-VEGFA, 1001501-VEGFB, 1001601-GATA4, 1001701-MEF2A, 1001801-MEF2C, 1001901-MESP1, 1002001-MYOD1, 1002101-TBX5, 1002201-GATA1, 1002301-GATA3, 1002401-GATA4, 1002501-GATA4-Mutant, 1002601-KLRG1, 1002701-NEUROG3, 1002801-PDHX, 1002901-UL48, 1003001-FOXA1, 1003101-FOXA2, 1003201-FOXA3, 1003301-HNF1A, 1003401-HNF1B, 1003501-ASCL1, 1003601-FOXA2, 1003701-ISL1, 1003801-LHX3, 1003901-LMX1A, 1004001-MNX1, 1004101-NEUROD1, 1004201-NEUROD2, 1004301-NEUROG2, 1004401-POU3F2, 1004501-ZIC1, 1004601-FOS, 1004701-MITF, 1004801-TFE3, 1100001-HGF, 1100101-VEGFA, 1100201-VEGFB, 1100301-VEGFC, 1100401-VEGFD, 1100501-PDGFA, 1100601-PDGFB, 1100701-PDGFC, 1100801-PDGFD, 1100901-FGF1, 1101001-FGF2, 1101101-FGF3, 1101201-FGF4, 1101301-FGF5, 1101401-FGF6, 1101501-FGF7, 1101601-FGF8, 1101701-FGF9, 1101801-FGF10, 1101901-FGF11, 1102001-FGF12, 1102101-FGF13, 1102201-FGF14, 1102301-FGF16, 1102401-FGF17, 1102501-FGF18, 1102601-FGF19, 1102701-FGF20, 1102801-FGF21, 1102901-FGF22, 1103001-FGF23, 1103101-IGF1, 1103201-IGF2, 1103301-IGFBP1, 1103401-IGFBP2, 1103501-IGFBP3, 1103601-IGFBP4, 1103701-IGFBP5, 1103801-IGFBP6, 1103901-AREG, 1104001-BTC, 1104101-EPGN, 1104201-ERE, 1104301-HBEGF, 1104401-NRG1, 1104501-NRG2, 1104601-NRG3, 1104701-NRG4, 1104801-TGFA, 1200101-MET, 1200201-FLT1, 1200301-FLT4, 1200401-KDR, 1200501-PDGFR, 1200601-PDGFRB, 1200701-FGFR1, 1200801-FGFR2, 1200901-FGFR3, 1201001-FGFR4, 1201101-FGFR4, 1201201-IGF1R, 1201301-EGFR, 1300101-CCL1, 1300201-CCL2, 1300301-CCL3, 1300401-CCL4, 1300501-CCL5, 1300601-CCL7, 1300701-CCL8, 1300801-CCL11, 1300901-CCL13, 1301001-CCL14, 1301101-CCL15, 1301201-CCL16, 1301301-CCL17, 1301401-CCL18, 1301501-CCL19, 1301601-CCL20, 1301701-CCL21, 1301801-CCL22, 1301901-CCL23, 1302001-CCL24, 1302101-CCL25, 1302201-CCL26, 1302301-CCL27, 1302401-CCL28, 1302501-IL1A, 1302601-IL1B, 1302701-IL2, 1302801-IL3, 1302901-IL4, 1303001-IL5, 1303101-IL6, 1303201-IL7, 1303301-CXCL8, 1303401-IL9, 1303501-IL10, 1303601-IL11, 1303701-IL12A, 1303801-IL12B, 1303901-IL13, 1304001-IL15, 1304101-IL16, 1304201-IL17A, 1304301-IL18, 1304401-IL19, 1304501-IL20, 1304601-IL21, 1304701-IL22, 1304801-IL23A, 1304901-IL24, 1305001-MYDGF, 1305101-IL26, 1305201-IL27, 1305301-IL31, 1305401-IL32, 1305501-IL33, 1305601-IL34, 1305701-CD40LG, 1305801-CD70, 1305901-LTA4H, 1306001-CYP4F3, 1306101-TNF, 1306201-FASLG, 1306301-TNFSF8, 1306401-TGFB1, 1306501-TGFB2, 1306601-TGFB3, 1306701-IFNA4, 1306801-IFNB1, 1306901-IFNE, 1307001-IFNG, 1307101-IFNK, 1307201-IFNL1, 1307301-IFNL2, 1307401-IFNL3, 1307501-IFNW1, 1307601-CSF1, 1307701-CSF2, 1307801-CSF3, 1400101-ACKR3, 1400201-CCR1, 1400301-CCR2, 1400401-CCR3, 1400501-NOCT, 1400601-CCR5, 1400701-CCR6, 1400801-CCR7, 1400901-CCR8, 1401001-CCR9, 1401101-ACKR2, 1401201-CX3CR1, 1401301-CXCR1, 1401401-CXCR2, 1401501-CXCR3, 1401601-CXCR4, 1401701-CXCR5, 1401801-CXCR6, 1401901-XCR1, 1402001-IFNLR1, 1402101-IL1R1, 1402201-IL2RA, 1402301-IL3RA, 1402401-IL4R, 1402501-IL5RA, 1402601-IL6R, 1402701-IL7R, 1402801-IL9R, 1402901-IL10RA, 1403001-IL11RA, 1403101-IL12RB1, 1403201-IL13RA1, 1403301-IL13RA2, 1403401-IL15RA, 1403501-IL17RA, 1403601-IL18R1, 1403701-

IL20RA, 1403801-IL21R, 1403901-IL22RA1, 1404001-IL22RA2, 1404101-IL23R, 1404201-IL27RA, 1404301-CD40, 1404401-FAS, 1404501-LTBR, 1404601-TNFRSF1A, 1404701-TNFRSF1B, 1404801-TNFRSF4, 1404901-TNFRSF8, 1405001-TNFRSF14, 1405101-ACVR1, 1405201-ACVR1B, 1405301-ACVR1C, 1405401-ACVR2A, 1405501-ACVR2B, 1405601-ACVRL1, 1405701-AMHR2, 1405801-BMPR1A, 1405901-BMPR1B, 1406001-TGFBR1, 1406101-TGFBR2, 1406201-TGFBR3, 1406301-IFNAR1, 1406401-IFNAR2, 1500101-GFP, 1500201-GFP-NLS, 1500301-mCherry, 1500401-fLuc, 1500501-rLuc, 1500601-gLuc, 1500701-GLB1, 1600101-TERT, 1600201-TERT-CI_(D712A), 1600301-TERT-5'-3xFLAG, 1600401-TERT-3'-3xFLAG, 1600501-TERT-5'-3xFLAG_3'-NLS, 1600601-TERT-CI_(D712A)_5'-3xFLAG, 1600701-TERT-CI_(D712A)_3'-3xFLAG, 1600801-TERT-CI_(D712A)_5'-3xFLAG_3'-NLS, 1600901-Tert, 1700101-TP53, 1700201-BAX, 1700301-BAK1, 1700401-YAP1, 1700501-YAP1, 1800101-MYD88, 1800201-NFKB1, 1800301-NFKB2, 1800401-PRKCA, 1800501-PRKCB, 1800601-EIF2AK2, 1800701-TLR1, 1800801-TLR2, 1800901-TLR3, 1801001-TLR4, 1801101-TLR5, 1801201-TLR6, 1801301-TLR7, 1801401-TLR8, 1801501-TLR9, 1801601-TLR10, 1900101-PAX1, 1900201-PAX2, 1900301-PAX3, 1900401-PAX4, 1900501-PAX5, 1900601-PAX6, 1900701-PAX7, 1900801-PAX8, 1900901-PAX9, 2000101-ERAS, 2000201-SERPINA1, 2000301-SERPINA1, 2000401-ELANE, 2000501-CXCL12, 2000601-CXCL12, 2000701-OLA1, 2000801-SLC11A2, 2000901-MEF2C, 2001001-TBX5, 2001101-GATA4, 2001201-HAND2, 2001301-POU3F2, 2001401-POU3F2

1.2 Uses

Recommended use

Research use only. Cell biological research, laboratory chemicals, manufacture of substances.

Uses advised against

Not for use in humans.

1.3 Details of the Supplier of the Safety Data Sheet

Supplier address

phaRNA, LLC

975 Corbindale Road, Suite 201

Houston, TX 77024

USA

Company phone: 713-805-1770

Fax: 713-464-5099

Email address: info@pharna.com

1.4 Emergency Telephone Number

Emergency Phone

713-805-1770

8 am – 5 pm CST, Monday-Friday

2. HAZARD IDENTIFICATION

2.1 Classification

Not a hazardous substance or mixture.

2.2 Label Elements

Not a hazardous substance or mixture.

2.3 Hazard statements(s)

No ingredients are hazardous according to OSHA criteria. No components need to be disclosed according to the applicable regulations.

2.4 Precautionary statements

Not applicable

2.5 Hazards not Otherwise Classified (HNOC) or not covered by GHS

None

3. COMPOSITION

3.1 Chemical name

phaRNA mRNA

3.2 Synonyms

phaRNA messenger RNA

3.3 Chemical formula

Not applicable

3.4 Molecular weight

Not applicable

3.5 CAS Number

Not applicable

4. FIRST AID MEASURES

4.1 First Aid Measures

General

Move out of exposure area and consult a physician.

Eye contact

Check for and remove contact lenses. Immediately flush eyes thoroughly with copious amounts of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact

Immediately flush skin thoroughly with copious amounts of water. Wash skin with soap and water. Remove contaminated clothing and wash before wearing. Consult a physician.

Puncture wound

Flush wound with copious amounts of water for at least 15 minutes. Wash skin with soap and water. Allow wound to bleed freely. Consult a physician.

Inhalation

Remove to fresh air. If not breathing, provide artificial respiration. Consult a physician.

Ingestion

If swallowed, wash out mouth with water provided person is conscious. Loosen constrictive clothing. Consult a physician.

4.2 Most Important Symptoms and Effects, both Acute and Delayed

No data available

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

No data available

5. FIRE-FIGHTING MEASURE

5.1 Extinguishing Media

Suitable Media: Use water spray, dry chemical, alcohol-resistant foam, or carbon dioxide.

5.2 Special Hazards Arising from Product

No data available

5.3 Advice for Firefighters

As in any fire, wear self-contained breathing apparatus and full protective gear if necessary.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as described in Section 8. Ensure adequate ventilation. Avoid direct contact with eyes or skin. Avoid breathing vapors, aerosols, gas, or mists.

6.2 Environmental Precautions

No special environmental precautions necessary.

6.3 Methods and Materials for Containment and Clean Up

Prevent further spillage or leakage if safe to do so. To contain spill or leak of liquid, soak up with absorbant, inert material which should be transferred to properly labeled containers. This material and its container must be disposed of in accordance with local, state, and federal environmental regulations.

7. HANDLING & STORAGE

7.1 Precautions for Safe Handling

Avoid contact with eyes or skin. Use only with adequate ventilation. Avoid breathing aerosols, vapors, mists or gas. See Section 8 for personal protection.

7.2 Conditions for Safe Storage

Store at or below -70°C. Avoid repeated freeze/thaw cycles. Aliquot if necessary using RNase-free equipment, reagents, pipet tips, tubes, and containers. Treat surfaces and gloves with RNase inhibitor. Avoid contaminating the material by breathing out or talking near open containers.

7.3 Incompatibilities

Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

No known occupational exposure limit values established by the region-specific regulatory bodies.

8.2 Appropriate Engineering Controls

Safety shower, eye bath, mechanical exhaust.

8.3 Individual Protection Measures

General

Adhere to good industrial hygiene and safety practices.

Eye Protection

Wear safety glasses with side shields or chemical safety goggles.

Skin Protection

Wear suitable protective clothing and gloves.

Respiratory Protection

Use in well ventilated areas.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Physical state

Liquid

Appearance

Colorless

Odor

Mild

pH

Refer to phaRNA website for buffer pH information.

Melting Point/Freezing Point

No data available

Boiling Point/Boiling Range

No data available

Flash Point

No data available

Evaporation Rate

No data available

Flammability (solid, gas)

No data available

Upper/Lower Flammability Limits

No data available

Vapor Pressure

No data available

Vapor Density

No data available

Relative Density

No data available

Specific Density

No data available

Water Solubility
No data available

Partition Coefficient
No data available

Autoignition Temperature
No data available

Decomposition Temperature
No data available

Viscosity
No data available

Oxidizing Properties
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Can react briskly with oxidizers, danger of explosion.

10.4 Conditions to avoid
Incompatible materials. Ignition sources. Heat.

10.5 Incompatible materials
Strong oxidizing agents.

10.6 Hazardous decomposition products
Burning can lead to release of toxic and irritating gases and vapors. Carbon dioxide. Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

11.1 Information on likely routes of exposure

Inhalation

Avoid breathing vapors or mists. May cause irritation of respiratory tract.

Eye contact

Redness. May cause slight irritation.

Skin contact

Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

Ingestion

Ingestion may cause irritation or burns of the upper digestive and respiratory tracts. Symptoms include burning sensation, drowsiness, dizziness, coughing, wheezing, shortness of breath, headache, nausea, and vomiting.

11.2 Information on toxicological effects

Symptoms

No data available

11.3 Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/Irritation

Mild

Serious Eye Damage/Eye Irritation

Mild

Skin or Respiratory Sensitization

No data available

Germ Cell Mutagenicity

No data available

Carcinogenicity

No data available

Reproductive Toxicity

No data available

Developmental Toxicity

No data available

Teratogenicity

No data available

Specific Target Organ Toxicity (STOT) – Single Exposure

No data available

Specific Target Organ Toxicity (STOT) – Repeated Exposure

No data available

Target Organs

Kidneys, eyes, skin, respiratory system

Chronic Toxicity

No data available

Subchronic Toxicity

No data available

Neurological Effects

No data available

Aspiration Hazard

No data available

Other Adverse Effects

No data available

12. ECOLOGICAL INFORMATION

12.1 Marine pollutant

No data available

12.2 Ecotoxicity

No data available

12.3 Persistence and degradability

No data available

12.4 Bioaccumulation

No data available

12.5 Mobility

No data available

12.6 Other adverse effects

Ozone

No data available

Ozone Depletion Potential

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Relevant Information

Keep out of drains, ditches, reservoirs, sewers, ditches, and waterways.

Disposal Method

Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator. Use a professional waste disposal service to dispose of this product.

Contaminated Packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

This material is not considered hazardous for transport.

15. REGULATORY INFORMATION

15.1 US Federal Regulations

Clean Water Act (CWA)

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).

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see CFR 61)

Does not contain any components subject to reporting.

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

SARA 302 components

This material does not contain any components subject to reporting.

SARA 311/312 Hazards

Not hazardous.

SARA 313 components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels.

15.2 US State Regulations

California Proposition 65

Does not contain any components subject to reporting.

Massachusetts Right To Know Components

Does not contain any components subject to reporting.

Pennsylvania Right To Know Components

Does not contain any components subject to reporting.

New Jersey Right To Know Components

Does not contain any components subject to reporting.

16. OTHER INFORMATION

16.1 HMIS Rating

Health Hazard

0

Flammability

0

Physical Hazard

0

Chronic Health Hazard

0

16.2 NFPA Rating

Health Hazard

0

Fire Hazard

0

Reactivity Hazard

0

16.3 Preparation Information

Prepared by phaRNA LLC

713-805-1770

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Version 1.1

16.4 Further Information

To the best of our knowledge, the information in this document is believed to be accurate. However, this information is not necessarily all-inclusive, and all materials may present unknown hazards and should be used with caution. The information in this document only relates to materials of individual products and not combinations of materials from more than one product, or combinations with other materials or processes. Final determination of suitability of these or other materials are the responsibility of the user. phaRNA LLC shall not take responsibility for any damage resulting from handling or from contact with these materials alone or in combination with other materials or processes.

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