The PathScan® Intracellular Signaling Array Kit (Chemiluminescent Readout) is a slide-based antibody array founded upon the sandwich immunoassay principle. The array kit allows for the simultaneous detection of 18 important and well-characterized signaling molecules when phosphorylated or cleaved. Target-specific capture antibodies have been spotted in duplicate onto nitrocellulose-coated glass slides. Each kit contains two 16-pad slides, allowing the user to test up to 32 samples and generate 576 data points in a single experiment. Cell lysate is incubated on the slide followed by a biotinylated detection antibody cocktail. Streptavidin-conjugated HRP and LumiGLO® Reagent are then used to visualize the bound detection antibody by chemiluminescence. An image of the slide can be captured with either a digital imaging system or standard chemiluminescent film. The image can be analyzed visually or the spot intensities quantified using array analysis software.

Specificity/Sensitivity: PathScan® Intracellular Signaling Array Kit (Chemiluminescent Readout) detects the indicated cellular proteins and signaling nodes only when phosphorylated or cleaved at the specified residues. (see Array Target Map). No significant cross-reactivity has been observed between targets. This kit is optimized for cell lysates diluted to a total protein concentration between 0.2 and 1 mg/ml (see kit protocol).

**Products Included**

<table>
<thead>
<tr>
<th>Products Included</th>
<th>Quantity</th>
<th>Cap Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Array Slides</td>
<td>2 slides</td>
<td></td>
</tr>
<tr>
<td>Multi-Well Gasket</td>
<td>2 gaskets</td>
<td></td>
</tr>
<tr>
<td>Sealing Tape</td>
<td>2 sheets</td>
<td></td>
</tr>
<tr>
<td>Chemiluminescent Development Folder</td>
<td>2 folders</td>
<td></td>
</tr>
<tr>
<td>20X Array Wash Buffer</td>
<td>15 ml</td>
<td>White</td>
</tr>
<tr>
<td>Array Blocking Buffer</td>
<td>5 ml</td>
<td>Red</td>
</tr>
<tr>
<td>Array Diluent Buffer</td>
<td>15 ml</td>
<td>Blue</td>
</tr>
<tr>
<td>10X Detection Antibody Cocktail</td>
<td>300 µl</td>
<td>White</td>
</tr>
<tr>
<td>10X HRP-linked Streptavidin</td>
<td>300 µl</td>
<td>Clear</td>
</tr>
<tr>
<td>20X LumiGLO® Reagent A #7003</td>
<td>5 ml</td>
<td>Brown</td>
</tr>
<tr>
<td>20X Peroxide Reagent B #7003</td>
<td>5 ml</td>
<td>Clear</td>
</tr>
</tbody>
</table>

*Cell Lysis Buffer #7018

*Kit should be stored at 4°C with the exception of 1X Cell Lysis Buffer, which is stored at –20°C (packaged separately).

**Intracellular Signaling**

<table>
<thead>
<tr>
<th>Target</th>
<th>Phosphorylation Site</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Positive Control</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>Negative Control</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>ERK1/2</td>
<td>Thr202/Tyr204</td>
</tr>
<tr>
<td>4</td>
<td>Stat1</td>
<td>Tyr701</td>
</tr>
<tr>
<td>5</td>
<td>Stat3</td>
<td>Tyr705</td>
</tr>
<tr>
<td>6</td>
<td>Akt</td>
<td>Thr308</td>
</tr>
<tr>
<td>7</td>
<td>Akt</td>
<td>Ser473</td>
</tr>
<tr>
<td>8</td>
<td>AMPK</td>
<td>Thr172</td>
</tr>
<tr>
<td>9</td>
<td>S6 Ribosomal Protein</td>
<td>Ser235/236</td>
</tr>
<tr>
<td>10</td>
<td>mTOR</td>
<td>Ser2448</td>
</tr>
<tr>
<td>11</td>
<td>HSP27</td>
<td>Ser78</td>
</tr>
<tr>
<td>12</td>
<td>Bad</td>
<td>Ser112</td>
</tr>
<tr>
<td>13</td>
<td>p70 S6 Kinase</td>
<td>Thr389</td>
</tr>
<tr>
<td>14</td>
<td>PRAS40</td>
<td>Thr246</td>
</tr>
<tr>
<td>15</td>
<td>p53</td>
<td>Ser15</td>
</tr>
<tr>
<td>16</td>
<td>p38</td>
<td>Thr180/Tyr182</td>
</tr>
<tr>
<td>17</td>
<td>SAPK/JNK</td>
<td>Thr183/Tyr185</td>
</tr>
<tr>
<td>18</td>
<td>PARP</td>
<td>Asp214</td>
</tr>
<tr>
<td>19</td>
<td>Caspase-3</td>
<td>Asp175</td>
</tr>
<tr>
<td>20</td>
<td>GSK-3β</td>
<td>Ser9</td>
</tr>
</tbody>
</table>

For Research Use Only. Not For Use In Diagnostic Procedures.
Background: Phosphorylation and proteolysis are two widespread covalent post-translational modifications that represent important regulatory mechanisms in biology. Detection of these modifications on a set of cellular proteins playing a well-understood role in cell biology can provide a broad snapshot of intracellular signaling.

The MAPK/Erk cascade is one of the best characterized and widely studied signaling modules. It is involved in a broad range of cellular processes such as proliferation, differentiation, and motility. MAPK/Erk is activated by a wide range of extracellular signals including growth factors, cytokines, hormones, and neurotransmitters. It is activated by dual phosphorylation at Thr202 and Tyr204 by the dual specificity kinases MEK1 and MEK2.

p38 and JNK MAPKs are core components of two additional structurally related signal transduction modules. p38 and JNK are activated through a similar dual phosphorylation mechanism by various MAPK kinases in response to pro-inflammatory cytokines, stressful conditions, or genotoxicity.

Stat1 and Stat3 are important signaling molecules that are involved in immunity and inflammation and can be activated by a variety of cytokinins or growth factors. Stat1 and Stat3 are phosphorylated at Tyr701 or Tyr705, respectively, by cytokine receptor-tethered tyrosine kinases of the Jak family or, in some cases, by other tyrosine kinases such as Src.

Akt is a protein kinase generally activated in response to growth factor stimulation that transmits growth and survival signals. Phosphorylation of Akt at Ser473 and Thr308 by TORC2 complex and PDK1, respectively, are reliable predictors of Akt activation. Phosphorylation of PRAS40 at Thr246 by Akt relieves PRAS40 inhibition of TORC1. Akt phosphorylation of the pro-apoptotic protein Bad at Ser112 and the multifunctional kinase GSK-3 at Ser9 inhibits their activity and promotes cell survival.

mTOR is an important signaling hub that is a major component of two macromolecular complexes, TORC1 and TORC2. mTOR is phosphorylated at Ser2448 and integrates growth factor signaling and nutrient availability, thus playing an important role in cell growth and homeostasis. mTORC1 phosphorylates p70 S6 Kinase at Thr389, leading to kinase activation and cell cycle progression. The S6 ribosomal protein is found downstream of p70 S6 Kinase and its phosphorylation at Ser235/236 reflects mTOR pathway activation and predicts cell cycle progression.

AMPK is an energy sensor that is activated by phosphorylation at Thr172 in response to elevated AMP levels. AMPK regulates fatty acid metabolism, as well as modulates protein synthesis and cell growth.

HSP27 is a mediator of cell stress that confers resistance to adverse environmental change. HSP27 is phosphorylated at Ser78 within the p38 MAPK pathway.

p38 plays an important role in cellular response to DNA damage and other genomic aberrations. Phosphorylation of p33 at Ser15 by ATM/ATR or DNA-PK in response to DNA damage leads to its stabilization and accumulation.

Caspase-3 is a critical executor of apoptosis. Caspase-3 is activated by endoproteolytic cleavage at Asp175 and exerts its pro-apoptotic activity through cleavage of multiple cellular targets. PARP, an enzyme that is involved in DNA repair, is one of the main substrates of activated caspase-3. Cleavage at Asp214 leads to PARP inactivation. Increased levels of cleaved caspase-3 and cleaved PARP are reliable indicators of apoptosis.
**PathScan® Intracellular Signaling Array Kit (Chemiluminescent Readout) Protocol**

### A Preparing Cell Lysates

1. Thaw 1X Cell Lysis Buffer #7018 and mix thoroughly. Supplement Cell Lysis Buffer with phenylmethylsulfonyl fluoride (PMSF) to a final concentration of 1 mM, or a cocktail of protease inhibitors (not included). Keep lysis buffer on ice.
2. Remove media and wash cells once with ice-cold 1X PBS.
3. Remove PBS and add ice-cold Cell Lysis Buffer. For adherent cells, use 0.5 ml cell lysis buffer for each plate (10 cm in diameter). Incubate on ice for 2 minutes.
4. Tilt the plate and collect the lysate into a clean micro tube.
5. Optional step: microcentrifuge the lysate at maximum speed for 3 minutes at 4°C and transfer the supernatant to a new tube. This step is usually not required but can help remove any particles or large cell debris, if present. Lysate may be used immediately or stored at -80°C in single-use aliquots.
6. Immediately before performing the assay, dilute lysates to 0.2 – 1.0 mg/ml in Array Diluent Buffer. Set aside on ice.

### B Assay Procedure

1. Bring glass slides and blocking buffer to room temperature before use.
2. Prepare 1X Array Wash Buffer by diluting 20X Array Wash Buffer in deionized water. Keep at room temperature. Dilute 1 ml of 20X Array Wash Buffer with 19 ml of deionized water. Label as 1X Array Wash Buffer.
3. Prepare 1X Detection Antibody Cocktail as follow:
   - For running only 1 slide: Dilute 150 µL of 10X Detection Antibody Cocktail with 1350 µL of Array Diluent Buffer.
   - For running 2 slides: Dilute 300 µL of 10X Detection Antibody Cocktail with 2700 µL of Array Diluent Buffer.
4. Prepare 1X HRP-linked Streptavidin as follow:
   - For running only 1 slide: Dilute 150 µL of 10X HRP-linked Streptavidin with 1350 µL of Array Diluent Buffer.
   - For running 2 slides: Dilute 300 µL of 10X HRP linked Streptavidin with 2700 µL of Array Diluent Buffer.
5. Affix the multi-well gasket to the glass slide (see figure at right):
   - a. Place the multi-well gasket face-down on the benchtop (the nitrocellulose pads should be facing up). Remove the protective plastic film.
   - b. Carefully place the glass slide on top of the multi-well gasket with the nitrocellulose pads facing down while aligning the pads with the openings in the gasket. The orientation line should appear in the upper left hand corner when the slide is oriented vertically.
   - c. Insert the metal clip into the groove in the gasket and rotate the clip into the locked position. Ensure that the clip is on the same side as the orientation line on the slide.
   - Note: one of the clips has a small dot etched onto the upper rib to assist with pad designation (see slide assembly photos).
   - d. Slide the clip into place.
   - e. Snap the second metal clip to the other side of the assembly in the same manner and slide into place.
   - f. The assembled array is ready to use.
6. Add 100 µl Array Blocking Buffer to each well and cover with sealing tape. Incubate for 15 minutes at room temperature on an orbital shaker.
   - Note: Do not allow the pads to dry out at any time during the assay.
7. Decant Array Blocking Buffer by gently flicking out the liquid into a sink or other appropriate waste receptacle. Add 50 - 75 µl diluted lysate to each well and cover with sealing tape. Incubate for 2 hours at room temp (or overnight at 4°C) on an orbital shaker.
8. Decant well contents by gently flicking out the liquid into a sink or other appropriate waste receptacle. Add 100 µl (1X) Array Wash Buffer to each well and incubate for 5 minutes at room temperature on an orbital shaker. Repeat three more times. Decant well contents.
9. Add 75 µl (1X) Detection Antibody Cocktail to each well and cover with sealing tape. Incubate for 1 hour at room temperature on an orbital shaker.
10. Wash 4 X 5 minutes with 100 µl (1X) Array Wash Buffer as in step 8.
11. Add 75 µl (1X) HRP-linked Streptavidin to each well and cover with sealing tape.
12. Incubate for 30 minutes at room temperature on an orbital shaker.
13. Remove multi-well gasket by pulling the bottom of the metal clips away from the center of the slide, then peeling the slide and gasket apart.
14. Place the slide face up in a plastic dish (a clean pipette tip box cover works well). Wash briefly with 10 ml (1X) Array Wash Buffer.
15. Dilute and combine LumiGLO® and Peroxide reagents immediately before use (to make 10 ml of a 1X solution, combine 9 ml deionized water with 0.5 ml of 20X LumiGLO® and 0.5 ml of 20X Peroxide). Note for Kodak Biomax film users: This dilution of LumiGlo®/Peroxide may necessitate very short exposure times (2-3 seconds) for some targets. For more convenient exposure times (20-30 seconds) add 20 ml of deionized water to the 10 ml LumiGlo®/Peroxide mix to make a 3 fold more diluted chemiluminescent reagent.
16. Decant Array Wash Buffer and cover slide with LumiGLO®/Peroxide reagent.
17. Transfer slide to chemiluminescent development folder, ensuring that it is still covered by LumiGLO®/Peroxide reagent (add a small amount on top of the slide).
18. Immediately capture an image of the slide using a digital imaging system capable of detecting chemiluminescent signals. If desired, quantify spot intensities using commercially available array image analysis software. Alternatively, chemiluminescent film may be used. Expose film for 2-30 seconds using even and light pressure on the top of the development cassette (do not fasten the cassette clamps) to avoid squeezing out the LumiGlo®/Peroxide reagent. Develop the film using an automated film developer.
   - Note: If both slides are being used, it is not recommended to expose them simultaneously in the same development cassette. In this case, leave the second slide in the wash buffer (step 12) while proceeding with steps 13-18 using the first slide. After the first slide is finished, proceed with steps 13-18 using the second slide and freshly diluted LumiGlo®/Peroxide reagent.

LumiGLO® is a registered trademark of Kirkegaard & Perry Laboratories.
Material Safety Data Sheet (MSDS) for PathScan® Intracellular Signaling Antibody Array Kit

II. Composition/Information:
Substance Name: PathScan® Intracellular Signaling Antibody Array Kit
CAS#: None
This product is For Research Use Only. According to 29 CFR 1910.1200(d), mixtures with hazardous ingredients at less than <1% and carcinogens at less than < 0.1% are considered non-hazardous. Please refer to the individual material safety data sheets for hazard information specific to kit components.
- Array Slides MSDS
- PathScan® Sandwich ELISA Lysis Buffer (1X) (CST#7018) MSDS
- Array Blocking Buffer MSDS
- Array Diluent Buffer MSDS
- Array Wash Buffer MSDS
- Detection Antibody Cocktail MSDS
- HRP-linked Streptavidin MSDS (Kit 7323 only)
- DyLight 680™-linked Steptavidin MSDS (Kit 7744 only)
- 20X LumiGLO & 20X Peroxide (CST#7003) MSDS

III. Hazard Identification:
Emergency Overview:
Not considered hazardous.
Not expected to produce significant adverse health effects when the recommended instructions for use are followed. No known significant effects or critical hazards.

IV. First Aid Measures:
Inhalation: Remove to fresh air. If breathing is difficult, get medical attention.
Ingestion: If person is conscious, wash out mouth with water. Get medical attention.
Skin exposure: Wash skin with soap and water. If irritation develops or persists, get medical attention.
Eye exposure: Immediately flush eyes water for at least 15 minutes. Get medical attention.

V. Fire Fighting Measures:
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion: Not applicable.
Fire extinguishing media: Water spray, dry chemical, alcohol foam, or carbon dioxide.
Firefighting: Wear protective clothing and self-contained breathing apparatus to prevent contact with skin and eyes.
Specific Hazard: None.

VI. Accidental Release Measures: Wear appropriate personal protective equipment as indicated in Section VIII. Absorb liquid with an absorbent material. Transfer contaminated absorbent to a closed chemical waste container for disposal. Wash spill site after material has been picked up for disposal.

VII. Handling And Storage:
Storage: Store kit in tightly closed container at 4°C.

VIII - XIII. Refer to individual MSDS for kit components for Sections 8-13 information: Exposure Controls/Personal Protection, Physical and Chemical Properties, Stability and Reactivity, Toxicological Information, Ecological Information, Disposal Considerations.

XIV. Transport Information:
DOT: Proper Shipping Name: None.
This substance is considered Non-Hazardous for transport.
IATA: Proper Shipping Name: None.
This substance is considered Non-Hazardous for air transport.

XV. Regulatory Information:
EU Regulations/Classifications: Xi. Irritant.
Risk Phrases: Irritant. Irritating to eyes and skin. Harmful if swallowed.
Safety Phrases: In case of contact wash with water and seek medical attention.
US Regulatory Information: Irritant.

XVI. Other Information:
This product is not intended for use in humans. To the best of our knowledge, this document is accurate. It is intended to serve as a guide for safe use of this product in a laboratory setting by experienced personnel. The burden of safe use of this material rests entirely with the user. The above information is believed to be accurate but is not necessarily all-inclusive and shall be used only as a guide. Cell Signaling Technology, Inc., shall not be held liable for any damage resulting from the handling of or from contact with the above product.
VII. Handling And Storage:

Storage: Store at -20°C or below for long-term storage. Store at 4°C for up to 1 month. Once thawed, use within 6 months.

VIII. Exposure Controls/Personal Protection:

Engineering Controls: Use in a fume hood or other ventilation system. Use proper personal protective equipment (PPE).

Eye Protection: Wear safety glasses or chemical protection goggles.

Face Protection: Wear a mask with a P100 or higher level respirator for any spills or splashes.

IX. Physical and Chemical Properties

Appearance: Clear liquid
pH: 7

X. Stability and Reactivity

Stability: Stable under normal conditions.

Shipping and Handling: Store at 4°C or below.

XI. Accidental Release Measures:

Incidence: May be harmful if inhaled. Causes respiratory tract irritation. If swallowed, may cause gastrointestinal irritation. If skin contacted, may cause skin irritation.

Ingestion: If swallowed, get medical attention immediately.

Eye Contact: Wash eyes with large amounts of water for 15 minutes. Get medical attention.

Skin Contact: Wash skin with soap and water for at least 15 minutes. Get medical attention.


XII. Ecological Information

Data not available.

XIII. Disposal Considerations

Disposal: Disposal should be in accordance with federal, state, and local environmental regulations. This product is not considered hazardous waste.

XIV. Transport Information

IATA: None

ADSS: None

SARA 302/313: None

SARA 802: Not Listed

SARA 803: Not Listed

SARA 804: Not Listed

Wood: None

XV. Regulatory Information

California Proposition 65: Not Listed

Massachusetts Right to Know: Not Listed

New Jersey Right to Know: Not Listed

XVI. Other Information

Data not available.

For more information, contact Cell Signaling Technology, Inc. at 978-867-2400 or info@cellsignal.com.
Material Safety Data Sheet (MSDS) for PathScan® Antibody Array Diluent Buffer

I. Identification:
Product name: PathScan® Antibody Array Diluent Buffer
Product Catalog: 7744-20-3 Component
Manufacturer: Cell Signaling Technology

II. Composition/Information:
This product is for Research Use Only. According to 29 CFR 1910.1200, include with hazardous chemicals and materials at levels that are: (1) 0.1% or more as an ingredient at 0.5% by weight on or after 07/20/2010.

III. Hazards Identification:
This product is to be used for research use only. It is intended for research purposes only. To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been established.

IV. First Aid Measures:
Inhalation: Remove to fresh air. If breathing problems continue, get medical attention.
Ingestion: Do not induce vomiting. Get medical attention.
Eye Contact: Wash eyes with water or saline solution for at least 15 minutes. Get medical attention.
Skin Contact: Wash with soap and water. If irritation develops or persists, get medical attention.

V. Fire Fighting Measures:
Fire: Use dry chemical, carbon dioxide, or water fog type extinguisher. Do not fight small jumps with water. Do not use water as a blanketing agent.

VI. Accidental Release Measures:
Wear protective clothing and self-contained breathing apparatus to prevent exposure to material. Keep the area under a negative pressure exhaust system.

VII. Handling and Storage:
Store at 4°C in tightly closed container. Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid prolonged or repeated exposure.

VIII. Exposure Controls/Personal Protection:
Eye Protection: Wear safety glasses or other personal eye protection.
Skin Protection: Wear compatible chemical resistant gloves and protective clothing.

IX. Physical And Chemical Properties:
Appearance: colorless liquid
Odor: pungent
pH: not available

X. Stability and Reactivity:
Stability: Store under normal conditions.
Hazardous Decomposition: Not available.

XII. Ecological Information:
Xi: Irritant. R36/38-43-52/53

XIII. Exposure Control/Personal Protection:
Ventilation Systems: Keep adequate ventilation at the work site. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid prolonged or repeated exposure.

XIV. Transport Information:
IATA: Proper Shipping Name: None.
Rate: None.
Iben: None.
UN Number: None.
US DOT: Proper Shipping Name: None.

XV. Regulatory Information:
This substance is considered Non-Hazardous for transport.

XVI. Other Information:
SARA 302, 313:
None.

Canadian DSL: Not applicable.

OSHA: None.

EU: None.

Other Information: This product is intended for use in a laboratory setting by trained personnel only. This product is considered Non-Hazardous for transport.

Orders: 877-616-CELL (2355) orders@cellsignal.com
978-867-2300 TEL
www.cellsignal.com
Danvers, MA 01923 USA

- © 2012 Cell Signaling Technology, Inc.

Material Safety Data Sheet (MSDS) for PathScan® Antibody Array Wash Buffer

I. Identification:
Product name: PathScan® Antibody Array Wash Buffer
Product Catalog: 7744-20-3 Component
Manufacturer: Cell Signaling Technology

II. Composition/Information:
This product is for Research Use Only. According to 29 CFR 1910.1200, include with hazardous chemicals and materials at levels that are: (1) 0.1% or more as an ingredient at 0.5% by weight on or after 07/20/2010.

III. Hazards Identification:
This product is to be used for research use only. It is intended for research purposes only. To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been established.

IV. First Aid Measures:
Inhalation: Remove to fresh air. If breathing problems continue, get medical attention.
Ingestion: Do not induce vomiting. Get medical attention.
Eye Contact: Wash eyes with water or saline solution for at least 15 minutes. Get medical attention.
Skin Contact: Wash with soap and water. If irritation develops or persists, get medical attention.

V. Fire Fighting Measures:
Fire: Use dry chemical, carbon dioxide, or water fog type extinguisher. Do not fight small jumps with water. Do not use water as a blanketing agent.

VI. Accidental Release Measures:
Wear protective clothing and self-contained breathing apparatus to prevent exposure to material. Keep the area under a negative pressure exhaust system.

VII. Handling and Storage:
Store at 4°C in tightly closed container. Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid prolonged or repeated exposure.

VIII. Exposure Controls/Personal Protection:
Eye Protection: Wear safety glasses or other personal eye protection.
Skin Protection: Wear compatible chemical resistant gloves and protective clothing.

IX. Physical And Chemical Properties:
Appearance: colorless liquid
Odor: pungent
pH: not available

X. Stability and Reactivity:
Stability: Store under normal conditions.
Hazardous Decomposition: Not available.

XII. Ecological Information:
Xi: Irritant. R36/38-43-52/53

XIII. Exposure Control/Personal Protection:
Ventilation Systems: Keep adequate ventilation at the work site. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid prolonged or repeated exposure.

XIV. Transport Information:
IATA: Proper Shipping Name: None.
Rate: None.
Iben: None.
UN Number: None.
US DOT: Proper Shipping Name: None.

XV. Regulatory Information:
This substance is considered Non-Hazardous for transport.

XVI. Other Information:
SARA 302, 313:
None.

Canadian DSL: Not applicable.

OSHA: None.

EU: None.

Other Information: This product is intended for use in a laboratory setting by trained personnel only. This product is considered Non-Hazardous for transport.

Orders: 877-616-CELL (2355) orders@cellsignal.com
978-867-2300 TEL
www.cellsignal.com
Danvers, MA 01923 USA

- © 2012 Cell Signaling Technology, Inc.
I. Identification:

Product name: PathScan® Antibody Array DyLight 680®-linked Streptavidin
Product Catalog: #7003 MSDS
Manufacturer Supplier: Cell Signaling Technology

II. Composition/Information:

This product is for Research Use Only. According to the GHS (for COSHH), this material with hazard classes and categories exists. It is made from or contains substantial amounts of hazardous substances or compounds.

Gold standard for quantitative analysis in one plate.

III. Hazard Identification:

This product is not active in humans. It is intended for research purposes only. In the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

Eye protection:

Wear chemical safety goggles. Maintain emergency eyewash and shower in case of eye exposure.

Skin Protection:

Specific Hazards:

Wear protective clothing and self-contained breathing apparatus to prevent skin contact and inhalation in case of exposure to material.

Skin exposure:

May be harmful if absorbed through skin. May be harmful if inhaled. Prolonged or repeated contact may cause skin irritation. 

Inhalation:

May be harmful if inhaled. May cause respiratory tract irritation.

Potential Health Effects:

Irritant. May cause eye irritation. May be harmful if inhaled. May cause respiratory tract irritation. 

Ingestion:

May be harmful if swallowed. Prolonged or repeated contact may cause skin irritation.

IV. First Aid Measures:

Inhalation:

Remove person to fresh air. If breathing is difficult, get medical attention.

Ingestion:

If conscious, wash out mouth with water. Get medical attention.

Skin exposure:

Wash skin with soap and water. If irritation develops or persists, get medical attention.

Eye exposure:

In case of contact with eyes, flush eyes with water for at least 15 minutes. Get medical attention.

V. Fire Fighting Measures:

Flammable:

Not applicable.

Fire extinguishing media:

Not applicable.

Ventilation System:

Not applicable.

VI. Accidental Release Measures:

Inhalation:

Remove person to fresh air. If breathing is difficult, get medical attention.

Ingestion:

If conscious, wash out mouth with water. Get medical attention.

Skin exposure:

Wash skin with soap and water. If irritation develops or persists, get medical attention.

Eye exposure:

If eyes are exposed, flush eyes with water for at least 15 minutes. Get medical attention.

VII. Handling And Storage:

Store at 4°C in tightly closed container.

VIII. Exposure Controls/Personal Protective Equipment:

Respiratory System:

A respirator with high efficiency particulate air (HEPA) filter shall be used for any aerosol generated.

Eye Protection:

Wear chemical resistant goggles. Maintain emergency eyewash and shower in case of eye exposure.

IX. Physical And Chemical Properties:

Appearance:

colourless liquid

Color:

data not available

Odor:

data not available

pH:

data not available

Flammable Point:

data not available

Freezing Point:

data not available

Solubility in water:

data not available

X. Stability and Reactivity:

Stable for 1 year under normal conditions.

Incompatible Materials:

Strong oxidizing agents, strong acids, strong bases.

Hazardous Decomposition:

Anhydride

Hazardous polymers:

Will occur.

XI. Toxicological Information:

No data available.

Routes of Exposure:

Eye Exposure: May cause eye irritation. May be harmful if inhaled. May cause respiratory tract irritation.

Inhalation: May cause respiratory tract irritation.

Ingestion:

May be harmful if swallowed. Prolonged or repeated contact may cause skin irritation.

XII. Ecological Information:

No data available.

XIII. Disposal Considerations:

Dispose of in accordance with federal, state and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

XIV. Transport Information:

Not shippable by air (ICAO/IATA).

Not shippable by sea (IMDG).

No data available.

XV. Regulatory Information:

California Prop. 65:

Ingredients Not Listed.

New Jersey Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

Massachusetts Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

No data available.

California Proposition 65:

Ingredients Not Listed.

New Jersey Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

XVI. Other Information:

This substance is considered Non-Hazardous for air transport.

Potential Health Effects:

No data available.

IX. Physical And Chemical Properties:

Appearance:

clear faint yellow colored liquid

Color:

data not available

Odor:

data not available

pH:

data not available

Flammable Point:

data not available

Freezing Point:

data not available

Solubility in water:

data not available

X. Stability and Reactivity:

Stable for 1 year under normal conditions.

Incompatible Materials:

Strong oxidizing agents, strong acids, strong bases.

Hazardous Decomposition:

Anhydride

Hazardous polymers:

Will occur.

XI. Toxicological Information:

No data available.

Routes of Exposure:

Eye Exposure: May cause eye irritation. May be harmful if inhaled. May cause respiratory tract irritation.

Inhalation: May cause respiratory tract irritation.

Ingestion:

May be harmful if swallowed. Prolonged or repeated contact may cause skin irritation.

XII. Ecological Information:

No data available.

XIII. Disposal Considerations:

Dispose of in accordance with federal, state and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

XIV. Transport Information:

Not shippable by air (ICAO/IATA).

Not shippable by sea (IMDG).

No data available.

XV. Regulatory Information:

California Prop. 65:

Ingredients Not Listed.

New Jersey Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

Massachusetts Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

No data available.

California Proposition 65:

Ingredients Not Listed.

New Jersey Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

XVI. Other Information:

This substance is considered Non-Hazardous for air transport.

Potential Health Effects:

No data available.

This information is believed to be accurate, but is not necessarily inclusive or exhaustive and shall be used at own risk. Cell Signaling Technology, Inc. shall not be held liable for any damage resulting from the handling or use from contact with the above product.

Material Safety Data Sheet (MSDS) for 20X Lumiglo® and 20X Peroxide

I. Identification:

Product name: 20X Lumiglo® and 20X Peroxide
Product Catalog: #7003 MSDS
Manufacturer Supplier: Cell Signaling Technology

II. Composition/Information:

This product is for Research Use Only. According to the GHS (for COSHH), this material with hazard classes and categories exists. It is made from or contains substantial amounts of hazardous substances or compounds.

Gold standard for quantitative analysis in one plate.

III. Hazard Identification:

This product is not active in humans. It is intended for research purposes only. In the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

Eye protection:

Wear chemical safety goggles. Maintain emergency eyewash and shower in case of eye exposure.

Skin Protection:

Specific Hazards:

Wear protective clothing and self-contained breathing apparatus to prevent skin contact and inhalation in case of exposure to material.

Skin exposure:

May be harmful if absorbed through skin. May be harmful if inhaled. Prolonged or repeated contact may cause skin irritation. 

Inhalation:

May be harmful if inhaled. May cause respiratory tract irritation.

Potential Health Effects:

Irritant. May cause eye irritation. May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion:

May be harmful if swallowed. Prolonged or repeated contact may cause skin irritation.

IV. First Aid Measures:

Inhalation:

Inhalation is not expected. Get medical attention.

Ingestion:

Ingestion is not expected. Get medical attention.

Skin exposure:

Avoid contact with eyes, skin, and clothing. Maintain emergency eyewash and shower in case of skin exposure.

Eye exposure:

Avoid contact with eyes. 

V. Fire Fighting Measures:

Flammable:

Not applicable.

Fire extinguishing media:

Not applicable.

Fire extinguishing media:

Not applicable.

Ventilation System:

Not applicable.

VI. Accidental Release Measures:

Inhalation:

Inhalation is not expected. Get medical attention.

Ingestion:

Ingestion is not expected. Get medical attention.

Skin exposure:

Avoid contact with eyes, skin, and clothing. Maintain emergency eyewash and shower in case of skin exposure.

Eye exposure:

Avoid contact with eyes.

VII. Handling And Storage:

Store at 4°C in tightly closed container.

VIII. Exposure Controls/Personal Protective Equipment:

Respiratory System:

A respirator with high efficiency particulate air (HEPA) filter shall be used for any aerosol generated.

Eye Protection:

Wear chemical resistant goggles. Maintain emergency eyewash and shower in case of eye exposure.

IX. Physical And Chemical Properties:

Appearance:

clear yellow colored liquid

Color:

data not available

Odor:

data not available

pH:

data not available

Flammable Point:

data not available

Freezing Point:

data not available

Solubility in water:

data not available

X. Stability and Reactivity:

Stable for 1 year under normal conditions.

Incompatible Materials:

Strong oxidizing agents, strong acids, strong bases.

Hazardous Decomposition:

Anhydride

Hazardous polymers:

Will occur.

XI. Toxicological Information:

No data available.

Routes of Exposure:

Eye Exposure: May cause eye irritation. May be harmful if inhaled. May cause respiratory tract irritation.

Inhalation: May cause respiratory tract irritation.

Ingestion:

May be harmful if swallowed. Prolonged or repeated contact may cause skin irritation.

XII. Ecological Information:

No data available.

XIII. Disposal Considerations:

Dispose of in accordance with federal, state and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

XIV. Transport Information:

Not shippable by air (ICAO/IATA).

Not shippable by sea (IMDG).

Not shippable for air transport.

No data available.

XV. Regulatory Information:

California Prop. 65:

Ingredients Not Listed.

New Jersey Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

Massachusetts Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

No data available.

California Proposition 65:

Ingredients Not Listed.

New Jersey Right To Know: Ingredient Dimethyl Sulfoxide, CAS#67-68-5

XVI. Other Information:

This substance is considered Non-Hazardous for air transport.

Potential Health Effects:

No data available.

This information is believed to be accurate, but is not necessarily inclusive or exhaustive and shall be used at own risk. Cell Signaling Technology, Inc. shall not be held liable for any damage resulting from the handling or use from contact with the above product.