

## **ADAPT-3D™ Refractive Index Match Buffer**

Product Information

Product No.: B675

Storage: Ambient “room” temperature

### **Product Description**

#### **Background:**

The ADAPT-3D Refractive Index is a key component of the ADAPT-3D (Accelerated Deep Adaptable Processing of Tissue for 3-Dimensional Fluorescence Tissue Imaging) method. This innovative tissue clearing technique is designed to revolutionize 3D fluorescence imaging in biomedical research by enabling researchers to visualize biological tissues at unprecedented depths and clarity. The core principle behind ADAPT-3D, and many other tissue clearing methods, is refractive index matching (RIM). Light scatters when it passes through a material with varying refractive indices (the measure of how much light bends when entering a material). Biological tissues are inherently complex, with different components having different refractive indices, which leads to significant light scattering and limits the penetration depth and resolution of traditional microscopy. ADAPT-3D addresses this by immersing tissues in solutions that minimize the refraction of light, essentially making the tissue transparent. This allows light to penetrate deeper into the sample, enhancing the detection of fluorescent signals.

What makes ADAPT-3D particularly notable is its focus on:

- Rapid Processing: It achieves refractive index matching in minutes to hours, significantly reducing preparation time compared to conventional methods.
- Broad Compatibility: It's suitable for various tissue types and species, including brain, liver, and intestinal tissues.
- Preservation of Morphology and Fluorescence: It minimizes distortion and maintains the quality of fluorescent signals, which is crucial for accurate imaging.
- Non-Toxic: Unlike some older methods that use harmful chemicals, ADAPT-3D aims to provide a safer alternative.

#### **Formula:**

The ADAPT-3D Refractive Index solution is a specially formulated buffer that optimizes the optical properties of tissue, allowing for much clearer and deeper 3D imaging.

#### **Storage & Stability:**

**DO NOT FREEZE.** Store at room temperature. When stored as directed, this product is stable for 6-months.

#### **Shipping:**

Available for shipment at room temperature via Ground or 2-Day Express delivery.

**Country of Origin:**  
USA

**Directions for Use:**

The ADAPT-3D™ Refractive Index Matching (RIM) buffer is an integral component of the ADAPT-3D Imaging protocol (Kit Number A630). To use please follow all steps of the protocol and simply immerse your samples in the RIM solution until they become transparent. For intestine and brain tissues, first incubate them in a 1:1 mixture of RIM buffer and PBS (pH 7.4) for approximately 30 minutes.

*Each investigator should determine their own optimal working dilution for specific applications. See directions on lot specific datasheets, as information may periodically change.*

**Hazard Description:**

The ADAPT-3D™ Refractive Index Matching (RIM) buffer requires careful handling in your laboratory setting environment. Always wear appropriate protective eyewear, clothing, and gloves when working with this reagent. For detailed safety information, including handling, storage, and emergency protocols, please consult the Safety Data Sheet (SDS).

**Related Products:**

Product No.	Description
B673	ADAPT-3D™ Immunostaining Buffer
B676	ADAPT-3D™ Delipidation Buffer Component B
B671	ADAPT-3D™ Decolorization Buffer
B674	ADAPT-3D™ 5X Wash Buffer
B672	ADAPT-3D™ Delipidation Buffer Component A
A630	ADAPT-3D™ Tissue Clearing Kit