

# I.E.D. Unit (Ion-Exchange Decal Unit)

Ancillary Reagent  
902-BRR1203/1204-062123

**BIOCARE**  
M E D I C A L

Available Product Formats	
Catalog Number	Volume
BRR1203	140 mL
BRR1204	500 mL

## Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

## Background Information:

The I.E.D. Unit incorporates a strong cation ion-exchange resin in a weak acid solution to remove calcium ions from bone, while replacing them with hydrogen ions. This advanced decalcification system removes calcium from bone quickly while leaving superior cellular detail. The ion-exchange process does not require strong concentrated acid solutions as in traditional decalcification methods; so delicate cellular structures remain intact. This can be very important for immunohistochemistry (IHC) procedures, especially for bone marrow. Over decalcification can destroy morphology that may affect the final staining quality and staining intensity for IHC staining. The ion exchange decal method has been shown to provide the best tissue morphology and IHC staining when compared to other conventional decal methods. Results were very similar to EDTA methods, but much faster. Tissues can remain in the I.E.D. solution for longer periods of time without destroying tissue morphology, eliminating the daily solution change, thus reducing the amount of toxic waste.

## Known Applications:

Immunohistochemistry (formalin-fixed tissues)

## Materials and Methods:

### Reagents Provided:

Kit Catalog No.	Component Description	Quantity x Volume
BRR1203	I.E.D. Unit (Ion-Exchange Decal Unit)	1 x 140 mL
BRR1204	I.E.D. Unit (Ion-Exchange Decal Unit)	1 x 500 mL

\* Refer to the Biocare Medical website located at <http://biocare.net> for information regarding catalog numbers and ordering.

BRR1203 is packaged in a 250mL container.  
BRR1204 is packaged in a 1000mL container.

The number of uses for this product will depend on specimen size and I.E.D. Unit size.

## Supplied As:

Acidic solution and beads. See Safety Data Sheet for additional details.

## Reconstitution, Dilution and Mixing:

The I.E.D. Unit is ready to use. No reconstitution, mixing, dilution, or titration is required.

## Storage and Stability:

Store at room temperature (20-25°C). The product is stable to the expiration date printed on the vial label when stored under these conditions. Do not use after expiration date. Storage under any condition other than those specified must be verified.

## Instructions for Use

Below recommendations are to assist the user in preparing tissue specimens for staining for use in research applications. The user is responsible for further optimizations of staining protocols.

1. Bone marrow cores must be fixed approximately 4 to 24 hours, and then washed 5 minutes in running water.
2. Place bone marrow core biopsy in the I.E.D. unit solution for 2-3 hours. If possible, gentle agitation or low heat (37°C) on an orbital shaker will speed up the process. When decalcification is complete, wash tissue for 5 minutes in running tap water.
3. Process in the usual manner.

## Technical Note:

1. All cation exchange resins will have color changes, and the end stage is usually reddish brown. This is a normal color variation. The cosmetic color of resins is not indicative of the resin's quality or activity. It has to do with the chemical process and how the natural chromophores in the resin line up. Thus, the color can vary from light tan to reddish brown, or even grey to black.



## Limitations:

This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

## Precautions:

1. Do not heat this solution beyond 37°C.
2. Handle materials of human or animal origin as potentially biohazardous and dispose of such materials with proper precautions. In the event of exposure, follow the health directives of the responsible authorities where used.<sup>1,2</sup>
3. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come into contact with sensitive areas, wash with copious amounts of water.<sup>3</sup>
4. Microbial contamination of reagents may result in an increase in nonspecific staining.
5. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
6. Do not use reagent after the expiration date printed on the vial.
7. The reagent is optimized for use with Biocare antibodies and ancillary reagents. Refer to the primary antibody and other ancillary reagent instructions for use for recommended protocols and conditions for use.
8. Follow local and/or state authority requirements for method of disposal.
9. The SDS is available upon request and is located at <http://biocare.net>.

This I.E.D. Unit contains components classified as indicated in the table below in accordance with Regulation (EC) No. 1272/2008.

Hazard	Code	Hazard Statement
	H314 H318	Causes severe skin burns and eye damage. Causes serious eye damage.
	H335 H302	May cause respiratory irritation. Harmful if swallowed.
N/A	H227	Combustible liquid.

## Technical Support:

Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.



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### **References:**

1. Occupational Safety and Health Standards: Occupational exposure to hazardous chemicals in laboratories. (29 CFR Part 1910.1450). Fed. Register.
2. Directive 2000/54/EC of the European Parliament and Council of 18 September 2000 on the protection of workers from risks related to exposure to biological agents at work.
3. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.



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