

ALP Fluorescent Substrate System (Catalog# TBS5025)

For Fluorometric ALP-based quantitative detection

Description

4-Methylumbelliferyl Phosphate (4-MUP) is a substrate for alkaline phosphatase that forms the soluble highly fluorescent reaction product methylumbelliferone. The 4-Methylumbelliferyl Phosphate (4-MUP) Liquid Substrate System combines 4-Methylumbelliferyl Phosphate (4-MUP) and buffer in a single solution, ready-to-use reagent for use in procedures detecting alkaline phosphatase enzyme activity in the culture media or ELISA. Fluorescence can be measured with excitation at 360 nm and emission at 440 nm. Also, the fluorescent end product may also be observed using a UV light source. This substrate is about 10 times more sensitive than the alkaline phosphatase substrate BCIP/NBT.

Application:

- **ALP substrate** – for detection of alkaline phosphatase (alk-phos) activity on liquid system.
- Available for western blot.
- Custom packaging and bulk purchase information is available upon request.

KIT CONTENTS

MUP substrate solution	20 mL
ALP standard	100 µL 50 U/L

Storage:

Supplied as a ready to use solution, 20 mL.
Store at 2-8°C. Protect from light for up to one year.

RELATED PRODUCTS:

NCIP/NBT Substrate System (Catalog# TBS5022)
TMB Substrate System (Catalog# TBS5021)
ALP Activity Fluorometric Assay Kit (Catalog # TBS2070)
ALP Activity Colorimetric Assay Kit (Catalog # TBS2075)
HRP Fluorescent Substrate system (Catalog # TBS5026)
Antibody Diluent Kit (catalog# TBS5012)

Procedure:**ALP activity**

Warm up MUP solution to room temperature.

1. Prepare samples and ALP standards according to your established procedures.
2. To each sample and AP standard, add 50 µL of MUP solution. This quantity should be determined experimentally and depends on the cuvette or multiwell plate used. Commonly 1mL for 1cm cuvettes or 50µL per well of a multiwell plate is required for ELISAs..
3. Record the fluorometric values (Ex360nm/Em440nm) for each sample and ALP standard at the desired intervals (kinetics assay) or upon termination of the reaction (endpoint assay).
4. Prepare ALP standard curve by plot of the concentrations (or amounts) of the ALP standards v. fluorometric values.
5. Using the fluorometric value for each sample, determine the ALP concentration by extrapolation on the standard curve generated in Step 4.

Western blotting

1. Remove nitrocellulose membrane from the transfer apparatus and block nonspecific sites with Blocking Buffer for 10-30minutes at room temperature with shaking.
2. Add the primary antibody and incubate membrane for 1 hour with shaking.
3. Wash the membrane with TBS-T.
4. Add the ALP-conjugated secondary antibody and incubate membrane for 1 hour at room temperature with shaking.
5. Wash membrane with TBS-T.
6. Add the MUP Substrate solution to cover the membrane and incubate 5 min.
7. Visualize membrane by fluorescence.

Material Safety Data Sheet (MSDS)

Identification:**Product name:** ALP Fluorescent Substrate System**Product Catalog:** TBS5025**Manufacturer Supplier:**4062 Fabian Way, suite 1, Palo Alto,
CA 94303 USA

1-650-917-9269 TEL

1-650-618-5498 FAX

Composition/Information on Ingredients:

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.

Ingredient Name	CAS#	Percent
4-Methylumbelliferyl Phosphate	3368-04-5	<0.03%
2-Amino-2-methyl-1-propanol	124-68-5	<0.01%
alkaline phosphatase	9001-78-9	na

Hazard Identification:

CAUTION: This product is not for use in humans. 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.

Emergency Overview: Harmful by Ingestion. Irritant.

Potential Health Effects:

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Eye Contact: Causes eye irritation. Risk of damage to eyes.

Skin Contact: May be harmful if absorbed through skin. Causes skin irritation.

Ingestion: Harmful if swallowed.

First Aid Measures for hazardous ingredient:

2-Amino-2-methyl-1-propanol:

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

Ingestion: DO NOT INDUCE VOMITING. If person is conscious, wash out mouth with water. Get medical attention.

Skin contact: Wash skin with soap or mild detergent and water for at least 15 minutes. If irritation develops or persists, get medical attention.

Eye contact: Immediately flush eyes water for at least 15 minutes. Get medical attention.

Accidental Release Measures:

Wear appropriate personal protective equipment as indicated. 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.

Handling and Storage:

Store at 4°C in tightly closed container. Avoid inhalation of vapor or mist. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Avoid prolonged or repeated exposure.

Exposure Controls/Personal

Ventilation System: a system of local (fume hood) and general exhaust is recommended.

Skin Protection: wear compatible chemical resistant gloves and protective clothing.

Eye protection: wear chemical safety goggles.

Maintain emergency eyewash and shower in work area.

Physical and Chemical Properties

Appearance: colorless liquid

Odor: data not available

pH: data not available

Boiling Point: data not available

Melting or Freezing Point: data not available

Flash Point: data not available

Volatile Organic Compounds: data not available

Autoignition temp: data not available

Solubility (water): Soluble in water

Toxicological Information:

Acute toxicity: data not available

Chronic exposure: data not available

Potential Health Effects:

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: Harmful if swallowed.

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.

Other Information:

This product is for research use only and 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. Tribioscience, Inc., shall not be held liable for any damage resulting from the handling of or from contact with the above product.