

IgM DILUENT

Meridian Life Science, Inc. (MLS) IgM Diluent (Product # 8120) is intended for use in the development of qualitative and quantitative assays for the detection of IgM antibodies. The diluent is formulated to reduce assay interference from IgG antibodies, rheumatoid factor, heterophilic antibodies, and other non-specific proteins which may affect assay results. The addition of MLS IgM Diluent can aid in the determination of current or recent viral infections.

MLS IgM Diluent is designed to remove specific IgG interference from serum samples. It also contains proteins to reduce non-specific interaction commonly found with polystyrene plates and low affinity interactions to proteins bound on the plates.

INTRODUCTION

IgM assays have been developed in two major formats: Direct and Capture. Direct assays are often preferable since they are inherently less complex; while Capture assays are generally more specific. By using MLS IgM Diluent, the convenience of testing with a direct assay can be realized with improved specificity.

MLS IgM Diluent is formulated to reduce IgG interference by virus specific IgG antibodies. Several additional components have also been included in the buffer formulation to reduce non-specific binding of IgG and particularly IgM antibodies to the antigen and the solid surface.



Heterophilic and low-affinity antibodies may affect serum reactivity and could cause false positive results. The graph demonstrates various formulations of commercially available sample diluent against 100 negative human serum samples in an in-house Rubella IgM ELISA.

The RED bars demonstrate the ELISA response when a heterophilic blocking reagent is added to the sample. The GREEN bars were generated with a standard sample diluent. The BLUE bars indicate the ELISA response when the sample is diluted using the MLS IgM Diluent. The YELLOW bars display the results with a competing diluent.

PRINCIPLE

IgM Diluent reacts with the patient's IgG, blocking its ability to react with antigens on the solid surface of the assay. Proteins within the MLS IgM Diluent are in high excess and will bind to any unblocked binding sites of the solid surface preventing binding from sample proteins. Only IgM antibodies specifically bound to the viral antigens are available for reaction after the first wash steps of the assay.

RECOMMENDED USAGE:

- Each lot of MLS IgM Diluent is tested for efficacy using an IgM assay procedure
- For use in the development of assays for *in vitro* diagnostic
- Contains sodium azide
- Diluent must be warmed to room temperature prior to use
- MLS IgM Diluent should be stored at 2°C to 8°C and is stable at this temperature until expiry
- MLS IgM Diluent must be standardized as a unit with the other assay components
- Dilute the patient serum sample in the MLS IgM Diluent at a 1:21 dilution or greater
- It is preferred that the dilutions are performed in a separate tube
- Mix well after diluting

CONCLUSIONS:

The MLS IgM Diluent reduces non-specific binding separating the positive and negative populations. The MLS IgM Diluent dramatically reduces false positive results while maintaining a high level of sensitivity.

LIMITATIONS:

Results are highly dependent upon the samples chosen. Performance is directly related to the companion components and assay procedure. Use of the MLS IgM Diluent with highly contaminated or lipemic samples at low dilutions is not recommended.