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Bio-plex cytokine assay instruction manual

Bio plex cytokine assay. Bio-plex pro human cytokine assays instruction manual. Bio plex cytokine. Bio plex cytokine assay protocol.

Bio-Plex Precision Pro Cytokine Assay Instruction Manual Requires Bio-Plex Manager 4.1 software or later versions. For technical support, contact your local Bio-Rad office or call 1-800-4BIORAD (1-800-424-6723). This product is for research use only and not for diagnostic procedures. The reconstituted standard is prepared by pipetting the appropriate volume of diluent into tubes. Different types of samples require different types of diluents. 25.6 µl of the reconstituted standard is added to the first tube with a certain amount of standard diluent, and then serial dilutions are made. 14. Wash the plate 3 times. Vortex the streptavidin-PE (1x) vigorously, add 50 µl to each well, then incubate for 10 minutes. 16. For data acquisition, use Bio-Plex Manager software version 4.1 or higher. Alternatively, refer to the user guide or instrument instructions. Prepare System: Empty waste and fill sheath fluid bottles before starting (if HTF not present). Update target values in Luminex software by calibrating reporter channels. Prepare Protocol: Create a new protocol by selecting File > New. Format the plate by identifying wells with standards, blanks, controls, and samples. Acquire Data: Shake the assay plate at 1,100 rpm for 30 sec before data acquisition. Check filter plate flatness; if not, transfer contents to another plate or use a flat-bottom one. Refill sheath bottles between plate runs (if HTF not present). When done, select Shut Down. Section 10 Troubleshooting Guides: Review possible causes and solutions for problems encountered with Bio-Plex Precision Pro cytokine assays. Use a calibrated multichannel pipet to transfer volumes accurately. Replace pipet tips after each use to avoid contamination. Ensure all reagents and components are at room temperature before plating. Proper equilibration is key to optimal results. Recovering from Issues Low Bead Count? Double-check your math and add the correct amounts carefully. Avoid clumping beads by vortexing them for 15-20 seconds beforehand. When aspirating buffer, don't leave the vacuum on too long – just 10 seconds should do it. High Background Signal Gotcha! Use the right buffer to dilute standards, or you might get confusing results. Also, be careful not to spike "0 pg/ml" wells by mistake. Poor Recovery? Check your reagents; they might have expired. Follow the procedure's incubation time for Streptavidin-PE. Safety First When working with this product, wear eye protection and gloves. Handle human source material carefully – it could potentially transmit infectious agents. Use universal precautions. The MSDS has more info on safety considerations. The Bio-Plex Precision Pro cytokine assay is required for data acquisition. This kit includes all necessary components, including reagents and diluents, in one convenient box. Standard serum and plasma diluents are included, along with additional cytokines that can be used to prepare user-specified quality controls. To view the current list of available cytokine assays, visit the Bio-Rad website at www.bio-rad.com/bio-plex. The provided manual includes a detailed table of contents covering various sections, including introduction, principle, required and recommended materials, sample preparation, standard preparation, control preparation (optional), assay instructions, data acquisition, troubleshooting, safety considerations, and technical information. The assay requires the use of Bio-Plex Manager 4.1 software or later versions. The manual is intended for research use only and not for diagnostic procedures. For technical support, contact your local Bio-Rad office or call 1-800-424-6723 in the US. The Bio-Plex Precision Pro cytokine assays are highly sensitive tests that use magnetic beads to measure low levels of multiple cytokines in a single sample. These assays can detect up to 25 different cytokines at once, using as little as 12.5 microliters of serum or plasma. The tests come in a convenient kit format and include standard diluents for serum and plasma, as well as additional cytokines that can be used to create custom quality controls. The assays work by using fluorescently dyed beads to detect the presence of specific cytokines. A sample containing the target cytokine is mixed with the beads, which are then washed to remove any unbound protein. A detection antibody is then added, and the resulting signal is measured using a flow cytometer. This process allows for the simultaneous measurement of multiple cytokines in a single well of a 96-well microplate. The Bio-Plex Precision Pro assays use a novel technology that combines up to 100 unique fluorescently dyed beads with a high-speed digital signal processor. This enables efficient and accurate measurement of the different molecules bound to the surface of the beads. The tests can be used in various matrices, including serum, plasma, and culture supernatant. They are offered in a convenient kit format that includes assay reagents and diluents, as well as additional cytokines for custom quality control preparation. For more information on Bio-Plex Precision Pro cytokine assays, please visit the manufacturer's website at www.bio-rad.com/bio-plex/. The assays have several sections, including: * Section 1: Introduction * Section 2: Principle Technology * Section 3: Sample Preparation (not mentioned in the original text) * Section 4: Standard Preparation (not mentioned in the original text) * Section 5: Sample Preparation * Section 6: Standard Preparation * Section 7: Control Preparation (Optional) * Section 8: Assay Instructions * Section 9: Data Acquisition * Section 10: Troubleshooting * Section 11: Safety Considerations It is essential to follow the guidelines in these sections to ensure accurate and reliable results when using the Bio-Plex Precision Pro cytokine assays. The assay begins with the formation of a sandwich around the target cytokine using antibodies. Streptavidin-phycoerythrin (streptavidin-PE) is then added to bind with biotinylated detection antibodies on the bead surface. The Bio-Plex suspension array system, a dual-laser reader system, acquires data from the reaction. The contents of each well are drawn into the reader, where lasers detect internal fluorescence and fluorescent signals on the beads, identifying each assay and reporting the target protein level. Fluorescence intensity indicates the relative quantity of targeted molecules. Data output is efficiently managed by a high-speed digital processor, further analyzed, and presented as fluorescence intensity through Bio-Plex Manager software. Required materials include coupled magnetic beads, detection antibodies, standard components, control samples, assay buffer, wash buffer, detection antibody diluent, streptavidin-PE, a sterile filter plate, and sealing tape. Components are guaranteed for up to 6 months when stored at 4ºC. Bio-Plex Precision Pro assays are offered in convenient kit formats that include all necessary reagents and components. Storage and stability guidelines must be followed. The assay workflow involves pre-wetting wells, adding beads, washing, adding standards and samples, waiting, adding detection antibody, waiting again, adding streptavidin-PE, washing, resuspending, acquiring data, and further analyzing the results. Given article text here Looking forward to seeing everyone at the meeting tomorrow and discussing our strategies. Our company uses a VWR catalog #58815-234 2784-422#golatacdaR-oiB Pipets and pipet tips, sterile distilled water, aluminum foil, absorbent paper towels, 1.5 ml microcentrifuge tubes, 15 ml culture tubes for optimal results. For this purpose, we have listed the recommended materials below: #### Sample Preparation This section provides instructions for preparing samples from serum, plasma, and culture supernatant. For other sample preparations, please consult publications listed in Bio-Rad bulletin 5297. #### Serum and Plasma Samples Note that plasma samples require EDTA tubes, while sodium citrate tubes need to be filtered with a 0.22 µm filter. Hemolyzed samples are not suitable for our Bio-Plex 1 system. To prepare these samples, follow the guidelines: - Collect and process the serum or plasma samples and assay immediately or freeze at –20ºC. Avoid repeat freezing and thawing. - Centrifuge the samples at 13,200 rpm for 10 min at 4ºC to clear the samples of precipitate, or filter with a 0.22 µm filter. - Immediately dilute 1 volume of sample with 3 volumes of sample diluent. Keep the samples on ice until ready for use. #### Culture Supernatant Samples For culture supernatant samples: - Collect and process the samples and assay immediately, or freeze at –20ºC if necessary. Avoid repeat freezing and thawing. - If required, dilute the culture supernatant with culture medium. Ensure the serum-free culture medium contains carrier protein (such as BSA) at a concentration of at least 0.5%. - Keep the samples on ice until ready for use. #### Sample Standard Diluent The product insert provides the standard preparation instructions. Two tubes of lyophilized cytokine standard are included in each Bio-Plex Precision Pro assay, but only one is required per 96-well plate. To prepare standards: - Gently tap the glass vial containing the lyophilized cytokine standard on a solid surface. - Reconstitute 1 vial with 500 µl of the appropriate standard diluent. Do not use assay buffer to dilute standards. - Gently vortex for 1–3 sec and incubate on ice for 30 min, maintaining consistency for optimal results. #### Standard Dilution Series The cytokine concentrations specified for the 8-point standard dilution set have been selected using the 5-parameter logistic (5PL) or 4-parameter logistic (4PL) r Manager software. A specific brand of a biotechnology-based product, referred to as Bio-Plex, with seven distinct components or functionalities is being discussed.