biomat

Surface modifications - Diagnostic devices - Engineering

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Biomat 's full range of 96 well immunoassay plates includes both solid and 8 well strip format assembled on 12 x 8 and single well holding frame (breakable strips), allowing the maximum flexibility for the user.
Made in **Transparent, White** and **Black** Polystyrene the plates can be used for ELISA, Luminescence and Fluorescence assays.
Their design offers the best performances:

- manufactured in pure polystyrene with low fluorescence
- the optical quality, important to reduce the background signal, is pursued through the mould design
- the radius edged inner bottom of the wells improves the efficiency of washings
- the external lid warrants vertical alignment when using single wells
- a rim protects the external face of the bottom from scratches
- the plates comply with SBS standards and the design assures a good performance in automatic processing plant.

Each type of surface is tested in order to warrant:

stability - uniformity - reproducibility

of binding capacity.

If you need assistance in your assay development or are looking for assay development services, please contact us.

Available coated and treated surface are:

	COATING/TREATMENT SURFACE	FEATURES OF SURFACE
STANDARD SURFACE	**Medium binding**	Medium binding surface is a hydrophobic **surface suitable for passive adsorption of large molecules**, such as antibodies, **that have large hydrophobic regions**. The medium binding plates have a binding capacity of approximately 100 to 200 ng IgG/cm².
	High binding	High binding surface is a hydrophilic **surface suitable for passive adsorption of proteins with different grades of hydrophilicity**. This surface is ideal for immunoassays with a binding capacity of 400 to 500 ng IgG/cm².
	No binding	No binding surface is designed to **prevent the binding of proteins to the wells**. Addressed to those procedures that need to avoid any modification of the activity of the molecules (e.g. enzymes) induced by the reactions that could occur with the well surface.

	COATING/TREATMENT SURFACE	FEATURES OF SURFACE
BIOTIN – AVIDIN BINDING	**Biotin**	Biotin coated surface shows its usefulness for these applications: • interaction with avidin, streptavidin and neutravidin or other biotin-binding proteins
	Streptavidin	Streptavidin coated surface offers a powerful and universal **instrument for binding any biotinylated molecule** (Proteins-Peptides – Polysaccharides – Oligonucleotides-DNA fragments-etc.), finding a special application for those molecules which do not offer reliable bonding by passive adsorption or adsorb in an unfavourable orientation.
	Streptavidin HB	Streptavidin HB coated surface offers a powerful and universal **instrument for binding any biotinylated molecule** (Proteins-Peptides-Polysaccharides-Oligonucleotides-DNA fragments-etc.), finding a special application for those molecules which do not offer reliable bonding by passive adsorption or adsorb in an unfavourable orientation. Unlike the normal streptavidin coated surface, this product is **particularly useful in competitive tests to measure biotinylated low molecular weight molecules**.
	Neutravidin	Neutravidin® coated surface is designed to specifically **bind biotinylated molecules**, including biotin tagged antibodies, minimizing non-specific interactions.
IMMUNOGLOBULINS BINDING PROTEINS	**Protein A, Protein G and** **Protein A/G**	Protein A, Protein G and Protein A/G coated surfaces are designed for **capture IgG** applied directly or as antigen/antibody complexes. Among their applications there are: • specific and sterically oriented bond of IgG • separation of IgG from other immunoglobulins or contaminants • separation of antigen-antibodiescomplex • isolation and analysis of fusion proteins • finding and identifying red cell antibodies (only on U-bottom plates) The antibody being used determines whether to use Protein A, Protein G or Protein A/G coated plates. Protein G binds all subclasses of mouse,rabbit and goat IgG as well as most other commonly used species. Protein A binds strongly to rabbit antibodies and binds pig and guinea pig IgG better than Protein G; Protein A does not bind mouse IgG_1 well, and has weak binding of most rat IgG subclasses. Protein A/G is a secreted gene fusion product that joins binding domains of both Protein A and Protein G making it a more versatile tool.

	COATING/TREATMENT SURFACE	FEATURES OF SURFACE
LECTINS FAMILY	**Concanavalin A**	Concanavalin A coated surface offers a powerful and sensitive instrument for **binding in specific way the carbohydrate fraction of glycoproteins, enzymes and cell membranes**. Among its applications there are: • interaction with glycoproteins, glycopeptides and enzyme-antibody conjugates • polysaccharides and glycolipids • interaction with cellular membranes, hormones and hormone receptors
	Jacalin	Jacalin coated surface is used in assay for **binding carbohydrate-binding proteins and glycoproteins**. It shows usefulness for: • human IgA1 specific binding, sterically oriented • purification of human immunoglobulins (especially IgA1) • separation of immunocomplexes antigen-antibody • separation of IgA1 from contaminants • stimulation of T-cells
	WheatGerm	Wheat Germ coated surface is a powerful and sensitive instrument for **binding in specific way the carbohydrate fraction of glycoproteins, enzymes and cell membranes**. It'sused for: • studies of surfaces of normal and transformed cells • glycoproteinpurificationincluding membrane glycoproteins • studies of cell surface changes during development and the cell cycle
POLYAMINO ACIDS	**Poly-D-Lysine**	Poly-D-Lysine coated plates have a positively charged surface; this feature has been shown to **enhance cell attachment, growth and differentiation of some cell types** (e.g. primary neurons, glial cells, neuroblastomas and a variety of transfected cell lines). Many cell types adhere better to this surface and are less dependent on the presence of serum proteins. In addition, Poly-D-Lysine coated surfaces are often used to **reduce cell detachment** that often occurs during multiple washing steps that are associated with cell-based assays.
	Poly-L-Lysine	Poly-L-lysine coated surface is a powerful tool for these applications: • interactions with plasminogen and plasminogen activator • interactions with ribosomal**RNA** • interactions with double stranded **DNA**
	Poly-L-Arginine	Poly-L-arginine coated surface shows its usefulness for these applications: • interactions with serino proteases • interactions with maturation promoting factors
Ca^{**}-MODULATED PROTEINS	**Calmodulin**	Calmodulin coated surface shows its usefulness for these applications: • interactions with proteins involved in glycogen metabolism • interactions with factors involved in neurotransmission mechanism polysaccharides and glycolipids • interaction with cellular membranes, hormones and hormone receptors • interactions with enzymes involved in the NAD*/NADP* phosphorylation system

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HEPARIN CATCHER	**Heparin catcher 1** **Heparin catcher 2** **Heparin catcher 3**	The three Heparin Catcher plates are able to capture and to evaluate unfractionated heparin by quantitative *in vitro* enzyme-linked assays in low protein content fluid such as a buffer. These heparin ELISA tests are competitive assays in which the colorimetric signal is inversely proportional to the amount of heparin present in the sample. The plates can immobilize and measure heparin in the following ranges: - HC1 surface is useful for **immobilizing heparin** present in the fluids in the **range from 0.01 to 2.0 U/ml** - HC2 surface is useful for **immobilizing heparin** present in the fluids in the **range from 0.5 to 40.0 U/ml** - HC3 surface is useful for **immobilizing heparin** present in the fluids in the **range from 2.0 to 160.0 U/ml**
SECONDARY ANTIBODIES	**Goat Anti Mouse IgG Fcγ(Subclasses 1+2a+2b+3)**	Goat anti Mouse coated surface **specifically binds the Fc region of mouse immunoglobulin subclasses 1,2a, 2b and 3 with minimal cross-reaction to human, bovine and rabbit serum proteins**. It is ideal as solid support for most sandwich ELISAs utilizing a mouse IgG capture and a non mouse IgG detection antibody. Other applications include competitive ELISA, IgG isotyping and hybridoma screening/selection. Features: • prevent antibody denaturation as a result of direct adsorption to polystyrene • unlike Protein A or G plates, these plates bind only the target IgG species • these plates show a higher antibody-binding capacity than direct adsorption onto polystyrene when using diluted mouse IgG solutions
	Goat Anti-Rabbit IgG Fcy	Goat anti Rabbit coated surface is ideal when in the assay the antibodies are in low quantities, denature or become inactive upon direct adsorption to polystyrene plates. This plate **specifically binds the Fc region of rabbit immunoglobulins, with minimal cross-reaction to human serum proteins.** Features: • prevent antibody denaturation as a result of direct adsorption to polystyrene • unlike Protein A or G plates, these plates bind only the target IgG species • these plates show a higher antibody-binding capacity than direct adsorption onto polystyrene when using diluted rabbit solutions

	COATING/TREATMENT SURFACE	FEATURES OF SURFACE
COVALENT BINDS	**Amine (primary amine)**	The surface with primary amino groups is dedicated to **promote the covalent immobilisation of compounds containing reactive moieties** such as **amino, carboxyl or thiol groups** via well-known homo-heterobifunctional linkers. This kind of immobilisation can overcome some of the limitations connected with physical adsorption of the molecules to the surfaces. Features: • immobilization of molecules which are bound weakly or not at all by physical adsorption, namely small peptides (M.W. 1000-5000 Da), drugs, toxins or hormones • oriented immobilization of molecules in order to secure the integrity and accessibility of their specific sites avoiding the risk of inhibition of these sites by casual physical adsorption for such molecules as Fab-SH-antibody fragments, streptavidin, polysaccharides or nucleic acids (single strand or double strand) • increased storage stability compared with that of physical adsorption because of the reduced risk of spontaneous desorption
	Carboxyl	Carboxylated surface is dedicated to **promote the covalent immobilization of compounds containing reactive free amino groups** using the EDC mediated amination. This kind of immobilization can overcome some of the limitations connected with physical adsorption of the molecules to the surfaces. Features: • immobilization of molecules which are bound weakly or not at all by physical adsorption, namely small peptides (M.W. 1000-5000 Da), drugs, toxins or hormones • oriented immobilization of molecules in order to secure the integrity and accessibility of their specific sites • increased storage stability compared with that of physical adsorption because of the reduced risk of spontaneous desorption
	Maleimide	Maleimide coated surface offers a powerful instrument for **binding biomolecules containing free sulfhydryl groups** (e.g. peptides that contains a terminal cysteine or thiols containghaptens) **or reducibile disulfide bonds.** It's also very useful tool for assay requiring site-directed orientation.

NOTES

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