ELISA Workflow Guide

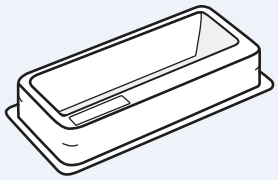
CORNING

OVERVIEW

Enzyme Linked Immunosorbent Assay (ELISA) is accurate, highly sensitive, and specific for identifying protein species. ELISA microplates enable a common laboratory procedure to be carried out on multiple samples simultaneously. Popular formats include 96-well microplates, 384-well microplates, and 8-well strips.

This guide provides an overview of the tools you'll need at each stage of the ELISA workflow, as well as a few tips for choosing the optimal microplate for your particular assay. Corning is a leading manufacturer of high quality, high performance ELISA microplates and 1 x 8 Corning® Stripwell™ microplates for a wide range of laboratory assays. Corning also carries an extensive variety of accessories that can be used as part of the ELISA workflow, including a full line of buffers, pipets, tips, and tubes to meet unique assay needs.

Reservoirs



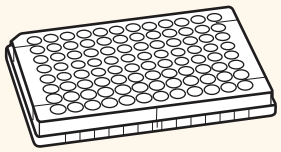
Costar® Reagent Reservoirs

- Use with multi-channel pipets to transfer samples, buffers, or reagents into ELISA microplates

Axygen® Multi-channel Reservoirs

- Single and multiple well formats for manual and automated platforms
- Multi-channel reservoirs allow for separation of reagents during ELISA preparation

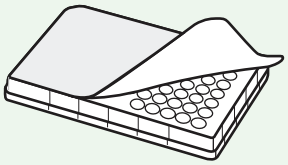
Microplates



Corning/Falcon® Microplates

- Available in clear, black, or white polystyrene to suit various detection methods: absorbance, fluorescence, or luminescence
- Medium or High Binding surfaces most commonly used for biochemical assays based on size of target molecule
- Additional surfaces are available to support other assay types

Microplate Seals



Axygen ELISA Microplate Sealing Films

- Used during repetitive incubation steps during ELISAs to reduce reagent evaporation, which can cause an "edge effect"

Corning Aluminum Microplate Sealing Tape

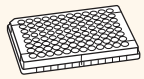
- Utilize during incubation steps to protect light-sensitive samples or reagents for direct and sandwich ELISA

BASIC WORKFLOW

Process Step	Products Used

Select the Correct Microplate and Surface for the Application

- Well format (96-well, 384-well, 8-well strips)
- Surface chemistry (medium bind, high bind, or other surface type)
- Microplate color (clear, black, white)



Coat

- Coat the microplate surface with solution of either antigen or antibody of interest
- Incubate
- Wash to remove unbound material

Block (if required)

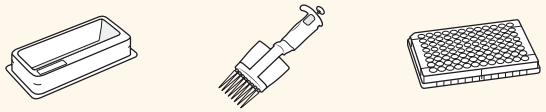
- Add protein-based solution to block unbound sites on microplate surface (BSA, Casein)
- Incubate
- Wash to remove excess blocking solution (if required)

Add Detection Substrate Solution

- Enzyme, fluorophore-conjugated Ab or direct binding
- Aluminum sealing tape (ideal for fluorescent reactions)
- Incubate at the appropriate temperature for the detection method used

Read Signal

- Add stop solution (if required)
- Measure produced signal via absorbance, fluorescence, or luminescence



PRODUCTS

Microplates

For a full list of all microplates, reservoirs, and microplate seals, visit **www.corning.com/lifesciences**

Color

Clear – Best suited for absorbance detection

Black – Low background fluorescence and low fluorescent cross-talk. The black colorant reduces background, as well as light scattering, resulting in higher signal-to-noise ratios.

White – Enhances luminescence signal-to-noise ratio by reflecting light back into the range of the detector.

Surface Chemistry

Medium Binding Surface

- Hydrophobic
- Ideal for large, hydrophobic biomolecules (>20 kD)
- Binding capacity: ~200 ng IgG/cm^2

High Binding Surface

- Hydrophobic and ionic (negatively charged)
- Ideal for positively charged biomolecules (>10 kD)
- Binding capacity: ~500 ng IgG/cm^2

Corning® 96-well ELISA Microplates

Cat. No.	Type	Color	Surface	Qty/Pk	Qty/Cs
3591	Flat-bottom	Clear	Medium binding	1	50
3590	Flat-bottom	Clear	High binding	1	100
9017	Flat-bottom	Clear	Medium binding	25	100
9018	Flat-bottom	Clear	High binding	25	100
3912	Flat-bottom	White	Medium binding	25	100
3922	Flat-bottom	White	High binding	25	100
3915	Flat-bottom	Black	Medium binding	25	100
3925	Flat-bottom	Black	High binding	25	100

Falcon® 96-well ELISA Microplates

Cat. No.	Type	Color	Surface	Qty/Pk	Qty/Cs
351172	Flat-bottom, with lid	Clear	Not treated	1	50
351190	Round-bottom	Clear	Not treated	25	100

Corning Stripwell™ 96-well ELISA Microplates

Cat. No.	Type	Color	Surface	Qty/Pk	Qty/Cs
2593	Flat-bottom	Clear	Medium binding	25	100
2592	Flat-bottom	Clear	High binding	25	100
3923	Flat-bottom	White	High binding	25	100
3924	Flat-bottom	Black	High binding	25	100

Corning 384-well ELISA Microplates

Cat. No.	Type	Color	Surface	Qty/Pk	Qty/Cs
3700	Flat-bottom	Clear	High binding	25	100
3702	Flat-bottom	Clear	Not treated	25	100
3576	Flat-bottom	White	High binding	10	50
3572	Flat-bottom	White	Not treated	10	50
3577	Flat-bottom	Black	High binding	10	50
3573	Flat-bottom	Black	Not treated	10	50

Costar® Reagent Reservoirs

- Manufactured from modified polystyrene
- Sterile
- Disposable
- 50 mL or 100 mL volume

Cat No.	Volume	Color	Qty/Pk	Qty/Cs
4870	50 mL	White	5	200
4872	100 mL	White	5	200

Axygen® Single- and Multi-channel Reservoirs

- Complies with ANSI/SLAS footprint for automation
- Multi-channels allow separation of multiple assays and buffers during ELISA
- Ranges from 1- to 12-channel reservoirs

Cat No.	Channel	Color	Volume/Channel	Total Volume	Qty/Pk	Qty/Cs
RES-SW96-HP	Single	Clear	240 mL	240 mL	25	25
RES-MW4-HP	Four	Clear	70 mL	280 mL	25	25

Axygen ELISA Microplate Sealing Film

- Polyester-based with uniformly applied acrylic adhesive that reduces the edge effect of sensitive ELISA assays
- Suitable for short-term storage and incubation
- Utilized for incubation of ELISA assays and buffers

Cat No.	Material	Thickness	Dimension (mm)	Working Temp.	Qty/Pk	Qty/Cs
PCR-SP	Polyester	80 µm	146 x 79.6	104°C	100	500

Corning® Aluminum Microplate Sealing Tape

For light sensitive samples and reagents

Cat No.	Material	Microplate	Qty/Pk	Qty/Cs
6570	Aluminum	96-well	100	100
6569	Aluminum	384-well	100	100

ELISA Technical Documents

Five ELISA Application Notes are available at **www.corning.com/lifesciences**.

- Immobilization Principles – Selecting the Surface for ELISA Assays (CLS-DD-AN-454)
- Optimizing the Immobilization of Protein and Other Biomolecules for ELISA Assays (CLS-DD-AN-455)
- Effective Blocking Procedures in ELISA Assays (CLS-DD-AN-456)
- Optimizing the Separation Step on 96-well Microplates for ELISA Assays (CLS-DD-AN-457)
- Selecting the Detection System – Colorimetric, Fluorescent, Luminescent Methods for ELISA Assays (CLS-DD-AN-458)

CORNING

Corning Incorporated
Life Sciences
836 North St.
Building 300, Suite 3401
Tewksbury, MA 01876
t 800.492.1110
t 978.442.2200
f 978.442.2476
www.corning.com/lifesciences

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