BUFFERS AND SOLUTIONS

PACKAGE SIZES – SUMMARY

LowCross-Buffer®

50 mL	order number	100 050
125 mL	order number	100 125
500 mL	order number	100 500

The Blocking Solution

50 mL	order number	110 050
125 mL	order number	110 125
500 mL	order number	110 500

SmartBlock™

125 mL	order number	113 125
500 mL	order number	113 500

BSA-Block

125 mL	order number	115 125
500 mL	order number	115 500

LowCross® HRP-Stab

50 mL	order number	270 050
125 mL	order number	270 125
500 mL	order number	270 500

Antibody Stabilizer "TRIS"

50 mL	order number	130 050
125 mL	order number	130 125
500 mL	order number	130 500

Antibody Stabilizer "PBS"

50 mL	order number	131 050
125 mL	order number	131 125
500 mL	order number	131 500

Liquid Plate Sealer®

50 mL	order number	160 050
125 mL	order number	160 125
500 mL	order number	160 500

HRP-Protector™

50 mL	order number	222 050
125 mL	order number	222 125
500 mL	order number	222 500

Sample Buffer

50 mL	order number	105 050
125 mL	order number	105 125
500 mL	order number	105 500

Stripping Buffer

50 mL	order number	150 050
125 mL	order number	150 125
500 mL	order number	150 500

Coating Buffer "pH 7.4" 10×

125 mL	order number	120 125
500 mL	order number	120 500

Coating Buffer "pH 9.6" 10×

125 mL	order number	121 125
500 mL	order number	121 500

Washing Buffer "PBS" 10×

500 mL	order number	140 500

Washing Buffer "PBS IHC" 10×

500 mL	order number	141 500

Washing Buffer "TRIS" 10×

500 mL	order number	145 500

Washing Buffer "TRIS IHC" 10×

500 mL	order number	146 500

Starter Package

small	order number	600 001
large	order number	600 002

Starter Package "IHC"

small	order number	600 011
large	order number	600 012

Blocking Sampler Package

small	order number	600 021
large	order number	600 022

CONTACT

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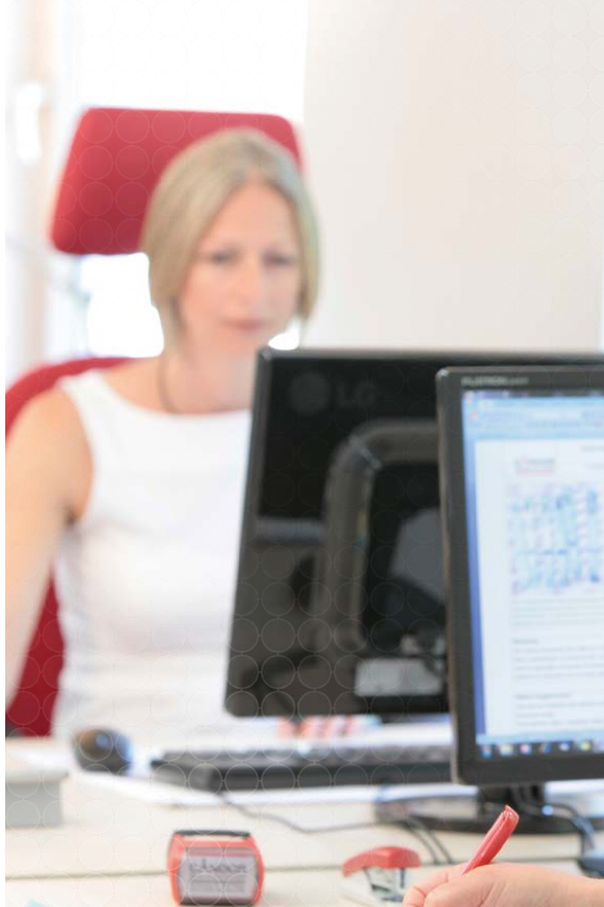


PREFACE

True results for your measurements.

Immunoassays are an important tool in everyday work for many scientists and lab technicians. But regardless whether we are experts in drug discovery, medical research, veterinary diagnostics, biotechnological quality control, environmental analysis or whatsoever – we do not perform immunoassays only because it is a funny amusement. We just and only perform immunoassays to get the correct answer to our specific scientific questions. If this is the case for you, what is your opinion? Shouldn't all of your assay results be accurate?

Sincerely yours Dr. Peter Rauch

Yes. We do think so. And that is the reason why our team at CANDOR works for reliable science. From the very beginning – more than a decade ago – we have focused on better tools for better immunoassays. We believe it is not acceptable, that assays do not show true results – regardless whether a matrix is challenging or not. The great success of CANDOR solutions in the last years was due to so many lab technicians and scientists, who only accept reliable and convenient assays with true results.

Sincerely yours Dr. Tobias Polifke

CANDOR solutions are "Made in Germany" under very strict and ISO certified quality control. CANDOR not only supplies life science research laboratories worldwide, but is also trusted supplier for many industrial kit manufacturers for human and veterinary diagnostics, food and feed diagnostics and environmental analysis. We have set new industrial standards for assay reliability and stability. With this brochure we would like to showcase our current products for professional users in modern research laboratories. Enjoy reading!

CONTENT

METHODS

ELISA is the abbreviation for Enzyme-Linked Immuno Sorbent Assay.

The principle is the binding of a labeled specific antibody to the target antigen (called analyte). The signal of the enzyme labeled antibody is the conversion of a substrate, which can be detected and quantified.

The most important assay formats are: Sandwich ELISA – Antibody Coated, Sandwich ELISA – Antigen Coated and Competitive ELISA – Antibody Coated.

The **Western blotting** technique is used to detect proteins from crude mixtures. First, the proteins are separated by gel-electrophoresis into bands. Then all proteins are transferred to a membrane, where the target protein band is detected with primary antibodies specific to the target protein.

Such primary antibodies on the membrane are detected with secondary antibodies, which are either enzymatic or fluorescence labeled.

In **immunohistochemistry** or immunocytochemistry tissue or cell structures are stained by using antibodies. A very good local resolution can be achieved, if preparation of tissue slices is optimized and blocking of nonspecific binding is effective. Thus not only presence, but also localization of an analyte can be visualized.

Detection is done commonly either by enzymatic substrate-conversion or by fluorescence-labeling.

Protein arrays are miniaturized assays for detection of many proteins in parallel. They use proteins or antibodies immobilized on surfaces such as glass slides or beads. A single target protein is detected either by localization of a signal at a specific point in the array or by differences in the specific beads, which can be individually coded e.g. by color or fluorescence.

The major advantage of this technique is that many analytes can be detected at the same time from one sample. But cross-talk between the multiplexed assays has to be avoided to enable sufficient reliability of results.

Immuno-PCR combines ELISA technique with the exponential signal enhancement of a PCR (polymerase chain reaction). The specific antibodies are labeled with a DNA marker.

By using the amplification steps of the PCR, the sensitivity can be better compared to the “classic” ELISA. Due to the fact that signals from nonspecific binding are significantly enhanced by the PCR-reaction, false positive results are very common. As a consequence effective blocking of the plate surface and avoiding of interference are extremely important for Immuno-PCR.

OPTIMIZERS

Optimizers are a class of advantageous and multifunctional solutions for immunoassays.

They are outstanding compared to other diluents and buffers. LowCross-Buffer® is the first solution that combines several functionalities of diluents in one product and is not only an assay diluent. Additionally it can reduce HAMA-interference and furthermore helps to avoid matrix effects.

LowCross® HRP-Stab is another product with several functionalities. This product enables convenient one step incubation assays without negatively affecting the reliability of the results. This is due to both the optimizing and stabilizing properties of the solution. Due to its stabilizing properties, LowCross® HRP-Stab is described in the chapter Stabilizers.

The casein based surface blocker “The Blocking Solution” is also part of the class of optimizers.

The Blocking Solution shows outstanding blocking characteristics combined with a reduced background and a high sensitivity of the immunoassay.

Please find more information about The Blocking Solution in the chapter Blockers.

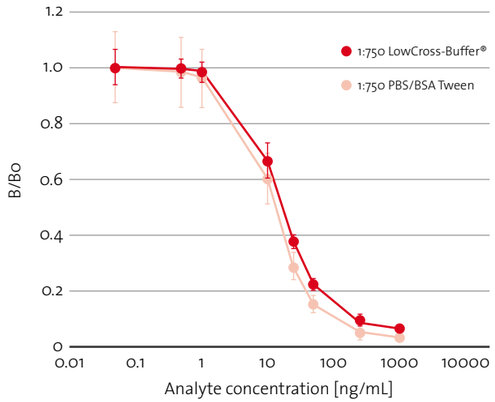
LOWCROSS-BUFFER®

Antibody and sample diluent for minimizing nonspecific binding, cross-reactivities and matrix effects in immunoassays.

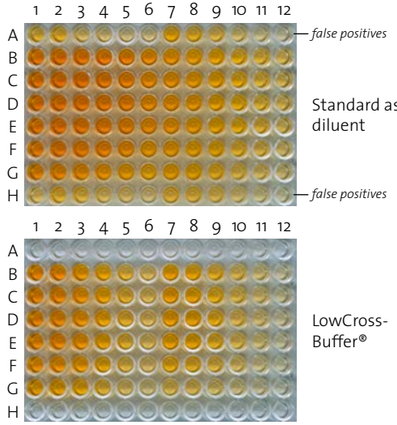
The formulation of LowCross-Buffer® helps to reduce interference in immunoassays. Thus quality of detection can be significantly improved. Nonspecific binding of the antibodies, negative effects of interfering substances and low or medium affinity cross-reactivities of the antibodies are minimized.

In addition matrix effects, coming for example from blood sera or plasma specimen are reduced.

That means that matrix effects no longer exacerbate detection of analytes. Minimization of all these negative effects upgrades the quality of the assay and improves the reliability of the results.



Calibration curve of an ELISA. *The analyte was diluted 1:750 in PBS/BSA Tween or 1:750 in LowCross-Buffer®. The ELISA with PBS/BSA Tween shows, despite the high dilution factor, a very high coefficient of variation (error bar) due to interference. The precision of the ELISA with LowCross-Buffer® as assay diluent is significantly better.*



Elimination of false positive binding in an ELISA

Control of specifity in (A1-12) and blanks (H1-H12) show false positive binding.

(Data from Dr. C. Specht, vivo Science GmbH, Gronau, Germany)

Package sizes

50 mL	order number	100 050
125 mL	order number	100 125
500 mL	order number	100 500

ELISA

Western Blot

Immunohistochemistry

Protein Array

Immuno-PCR

BLOCKERS

The surfaces of ELISA plates or Western blotting membranes are optimized for efficient attachment of proteins and antibodies.

This enables optimal assays with a high density of capture antibodies or capture molecules on the surfaces. As a consequence of this optimization of the surfaces, many other proteins or peptides and other molecules from the sample can attach on the surface, too.

Without surface blocking, assay antibodies, tracers, analytes or other components of the sample would bind to the surface. This can lead to false results or high background signals and therefore it has to be prevented in order to get reliable assays. Blocking is necessary to saturate free binding capacities of the respective surfaces. This saturation can be achieved by covering the surface with a dense layer of molecules without gaps in this layer.

CANDOR offers three blockers with different formulations and blocking characteristics. BSA-Block is a classic BSA-based blocker for many applications. SmartBlock™ is a very efficient peptide based blocker. The Blocking Solution is a premium casein based blocker for routine applications as well as for challenging immunoassays.

THE BLOCKING SOLUTION

Casein based blocker for minimizing nonspecific binding to surfaces.

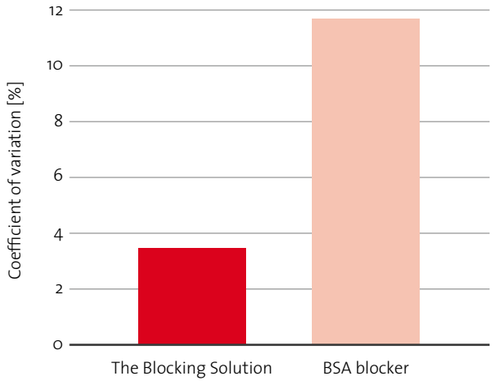
The Blocking Solution saturates free binding sites on plastic surfaces, membranes or other protein binding surfaces and prevents nonspecific binding to surfaces.

This minimizes unwanted binding of the analyte or the detection antibody to the surface and so background can be avoided and sensitivity of the assay can be improved.

Additionally, no components of the sample can bind nonspecifically to the surface, if it is effectively blocked.

The Blocking Solution is based on chemically modified and fragmented highly purified casein.

The production process of The Blocking Solution has been developed and up-scaled by CANDOR. This proprietary process guarantees an extremely good lot-to-lot consistency which can normally be obtained only from synthetic raw materials although the casein is derived originally from natural sources.



Decrease of the coefficient of variation. *Compared to standard blockers, The Blocking Solution impressively lowered the coefficient of variation as shown in this assay validation of a competitive ELISA (n = 96, measured at the maximum Bo).*

The Blocking Solution is routinely used as a blocker in industrial scale production of immunodiagnostics by several international kit manufacturers.

The Blocking Solution is not comparable to other commercially available or home-made casein based solutions which are produced by just dissolving and filtration of casein.

ELISA

Western Blot

Immunohistochemistry

Protein Array

Immuno-PCR

Package sizes

50 mL	order number	110 050
125 mL	order number	110 125
500 mL	order number	110 500

SMARTBLOCK™

BSA-free blocker for saturating free binding sites on plastic surfaces or other protein binding surfaces.

SmartBlock™ is a modern blocker based on peptides. To further improve the blocking efficiency, peptides were chemically modified in a specific process. The result is a peptide solution with very good blocking characteristics. At the same time SmartBlock™ has a very good lot-to-lot consistency, up until now obtained only by synthetic blockers.

SmartBlock™ sets standards in the development of economically priced assays with good reliability e.g. for diagnostics, pharmaceutical research, pharmaceutical or biotechnological process control, food diagnostics, environmental diagnostics or research.

For many assays SmartBlock™ is an economical and useful alternative to BSA containing solutions.

Package sizes

125 mL	order number	113 125
500 mL	order number	113 500

ELISA

Western Blot

Immunohistochemistry

Protein Array

Immuno-PCR

BSA-BLOCK

Standard blocker for saturating free binding sites on plastic surfaces or other protein binding surfaces.

BSA-Block is a well-established, versatile blocker for many applications.

The high purity and control of the raw materials enable good lot-to-lot consistency for this blocker based on BSA. Therefore a high reliability of the assay over years is obtained even when different lots are used.

If you experience background due to nonspecific binding even when using BSA-Block, we recommend using The Blocking Solution.

Package sizes

125 mL	order number	115 125
500 mL	order number	115 500

ELISA

Western Blot

Immunohistochemistry

Protein Array

Immuno-PCR

STABILIZERS

Immunoassay stabilizers are needed to preserve the native conformation of proteins and to protect them from losing their functionality.

Stabilizers for immunoassays allow long-term storage of antibodies, conjugates (e.g. HRP-labeled or AP-labeled) and antigens in solutions as well as coated onto surfaces like microtiter plates or others.

CANDOR offers stabilizers to protect proteins, antibodies and conjugates in solution as well as stabilizers for antibodies coated on surfaces. The portfolio ranges from Antibody Stabilizer over HRP-Protector™ and LowCross® HRP-Stab to Liquid Plate Sealer®.

To always get the same reliable results in immunoassays, it is essential to preserve standards for calibration curves, coated plates and antibodies during storage.

CANDOR stabilizers can be used for preserving activity of all biological components of an immunoassay.

CANDOR stabilizers are routinely used for production of commercial ELISA kits with shelf lives of 2 or more years.

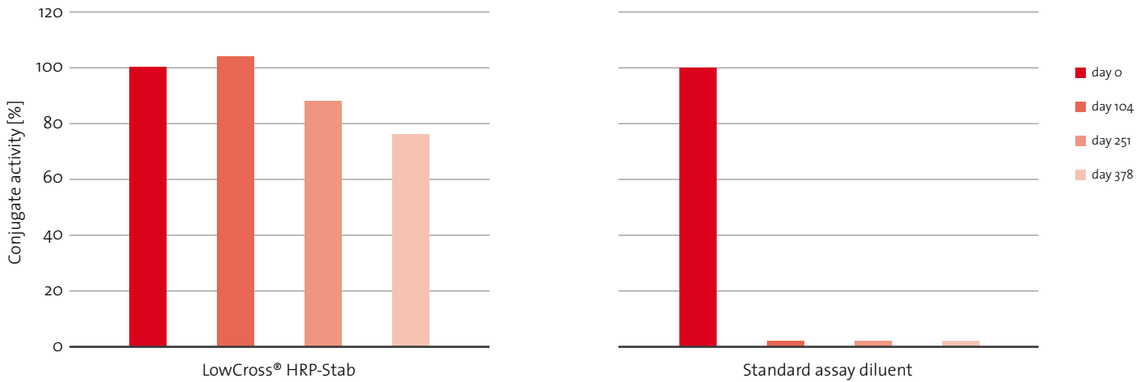
LOWCROSS® HRP-STAB

Assay diluent for long-term storage of HRP conjugates and for minimizing nonspecific binding, cross-reactivities and matrix effects in immunoassays.

LowCross® stands for superior reliability by neutralizing assay interferences including HAMA-derived ones. The LowCross-effect minimizes matrix effects, cross-reactivities and nonspecific binding. Thus several washing steps like in sequential assays are not necessary and one-step-incubation protocols without multiple washing can be done by using this assay diluent.

HRP-Stab gives peroxidase-antibody conjugates the crucial long-term stability over several years, even when stored as a ready-to-use solution.

The result is an assay diluent and storage buffer for peroxidase conjugates in one solution with high reliability and convenience due to ready-to-use dilution.



Shelf life of an HRP-labeled antibody is measured as signal (= antibody binding + enzymatic activity) in an ELISA after storage under heat stress at 45°C. The concentration of the stored antibody is 400 ng / mL.

Package sizes

50 mL	order number	270 050
125 mL	order number	270 125
500 mL	order number	270 500

ELISA

Western Blot

Immunohistochemistry

Protein Array

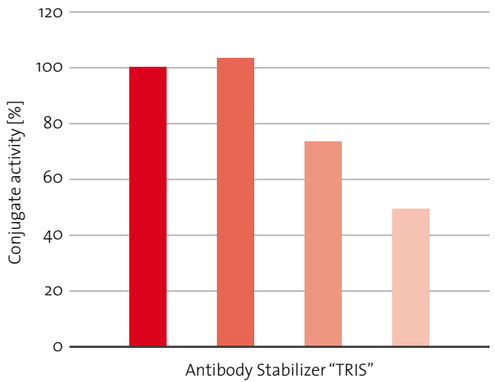
ANTIBODY STABILIZER

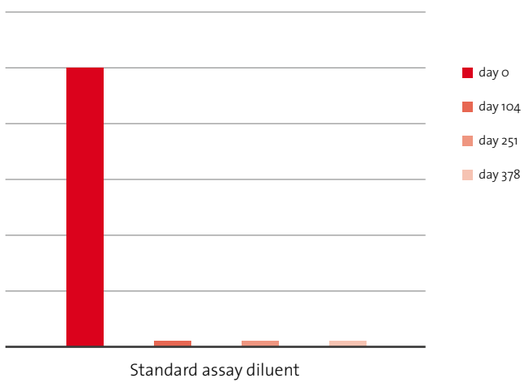
Stabilizer for long-term storage of proteins or antibodies at 2–8°C.

Antibody Stabilizer conserves the structure of proteins and antibodies preventing them from losing functionality due to storage.

Just dissolve proteins or antibodies with Antibody Stabilizer and store in the refrigerator.

Antibody Stabilizer is used for storage of assay antibodies and for storage of proteins, which are used as calibration standards or controls in immunoassays.





Shelf life of an antibody is measured as binding in an ELISA after storage under heat stress at 45°C. The concentration of the stored antibody is 400 ng/mL.

Package sizes "TRIS"		
50 mL	order number	130 050
125 mL	order number	130 125
500 mL	order number	130 500

Package sizes "PBS"		
50 mL	order number	131 050
125 mL	order number	131 125
500 mL	order number	131 500

ELISA

Western Blot

Immunohistochemistry

Protein Array

Immuno-PCR

LIQUID PLATE SEALER®

Stabilizer for coated antibodies and antigens on polystyrene- or glass-surfaces.

After immobilization of the antibodies/antigens and blocking, Liquid Plate Sealer® seals the plates with a uniform stabilizing layer, demonstrating good solubility and without affecting the assay afterwards.

It can also be used for stabilizing antibodies and antigens after coating on polystyrene- or glass-surfaces for protein arrays. Plates treated with Liquid Plate Sealer® can be stored for long periods after drying.

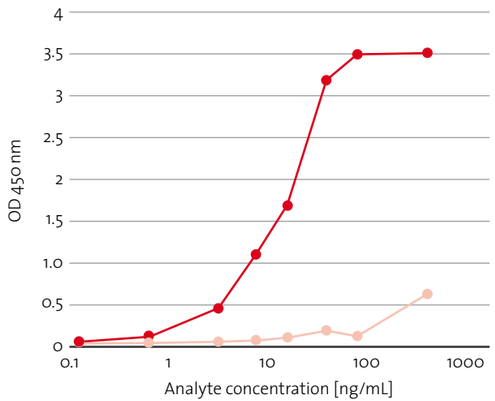
It allows long-term storage of coated plates under dry conditions even at room temperature.

The recommended optimum storage temperature is 2–8°C. But most stabilized plates can also be stored dry at ambient temperature for many months without loss in activity.

Liquid Plate Sealer® can be used for stabilizing coated ELISA plates, immunochromatographic test strips (lateral flow assays), affinity chromatography columns, protein arrays and for similar applications.

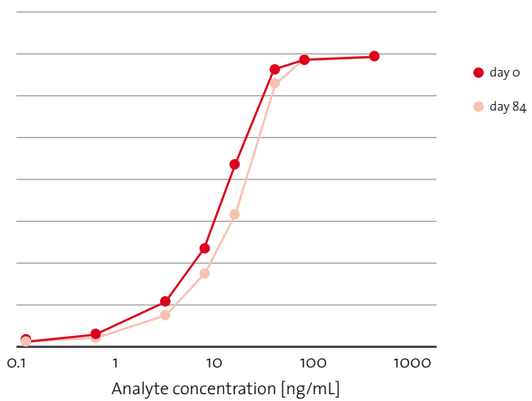
It is used as a coating stabilizer for industrial ELISA kit production.

Fig. 1: BSA-Block



Calibration curves of an ELISA are shown, which was either blocked only with BSA (fig. 1) or blocked with BSA and additionally stabilized with Liquid Plate Sealer® (fig. 2). Calibration curves at the starting day are identical. The calibration curve of fig. 1 after storage shows that there is no remaining binding activity of the capture antibodies.

Fig. 2: BSA-Block + Liquid Plate Sealer®



The stabilized plate does not show significant decrease in sensitivity after 84 days of incubation at 37°C.

Package sizes

50 mL	order number	160 050
125 mL	order number	160 125
500 mL	order number	160 500

ELISA

Protein Array

Immuno-PCR

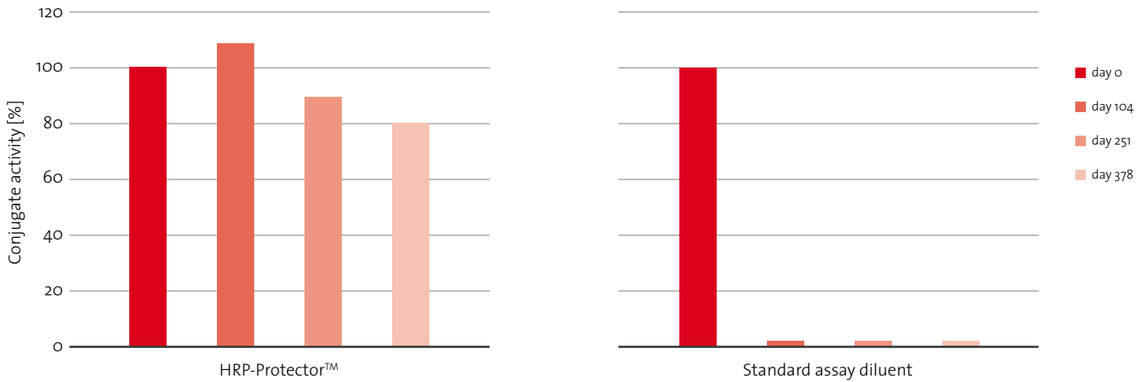
HRP-PROTECTOR™

Diluent for long-term storage of HRP conjugates.

HRP-Protector™ is a long-term stabilizer for horseradish peroxidase (HRP) coupled to antibodies or Neutravidin/Streptavidin. HRP-Protector™ gives peroxidase conjugates the crucial long-term stability over several years even when stored in low concentrated ready-to-use dilutions. HRP-Protector™ can be used directly as an assay buffer for incubating the HRP conjugates.

Typical ready-to-use concentrations for detection are between 40–500 ng/mL.

If you have background or interference – for example derived from cross-reactivities – we recommend using LowCross® HRP-Stab as long-term stabilizer for the conjugate.



Shelf life of an HRP-labeled antibody is measured as signal (= antibody binding + enzymatic activity) in an ELISA after storage under heat stress at 45°C. The concentration of the stored antibody is 400 ng/mL.

Package sizes

50 mL	order number	222 050
125 mL	order number	222 125
500 mL	order number	222 500

ELISA

Western Blot

Immunohistochemistry

Protein Array

BUFFER SOLUTIONS

CANDOR Buffer Solutions comprise convenient ready-to-use or 10× concentrated buffer solutions for easy and fast working with immunoassays.

All of these solutions are manufactured in our own facility, which is certified according to current DIN EN ISO 9001 standards. This includes e.g. inprocess-controls, batch testing and traceability of every component of the solutions. Therefore all products can be used directly in regulated areas like GLP laboratories (good laboratory practice) or for diagnostics kit production.

The quality from lot-to-lot is always the same and conforms to highest requirements. In this chapter, buffers such as Washing Buffer, Coating Buffer, Sample Buffer and Stripping Buffer are summarized.

SAMPLE BUFFER

Sample and antibody dilution buffer for immunoassays.

Sample Buffer is designed for trouble free assays, which are not affected by interference derived from samples.

If you have background or false positives – for example derived from cross-reactivities or matrix effects – we recommend using LowCross-Buffer® as the assay diluent.

ELISA

Western Blot

Immunohistochemistry

Protein Array

Immuno-PCR

Package sizes		
50 mL	order number	105 050
125 mL	order number	105 125
500 mL	order number	105 500

STRIPPING BUFFER

Western Blot

Buffer for stripping antibodies from membranes for multiple reprobing.

Stripping Buffer removes reaction solution and primary and secondary antibodies from Western blotting membranes.

After stripping, the membrane can be used for repeated detection (reprobing) with antibodies.

Stripping Buffer does not contain mercapto-ethanol nor DTT.

Package sizes		
50 mL	order number	150 050
125 mL	order number	150 125
500 mL	order number	150 500

COATING BUFFER 10×

ELISA

Protein Array

Immuno-PCR

Buffer for adsorptive immobilization of proteins and antibodies on plastic surfaces (for example microtiter plates) or other protein binding surfaces.

Depending on the capture protein or the capture antibody the pH of the Coating Buffer is crucial for efficient immobilization. Select from Coating Buffer pH 7.4 and pH 9.6, as the pH-value can have an influence on the steric structure of proteins or antibodies, thus affecting their immobilization.

For the optimization of the coating procedure of a newly developed immunoasay we strongly recommend testing the two Coating Buffers side by side. Depending on the surface as well as on proteins or antibodies the required incubation time can vary. Consequently, individual optimization of the incubation procedure is recommended.

10× concentrate – simply dilute with water!

Package sizes

pH 7.4 10×
125 mL order number 120 125
500 mL order number 120 500
pH 9.6 10×
125 mL order number 121 125
500 mL order number 121 500

WASHING BUFFER 10×

ELISA

Western Blot

Immunohistochemistry

Protein Array

Immuno-PCR

Washing steps are needed to remove unbound and excessive components which are able to interfere with the assay.

Washing Buffer is optionally available based on TRIS or PBS.

Washing Buffer is suitable for automatic washers (Please note the specifications of your device and follow the instruction manual of your washer!).

For immunohistochemistry (IHC) we offer Washing Buffer without Tween and detergents.

10× concentrate – simply dilute with water!

Package sizes

PBS 10×
500 mL order number 140 500
PBS IHC 10×
500 mL order number 141 500
TRIS 10×
500 mL order number 145 500
TRIS IHC 10×
500 mL order number 146 500

PACKAGE

CANDOR Starter Package

ELISA

Western Blot

Protein Array

Immuno-PCR

For a first test, which solution is most suitable for a specific assay, we offer different sampler packages.

Starter Package small
contains:
50 mL LowCross-Buffer®
50 mL The Blocking Solution
125 mL Washing Buffer TRIS 10×

Starter Package large
contains:
125 mL LowCross-Buffer®
125 mL The Blocking Solution
125 mL Washing Buffer TRIS 10×

Package sizes		
small	order number	600 001
large	order number	600 002

PACKAGE

CANDOR Starter Package IHC

Immunohistochemistry

Starter Package IHC small
contains:
50 mL LowCross-Buffer
50 mL The Blocking Solution
125 mL Washing Buffer TRIS IHC 10×

Starter Package IHC large
contains:
125 mL LowCross-Buffer
125 mL The Blocking Solution
125 mL Washing Buffer TRIS IHC 10×

Package sizes		
small	order number	600 011
large	order number	600 012

PACKAGE

CANDOR Blocking Sampler Package

ELISA

Western Blot

Immunohistochemistry

Protein Array

Immuno-PCR

Blocking Sampler Package small
contains:
50 mL The Blocking Solution
50 mL SmartBlock™
50 mL BSA-Block

Blocking Sampler Package large
contains:
125 mL The Blocking Solution
125 mL SmartBlock™
125 mL BSA-Block

Package sizes		
small	order number	600 021
large	order number	600 022

READYTECTOR®

Easy, quick and clear

ReadyTector® is the all-in-one detection solution for Western blotting.

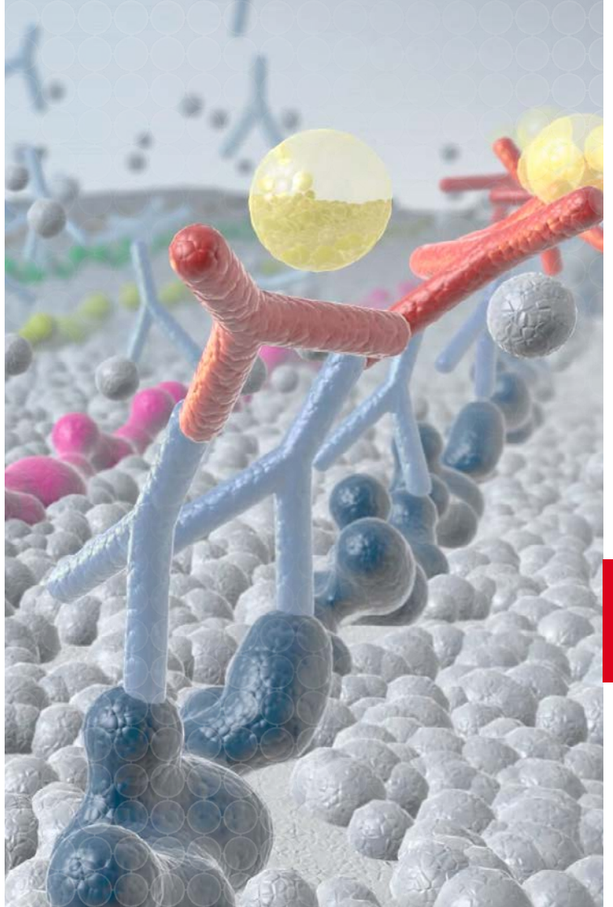
ReadyTector® contains everything you need for fast, all-in-one immunodetection. Only a specific primary antibody has to be added. All-in-one means that one solution contains everything you need, and the entire process takes place in a single work step – blocking and binding of the primary and secondary antibody occur simultaneously.

The next step is just washing using the special ReadyTector® Wash buffer.

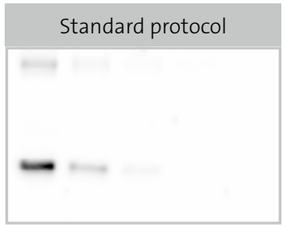
Despite the fast, all-in-one incubation process, ReadyTector® reduces background, allowing users to generate clear, distinct bands suitable for publishing.

ReadyTector® for Western blotting – easy, quick and clear
- **easy** – simple to use
- **quick** – very fast procedure with very quick results
- **clear** – no background

Please find more information at www.readytector.com



Western Blot



Comparable results obtained with standard Western blotting protocol or ReadyTector® protocol and ReadyTector® Chemiluminescent Substrate

Lanes 1–5 contain 22, 11, 5.5, 2.8, 1.4 ng Alpha-1-Antitrypsin spiked in cell lysates, respectively.

Protein detection: Mouse anti-A1AT Clone 1AT (Biotrend), 0.2 µg/mL on nitrocellulose.

ReadyTector® protocol

Washing 3 × 5 min	Incubation ReadyTector® 15 min–1 h	Washing 3–4 × 5 min

ReadyTector® saves several washing and incubation steps. Therefore a time saving of several hours can be obtained.

Run your gel and blot and detect the membrane in a single morning. You get the same great results with ReadyTector® – simply much faster.

Standard protocol

Washing 3 × 5 min	Blocking 1–2 h	Incubation primary antibody 1–2 h	Washing 3 × 5 min	Incubation secondary antibody 1–2 h	Washing 3 × 5 min

08.2015 | www.designconnection.eu

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CANDOR®
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