BY CHALLENGING TODAY WE CHANGE TOMORROW

„Solutions for Solutions"

BIOTHINX

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BIOMOLECULE STABILISERS

The specific function of proteins is due to their precise three-dimensional structure. Exogenous stress such as heating, drying, freezing-thawing cycles or storage in liquid formulation can result in the deactivation of a protein's biological activity.

Nucleic acids can be degraded through nucleases, hydrolysis and oxidation. To prevent such damage, our ready-to-use stabilisation reagents are especially formulated to protect a broad range of biomolecules and applications.

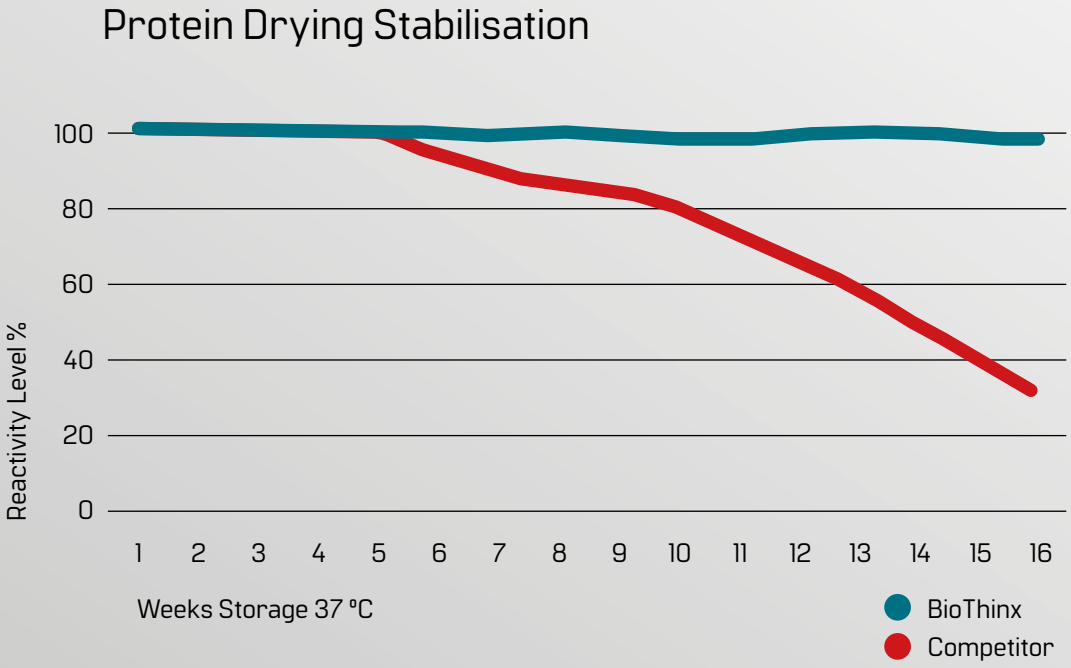
PROTEIN DRYING STABILISER

BioThinx proprietary biomolecule drying stabiliser acts like a chemical chaperone, inhibiting protein aggregation and denaturation. As the biomolecules are dried, the reagent forms a glassy matrix that maintains protein conformation and integrity.

Vitrification-drying is used to stabilise protein structure and is applicable for long-term storage in every aspect of biological, medical, and pharmaceutical sciences.
In this method water is completely removed, and the biomolecules are instead surrounded, protected by small ,low molecular weight molecules, that do not effect the biological reactivity or interfere in chemical or biological reactions.

ADVANTAGES

- Preserves the conformation and activity of enzymes, antibodies, and other proteins.
- Protects proteins for long-term storage, even at ambient temperature
- Simple and scalable alternative to freeze-drying, which is complex, demands high energy, involvs expensive equipment, and is not easily scalable.
- Applicable to diverse formats (vials, micro-reaction tubes, PCR-plates, lateral flow membranes, etc.)
- Suitable for preserving coated beads and gold colloids.
- Ready-to-use formulation
- Protein free (animal free)
- Non-hazardous components



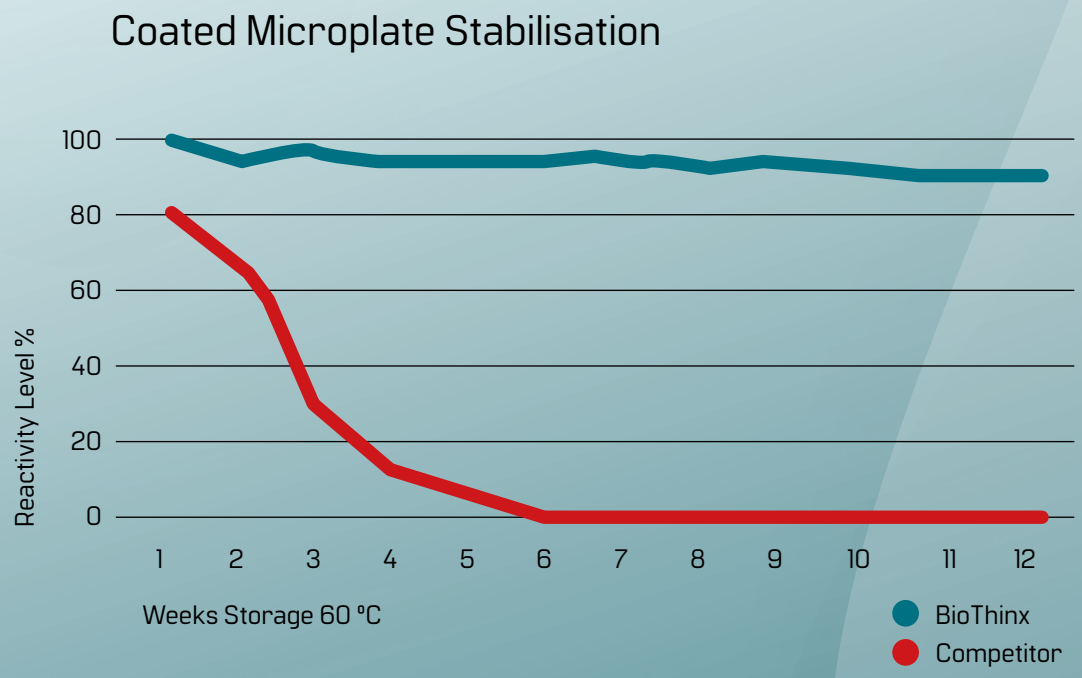
ELISA MICROPLATE STABILISER

BioThinx proprietary coated microplate stabiliser generates a protective surface layer that inhibits biomolecule inactivation during storage of coated microplates.

The stabiliser is added to coated microplates as a final step before drying. During the subsequent simple drying process at room temperature or 37 °C, the reagent spreads over the microplate surface and forms a glassy matrix that fully covers the coated biomolecules. This results in the long-term stabilisation of coated plates even at ambient temperature, which is a significant improvement in stabilising coated plates for IVD as well as for reproducible R&D applications.

- Preserves the natural conformation and activity of any coated biomolecules, includings enzymes and antibodies
- Protects coated surface for long-term storage at ambient temperature
- Protects against extreme conditions (freezing or heat spikes up to +70 °C)
- Stabilises ambient transport
- Applicable for any ELISA microplate formats
- Ready-to-use formulation
- Protein free
- Non-hazardous components

ADVANTAGES



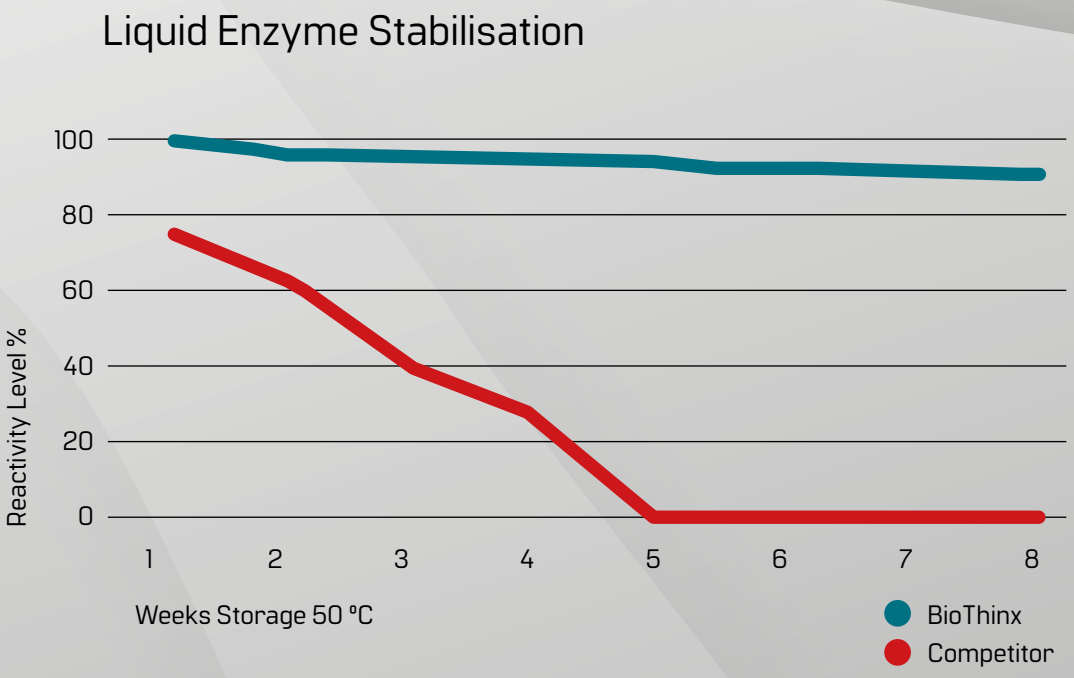
LIQUID PROTEIN STABILISER

BioThinx proprietary Liquid Protein Stabiliser protects biological activity in liquid protein formulations by inhibiting protein aggregation, denaturation, and microbial contamination. The method is based on the thermodynamic effect of compatible solutes exclusion, which shifts native proteins toward more compact conformations.

Liquid protein stabilisation is used to stabilise the structure and biological activity of purified proteins and complex biological samples, and is applicable for prolonged storage of antibodies, enzymes, or biomarkers in liquid formulations to avoid detrimental freeze thaw cycles.

ADVANTAGES

- Preserves the conformation and activity of antibodies, enzymes, or other biomolecules even at ambient temperature
- Protects against extreme conditions (freezing or heat spikes +50 °C)
- Stabilises ambient transport
- Broadly applicable to most proteins
- Protects protein formulations for pro longed storage without freezing
- Applicable to serum or plasma
- Ready-to-use formulation
- Non-hazardous components



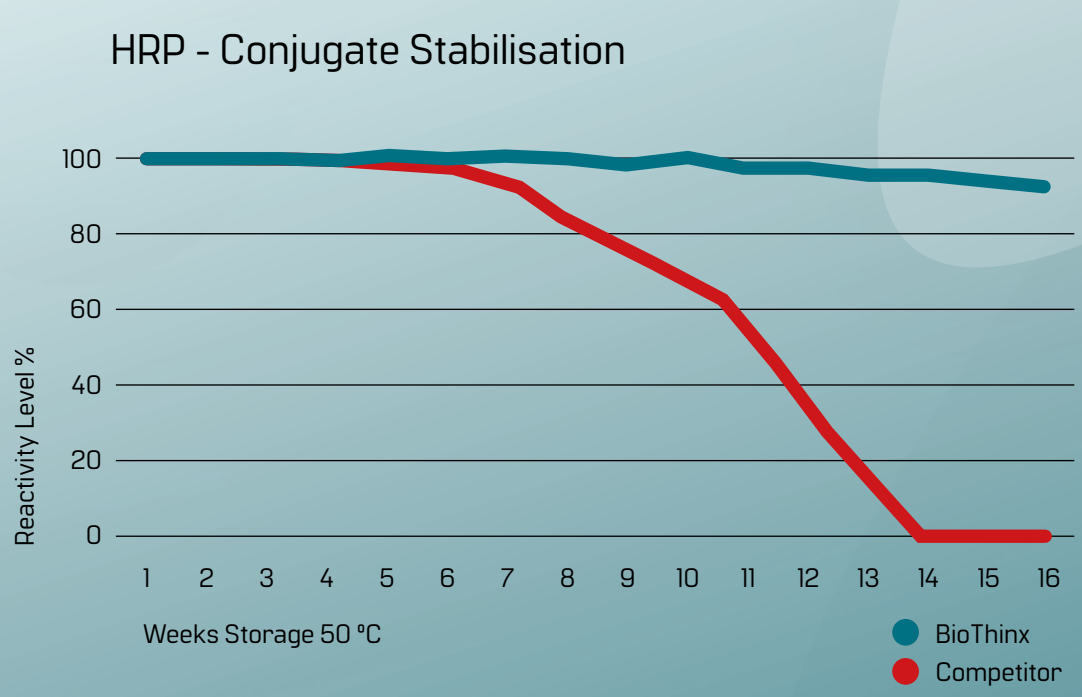
HRP CONJUGATE STABILISER

- Preserves antibody functionality and HRP enzyme activity
- Protects conjugates even at ambient temperature
- Protects against extreme conditions (freezing or heat spikes +50 °C)
- Stabilises ambient transport
- Applicable to diverse HRP-conjugates.
- Ready-to-use formulation or 10-X concentrate for custom buffer selection
- Protein-containing and protein–free variants available
- Non-hazardous components

ADVANTAGES

BioThinx proprietary HRP conjugate stabiliser is formulated to minimize the risk of conjugate failing in ELISA kits and to improve assay quality and accuracy. It is based on protein and antibody stabilisation through compatible solutes in combination with highly effective reagents to protect HRP enzyme activity.

HRP conjugate stabiliser is used to stabilise antibody or protein functionality and HRP enzyme activity in liquid formulations to avoid detrimental freeze-thaw cycles. BioThinx HRP conjugate stabiliser ensures long-term antibody functionality and HRP enzyme activity in liquid horseradish peroxidase (HRP) conjugate stock solutions and in highly diluted ready-to-use conjugate formulations.



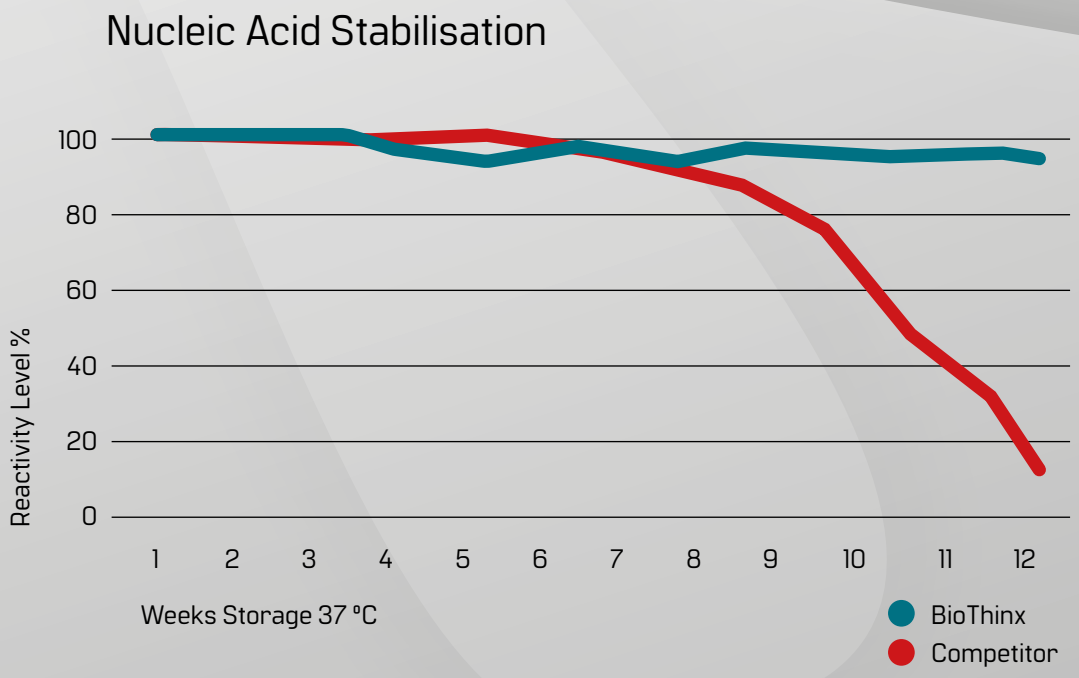
NUCLEIC ACID STABILISER

BioThinx proprietary nucleic acid drying stabiliser acts like a liquid glass, inhibiting nucleic acid degradation. During drying of DNA and RNA samples, the reagent forms an amber-like matrix that provides long-erm protection of embedded molecules even at ambient temperature.

Vitrification-drying is used to stabilise the nucleic acid integrity and is suitable for long-term storage in every aspect of biological nucleic acid sampling and bio banking.

ADVANTAGES

- Preserves purified plasmids
- Preserves high molecular weight DNA, RNA, chromosomes, ribosomes and complex biological nucleic acid samples
- Protects nucleic acids for long term storage even at ambient temperature
- Applicable to diverse formats (vials, micro reaction tubes, PCR-plates, blotting membranes)
- Ready-to-use formulation
- Protein free
- Non-hazardous components



RECOMBINANT MODULATED MONOCLONAL ANTIBODIES

BioThinx designs recombinant artificial antibodies, using our own patent-protected method for controlled E. coli production, offering significant advantages compared to other currently available products.

These antibodies are monoclonal, naturally precisely defined, and generated under controlled standard conditions, which results in high consistency. The batch-to-batch consistency of recombinant production increases the likelihood of achieving reproducible results over the lifetime of any immunoassay.

Because these antibodies are designed from the bottom up, they are optimized for specificity, sequence based. They provide outstanding (average 3.6) on a single antibody; where as normal monoclonal or polyclonal antibodies 1 or 2 HRP labels (average 1.4).

Sequence characterization reduces risk that of revalidating methods will be required due to product discontinuation because of to discontinuation due to loss of hybridoma (monoclonal hybridoma derived sequence characterized). In addition, recombinant production conforms with the goal of many organizations to seek and use technologies and reagents that replace, or reduce the use of animals for scientific purposes. Finally, the small molecular weight (ca. 45 kDa) of our patent protected micro-antibodies, offers diffusion advantages and enhanced specificity and sensitivity in antibody-based detection techniques.

RECOMBINANT ANTI HUMAN CONJUGATES:

- Anti-human-IgG-HRP
- Anti-human-IgA-HRP
- Anti-human-IgM-HRP
- Customised target-specific antibody production possible

ADVANTAGES

- Highly active, covalent, long-term stable HRP conjugation
- Sequence-defined antibodies for long-term supply consistency
- Monoclonal, high specificity
- Small molecular weight, diffusion advantage
- Lower non-specific binding compared to full-length antibodies
- Recombinant, free of animal compounds, unlike antibodies derived from mammalian cell
- No immunisation of animals
- Non-hazardous components
- 100 % isotype-specific, no cross reactivity

SPECIAL CONJUGATES

BioThinx special conjugates offer extraordinary stability and a long shelf life, because of the combination of our own "protein-free non-hazardous" stabilisation technologies and our own patent–protected „CLICK-CHEMISTRY" technology.

PROTEIN-A-FITC CONJUGATE

- Protein-A-HRP Conjugate
- Biotin-BSA Conjugate
- Biotin-HRP Conjugate
- Biotin-Nickel Conjugate
- Streptavidin-HRP Conjugate
- Streptavidin-Nickel Conjugate
- Streptavidin-FITC Conjugate
- Nickel-HRP Conjugate

COATED PLATES

COPPER COATED PLATES

Copper coated plates are ideal for analysing polyhistidine-tagged fusion proteins by ELISA-based methods. Proteins that contain a succession of several histidine residues at the amino or carboxyl terminus have a strong binding affinity for metals such as copper. Pierce copper coated plates have high binding capacity because they are coated using an exclusive process that increases the amount of histidine-tagged protein that will bind to the plate surface. Although copper is less discriminating in its binding specificity than nickel, the higher binding capacity of these plates is ideal for high throughput screening applications that need improved sensitivity and greater dynamic range. The copper-coated plates are available as clear, white, or black plates that can be used with colorimetric, chemiluminescent, or fluorescent detection methods, respectively.

PLATE SPECIFICATIONS

- Quantify previously undetectable histidine-tagged proteins
- Wider dynamic range with four-fold greater capacity than regular nickel chelate-coated plate
- Copper chelate provides greater binding capacity than nickel
- The detection limit is 0.1 pg of polyhistidine tagged fusion protein per well
- Pre-blocked

Copper coated plates are for use with purified His-tagged proteins. Typical cell lysates contain non-His-tagged proteins that may bind to copper, which can reduce binding capacity and signal-to-noise ratios. For cell lysates, use nickel coated plates

NICKEL COATED PLATES

Nickel coated plates provide a simple format to bind His-tagged fusion proteins for ELISA and other plate-based assays involving protein interactions of expressed recombinant proteins. These clear plates can be used with colorimetric detection methods.

PLATE SPECIFICATIONS

- Ni^{2+} activated surface enables metal-chelate binding of His-tagged proteins
- Detergents used to lyse cells don't inhibit binding to activated plates as they do with plain polystyrene
- Better binding for sensitive assays compared to other commercially available nickel-activated plates
- Detection limit: 1 ng of polyhistidine fusion protein

$Ni^{(2+)}$ chelate-coated plates are ideal for analysing polyhistidine-tagged fusion proteins by ELISA-based methods. Proteins that contain a succession of several histidine residues at the amino or carboxyl terminus have a strong binding affinity for metal. Bacterial lysates containing polyhistidine-tagged fusion proteins can be added directly to the plates without the need for blocking.

BIOTIN COATED PLATES

Biotin coated plates can be used in any immunoassay with streptavidin, avidin, or other biotin-binding proteins.

PLATE SPECIFICATIONS

- Biotin group accessible for binding avidin or streptavidin
- Pre-blocked to reduce nonspecific binding
- Strip well plate format

Biotin coated plates can be used as the basis for a variety of biomolecular assay techniques requiring the immobilisation of probes that are conjugated with streptavidin, avidin, or other biotin-binding proteins.

COBALT COATED PLATES

Immobilised metal affinity interaction allows polyhistidine tag containing protein to be captured on surfaces that contain chelated divalent ions such as Ni^{2+}, Cu^{2+}, Co^{2+} and Zn^{2+} comparison to nickel, cobalt has lower affinity but highly specific binding.

PLATE SPECIFICATIONS

- Capture, detection, and purification of polyhistidine tagged proteins and peptides
- Pre-blocked to reduce nonspecific binding
- Strip well plate format

This product may be used with His-tagged molecules in various applications such as recombinant protein expression screening, immunoabsorbtion assays, biochemical assays, competition assays, and protein purification. The captured proteins or peptides can be detected using standard ELISA techniques or eluted for further analysis.

PROTEIN A BINDING PLATES

Protein A Coated Binding Plates provide an alternative to direct, passive adsorption methods for immobilizing antibodies for ELISA and other plate-based assay techniques.

Plates are stably coated with Protein A, and enable antibodies or pre-established antibody-antigen complexes to be captured in wells of the polystyrene plate for subsequent detection in plate readers.

PLATE SPECIFICATIONS

- Retains antibody activity, which can be lost when antibodies are immobilized by passive adsorption
- Orients antibodies for maximum antigen-binding capacity
- Immobilize antibodies for plate assays without prior purification
- Ensures minimal variation (<5% well-to-well) from consistent coating
- Reduces nonspecific binding because plates are pre-blocked
- Binds strongly to IgG from human, rabbit, guinea pig, pig, dog and rhesus monkey
- Binds strongly to mouse IgG2a, IgG2b and IgG3
- Binds to Fc region of antibodies for optimal orientation

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