Protéomique/Analyse des Protéines

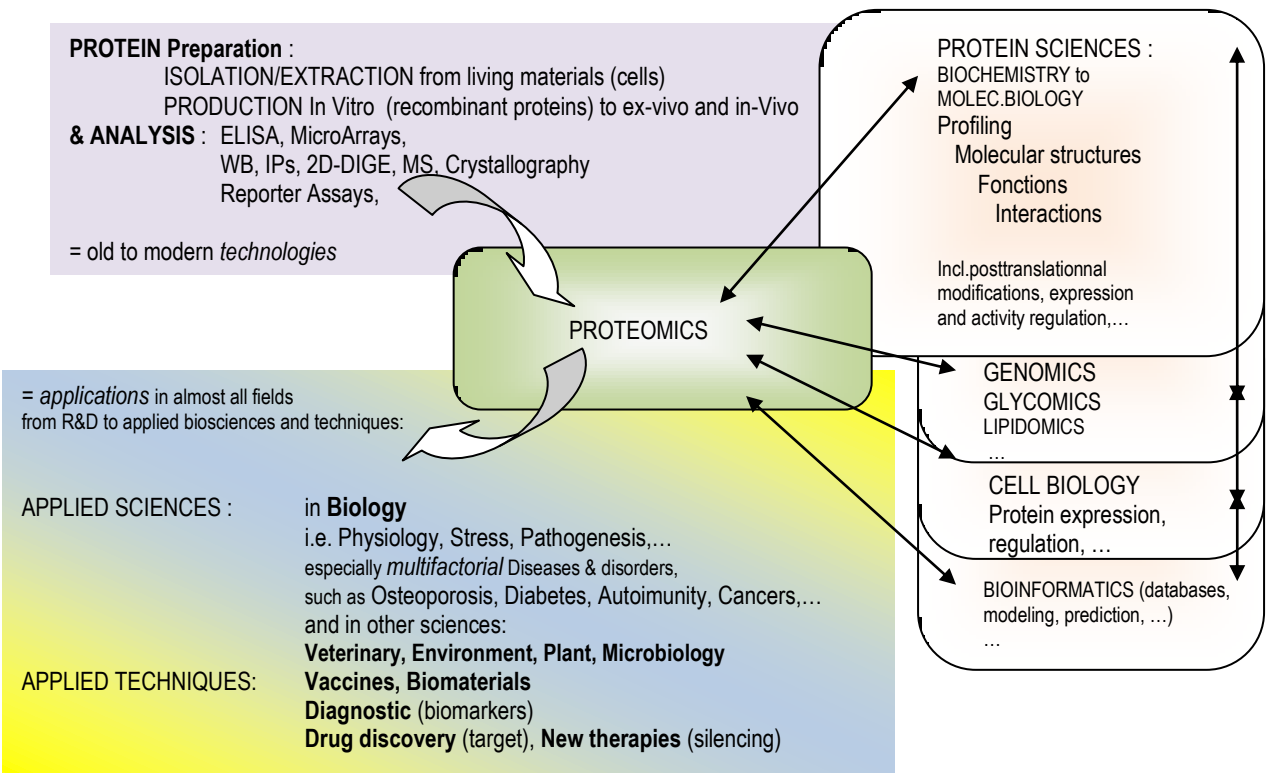
BioSciences | Protein Analysis

Proteomics/Protein Analysis

Technical tip – Proteomics

The term "**proteome**" arise in 1995 to introduce the concept of "protein map" (Wasinger et al) used a combination of two-dimensional gel electrophoresis, amino acid composition analysis, MALDI-TOF mass spectrometry, and N-terminal Edman degradation to analyze the/ protein complement, or proteome of the organism Mycoplasma genitalium. This combination of technologies allowed proteins to be identified prior to detection of their respective genes. Now, **proteomics** deals not only the protein identity and diversity in a sample, but also with their respective abundance, dynamics, and modifications. Biochemistry and molecular level analysis are essential to proteomics knowledge developement. Hot issues include proteins fine structure (i.e. post-translational modifications), protein expression and interactions (level and localization in cells depending on physiological processes). Proteomics is strongly inter-disciplinary with genomics and cell biology, while its applications span most fundamental cell biology topics up to molecular biology, diagnostic and therapy fields.

Proteomics Chart:



Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages colorimétriques

Protein & Peptides Assays

Proteins and polypeptides assays are performed by various methods for quantitation purpose, in solution and in gels. Among these, colorimetric methods are widely used, because of interesting features especially convenience, sensitivity, starting with the flexible and accurate BC Assay. Fluorescent methods are preferred when ultimate sensitivity is needed, or for small peptides. The No-interference protein assay are provide with BC Assay method and CooAssay method, however ,there is no universal protein assay that is compatible with any substances found in protein samples, one-step, very sensitive...
See also specific identification/dosages immunometric or enzymatic assays kits, and protein expression assays for recombinant proteins.
+

Colorimetric Protein Assays

Proteins and polypeptides assay, i.e. quantitation, in solution is performed by various methods, using stains (ionic or polar binding) or dyes (chemical reaction). Among these, colorimetric methods are widely used, because of interesting features especially conveniency, sensitivity, starting with the flexible and accurate BC Assay. Fluorescent methods are preferred when ultimate sensitivity is needed, or for small peptides.

Technical tip – Protein Assays overview

Method	Comment	Interchim key products and alternatives
Measure of UV absorbance	A spectrometric method that is very popular thanks its simplicity, despite some often-unappreciated limitations as poor sensitivity and biases.	IMAplate (also works for any colorimetric and fluorimetric assays)
Kjendal method	Nitrogen determination; very low sensitivity.	
Biuret method	Colorimetric assay, based on the reduction of Cu++ by peptidic bond in alkaline conditions; low sensitivity.	Biuret Assay #GS4320 alt.: BC Assay more convenient and performing
Lowry method	Improved Biuret assay (the folin-Ciocalteu reagent increases the color development); reading at 750 nm ; not very convenient (prepare freshly reagents each day; 2 incubations, timed operating and temperature control); noticeable interferences with compounds found in biological samples.	Modified Lowry protein Assay #381080 alt.: BC Assay more convenient and performing
Bicinchoninic method	Colorimetric assay, based on the chelating of Cu++ ions by bicinchoninic acid producing an intense purple color. Has become a standard popular method, being easy and reproducible, performing for linearity (wide working range), low P/P variations, and nice compatibility (detergent, lipids, DNA/RNAs,…) and even full compatibility (with any substances usually not tolerated by BCA assays, such as reducers or chelators, when combined with the PPR reagent).	BC Assay #40840A/R56071.. MicroBC Assay #75860A
Formazan based methods	Colorimetric assay, based on WST-8	Protein Assay Kit #T32790
Bradford method	Colorimetric assay based on the interaction of a dye (Coomassie) with some amino-acids ; well-known and used, but a lot of modified procedures. Important protein-to-protein signal variations. A good choice for very quick procedure (1-5min), without incubator, and for reducer containing samples.	Coo Assay #UPF86400A/R56071.
Fluorimetric assays	Fluorimetric high sensitive methods, yet with different principles and features. AccuOrange performs 0.1-15µg/ml sensitivity, very low P/P variability, but low tolerance to detergents (unless combining PPR). Epicocconone-based assays detects down 40ng/ml proteins) by reversible dye-binding allowing full compatibility with MS.	AccuOrange Assay #1A8080 OPA AA/Peptides/Proteins Assay #02727A RED Epicoccostab Fluorescent Assay, #FP-CH419A
Other fluorimetric methods	Other fluorimetric methods based on different principle with various performances. Inquire.	
(others)	-derivatization of aa, peptides and proteins before analysis (Chromatography, Electrophoresis,...). -assaying specific proteins: phosphoproteins, glycoproteins, cell adhesion proteins,…	OPA and other reagents for aa derivatization

Technical tip – choosing a protein assay []

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages colorimétriques

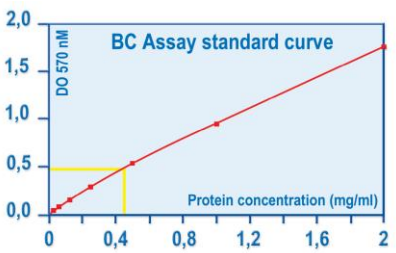
BCA protein colorimetric assays

■ BC protein assays *Uptima*

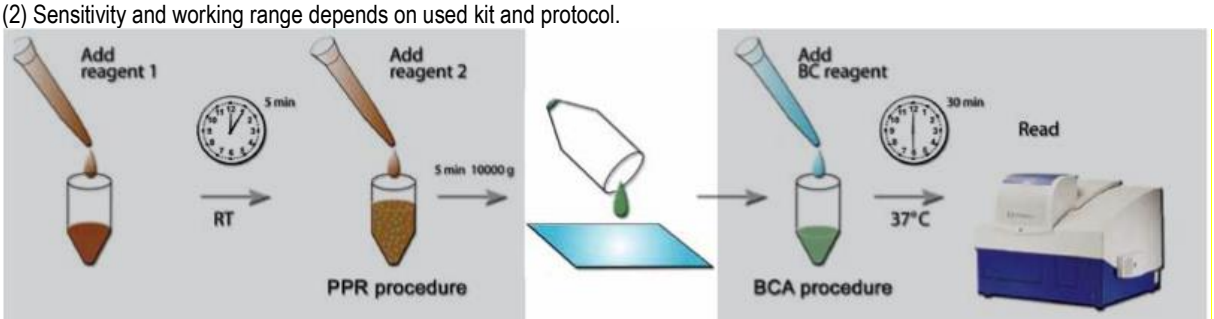
The most useful assay for protein in solutions in today's labs - Accurate and sensitive determination

- **Full compatibility** - with detergents, lipids, DNA,… and any substance(1) incl.reducers!
- **Colorimetric** - read at 562nm
- **Excellent linearity** / **Broad working range**
  1-200µg/ml, 5-200µg/ml or 20-2000µg/ml (2)

BC Assay is the state of art improvement of Biuret and Lowry assays, providing brand leading performance at a nice price. BCAssay method has become the standard colorimetric in most labs, thanks its ease of use (**one step**), its **unrivalled linearity and working range** (0.5 to 2mg/ml), its **compatibility with many agents** starting with detergents (e.g. SDS), lipids and nucleic acids, and its **sensitivity** (20µg/ml and down 0.5pg/ml). It works fine as well as for **glycoproteins**. Detection occurs at **540-590nm** (opt.@562nm).
It is now available from Interchim with **compatibility extended to any kind of susbtances**, i.e. to analyse electrophoresis samples containing both SDS and DTT, urea, Tris and BME.
This No-Interferences BC Assay uses our PPR reagent.



(1) Full compatibility with substances usually not tolerated by BCA assays, such as reducers or chelators, is conferred by combination with the PPR reagent.
(2) Sensitivity and working range depends on used kit and protocol.



No-Interferences BC Assay protein dosage **R56071, 1kit(2x250ml, 250/500tests)**
The all purposes BC assay. Contains BC Assay UP40840B(2x250ml) and PPR reagent R5594A (500ml)

BC Assay protein determination kit **UP40840A, 1kit(1L)** **UP40840B, 1kit(250ml)**

The standard version – 20-2000µg/ml or 5-200µg/ml (enhanced protocol). Contains 2 reagents* to mix 1:1 Technical Sheet
Kit #UP40840A contains 1L of reagent A #UP95424A, 25ml of reagent B #UP95425B, 10x1ml BSA@2mg/ml, and performs 500 tube tests or 5000µwell tests.

MicroBC Assay protein determination kit **UP75860A, 1kit(500ml)** **UP75860B, 1kit(50ml)**
The higher sensitivity version – 0.5-200µg/ml. Contains 3 reagents* to mix 25:25:1 Technical Sheet
Kit #UP7586A contains 250ml of reagent A #UP67251A, 250ml of reagent B #UP67252A, 12ml of reagent C #UP67253A, 10x1ml BSA@2mg/ml, and performs 500 tube tests or 3400µwell tests.

+ Individual reagents of kits available as stand-alone.

BC Assay reagent A	**UP95424A(1L)**	**UP95424B(250ml)**
BC Assay reagent B	**UP95425A(25ml)**	**UP95425B(6ml)**
MicroBC Assay reagent A	**UP67251A(250ml)**	**UP67251B(25ml)**
MicroBC Assay reagent B	**UP67252A(250ml)**	**UP67252B(25ml)**
MicroBC Assay reagent C	**UP67253A(12ml)**	**UP67253B(1.2ml)**
BSA standard 2mg/ml	**UP36859A(10x1ml)**	**UP36859D(25ml)**

+

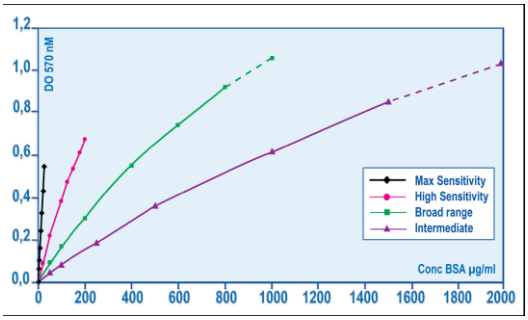
Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages colorimétriques
Bradford protein colorimetric assays

■ Coo Protein assays

Uptima

Improved formulation of the popular Bradford Assay



- **Full compatibility** - with reducers,… and more (1)
- **Colorimetric** - read at 562nm
- **Excellent linearity / Broad working range**
  1-200µg/ml, 5-200µg/ml or 20-2000µg/ml (2)

The classic Bradford method is recommended for researchers who need **rapid analysis**, do not have an incubator, or have **reducing agents** in their samples. Limitations of the method, that are not always known, include limited linearity + broad working range, poor compatibility with many detergents, lipids and alkaline samples, and considerable protein to protein variability of signal. Detection occurs at 570-610nm (optimal@595nm). Improved Bradford reagent is now available from Interchim combined to the PPR reagent to get full compatibility with any kind of substances.

(1) Full compatibility, with substances usually not tolerated by Bradford assays, such as SDS, is conferred by combination with the PPR reagent.
(2) Sensitivity and working range depends on used kit and protocol.

No-Interferences Coo Assay MAX protein dosage **F86400+R5594A , 1kit(2x250ml, 250/500tests)**
The all purpose Bradford assay. Contains CooAssay UP87542B(2x250ml) and PPR reagent R5594A (500ml)

Coo Assay protein dosage **UPF86400, 1kit(1L)** **UPF86401, 1kit(250ml)**
Our orignal formula, for maximum flexibility. Technical Sheet
UPF8600 kit contains 1L Coo reagent #UPF863420 and 10x1ml BSA@2mg/ml, and performs 500/1000 tube tests or 4000µwell tests.

Coo Assay Standard protein dosage **UP36858A, 1kit(1L)** **UP36858B, 1kit250ml)**
The version for direct alternative to the Coomassie assay 23200. Technical Sheet
UP36858A kit contains 1L Coo reagent #36858a and 10x1ml BSA@2mg/ml, and performs 500/1000 tube tests o 4000µwell tests.

Coo Assay MAX protein dosage **UP87542A, 1kit(1L)** **UP87542B, 1kit250ml)**
The version for direct alternative to the Coomassie assay 23236 Technical Sheet
UP87542A kit contains 1L Coo reagent #87542a and 10x1ml BSA@2mg/ml, and performs 500/1000 tube tests or 4000µwell tests.

+ Individual reagents of kits available as stand-alone.
+ Ask other Coomassie assay kits (in microplate format #GK1781) and see below or **on line**.

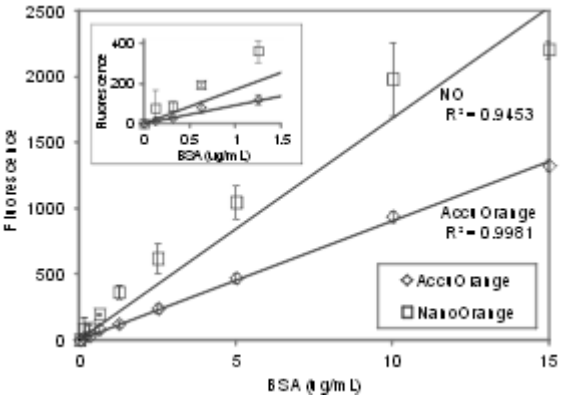
Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Fluorogenic Protein Assays

■ Fluorescamine Protein Quantitation — AAT

The Amplite™ Fluorescamine ProteinQuantitation Kit is significantly more sensitive than existing standard colorimetric measurements. It uses a non-fluorescent Fluorescamine that reacts rapidly with primary aliphatic amines, including those in peptides and proteins, to yield a blue-green-fluorescent derivative. It provides a simple method for quantifying protein concentration in solutions. The kit can be performed in a convenient 96-well or 384-well microtiter plate format. It can be completed within 30 minutes with the fluorescence signal easily monitored at Ex/Em = 380/470 nm. This kit has been used for (1). studying protein/protein interactions; (2). measuring column fractions after affinity chromatography; (3).estimating percent recovery of membrane proteins from cell extract; and (4). high-throughput screening of fusion protein.



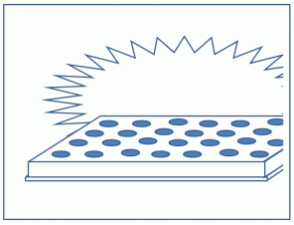
Amplite Fluorimetric Fluorescamine Protein Quantitation Kit *blue fluorescence* **CJF920-11100, 1kit**

Kit contains Fluoresceamin reagent, solvent and BSA standard. 30min procedure. Read with 380/470 nm. 3 µg/mL sensitivity. Technical sheet. exc./em.

■ AccuOrange Protein Assay — *Biotium*

High sensitivity, by fluorescence

- **High Sensitivity & Linear**ity: 0.1-15 µg/mL
- **Stable signal**, for 16 hours !
- **Quick**: 20min protocol



AccuOrange is ideal for sensitivity assay of difficult proteins, or when reading should be delayed (numerous samples, …).It is simple to use: Heat sample and reagent mix at 92°C for 10min. Measure fluorescence with excitation/emission at 480/598 nm.
The AccuOrange assay can tolerate up to 0.01% SDS but has low tolerance for non-ionic detergents. It is hence recommended to treat samples with the PPR reagent before assaying cell lysates containing >0.01% SDS, Triton X-100, sodium deoxycholate, CHAPs, or other non-ionic detergents.

AccuOrange Protein Quantification Kit **1A8080-30071, 1kit (2000tests)** **1A8080-30071-T, trial size**

Contains sufficient reagents (dye 500x, buffer 10x, BSA standard 2mg/ml) for 200 assays (microplate).
Highly sensitive (0.1-15 ug/mL protein), linear and reproducible rassays. 20min protocole. Read with exc/em.:480/598nm.

Can be used with AccuLite™ 470 Mini Fluorometer

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

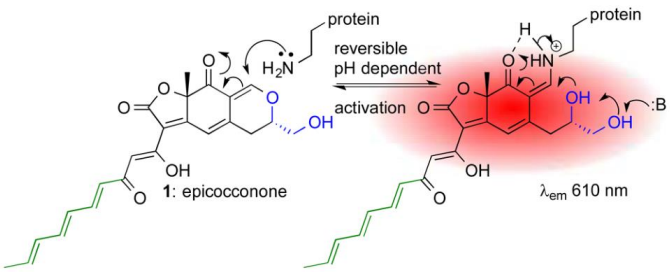
■ Epicoconone-based peptides & protein fluorescent assay *FluoProbes*

Use a unique epicocconone analog for more accurate and sensitive determination of peptides and proteins in solutions

- **Very Sensitivity:** detect as low as 100 ng/mL (peptide) and 40ng/ml (proteins)
- Low protein to protein variability – excellent for glycoproteins
- Linear wide dynamic range over 3-orders of magnitude (100-

- **Safer** to use & simpler to dispose of (biodegradable – no solvent or heavy metals)
- **Simple and quick**: 60min
- Suited to automated high throughput systems
- Protein sample can be recovered for downstream analysis.

This assay use an innovative synthetic analog of epicocconone that much more stable to light and temperature , improving the product stability and result reproducibility of all other available epicoccone assays such as LavaPep. Thus dye binds reversibly to lysine, arginine and histidine from peptides and proteins, that make it fluoresce strongly red. It achieves high detection sensitivity with a large dynamic range. This assay does not precipitate or denature peptides, so samples can be used in subsequent assays. It is a more reliable than alternative fluorescent assays, in particular for difficult proteins. Finally, it is more robust than other peptide assays, cost effective and amenable to many applications:



• MS and HPLC. • N-term sequencing • DIGE • other functional assays. • AAA

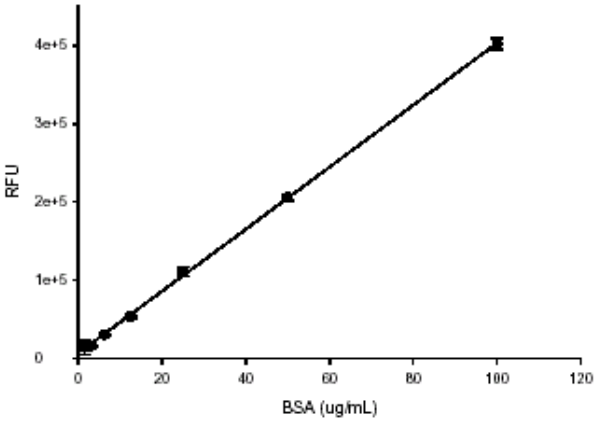
Protein&Peptide Fluorescent Assay, RED Epicoccostab **FP-CH419A, 1Kit (2000tests)**

Contains reagent A and B, sufficient quantity for up to 2000tests. 60min procedure. 40nM sensitivity. Technical sheet

■ OPA Protein Quantitation

- fluorescent (λabs.:338±5 nm, λem.: 455±10 nm)
- high sensitivity: 0.1 to 50µg/ml
- odorless

The OPA assay is useful to assay proteins and peptides when standard protein dosage
- do not achieve sufficient sensitivity of detection
- is not compatible with (interfering) substances
Hence, it suits advantageously to samples prepared for SDS-PAGE electrophoresis (SDS and DTT or b-mercaptoethanol interferences) or for immunoassays (Tween20, Tween80...), proteins of tissues, cells and bacteria extracts (TritonX100, Brij35, CHAPS...).
However, the assay does not suit acetylated and or other amine-blocked peptides.
It also suits amino-acid detection in chromatography (post-columns derivatization).



OPA Protein Quantitation **51225A, 1 kit (500 tests)**

Contains OPA reagent (350µl), Reducing solution (200µl), Assay buffer (20ml) and BSA standard 1mg/ml (500µl), sufficient to perform 500 assays. Technical sheet

Also available as OPA powder (02727B).

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Others available Protein Assays [One line]

Other colorimetric Protein Assays

Biuret reagent protein Assay **1E5350, 1 L**
Reagent Solution Gornall Bardawill & David

Modified Lowry protein Assay **381080-23240, 1 kit**
Colorimetric 570nmreading; 1-1500µg/ml sensitivity

660nm protein Assay **DV4920-22662, 1 kit(450ml)** **DV4910-22660, 1kit(750ml)**
Detergent- and reducing agent- compatible; 25/50-1000µg/ml sensitivity; to be used with Ionic Detergent Compatibility Reagent #DV4930I

Biuret Assay **GS4320-M262, 500ml**
Reagent Solution; Sens.1-10mg/ml; 500ml qsp 50-70 samples; CoA

BCS Protein Assay **729571-N962, 1 kit** (Z)
A Biuret like protein assay, with inversed detection: unreacted Copper gives a colorimetric signal inversely proportional to protein or peptide sample. Read at 385nm. Tech sheet

Tp-Blue Protein Assay Kit **FI9371-T3000, 1 Kit**

Pyrogallol Total Protein Assay **FI9381-T4000, 1 Kit**

Tp-Blue & Tp-Red Protein Assay Kit **FI9391-T5000, 1 Kit**

Coomassie Protein Assay Kit, Microplate Format **GK1780-704002, 480tests**
Contains 7.5ml assay reagetn6.6X, 5 microplate.s, standard; 5min protocol; Read 595nm; 5.6 µg/ml Sensitivity. Technical sheet

Aldehyde site (DNA and protein) detection kit **AYO560-600170**

Protein quantitation kit - Wide Range **T32790-PQ01-10, 500tests** **PQ01-12, 2500tests**
Contains CBB solution (100mlx2, and BSA standard sat 4mg/ml (1.5ml) – (L) fiche technique:

Precision Red Advanced Protein Assay (1X conc.) **NJQ170-ADV02-A, 500ml** **NJQ171-ADV02-B, 3 x 500ml**
low protein to protein variance; 0.25-50mg/ml range; detergent compatible. simple 1min 1-step procedure (red to blue color change read at 600 nm). See product Highlight, Technical sheet.

See also colorimetric kits in section 'medical biochemistry' (Total Protein Tests FT725, FT726, FT727, FT758,...) and protein Standards (FT757)

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See also next sections: 'Biochemical for protein Assays', 'Standards for protein assays', 'Glyco/Phospho/Lipo and other specific protein assays'(collagen, elastin,...).

Measure by UV absorbance (IMAplate) Uptima

Determination of proteins by simple spectrometry is very popular thanks its simplicity and rapidity, despite some often-unappreciated- limitations as poor sensitivity and other. It is typically based on the optical absorbance of peptidic bounds (215 nm) or aromatic amino-acids (280 nm). However, the user should know the exact extinction coefficient of the assayed protein(s). Furthermore, this methods is often leant over by, or does not suit samples with numerous compounds in buffer (salts, DMSO, detergents…), nor UV absorbing contaminants (for example hemoglobin). Yet, UV measure require expansive cuvettes and typically large volumes of samples are used.

■ IMAplates

IMAplate allows direct spectrometric measurement in UV wavelengths in a microplate format, on minute volumes (1-6µl) with a standard UV-microplate reader (no need for cuvette or expansive instruments). Samples can be recovered. This also work for UV-detection of DNA/RNA (260nm).

IMAplates (DR9601) **see product highlight BA361n**
A unique microplate with 96 bottom-free wells for protein assays – by direct UV measure, or by colorimetric, fluorimetric assays- Technical sheet

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Accessory reagents
Sample preparation for protein assays

Introduction / methods and reagents for sample treatment before protein assays

● Following are some solutions when one have interference in a protein assay that cannot be solved by choosing the right protein assay. This include dialysis (long but cheap), gelfiltration (rapid but expensive), extraction methods (i.e. to remove detergents) and chemical precipitation or neutralizing methods.

Desalting methods by dialysis Economic. See dialysis section (notably devices for small volumes, or tubing combined to the SpectraGel for also concentration)	**see section 'Dialysis'**
Desalting methods by gelfiltration Rapid procedure. See gelfiltration section (notably gelfiltration columns)	**see section 'Gelfiltration'**
Protein Preparation Reagent (PPR) Rapid and cost-effective. See description with the BC Assay.	**see description below (#R5594A)**
SDSaway Detergent Removal Protein Reagent and Prep Kits Removal of SDS and other interfering detergents. Useful for Coomassie-based assays.	**see product highlight BA361n**
Ionic Detergent Compatibility Reagent Sufficient for: Addition to 5 x 20mL Pierce 660nm Protein Assay Reagent	**DV4930-22663, 5 x 1g**
Neutralization reagent for interfering thiols/reducers NEM reacts and neutralize thiols and reducers before protein assays, removing their interfere	**See NEM product**

● When proteins are in low concentration too low for protein assays, one might concentrate samples. Find out in our Biopurification catalog, sections 'Sample preparation', Desalting/'dialysis' and 'Ultrafiltration' (and eventually desalt them to remove possible interfering substances). . See also the enrichisment kits of specific protein types (hydrophobic, phosphoproteins, glycoproteins) in the sction 'Specifi protein assays'.

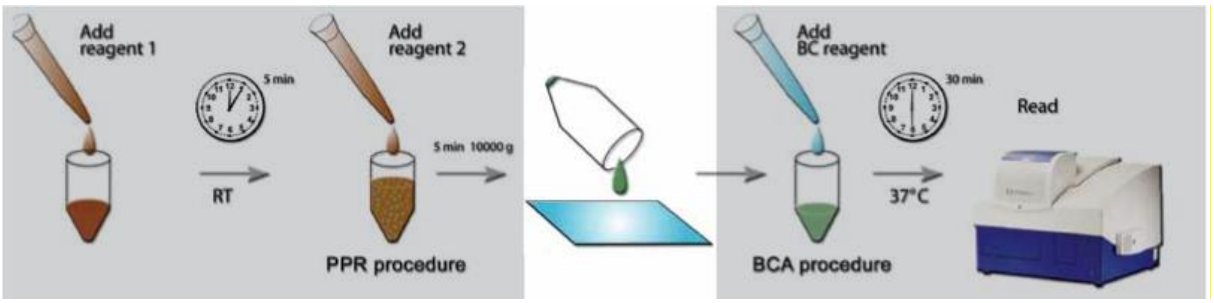
Protein Precipitation reagents Uptima

Protein Precipitation is a convenient method to concentrate proteins while removing undesired (non-precipitating) compounds. It can be performed easily using our protein precipitation reagents kits. It is especially useful before protein assay in solution, protein analysis by electrophoresis,… for diluted or small samples, and to get rid of interfering substances (salts, amines, reducers, lipids,…).

■ **Protein Preparation Reagent (PPR)**

Remove interfering substances from samples before protein assay or other applications.
Great because no standard protein assay is fully Detergents and Reducers Compatible!

- Desalt and concentrate proteins for any protein assay (colorimetric, fluorescent)
- **convenient**: 10-15min protocol, room temperature
- **flexible**: suitable to many samples in one round, and very small ones (down 50µL)
- **safe**: no organic solvent
- **economic** per sample treatment (cheap + gain of time)



Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Our 'Protein Preparation Reagent' removes very easily and efficiently non-protein substances, keeping selectively proteins. It is useful upstream to many analysis in order to desalt proteins from undesired substances, and in particular for protein assays to get no-interference protein dosage. This solves the tricky choice between classic protein assays, starting with the mostly used, the Bradford and the BCA reagents. Any protein assay is surely sensible to some substances, and options to solve this issue were tedious, long or expensive. I.e. dialysis is not convenient and long, gelfiltration is rapid but has insufficient and inconsistent protein yield, while standard precipitation methods are not convenient, long and requires hazardous solvents and a freezer or at least a fridge.
Our 'Protein Preparation Reagent' provides a great solution answering the limitations of each classic method.

Protein Preparation Reagent (PPR) **R5594A, 1kit (qsp 50ml samples)**
Contains:Reagent 1 (250ml) and Reagent 2 (250ml); sufficient to treat 50ml of samples. Technical sheet

PPR is available as component included in protein assay kits: see in above sections for No-Interferences BC Assay protein dosage (R56071) and Coo Assay MAX protein dosage (F86400+R5594A). See also Carrez clarification kit #IDJ181.

+ [One line]

Carrez clarification

Carrez clarification kit treat a wide variety of samples, notably food but also blood, intended to be analyzed by enzymatic or other means. The reagent cause precipitation of proteins from fats, hence suppress turbidity and emulsions particularly in food testing. As a result, it eliminate interferences due notably to a number of redox compounds, which can affect assays.
Most samples collected for analyses of small molecule analytes such as carbohydrates, alcohols, aldehydes and organic acids can be prepared using this reagent system. Carrez clarification is not suitable for samples in which enzymatic activities are to be quantified, nor analytes that may be converted (ascorbate, (vitamin C), citrate, urea (> ammonia), aconitate (> citrate).

Carrez clarification kit **IDJ181, 1kit (qsp 10tests)**
Contains: Reagent I (500µl) and Reagent II (500µl); sufficient to treat 100 samples of 1-5g. Technical sheet

Other accessories for protein assays (plates)

Protein Precipitation Plates **RJ6420-90036**, 2 plates **RJ6421-90037**, 10plates
96-Well Microplates, for BCA-RAC Assay **RJ1380-15045**

Enrichment Kits

See enrichicment kits in special protein assay section.

Biochemicals for assay/detection of Proteins, Peptides and AA derivatisation

Many **chromogenic protein dyes** have been proposed to detect proteins in solution, in electrophoresis gels, on microscopy sections (refer also to corresponding sections). The Coomassie dyes and Ninhydrin are classically used to quantitate protein in solution or visualize on TLC sheets.
Fluorescent dyes have also been used for assaying proteins in solution, gels and even microscopy slides. They are detected spectrometrically by their absorption or fluorimetrically by their emission upon proper excitation.
.OPA and TNBSA are useful to quantitate aa, peptides or proteins in solutions.
.Beside OPA, most other reagents listed below are mainly used as derivatization reagents for amino-acids analysis by capillary electrophoresis and chromatography.
Some are listed as follows.

■ Stains - Coomassie dyes

Coomassie R-250 and G-250 dyes, two most common chemical forms of Coomassie dye, a disulfonated triphenylmethane compound
The R-250 (red-tinted) form lacks two methyl groups that are present in the G-250 (green-tinted) form

Typically for detection of proteins in gel electrophoresis and Bradford-type assay reagents for protein quantitation. , coomassie gel stains and protein assay reagents are formulated as very acidic solutions in 25 to 50% methanol. In acidic conditions, the dye binds to proteins primarily

Dosage des Protéines et Peptides | Dosages fluorimétriques

through basic amino acids (primarily arginine, lysine and histidine), and the number of Coomassie dye ligands bound to each protein molecule is approximately proportional to the number of positive charges found on the protein. Protein-binding causes the dye to change from reddish-brown to bright blue (absorption maximum equals 595nm).

When dissolved in 0.01M citrate buffer at pH 3.0, Coomassie has an absorption maximum at 555nm; protein-dye complex is characterized by a peak slightly broader than that of the free dye with a maximum at 549nm. Hence, bound and unbound dye can be distinguished.

Coomassie G250 **077582, 5g** **077584, 25g**
MW: 854.4; CAS:[6104-58-1]. Widely used for protein assay in solution, and for electrophoresi gel staining. Technical Sheet
Coomassie G250, Proteomics grade **11524A, 10g** **11524B, 25g**
Coomassie R250 **115252, 55g** **115253, 25g** **115254, 50g**
MW: 825.99; CAS:[6104-59-2]. Widely used for protein electrophoresis gel staining (colloidal solution). Technical Sheet
Coomassie R250, Proteomics grade **11525A, 25g** **11525B, 25g** **11525C, 50g**

See other protein stains in the electrophoresis stain section (Silver Nitrate, AmidoBlack,…)

■ OPA fluorescent derivatisation/assays Uptima

High sensitivity for aminoacids and peptides

- **High Sensitivity:** 10µM, to 10pmol/GC
- **Versatile**: fluorescence or colorimetry

OPA (Phtalaldehyde) is ideal for sensitivity assay of amine containing small compounds. 10µM sensitivity is achieved by tube assays, and 10pmol combined to Gas Chromatography It works also by absorbance. It can also be used for thiol detection.

OPA Amine detection reagent (o-Phtalaldehyde) **02727B, 5g**
Technical sheet

■ Derivatization reagents for AA Fluoprobes + si possible en petit Uptima

Ninhydrin **024401, 100 g à100€/100g/749.0544, +036.21003-671e/500g**
MW: 178.14; reacts with primary and secondary amines for UV detection (λmax: 440 nm)
A popular colorimetric detection of amino acids (post –column detection at mmol detection levels). Microplate assay down 0.02µg

TNBSA reagent **BC3361 , 100ml**
2,4,6-Trinitrobenzene sulfonic acid 5% in MeOH; MW: 293.17; reacts with amino groups for UV detection (λmax: 335-345 nm). Technical sheet

Fluorescamine, Pure Grade **FP-12631E, 100 mg** **FP-R1246A, 100 mg**
Spiro(furan-2(3H),1'(3'H)-isobenzofuran) -3,3'-dione, 4-phenyl; MW: 278.26
Detects proteins down 10ng protein

FluoProbes (NHS, MAL, HYD) labeling agents **see section 'labeling'**
FITC, TRITC, TMR....labeling agents **see section 'labeling'**
FluoProbes488, 547H, 647H activated by succinimidyl ester, maleimide or hydrazide can be used advantageously to derivatize proteins, peptides or other molecules through amino-, sulfhydryl or carbonyl- groups. They yield higher sensitivity than conventional dyes such as FITC/TRITC/TMR or Cy dyes

o-Phthalaldehyde (OPA) **UP02727A, 1 g** **02727B, 5g**
MW: 134.13; reacts with primary amines for UV detection (λmax: nm)
fluorescent detection reagent for amines (i.e. aa, proteins and peptides). Useful for amino acids in pre- and post-column chromatographic effluents (10µM, to 10pmol/GC), as well as aa, peptides and protein quantitation. See below section, and Technical sheet.
o-Phthalaldehyde reagent **512250, 945ml**
Ready-to-use precolumn OPA derivatization reagent
OPA Protein Quantitation **51225A, 1 kit (500 tests)**
Contains OPA reagent (A: 350µl), Reducing solution (B: 200µl), Assay buffer (C: 20ml) and BSA standard 1mg/ml (500µl), sufficient reagent to perform 500 assays.
Modify specifically arginine residues in mild conditions (pH7-9). Can be monitored at 340 nm

PDAM (1-Pyrenyldiazomethane) **FP-76082A, 25 mg**
$\lambda_{exc}/\lambda_{em}$ (après dérivatisation) : 340 / 378 nm MW : 242.27

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Sonde de dérivatisation HPLC pour la détection des acides carboxyliques avec des paramètres de limite de détection meilleurs et une plus grande stabilité chimique que l'ADAM (9-anthryldiazomethane)

NDA (Naphthalene-2,3-dicarboxaldehyde) **FP-46870A, 100 mg**

$\lambda_{exc}/\lambda_{em}$ (after derivatization) : 419 / 493 nm MW : 184.19

Sonde de dérivatisation HPLC pour les amines avec des avantages comparée à l'OPA: dérivés plus stables et spectre avec des longueurs d'onde plus élevées

FQ derivatization reagent (3-(2-Furoyl)quinoline-2-carboxaldehyde) **FP-86524A, 25 mg**

$\lambda_{exc}/\lambda_{em}$ (after derivatization) : 486 / 591 nm MW : 251.24

Sonde de dérivatisation neutre pour amines pour le dosage picomolaire des protéines par électrophorèse capillaire ou chromatographie

ABD-F **FP-57564A, 10mg**

4-Fluoro-7-aminosulfonylbenzofurazan; 4-aminosulfonyl-7-fluoro-2,1,3-benzoxadiazole; MW: 232.21; $\lambda_{abs.}/\lambda_{em.}$ (free) : 315nm/none.; $\lambda_{abs.}/\lambda_{em.}$(coupled): 389/513 nm.

Readily reacts with thiol compounds (30times faster than that of SBD-F, and also reacts with amine compounds. It is widely used for TLC and HPLC derivatizations of thiol compounds (superior sensitivity and selectivity than OPA). The detection limits of cystein, glutathione, N-acetylcystein, and cysteamine are 0.6, 0.4, 1.9 and 0.5 pmol/injections respectively with pre-labeled ABD-thiol compounds.

NBD-Cl **FP-T3226A, 1g**

4-Chloro-7-nitrobenzofurazan; MW: 199.55; $\lambda_{abs.}/\lambda_{em.}$ (free) : 337 nm/none; $\lambda_{abs.}/\lambda_{em.}$ (NH2 bound) : 464/512 nm

A popular derivatization reagent for HPLC analysis to form highly fluorescent compounds with amino groups such as aliphatic amines and thiol group, also used to label peptides, proteins, drugs and other biomolecules, for localization, structural studies, function and transport.

NBD-F **FP-U0573A 25mg**

4-Fluoro-7-nitrobenzofurazan; MW: 183.1; $\lambda_{abs.}/\lambda_{em.}$ (free) : 337 nm/none; $\lambda_{abs.}/\lambda_{em.}$ (NH2 bound) : 464/512 nm

has similar properties and applications to NBD-Cl. Compared with NBD-Cl, it is more reactive

SBF-Cl **FP-AM858A, 5mg**

4-Chloro-7-sulfobenzofurazan, ammonium salt; MW: 251.65; $\lambda_{abs.}/\lambda_{em.}$ (free) : 380 nm/none; $\lambda_{abs.}/\lambda_{em.}$(coupled): 385/515 nm

a water-soluble fluorescent-labeling reagent for thiol compounds, and is not cytotoxic or mutagenic. Has been used for derivatization in chromatography and for enzyme substrates design.

SBF-F **FP-AM859A, 10mg**

4-Fluoro-7-sulfobenzofurazan, ammonium salt; MW: 235.2; $\lambda_{abs.}/\lambda_{em.}$ (free) : 385 nm/none; $\lambda_{abs.}/\lambda_{em.}$(coupled): 385/515 nm

same features than SBF-Cl. . It is widely used for HPLC derivatizations of thiol compounds. The HPLC detection limit of thiol compounds such as glutathione, cystein, N-acetylcystein, CoA, and BSA is in the range of 100-500 pmol/injection

ANTS **FP-46574A, 500mg**

8-Aminonaphtalene-1,3,6-trisulfonic acid; MW: 427.34; $\lambda_{abs.}/\lambda_{em.}$: 353/520 nm ; EC: 7 200 $M^{-1}cm^{-1}$

For labeling glycoproteins or sugars in general (reacts with the aldehyde or ketone). Has been used widely for oligosaccharides and glycoproteins sequencing , and for electrophoresis analysis of degradation products from carbohydrate polymers.

APTS **FP-33972A, 10mg**

8-aminopyrene-1,3,6-trisulfonic acid, trisodium salt; MW: 523.4; Soluble in water; $\lambda_{abs.}/\lambda_{em.}$ (free): 424/505 nm

A green fluorescent and multi-anionic dye ($\lambda_{abs.}/\lambda_{em.}$ (free): 424/505 nm) for glycoproteins or sugars labeling in general (reacts with aldehyde or ketone). It suits ideally high-resolution capillary electrophoresis of carbohydrates.

5-FTSC **FP-47552A, 25mg**

Fluorescein-5-thiosemicarbazide; MW: 421.43; Soluble in DMF or DMSO; $\lambda_{abs.}/\lambda_{em.}$ (pH>7.0) : 492/516 nm

React with ketones to yield relatively stable hydrazones and with aldehydes to yield hydrazones that are somewhat less stable. Extensively used to modify reduced sugars for analysis in gels and sequencing.

DMEQ-COCl **FP-69129A, 10mg**

3-Chlorocarbonyl-6,7-dimethoxy-1-methyl-2(1H)-quinoxalinone , CAS: 104077-15-8; MW: 282.69; λex./λem:: 400/500 nm

A labeling reagent for primary and secondary alcohols. The HPLC detection limits of benzylalcohol, n-hexanol, and cyclohexanol are 2-3 femtomoles per injection. CAn also detect steroids that have primary and secondary alcohols, amines (as little as 0.3 pmol/ml of b-phenylethylamine has been detected in human serum).

HPG **UP36862A, 100 mg**

β-Hydroxyphenyl Glyoxal; MW : 168.2; More resistant than p-Nitrophenyl Glyoxal and more soluble than phenylglyoxal

Modify specifically arginine residues in mild conditions (pH7-9). Can be monitored at 340 nm

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

SulfoNHS - acetate **UP69380A, 100 mg**
Sulfo-succinimidyl-acetate; MW : 259.2; Water-soluble
Blocks primary amines efficiently at pH7-10; Used forpeptide or proteins modificationbefore anlysisand for bBinding site studies

+ One line

Protein Assay Standards

Bovine Serum Albumin (BSA) standard, 2mg/ml **UP36859A, 10x1ml** **UP36859D, 30ml**
Provided in convenient autostable, screwed-cap one-use microvials.
Bovine Serum Albumin (BSA) standard, 0.5mg/ml **GK1792-E531, 1.5ml**

+ One line

Lyoph Glycoprotein Std **L77470-23259**
Mouse IGG Assay Kit **738920-23300**
Phosphoprotein Phosphate Estimation assay Kit **R09430-23270**
Protein Assay Standard
Hemoglobin Standard **964541-700543**

See also the chapter 'Standard'.

Plates and instruments for protein assays

MiniFluorimeter Biotium

AccuLite™ Mini Fluorometers are portable instrument designed for multipurpose fluorescence measurements. The instruments are simple to use, lightweight, and can be powered by either DC power adapter or battery, making it an excellent choice for field studies and laboratory measurements. The instruments are pre-programmed for use with Biotium's DNA and protein quantitation kits, and can be used for general fluorescence measurements or user-defined programs.

Features

- Accepts 200 uL PCR tubes or mini-glass tubes
- LCD touch-screen interface
- USB port for data export
- Compact and robust
- Greater than 6 logs of dynamic range

Ordering

AccuLite 350 Mini Fluorometer
AccuLite 470 Mini Fluorometer
AccuLite 470 Mini Fluorometer

Technical Specifications

- AccuLite™ 350:
  365-370 nm LED excitation,
  460+/-20 nm emission (blue fluorescence)
- AccuLite™ 470:
  465-475 nm LED excitation,
  540+/-30 nm emission (green fluorescence)

- Power: 4 AA batteries or 5V DC adapter
- Warm-Up Time: Less than 10 seconds
- Dimensions: 185mm x 90mm x 35mm
- Weight: 10 oz (0.28kg)

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Quantification par MS

Kits MS2Plex® pour la quantification de protéines membranaires *Bertin*

la gamme de kits MS2Plex® dpermet la quantification de protéines membranaires notament pour l'étude dusur le métabolisme des médicaments. Ces kits utilisent la technologie LC-MS/MS en mode MRM (Multiple Reaction Monitoring). Lorsqu'elle est combinée avec des standards internes marqués par des isotopes stables, l'approche MRM fournit une quantification absolue de la concentration du produit à analyser.

Avantages des kits MS2Plex®

- Une gamme unique et large de kits de quantification de protéines membranaires validés en LC-MS/MS
- Standards peptidiques et internes de haute qualité
- Haute sensibilité (fmol/pg de protéine totale) et spécificité par filtre de masse
- Quantification simultanée : jusqu'à 34 protéines en une seul mesure
- Enzymes incluses

Protocole

Après avoir recueilli votre échantillon, la membrane doit être isolée et les protéines solubilisées. Les protéines sont ensuite alkylées, précipitées et digérées avec de la trypsine (les enzymes sont fournies dans les kits MS2Plex®). Ces étapes de préparation sont vérifiées en utilisant une protéine de suivi brevetée qui permet de valider les étapes de purification et de digestion enzymatique.

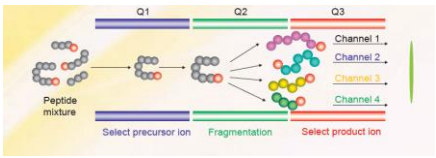
Les peptides générés sont mélangés avec des standards internes (peptides marqués avec les 13C ou 15N à une concentration connue et précise (identique à celle inclue dans les standards de calibration) avant l'injection dans le système LC-MS / MS.

Un ensemble de standards peptidiques est également fourni pour permettre la construction d'une courbe de calibration, ainsi qu'un ensemble de contrôles de qualité à grande (0,8 x LSDQ), Moyenne (0,5 x LSDQ (*)) et faible (2 x LLOQ (* *)) concentration.

Multiple Reaction Monitoring (MRM)

La technologie MRM permet aux chercheurs de sélectionner des peptides d'intérêt alors que tous les autres peptides sont filtrés. Les peptides sont détectés par l'analyse de spectrométrie de masse et la concentration exacte peut être déterminée.

Concrètement, dans une première étape, un ion d'intérêt (ion parent/précurseur) est sélectionné en Q1 et est fragmenté dans la cellule à collision (Q2). Dans une deuxième étape, au lieu d'obtenir un balayage complet de tous les fragments dérivés du précurseur, seul un petit nombre d'ions spécifiques d'une séquence est analysé en Q3. Cette analyse ciblée améliore jusqu'à 100 fois la limite inférieure de détection tout en permettant un contrôle rapide et continu des ions spécifiques d'intérêt.



Le mode de balayage MRM est utilisé pour quantifier de petites molécules, telles que les métabolites de médicaments. Le même principe est appliqué à des peptides produits à partir de la digestion enzymatique de protéines. Les progrès technologiques permettent aujourd'hui de **multiplexer jusqu'à 34 biomarqueurs différents** en mesurant les niveaux peptidiques dans une gamme. Ces tests utilisent l'ionisation électrospray suivie de deux étapes de sélection de masse (comme illustré ci-dessus). Les instruments modernes triple quadripole sont capables de mesurer ces nombreuses transitions en une seule expérience c'est pourquoi cette technique est appelée Multiple Reaction Monitoring (MRM).

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Liste des kits MS2Plex®

Stabilité : 6 mois
Stockage : -80°C
Condition d'envoi : Carboglace
Quantité d'échantillon : 50µg de protéine totale

Les tests spécifiques aux **transporteurs ABC**

Les transporteurs ABC (cassette ATP Binding Cassette) sont l'une des plus importantes de protéines paralogues. Elles sont présentes dans toutes les espèces et jouent une grande variété de rôles physiologiques. Dans les micro-organismes, les transporteurs ABC sont au cœur de la résistance aux antibiotiques et aux antifongiques, tandis que chez l'homme, beaucoup sont associés à des maladies génétiques et à la résistance aux médicaments contre le cancer.

Elles ont une importance particulière dans les études ADMET.

Nom	Réf.	Conditionnement	Specificité	Limite de quantification
MDR1 (human) MS2Plex® assay kit	T05028	24 dtn	Humain 100%, Singe 100%, Souris 0%	0,15 fmol/µg de protéine totale
BCRP (human) MS2Plex® assay kit	T05001	24 dtn	Humain 100%, Singe 100%, Souris 0%	0,75 fmol/µg de protéine totale

Les tests spécifiques aux transporteurs SLC

Les protéines solubles de transport (Solute carrier Protein: SLC) est une grande famille (51) de transporteurs facilitant le transport de petites molécules (endogènes et xénobiotiques) à travers la membrane plasmatique et cellulaire autrement que par diffusion ou par co-transport endogène des ions (organiques) pour fournir la force motrice. Parmi la super-famille de SLC, les polypeptides transporteurs d'anions organiques (OATPs), les transporteurs d'anions organiques (EAE) et les transporteurs de cations organiques (PTOM) sont fonctionnellement bien caractérisés et étudiés pour leur implication dans la physiologie, la physiopathologie et pharmacologie.

Nom	Réf.	Conditionnement	Specificité	Limite de quantification
OATP1B1 (human) MS2Plex® assay kit	T05002	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,15 fmol/µg de protéine totale
OATP1B3 (human) MS2Plex® assay kit	T05003	24 dtn	Humain 100%, Singe 100%, Souris 0%	2,25 fmol/µg de protéine totale
OCT2 (human) MS2Plex® assay kit	T05004	24 dtn	Humain 100%, Singe 100%, Souris 0%	0,30 fmol/µg de protéine totale
OAT1 (human) MS2Plex® assay kit	T05005	24 dtn	Humain 100%, Singe 100%, Souris 100%	0,30 fmol/µg de protéine totale
OAT3 (human) MS2Plex® assay kit	T05006	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,30 fmol/µg de protéine totale

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Liste des kits MS2Plex® (Suite)

Les tests spécifiques aux CYP450s

La biotransformation des xénobiotiques est le principal mécanisme de maintien de l'homéostasie pendant l'exposition de l'organisme à des molécules étrangères telles que des médicaments. Ce mécanisme est réalisé par un nombre limité d'enzymes avec de larges spécificités de substrat. Les réactions catalysées par des enzymes xénobiotiques de biotransformation sont divisés en deux phases, appelés phase I et phase II, conduisant à une augmentation de l'hydrophilie des xénobiotiques, améliorant grandement leur élimination.

Parmi les enzymes de biotransformation de phase I, les cytochromes P450 (CYP450) occupent le premier rang en terme de polyvalence d'oxydation catalytique et de toxification: ils peuvent ou non prendre en charge un grand nombre de xénobiotiques, eux-mêmes détoxifiés ou non par des enzymes de phase II.

Étant le principale voie d'élimination de nombreux médicaments, les enzymes du CYP450 jouent un rôle très important dans la détoxication des xénobiotiques, mais peuvent aussi conduire à des métabolites toxiques ou tumorigènes.

Nom	Réf.	Conditionnement	Specificité	Limite de quantification
CYP1A2 (human) MS2Plex® assay kit	T05007	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,75 fmol/µg de protéine totale
CYP2A6 (human) MS2Plex® assay kit	T05008	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,75 fmol/µg de protéine totale
CYP2B6 (human) MS2Plex® assay kit	T05009	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,75 fmol/µg de protéine totale
CYP2C8 (human) MS2Plex® assay kit	T05010	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,75 fmol/µg de protéine totale
CYP2C9 (human) MS2Plex® assay kit	T05011	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,75 fmol/µg de protéine totale
CYP2C19 (human) MS2Plex® assay kit	T05012	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,75 fmol/µg de protéine totale
CYP2D6 (human) MS2Plex® assay kit	T05013	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,75 fmol/µg de protéine totale
CYP3A4 (human) MS2Plex® assay kit	T05014	24 dtn	Humain 100%, Singe 0%, Souris 0%	0,75 fmol/µg de protéine totale

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Les tests spécifiques aux UGT

Les UGT sont une famille d'enzymes capables non seulement de la détoxification et de l'activation des xénobiotiques et des médicaments, mais sont également impliqués dans le métabolisme de substrats endogènes importants, comme par exemple, la bilirubine ou les hormones thyroïdiennes.

La caractérisation biochimique des différentes isoformes est compliquée en raison d'un large éventail de substrats réagissant (et des affinités qui se chevauchent pour un substrat donné: par exemple un substrat est métabolisé par plus d'une isoforme). Les composés Glucuronidés sont sensibles à la déconjugaison par la bêta-glucuronidase, une enzyme qui est largement distribuée dans les tissus de mammifères et localisée de façon intracellulaire dans les lysosomes et le réticulum endoplasmique.

Les actions combinées des UGTs et de la bêta-glucuronidase peuvent jouer un rôle dans le cycle futile dans lequel les métabolites conjugués subissent cycles successifs de synthèse (fabrication de glucuronide) et d'hydrolyse (fabrication d'aglycone).

Nom	Réf.	Conditionnement	Specificité	Limite de quantification
UGT1A1 (human) MS2Plex® assay kit	T05015	24 dtn	NC	au moins 3 fmol/µg de protéine totale
UGT1A3 (human) MS2Plex® assay kit	T05016	24 dtn	NC	au moins 3 fmol/µg de protéine totale
UGT1A6 (human) MS2Plex® assay kit	T05017	24 dtn	NC	au moins 3 fmol/µg de protéine totale
UGT1A9 (human) MS2Plex® assay kit	T05018	24 dtn	NC	au moins 3 fmol/µg de protéine totale
UGT2B7=UGT2B9 (human) MS2Plex® assay kit	T05019	24 dtn	NC	au moins 3 fmol/µg de protéine totale
UGT2B15=UGT2B8 (human) MS2Plex® assay kit	T05020	24 dtn	NC	au moins 3 fmol/µg de protéine totale

Les kits à Multiples protéines

Nom	Réf.	Conditionnement	Specificité
DMPK A (MDR1, BCRP) (human) MS2Plex® assay kit	T05021	24 dtn	Se référer à chacune des protéines
DMPK B (MDR1, BCRP, OATP1B1, OATP1B3) (human) MS2Plex® assay kit	T05022	24 dtn	Se référer à chacune des protéines
DMPK C (MDR1, OAT1, OAT3 , OCT2) (human) MS2Plex® assay kit	T05023	24 dtn	Se référer à chacune des protéines
DMPK D (CYP1A2, CYP2B6, CYP2C9, CYP3A4) (human) MS2Plex® assay kit	T05024	24 dtn	Se référer à chacune des protéines
DMPK E (MDR1, BCRP, OATP1B3) (human) MS2Plex® assay kit	T05025	24 dtn	Se référer à chacune des protéines
DMPK F (OATP1B3, OCT1, MDR1, BSEP, NTCP, BCRP, MRP2, OAT2) (human) MS2Plex® assay kit	T05026	24 dtn	Se référer à chacune des protéines
DMPK G (CYP1A2, CYP2B6, CYP2C9, CYP2C19, CYP2D6, CYP2E1, CYP3A4) (human) MS2Plex® assay k	T05027	24 dtn	Se référer à chacune des protéines
DMPK I (OCT2, MDR1, OAT1, OAT3, PEPT1, MCT1, MCT2) (human) MS2Plex® assay kit	T05030	24 dtn	Se référer à chacune des protéines
DMPK J (OATP1B3, OCT1, MDR1, BSEP, NTCP, BCRP, MRP2, OATP1B1) (human) MS2Plex® assay kit	T05031	24 dtn	Se référer à chacune des protéines
MRP2 (human) MS2Plex® assay kit	T05038	24 dtn	Se référer à chacune des protéines
DMPK H (UGT1A1, UGT1A3, UGT1A6, UGT1A9, UGT2B7, UGT2B15) (human) MS2Plex® assay kit	T05041	24 dtn	Se référer à chacune des protéines

Sample preparation for MS analysis

See UptiTips & other products

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Glyco-, Phospho-, Lipo- Proteins detection

Several reagents from sections 'fluorescent and biotin labeling', and even from 'crosslinkers or modifiers' sections, can be used to detect the CHO and OH, phospho or lipidic moieties present on Glyco-, Phospho-, or Lipo- Proteins, or to detect specific residues. For example AMF #M1161A and DTAF #46732A or FITC and cadaverins have been used to detect glycoproteins. Hydrazide (such as in ABH #UP87750A) reacts with cis-diols of carbohydrates (glycoproteins). HPG #UP36862A reacts with arginine and can be monitored at 340nm. Photoreactive groups react nonspecifically, hence can be used to derivatize any 'difficult' molecule (i.e. steroids), 4NBA #BL9650 detects hydrazine/hydrazide groups, while 2HP #019022 detects aldehyde groups. Phosphoramidite fluorescent dyes in section 'organic chemistry', react on phospho- group (phosphoproteins). Deuterated crosslinkers can be useful as well for derivatizing before MS analysis.

Following are ready-to-use reagents and kits for detection Glyco-, Phospho-, Lipo- Proteins.

Glycoproteins and Carbohydrates detection

●Glycoprotein assays

Numerous native proteins contain post-transcriptional glycosidic elaboration (sugars) whose structures are dependent both on species and cell type. The characterization of the complex oligosaccharides obtained from these glycoproteins has proven a difficult and time consuming endeavor. Following are useful tools to study glycoproteins.

Carbohydrate Analysis/Detection Kit (EDANS based) FP-CG4891, 1 Kit
Kit contains the 1.5-EDANS fluorescent reagent, reduction reagent, and TLC solvents. Read with $\lambda_{abs}/\lambda_{em.}$: 335/493 nm. Technical sheet

The Carbohydrate Analysis/Detection Kit is capable of quickly estimating and/or comparing the composition of the carbohydrates in such samples. The Kit involving enzymatic removal of the oligosaccharides from a native protein (or mixture of reducing sugars), reductive amination of the reducing sugars and covalent labeling with a fluorescent reagent (1,5-EDANS) for subsequent analysis of the resultant glycamines using silica-gel two dimensional thin layer chromatography (2D-TLC) or by other well established techniques. For more sensitive analysis and comparison of oligosaccharides, polyacrylamide gel electrophoresis (PAGE) of labeled oligosaccharides can be used.

This technique, used in combination with various methods of enzymatic release and degradation of N- and O- linked oligosaccharides, can be used for a variety of analytical processes

The advantages of using the 1,5 EDANS fluorophore include its low detection limit, water solubility, pH fluorescence invariance, stability, distinctive fluorescence from protein chromophores, and ability to be detected using normal phase chromatography techniques. The 1,5-EDANS labeling reagent also has advantages over the commonly used ANTS reagent: The more nucleophilic primary amine of 1,5-EDANS makes it more reactive in the labeling reaction than the aromatic amine of ANTS. In addition, 1,5-EDANS is less polar than ANTS, having only one charged sulfate group instead of three, allowing wider potential application for a variety of carbohydrate sizes.

Also available:

Glycoprotein Carbohydrate Estimation Kit **777840-23260 , 500mg kit**
Sufficient for 60 tube assays or 250 microplate assays. Technical Sheet
Kit Contents: Sodium meta-Periodate -500mg), Glycoprotein Detection Reagent (500mg), Glycoprotein Assay Buffer (250mL) and Glycoprotein Standards (5-protein kit)

Glycoprotein Detection Reagent **L77480-23262, 1g**
Proprietary reagent powder

Glycoprotein Standards Set **L77470-23259 , 5-protein kit**
Sufficient for preparing standard curves for glycoprotein carbohydrate estimation.
Kit Contents: Lysozyme (2.5mg) , BSA (2.5mg), Ovalbumin (2.5mg), Apo-transferrin (2.5mg=, Fetuin (0.25mg) and alpha-Acid Glycoprotein, (0.25mg)

See also section 'Electrophoresis gel staining' (i.e. Glycoprotein staining kit #903470).

●Lectins for Glycoprotein assays

Fluorescent lectins are available from FluoProbes for designing fluorescent assays in a variety of technics. See the section 'cell labeling / Fluorescent lectins' in the cell biology chapter.

●Glycoside labeling/purification kits

Please ask for:
GlycoPrep Preparation/labeling/Purification Kits (Glycoside digestion + labeling + clen-up for analysis by MS or HPLC)

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

BlotGlyco Beads (Glycan Purification and Labeling Kit, for analysis by MS or HPLC)

See also Carbohydrate / Glycan components: see sections Biomolecules, Standards

●Glycoside assays

Technical tip

Glucose, a monosaccharide, is transported via the blood stream, and the primary source of energy for the body's cells. Glucose level is tightly regulated in the human body. Failure to maintain blood glucose in the normal range leads to conditions of persistently high (hyperglycemia) or low (hypoglycemia) blood sugar. Diabetes mellitus, characterized by persistent hyperglycemia, is the most prominent disease related to failure of blood sugar regulation. Cayman's

Glucose Colorimetric Assay Kit provides a simple, reproducible, and sensitive tool for assaying glucose in plasma, serum, and urine. The glucose assay uses the glucose oxidase-peroxide reaction for the determination of glucose concentrations. In this assay, glucose is oxidized to δ-gluconolactone with concomitant reduction of the flavin adenine dinucleotide (FAD)-dependent enzyme glucose oxidase. The reduced form of glucose oxidase is regenerated to its oxidized form by molecular oxygen to produce hydrogen peroxide. Finally, with horseradish peroxidase as a catalyst, hydrogen peroxide reacts with 3,5-dichloro-2-hydroxybenzenesulfonic acid and 4-aminoantipyrine to generate a pink dye with an optimal absorption at 514 nm.

Glucose Colorimetric Assay Kit **10009582**
For analysis of glucose in plasma, serum, and urine. Tech Sheet/S

Glycosides and Glycosides inhibitors

1-Deoxymannojirimycin (hydrochloride) **17178**
A selective α-mannosidase inhibitor; CAS: 73465-43-7

Glycogen Phosphorylase Inhibitor **17578**
An inhibitor of glycogen phosphorylase; CAS: 648926-15-2

SR 8278 **17000**
An antagonist of REV-ERBα; CAS: 1254944-66-5

2-Chloro-4-nitrophenyl-α-D-glucopyranoside **16527**
A chromogenic substrate; CAS: 119047-14-2

D-Mannoheptulose **16548**
An inhibitor of glucokinases and hexokinases; CAS: 3615-44-9

Castanospermine **11313**
Inhibitor of α- and β-glucosidases; CAS: 79831-76-8

CMP-Sialic Acid (sodium salt) **16404**
A nucleotide sugar; CAS: 1007117-62-5

1-Deoxynojirimycin (hydrochloride) **10011718**
An inhibitor of α-glucosidase I and II; CAS: 73285-50-4

3'-Sialyllactose (sodium salt) **16617**
An abundant oligosaccharide in milk; CAS: 128596-80-5

Deoxynojirimycin Tetrabenzyl Ether Exclusive **10011914**
Starting material for inhibitors of glucosylceramide synthase; CAS: 69567-11-9

2-deoxy-2-fluoro L-Fucose **17171**
A fluorinated fucose analog; CAS: 70763-62-1

Amphomycin **17091**
An antibacterial lipopeptide; CAS: 1402-82-0

L-(−)-Fucose **16479**
A monosaccharide important for immune function; CAS: 2438-80-4

5-(galactosylhydroxy)-L-Lysine **10010255**
A specific marker of bone resorption; CAS: 32448-36-5

4-Nitrophenyl-N-acetyl-α-D-galactosaminide **16755**
A chromogenic N-acetylgalactosaminidase substrate; CAS: 23646-68-6

1-Deoxygalactonojirimycin (hydrochloride) **17179**
An α-galactosidase inhibitor and chaperone; CAS: 75172-81-5

Sophorose **14717**
A disaccharide component of sophorolipids; CAS: 20429-79-2

Concanavalin A **14951**
A plant lectin that affects cell agglutination, mitogenesis, and apoptosis; CAS: 11028-71-0

β-D-Glucose **16775**
A cyclic monosaccharide; CAS: 492-61-5

D-(+)-Raffinose (hydrate) **16773**
A natural trisaccharide; CAS: 17629-30-0

3-deoxy Glucosone **16347**
A precursor for advanced glycation endproducts; CAS: 4084-27-9

N-Acetylneuraminic Acid **16091**
An abundant sialic acid; CAS: 131-48-6

3-deoxy Galactosone **16801**
A galactose degradation product; CAS: 4134-97-8

1-thio-β-D-Glucose (sodium salt) **16485**

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Glucose with a reactive thiol group; CAS: 10593-29-0

3,4,6-Tri-O-benzyl-β-D-Mannopyranose 1,2-(methyl orthoacetate) **16405**
A synthetic intermediate used in glycosylation reactions; CAS: 16697-49-7

ChREBP Blocking Peptide **10006790**
For immunochemical detection of ChREBP

ChREBP DBD (human recombinant) **10009524**
Carbohydrate Response Element-binding Protein DNA Binding Domain

Peracetylchitobiose **16379**
A form of chitobiose; CAS: 41670-99-9

Phosphoproteins detection

CytoPhos Endpoint Phosphate Assay, to measure phosphate in solution **NJQ720-BK054, 1 test**
Technical sheet

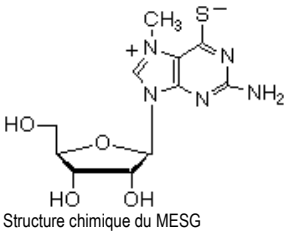
PHOSPHATE ASSAY KIT **SGA510-55R-1400, 500tests**

PHOSPHATE FLUOROMETRIC ASSAY KIT **SGN740-55R-1404, 100tests**

PICOLORLOCK GOLD 2500/6250 ASSAYS - phosphate detection reagent **YQ6981-303-0625, 625tests** **YQ6981-303-0125, 2500tests**
Technical sheet
The PiColorLock assay is based on the change in absorbance of the dye malachite in the presence of phosphomolybdate complexes. Unlike most malachite dye-based solution, it gives a stable end-point signal and is more prone to precipitation. Moreveor, a special stabilizer ensures that the reagent can be used with acid labile substrates.

PHOSPHATE ASSAY MESG ASSAY REAGENT **JQ8070-21600, 5mg**
Technical sheet

This PhosphoWorks™ Colorimetric MESG Phosphate Assay Kit has been developed for measuring the activity of any Pi-generating enzyme using MESG reagent.
Principle: in the presence of inorganic phosphate MESG is converted to 2-amino-6-mercapto-7-methlpurine by purine nucleoside phosphorylase (EC 2.4.2.1) with absorption wavelength shift to red. This feature has been used to quantifying phosphate spectrophotometrically. We offer a convenient MESG-based phosphate assay kit (#21659).



Structure chimique du MESG

See also Phosphoprotein enrichment kits in section BioPurification [BA199c].

+Online:
Phosphoprotein Phosphate Estimation Assay Kit **R09430-23270, 100ml Kit**
Kit contains Malachite green reagent, Phosvitin control and solutions for 500 tube assays or 1920µplate tests. Semi-quantitate p-Ser and p-Thr (not p-Tyr). -

Lipoproteins and Lipids detection

ADIFAB, fatty acid indicator **FP-040791, 200µg** **FP-040792, 1mg**
ADIFAB # is a fluorescent dye that can detect fatty acids. See description in section cell biology probes. Technical Sheet

ADIFAB2, fatty acid indicator **FP-BB6681, 200µg** **FP-BB6682, 1mg**
Higher affinity version..Technical Sheet

See also the section 'Lipid peroxidation'

Enrichment kits to prepare specific proteins for analysis

Graphite Spin Columns **FO820-88302, 30 col.of 10mg resin**
Efficiently purify and concentrate **hydrophilic phosphopeptides** - 30 columns, each containing 10mg of resin in 0.5mL of slurry
Ideal for improving mass spectrometric (MS) analyses of samples from protein digests, strong-cation exchange fractions, and enriched phosphopeptides eluted from TiO2 and immobilized metal affinity chromatography (IMAC) columns and tips

Phosphoprotein Enrichment Kit **RJ6340-90003, 1 kit**
Purify and isolate **phosphoproteins**, up 4mg protein, for analysis by Western blotting or mass spectrometry.
Kit Contents: Phosphoprotein Enrichment Columns 10 columns (1 ml resin bed),Lysis/Binding/Wash Buffer (325mL), Elution Buffer (60mL), CHAPS (1g), Protein Concentrators, 9K MWCO, 7mL (10u, with White Column Caps)

Phosphoprotein Enrichment Chromatography Cartridges **FO8210-87743 , 2 x1mL** **FO8211-87744, 5 ml**

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Ubiquitin Enrichment Kit **RJ6010-89899, Kit**
Facilitates the isolation of **polyubiquitin protein conjugates** from cultured cells and tissue samples, up to 15 samples each with ~0.15mg total protein.
Procedure is 45min hand-on, with 2 hours to ovn sample incubation
Kit contains: Polyubiquitin Positive Control (50µL), Anti-Ubiquitin Antibody (rabbit anti-serum) -50µL), Polyubiquitin Affinity Resin -300µL),
TBS buffer (500mL) a,d Spin Columns and Accessories (1u)

Glycoprotein Isolation Kit, ConA **89804-89804, 1 Kit**
Isolate glycosylated proteins from complex protein mixtures by ConcanavalinA affinity, 10 samples of up to 640µL (1-1.5mg total protein) each.
Includes: ConA Lectin Resin (1.1mL resin supplied as 50% slurry), Binding/Wash Buffer (5X, 6.5mL), Elution Buffer (5mL) a,d Spin Columns with accessories (10u)

Glycoprotein Isolation Kit, WGA **RJ5860-89805, 1 Kit**
Isolate glycosylated proteins from complex protein mixtures by WGA affinity, 10 samples of up to 640µL (1-1.5mg total protein) each.
Includes: WGA Lectin Resin (1.1mL resin supplied as 50% slurry), Binding/Wash Buffer (5X, 6.5mL), Elution Buffer (5mL) a,d Spin Columns with accessories (10u)

See also the Biopurification catalog (include section sample preparation)

Other

See also Antibodies to glycoproteins

cf Glycobiology

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Specific proteins assays (Collagen, sGAG, Elastine, Igs, Protease)

Adhesion molecules Assays

Sircol™ Soluble Collagen Assay *Biocolor*

The Sircol™ Assay is a quantitative dye-binding method for the analysis of acid-soluble collagens extracted from mammalian tissues and collagens released into culture medium by mammalian cells during in vitro culture.

Salt-soluble, acid-soluble and pepsin-soluble forms of mammalian collagens, Types I to IV, can be measured.

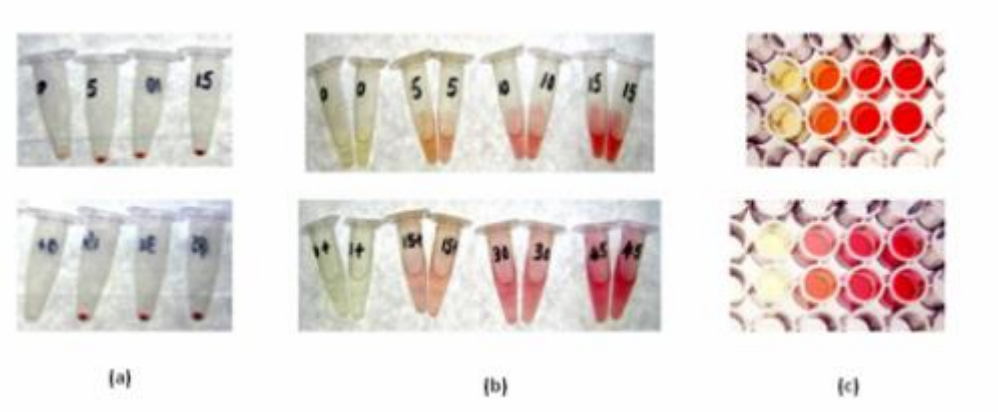
- Working range of **0-50 µg collagen**
- Assay time: **1 hour**
- Assay sensitivity: **2.5 µg collagen.**

That's so easy to use:

A. Mix sample and dye reagent

B. Centrifuge sample and decant unbound dye Retain collagen bound dye

B. Recover bound dye using Sircol dye release reagent Measure colour absorbance in cuvette or microwell plate



(a) Sets of collagen standards, Low range 0, 5, 10 & 15µg and High range 0, 15, 30 & 45µg, following collagen-dye mixing, centrifuging and removal of unbound dye, (duplicates not shown).
(b) Low Standards after adding 250µl Alkali Reagent. High standards after adding 1000µl Alkali Reagent.
(c) Tube aliquots (200µl) transferred to 96 well microplate.

Sircol™ Soluble Collagen Assay Kits **U59610, 1kit(120assays)**
Technical Sheet **U59611, 1kit(475assays)**
Components of the U59610 kit: Sircol Dye reagent (120 ml), Alkali Dye Release reagent (120 ml), Salt-soluble Collagen Precipitating reagent (12.5 ml), Acid-soluble Collagen Standard (5 ml of 1.00 mg/ml)
Acid-soluble Collagen Standard **BM1731, 3 x 5ml**
Sterile ampoules of acid-soluble collagen (1.00 mg/ml)

Sircol™ is a Trademark of Biocolor Ltd

See also Antibodies to collagen and related products
See also Cultrex Basement Membrane Extracts in section 'Cell Culture' .

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

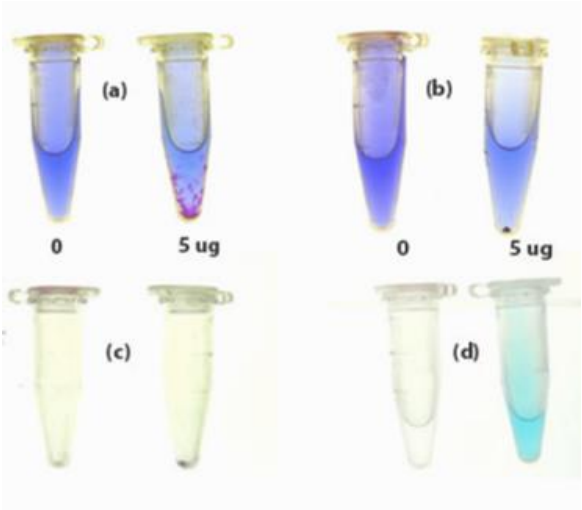
Blyscan™ Sulfated Glycosaminoglycan Assay *Biocolor*

The Blyscan™ Assay is a quantitative dye-binding method for the analysis of sulfated proteoglycans (sPG) and glycosaminoglycans (sGAG), activator and potentiator of growth factors.

- Assay time: 1 hour
- Assay sensitivity: 0.5 µg sulfated glycosaminoglycan

Have been measured following sGAG in soluble salt extracts from:
-in vitro studies where extracellular matrix components are released by live cells into the cell culture medium
-elastic, fibrous and hyaline cartilages
-arteries, lung, skin and other material containing extracellular matrix (connective tissue)
-solid tumour specimens
-cell and tissue extracts
-aliquots from protein chromatography fractions
and in samples:

The assay also measures sGAG in amniotic fluid and urine samples, and may be adopted to detect and/or measure sGAG degradative enzymes, and to measure the N- and O-sulfated glycosaminoglycan ratio.



Blyscan Assay; step-by-step:

(a) 0 and 5µg of sGAG and Blyscan Dye, (after 15 minutes mixing).

(b) 30 min mixing and then centrifuged, (note the sGAG-Dye pellet).

(c) The non-sGAG Dye was drained from tubes with pellet retained.

(d) Dye released from sGAG using the Dye Dissociation Reagent.

Blyscan™ Sulfated Glycosaminoglycan Assay kit **AA4880, 1kit (120assays)**
Technical Sheet **AA4881, 1kit (475assays)**
Kit B1000 contains: Blyscan Dye reagent (120 ml); Dissociation reagent (120 ml), Glycosaminoglycans Standard (5 ml of 100 µg/ml Ch-4-SO4), Nitration reagents (15 ml)

Glycosaminoglycan Standard **BM1741, 3 x 5ml**
Sterile ampoules of chondroitin-4 sulphate (100 µg/ml)

sGAG Isolation & Concentration pack **BM1751, 1kit (100runs)**
Contains: Buffered cetylpyridinium chloride and 2 M lithium chloride (Sufficient reagents for 100 samples)
Used to clean-up and concentrate test samples, prior to assay; and also for the pre-treatment of test samples with GAG level of less than 5 µg/ml

Blyscan™ is a Trademark of Biocolor Ltd

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

Fastin™ Elastin Assay *Biocolor*

The Fastin™ Assay is a quantitative dye-binding method for the analysis of elastins released into tissue culture medium and extracted from biological materials.

- Assay time: 6 hours
- Assay sensitivity: 2.5 µg elastin

How the Fastin™ Assay works:

[1] Cold precipitate elastin

[2] Cenfrifuge Elastin-dye complex and drain dried to remove unbound dye.

[3] Recover elastin bound dye, after adding dissociation reagent and centrifugation

Dye Bound α-Elastin (0, 12.5 and 25µg) after Removal of Unbound Dye from the Tubes.

ANCIENNES IMAGES/Protocole PERDUES:
Left: Solvent/buffer blank
Middle: Reagent blank
Right: Standard (50 µg)

Elastin forms that can be measured:
-soluble tropoelastins;
-lathyrogenic elastins;
-insoluble elastins (as solubilised elastin polypeptides [α-elastin, κ-elastin])
Furthermore, elastase activity can be measured, using elastin as an enzyme substrate

Furthermore, elastase activity can be measured, using elastin as an enzyme substrate

Fastin™ Elastin Assay kit **Q99550, 1kit(120assays)**
Technical Sheet **Q99551, 1kit (475assays)**
Components of the F2000 kit: Fastin Dye reagent (120 ml), Precipitation reagent (120 ml), Dye Dissociation reagent (120 ml), α-Elastin Standard (5ml of 100 µg/ml)

α-Elastin Standard **BM1761, 3 x 5ml**
Sterile ampoules of α-elastin (100 µg/ml)

Fastin™ is a Trademark of Biocolor Ltd

Also available:
QuickZyme Collagen&Protein Assays [PH]

Related products: -stains for pathological investigation)
Amido Black 10B (dark blue) 07793A, 25g
Biebrich Scarlet Stain solution (violet) BJ0001, 200ml
Mayer's Hematoxylin solution 82342A, 500ml
Ponceau (red, can be combined to nuclear staining by hematoxylin) 050261, 500ml

Hemoglobin Assays

Hemoglobin Colorimetric Assay Kit **IFR680-700540, 1Kit**
560-590nm, Sensitivity 3 µM (0.005 g/dl). Technical Sheet
Hemoglobin Assay Kit **FLG100-KA1616, 1Kit**
colorimetric determination of total hemoglobin at 400 nm, for blood, plasma, serum, urine, 50µl sample, 0.9-200mg/dL Technical Sheet/S
Mouse Hemoglobin A1c (HBA1C) Assay Kit **RK5420-8031, 96tests**
Glycated Hemoglobin (GHB) Assay Kit **JZW660-CSB-CH027877, 15Tests**
Human MetHemoglobin,Mhb Elisa Kit **CSB-E09493H, 96test**
Mouse MetHemoglobin,Mhb Elisa Kit **CSB-E13605M96tests**
Pig MetHemoglobin,Mhb Elisa Kit **CSB-E04909P , 96tests**
Human Free Haemoglobin (F-Hb) Elisa Kit **MNI71**
Mouse Free Haemoglobin (F-Hb) Elisa Kit **MPR01**

Protéomique/Analyse des Protéines

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Biochemical for standard spectrometric Hb assays (at 540nm après ajout de cyanure/transformation de l'Hb en a cyanométhémoglobine):

Potassium Cyanide **08758D**

+ See also medical biochemistry kits (CyanMetHemoglobin kits AM968, GlycoHemoglobin FT711, FT714, IU653, ...)

Immunoglobulins (IGs) Assays

MOUSE IgG Easy-Titer Assay Kit,	**738920-23300**
RABBIT IgG Easy-Titer Assay Kit,	**L77500-23305**
HUMAN IgG Easy-Titer Assay Kit	**R67380-23310**
HUMAN IgG (Gamma Chain) Easy-Titer Assay Kit	**BH3010 -23325**
HUMAN IgM Easy-Titer Assay Kit	**FN0110-23315**
Rapid Elisa MOUSE MAB Isotyping Kit	**CCZ290-37503 , 60tests**
Rapid Mouse Antibody Isotyping Kit -	**RK1580-26178, 10tests**
Rapid Mouse Antibody Isotyping Kit - plus KAPPA and LAMBDA	**RK1590-26179, 10tests**

Analysis of proteins by their enzymatic activity

Search other Target-Specific proteins assays and enzymatic activity assays in other sections, by applications, i.e.:

- Proteases
- Caspases
- Renine

- In 'cell signaling' section: GTPase , Transcription factor assays
- In 'cell culture' section: LAL endotoxin assays
- In 'reporter assays' section: b-gal assays

Protease assays

Protease assays are widely used for the investigation of protease inhibitors and detection of protease activities. Some proteases have been identified as good new drug development targets.

■ Universal Fluorimetric Protease Assay

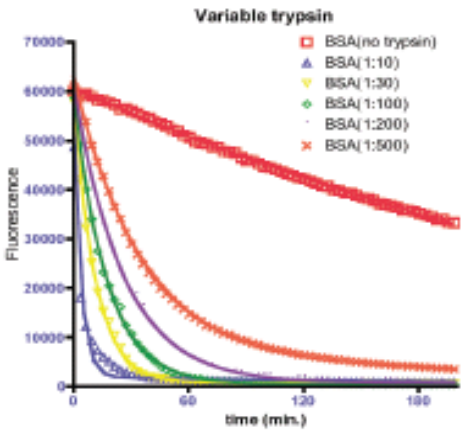
The Amplite™ Universal Fluorimetric Protease Activity Assay Kit is an ideal choice to perform routine protease assays for the isolation of proteases, or for identifying the presence of contaminating proteases in samples. The kit uses a red fluorescent casein conjugate that is proven to be a generic substrate for a broad spectrum of proteases (e.g. trypsin, chymotrypsin, thermolysin, proteinase K, protease XIV, and elastase). In the intact substrate, casein is heavily labeled with a fluorescent dye, resulting in significant fluorescence quenching. Protease-catalyzed hydrolysis relieves its quenching effect, yielding brightly fluorescent dye-labeled short peptides. The increase in fluorescence intensity is directly proportional to protease activity. The signal can be easily read at Ex/Em = 540 /590 nm. The assay can be performed in a convenient 96-well or 384-well microtiter plate format, in kinetic or end-point procedure. This kit has been used for screening protease inhibitors in a HTS mode.

Universal Fluorimetric Protease Assay Kit (Red) **BK963A-13501, 1 kit**

Kit contains protease substrate, trypsin and assay buffer. 10-60min procedure. Read with exc./em.: 540/590nm; Technical sheet

■ LavaDigest Protease Assay

LavaDigest offers a simple real time monitoring of protein digestions before analysis of formed peptides. It is suitable for all proteases working at pH7.7-8.5 (not for pepsin), even with phospho- and glyco-proteins.
LavaDigest do not need derivatization (simplifying MS analysis), performs in solution in real-time (allows kinetic studies, and to check complete digestion occured for accurate MS analysis), has a simple procedure.
LavaDigest is compatible for mass spectrometry and can be used on laser or CCD based imagers.



LavaDigest™ Protease Monitoring Kit

Technical Sheet **CH6251, 1 Kit (2000tests)**

Contains reagent A B and C, sufficient quantity fo up to 2000tests

Protéomique/Analyse des Protéines

Dosage des Protéines et Peptides | Dosages fluorimétriques

kinetic of trypsin digestion

+ One line

Quanticleave Colorimetric Protease Assay **T34460-23266, 1000tests**
Based on TNBSA succinylated casein. Read 405nm.; 1-1500µg/ml sensitivity

Quanticleave Fluorescent Protease Assay **T34460-23266, 1000tests**
Based on FTC-Casein #23267. Read with ec.em.:485/538nm.

Caspases assays

Renine assays

Other assays

+ Please inquire, or search One line

Active GTPase Pull-Down and Detection Kits
Chemiluminescent Transcription Factor Assay Kits
LAL Chromogenic Endotoxin Quantitation Kit
Quantitative Peroxide Assay Kits
Yeast beta-Galactosidase Assay Kit & beta-Galactosidase Assay Kit

S-Nitrosylated Protein Detection Kit	**CC7030-10006518, 1 Kit**
Phosphate Assay Kit, Malachite Green Based	**IS2793-10009325, 96 Tests**
Glycolysis Assay Cofactor	**IFR030-600454 , 250 ul**
Glycolysis Assay Substrate	**IFR000-600451**
Lipid Droplets Fluorescence Assay Kit	**AYN740-500001, 480 Tests**
Monoacylglycerol Lipase Inhibitor Screening Assay Kit	**AYQ41-705192, 96 Tests**

Hydrophobic Protein Analysis Kit **M0794**
(2-P-Toluidinylnapthalene-6-Sulfonic Acid, TNS +Control +Buffer)

End of Protein Assays catalog

Go to next catalog section "Protein electrophoresis", "Molecular Crystallography"
Go to previous catalog section "Biochemistry chapter" - Top of "Proteomics (Protein analysis) chapter"