

PRODUCT CATALOGUE

Flourescent & Non-Fluorescent
Dextran Derivatives

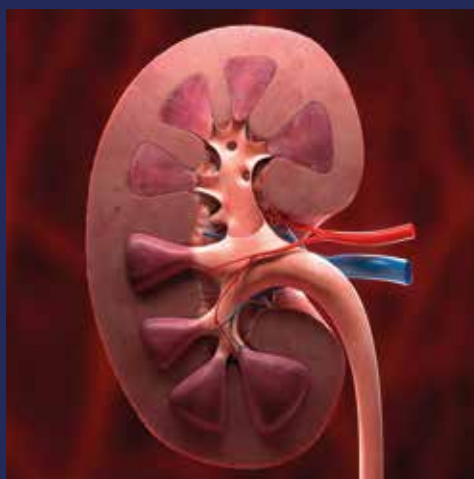


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About TdB Labs

Description

TdB Labs AB is a family-owned Swedish biotech company specializing in the development, manufacturing, and sales of dextran derivatives and other polysaccharides. It was founded in 1991 by Dr. Tony de Belder and is based on more than 50 years of experience working with polysaccharides, particularly dextran.

We produce a range of fluorescent and non-fluorescent polysaccharide derivatives with different molecular weights, together with cationic or anionic substituents, in certain cases. Also, we offer our proprietary Antonia Red™-dye and dextran sulfate sodium (DSS) for colitis studies, which have been proven as an invaluable tool for studying the causes and treatment of inflammation in the gut. Our customized polysaccharides are unique in the market and supported by extensive quality control and technical documentation. Our broad product range finds many applications within life science research and diagnostics.

Core business

At TdB Labs, we specialize in developing and providing polysaccharide products and services. Our offerings include a range of standard products, customized products, and various services to support our clients' projects. We are committed to delivering flexible and effective solutions through high professional standards and close customer collaboration.

Our unique strengths

- High-quality products ensuring reliable and reproducible results
- Fluorescent dextran derivatives for permeability and organelle studies
- Standard and customized products to meet specific needs, built on years of experience.
- Immediate, expert scientific support
- Specialist analytical services for polysaccharide derivatives
- Molecular weight determination using GPC technology according to GMP requirements and MALS for determining molar mass and size.
- Minimal batch-to-batch variations

“Out of sweetness comes bright science and a colourful world”

Tony de Belder



Our diverse product range

At TdB Labs, we cater to various industry needs with our technical-grade and pharmaceutical-grade products. Our technical-grade products are cost-effective solutions for industrial applications, while our pharmaceutical-grade products meet stringent regulatory standards for medical and clinical use, undergoing additional quality testing to ensure the highest purity and quality.

Certifications and awards

- TdB Labs achieved ISO 9001 certification in 2015
- Ecovadis Silver Rating 2025



We are green

Adhering to the twelve principles of green chemistry, TdB Labs ensures our products are environmentally friendly and sustainable, using renewable sources and minimizing harm to human health and the environment.

Tony: TdB Labs' Large-Scale Production Facility

TdB Labs has significantly enhanced its manufacturing capabilities with the launch of a new 110-litre production facility, aptly named 'Tony.' This state-of-the-art facility will significantly scale-up the synthesis and purification of our products to meet the ever increasing demands of our customer.



Analytical Services

At TdB Labs, we specialize in providing a wide range of analytical services tailored to derivatives of dextran, polysucrose, and other water-soluble polymers.

Our services include:

- Molecular weight determination
 - Gel Permeation Chromatography (GPC)
 - Multi-Angle Light Scattering (MALS)
- Quantitative analysis of substituents
- Optical rotation and spectroscopic studies
- Viscosity, pH, and loss on drying

Example of service: Fractionation of polysaccharides

Most of the biosynthesized polysaccharides are inherently heterogeneous, exhibiting wide distribution in molecular weights, branching patterns, linkage conformations, and degrees of substituents. This heterogeneity complicates the interpretation of structure–activity relationships in research. Therefore, it is crucial to fractionate polysaccharides into more homogeneous fractions.

Gradient anti-solvent precipitation is the most inexpensive and scalable technique than other classical purification methods based on chromatography or ultracentrifugation. We provide R&D and technical support to optimize and perform gradient anti-solvent-based fractionation of polysaccharides ranging between 1000Da to 3MDa molecular weight along their analysis.

“

TdB Labs has provided us with expert analytical services in our developmental program. Their efforts and support were key components in the characterization and understanding of our manufacturing process and products. Through our collaboration with TdB Labs, we have been able to confirm the consistency of, and control over, our manufacturing process.

”

David Casebier; Vice President of CMC Navidea Biopharmaceuticals, USA



Dextran: Our Core Ingredient

Dextran

Dextran is a linear glucose chain with α -D-(1–6) linkages and about 5% branching. Branches are typically 1-2 glucose units long, but larger fractions may have longer branches. Hydrolysis reduces branching, with smaller fractions having only 1-2%.

Functional modifications

Dextran can be modified with various functional groups to enhance its properties for different applications. Common functional groups are:

- **Carboxyl group:** Introduces negative charges, making dextran more hydrophilic and soluble in water. Useful in drug delivery systems and biosensors.
- **Carboxymethyl group:** Increases dextran's negative charge and hydrophilicity, enhancing solubility and biocompatibility. Used in drug delivery and biomedical applications. Carboxymethyl groups provide better nanoparticle coating than carboxyl groups.
- **Amino group:** Introduces positive charges, increasing dextran's reactivity for further modifications. They are used as transfection agents and enzyme stabilizers.
- **Disulfide bonds:** Provides redox-responsive properties, allowing degradation in reducing environments. They are used in targeted drug delivery, especially for cancer therapy.
- **Hydroxyl group:** Enhances hydrophilicity and biocompatibility, facilitating conjugation with other molecules. They are used in hydrogels and micellar nanocarriers.
- **Sulfate group:** Adds negative charges, enhancing solubility and interaction with positively charged molecules. Provides anticoagulant properties for blood-compatible materials.
- **Aldehyde group:** Highly reactive, forming covalent bonds with amines and hydrazines. Facilitates cross-linking, used in hydrogel formation and tissue engineering.
- **Phosphate group:** Introduces negative charges, enhancing solubility and interaction with positively charged molecules. Useful in bone tissue engineering and as a flame retardant.

Dextran sulfate

Dextran sulfate is an anionic derivative of dextran, created by sulfating selected dextran fractions. We offer two series: one with high sulfate content (16-20% sulfur) and another with low sulfate content (8-13% sulfur). TdB Labs produces pure white dextran sulfates with molecular weights from 5 kDa to 2000 kDa.

Dextran sulfate Pharma grade

Dextran sulfate Pharma grade products are suitable for those who aim to use them as raw materials in pharmaceutical formulations, medical devices, cosmetics, or related fields. TdB Labs produces high-sulfated dextran sulfates in pharma grade quality, with a mean molecular weight ranging from 5 kDa to 10 kDa.

These products are tested for microbial contamination, bacterial endotoxins, and residual solvents according to the European Pharmacopoeia. All the quality control results are reported in a Certificate of Analysis (CoA) for each batch. An integral part of the certificate is also an assessment of the possible elemental impurities according to ICH Q3D.

Dextran sulfate Pharma grade products have a wide range of applications, such as:

- Anti-coagulation agent in cell media
- Selective precipitation of lipoproteins
- Acceleration of DNA hybridization
- Release of DNA from the DNA-histone complexes
- Inhibition of tRNA-binding to ribosomes
- Inhibition of ribonucleases
- Anti-viral properties
- Cosmetic applications for anti-inflammatory properties and osmotic water retention
- Separation of microorganisms and macromolecules
- Adjuvant in vaccines
- Studies on the permselectivity of membranes

Dextran sulfate in cell media

Dextran sulfate of low molecular weight, such as DS 5 kDa, is a widely used anticoagulation agent for culturing cells and producing antibodies.. It has been employed by major cell culture media providers for over a decade.

DS5 prevents cell clumping, which can obstruct accurate cell counting, monitoring, and control. Clumping impairs nutrient and product transport, affects cell growth, reduces proliferation rates, and increases cell death due to shear forces.

Dextran sulfate sodium (DSS)

Dextran sulfate sodium (DSS) is widely used in gastroenterology (GI) research, particularly for studying inflammatory bowel diseases (IBD) and colorectal cancer.

DSS & Inflammatory Bowel Disease (IBD)

Inflammatory bowel disease (IBD) is a chronic inflammatory disease of the gastrointestinal (GI) tract caused by an overactive immune system, leading to repetitive episodes of inflammation throughout the gut and GI tract.

The development of IBD is influenced by genetics, environmental conditions, intestinal microbiota, and enteric infections. Experimental studies are crucial to uncover the causes and mechanisms of IBD.

The two main types of IBD



It impacts any part of the gastrointestinal tract, from the mouth to the anus. It most commonly affects the terminal ileum.



Inflammation is typically confined to the mucosa and submucosa of the colon, usually beginning in the rectum and extending upwards along the colon.

Key applications of DSS in IBD research

- Inducing colitis in animal models
- Investigating inflammatory pathways
- Evaluating therapeutic interventions
- Studying gut microbiota

Mechanism	DSS damages the epithelial lining of the colon, leading to inflammation and ulceration.
Advantages	It generates highly reproducible result, easy to administer, and mimics many features of human ulcerative colitis
Limitations	It primarily models ulcerative colitis and may not fully replicate the chronicity and complexity of human IBD

TdB Labs' products for colitis research

Dextran sulfate sodium: DSS for colitis is supplied as a sodium salt that is stabilized by a small addition of phosphate salts. A certificate of analysis is supplied with each batch. The molecular weight range, sulfur content, moisture, etc., are carefully controlled.

FITC-dextran: FITC-dextran is extensively used in colitis and IBD research to study intestinal permeability. It helps measure how much FITC-dextran passes through the intestinal barrier into the bloodstream, indicating permeability levels. Researchers also use it to assess the integrity of the epithelial barrier in organoid studies and track inflammatory responses to evaluate treatment effectiveness. Derivatives with diethylaminoethyl (DEAE) groups or carboxymethyl (CM) are often used to study the effects of charge on permeability.

Dextran sulfate sodium-induced colitis in animal models

Dextran sulfate sodium (DSS) exerts chemical injury to the intestinal epithelium, which exposes the deeper layers of the intestine to luminal antigens and enteric bacteria, leading to inflammation.

Rats and mice are the most common experimental animals used in colitis research. Advantages using these animal models include their genetic similarity to humans in terms of structure, function, metabolism, and the disease phenotype. Further, these models are cost-effective and also easy to handle.

Factors influencing DSS efficiency

- Dosage
- Duration of exposure
- Strain of tested animals
- Gender of animals
- Microbial environment of animals

Animal models for DSS-induced colitis

A gold standard and a highly potent method for inducing colitis in experimental animals is by orally administering DSS40 in drinking water.



Dosage recommendations for DSS-induced colitis

A concentration of 2-4% DSS in drinking water is recommended to induce clinical symptoms in mice. The exact concentration needs to be adjusted based on several factors, including the strain of mice, age, sex, and liquid consumption. These variables can significantly influence the onset and severity of colitis symptoms.

In rats, slightly higher concentrations of DSS are generally required to achieve similar clinical symptoms. The recommended dosage for rats ranges from 3.5 -5% DSS in drinking water.

In the tables below, data from selected references record the strain/breed of mice, rats, and other animal models along with the dosage and duration of treatment with DSS to induce colitis.

 Mouse strains		
Strain	Dosage (days)	Ref
TNF-alpha+	4.5% (7)	1
IL-6 and IL-6+	4.5% (8)	2
C57BL/6	2.5% (5)	3
Wild-type and Fat-1	2.5% (5)	4
Wild-type C57BL/6(J)m	3% (6)	5
Balb/c	1% (10)	6
WT C57BL/6(MFG-E8(+))	3.5% (7)	7
WT C57BL/6(IRF4 -/-)	3.5% (5)	8
BALB/c	5% (7)	9
C57BL/6(J)	3% (5)	10
WT; CCR9(-/-);CCL25(-/-)	2% (7)	11
WT eNOS +/- and -/-	3%	12
BALB/c; NMRI/KI	2.5-5%	13
CD-1(BR)	5% (7-35)	14

 Rat strains		
Strain	Dosage (days)	Ref
Sprague-Dawley	5% (9)	15
Sprague-Dawley	5% (6)	16
Sprague-Dawley (30 day)	0.5–5% (7)	17
Sprague-Dawley	5% (7)	18
Wistar (4–8 week)	2-4% (7)	19
Wistar	2.5% (7)	20
Other animal models		
Strain	Dosage (days)	Ref
Hamsters	1% (100)	21
Hamsters	2.5% (6); 3-5% (6)	22
Guinea pig	3% (4)	23
Gilthead Seabream	1% (30)	24

Acute vs chronic colitis

Researchers are focusing on two main types of colitis: acute and chronic. Acute colitis is a short-term inflammation, often caused by infections, while chronic colitis is a long-term condition associated with autoimmune diseases. Research on acute colitis focuses on rapid treatment methods, whereas chronic colitis research aims to understand long-term management and prevention strategies. Both are crucial for improving patient outcomes.

Why TdB Labs?

- High purity with a perfectly white colour
- No use of toxic solvents or ingredients
- Minimal batch-to-batch variation
- High stability with a long shelf life

DSS-induced colitis & colorectal cancer

DSS-induced colitis can progress to colorectal cancer, particularly when combined with other carcinogens such as azoxymethane (AOM). This model is widely used in research to study the progression from inflammation to cancer.

For detailed information on DSS-induced colitis and protocols for inducing both acute and chronic colitis, please refer to our white paper by scanning the QR code below.



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Labeled Dextran Products

Dextran is a highly versatile polysaccharide and an excellent carrier for various dyes. Its hydrophilic nature, high molecular weight, and low toxicity contribute to its effectiveness. The presence of multiple hydroxyl groups on the dextran backbone allows for easy chemical modifications, enabling the attachment of a wide range of dyes, including fluorescent and non-fluorescent types. Additionally, dextran's biological inertness and resistance to enzymatic degradation makes it suitable for long-term applications in biological systems.

Fluorescent derivatives of dextran and other polysaccharides are primarily used for:

- Studying permeability and transport in cells and tissues.
- Investigating drug delivery and microcirculation.
- Serving as molecular size indicators in research kits.
- Fluorescent polysaccharides modified with carboxymethyl (CM) or diethylaminoethyl (DEAE) are used to study the effect of charge on permeability.
- Lysine derivatives provide tools for bioconjugation and fixation, which can be used for preserving cells and tissues in a life-like state.

Blue dextran

Blue dextran is synthesized from controlled dextran fractions by reacting with Cibacron blue F3GA. After purification from unbound dye, products are controlled for molecular weight, solubility, degree of substitution, free dye, and loss on drying.

Blue dextran is applied in various areas, including:

- **Affinity chromatography:** Blue dextran is widely used in affinity chromatography to purify proteins and enzymes. Its ability to bind to specific proteins enhances the efficiency of purification processes.
- **Gel filtration chromatography:** It serves as a molecular weight marker in gel filtration chromatography, helping to determine the molecular size and void volume of different fractions.
- **Lysosomal activity studies:** It is used to study lysosomal activity, providing insights into cellular processes and disease mechanisms.
- **Permeability studies:** Blue dextran is employed in studies of endothelial cell permeability, corneal permeability, and cerebrospinal fluid barrier permeability, making it valuable in physiological and pharmacological research.
- **Flow studies:** It is used in lung flow studies to understand respiratory functions and disorders.

- **Hydrogels:** Hydrogels are often used for drug delivery systems, wound dressings, and tissue engineering. The inclusion of Blue dextran can help in tracking the diffusion and release of therapeutic agents within the hydrogel matrix.
- **Neurology and neuroscience:** Blue dextran has several important applications:
 - a) Blood-Brain Barrier (BBB) studies
 - b) Cerebral microdialysis
 - c) Neurovascular research
- **Membrane integrity testing:** Blue dextran is commonly used as a marker to test the integrity of biological membranes. Its large molecular size prevents it from passing through intact membranes, making it useful for assessing membrane permeability and integrity in various biological systems.



ATTO™ -derivatives

Characteristic features of ATTO™ dyes include strong absorption, high fluorescence quantum yield, high photostability, and little triplet formation. ATTO™ dyes are highly suitable for single-molecule detection applications and high-resolution microscopy such as PALM, dSTORM, STED, etc. Additionally, the dye is well-suited for flow cytometry (FACS), fluorescence in situ hybridization (FISH), and many other applications.

Antonia Red™: TdB Labs' proprietary dye

Antonia Red is a novel red-shifted dye (583/602 nm) developed by TdB Labs. It has a particle-free formulation and excellent water solubility. Our high-quality Antonia Red products have high photo and chemical stability, bright fluorescence, and are non-pH-dependent, making them a robust choice for various applications. Lysine derivatives of Antonia Red™-dextran enable the fixation of cells and tissues.

FITC & TRITC-derivatives

FITC

The labeling of dextran with fluorescein via its derivative fluorescein isothiocyanate (FITC) was first described in a publication in 1973 by de Belder and Granath (ref.1). The fluorescein moiety is bound by a thiocarbamoyl linkage, which displays good stability *in vitro* and *in vivo*.

TdB Labs produces a wide variety of FITC-derivatives with a mean molecular weight ranging from 4 kDa to 2000 kDa. All our FITC products are supplied as a yellow-to-orange powder.

TRITC

TRITC derivatives are produced by conjugating tetramethylrhodamine B isothiocyanate (TRITC) to polysaccharide fractions by a stable thiocarbamate linkage. A mixture of 5- and 6-amino-tetramethylrhodamine B is converted to isothiocyanate (TRITC). Our TRITC products are supplied as a pink-coloured powder.

Charged derivatives

Our standard range of FITC products comprises derivatives with functional groups, including:

- Carboxymethyl (CM)-derivatives, which carry a negative charge (anionic).
- Diethylaminoethyl (DEAE)-derivatives which carry a positive charge (cationic).
- Q, which is a substituent of O-Trimethylammonium-glycidyl (cationic).

Fixable derivatives

Lysine derivatives are polysaccharides carrying the natural amino acid lysine as a substituent. They are dextran derivatives that contain both the free primary amines and free carboxylates, as well as a fluorescent dye.

Other FITC/TRITC-labeled polysaccharides

- Polysucrose
- Hydroxyethyl starch
- Inulin
- Trehalose
- Hyaluronic acid

Eosin Y-derivatives

Eosin-Y-dextran 10 (EYD10) and Eosin-Y-lysine-dextran 500 (EYLD500) are dextran-based derivatives that are labeled with the dye Eosin Y (2-(2,4,5,7-tetrabromo-6-oxido-3-oxo-3H-xanthen-9-yl) benzoate. These products are manufactured using a special technique created by TdB Labs, which enables a significant level of functionalization.

We offer the following products:

- **Eosin-Y-dextran 10 (EYD10):** EYD10 is supplied as a deep red-colored amorphous powder and exhibits marked fluorescence (orange).
- **Eosin-Y-lysine-dextran 500 (EYLD500):** It is supplied as a pink amorphous powder and exhibits marked fluorescence (orange).

Both the products are readily soluble in water as well as in non-protic polar organic solvents such as DMSO; however, they remain insoluble in methanol and ethanol.

A key property of lysine-dextran relies on the presence of a primary amino group, which renders the fixation of lysine-dextran possible via a reaction of the latter with an aldehyde such as glutaraldehyde, forming a Schiff-base fixated on the surface of a cell or tissue. This property renders lysine-dextran an important scaffold for fixation. By stabilizing a fluorophore such as Eosin-Y on lysine-dextran and applying the fixation strategy, efficient cell or tissue imaging can be achieved.

Our panel of fluorescent dyes

Discover our vibrant fluorescent dyes, each with specific absorbance and emission wavelengths, offering exceptional brightness, stability, and flexibility.

TdB Labs' Fluorescent Dye Panel		
dyes	λ abs (nm)	λ fl (nm)
ATTO488™	 490	 525
FITC	 495	 520
Eosin Y	 530	 550
TRITC	 557	 576
Antonia Red™	 584	 600
ATTO647N™	 646	 664

Customized Product

Polysaccharides

A customized product will be tailored to your needs. We offer polysaccharides that are vary in solubility, biocompatibility, stability, and functional properties. The offered polysaccharides are:

- Dextran
- Polysucrose
- Inulin
- Hyaluronic acid
- Hydroxyethyl starch
- Trehalose (disaccharide)
- Maltose (disaccharide)

Molecular Weight

As the molecular weight increases, molecules become more complex and branched. Low molecular weight molecules are highly soluble in water and have low viscosity. Medium molecular weight molecules maintain good solubility but have increased viscosity, making them suitable for drug delivery and as food thickeners. High molecular weight molecules have decreased solubility and high viscosity, making them ideal for thickening and gelling applications.

Available Molecular Weights	
Dextran	Polysucrose
Low MW (4, 5, 10, 20 kDa) Medium MW (40, 70, 100, 110 kDa) High MW (500, 1000, 2000 kDa)	20, 40, 70, 400, 1000 kDa
Inulin	Hyaluronic Acid
5 kDa	165 kDa

Specification

Depending on the final product, polymers are optimized for various specifications. These include:

- the degree of substitution of dyes and other functional groups (such as sulfate, carboxymethyl (CM), quaternary ammonium (Q), diethylaminoethyl (DEAE), etc.
- pH
- purity
- molecular weight (MW)

Each of these factors can significantly influence the properties and performance of the polymer.

Dyes

Dye Categories	
Non-fluorescent dyes	Fluorescent dyes
Cibacron blue F3GA: It is an anionic anthraquinone dye. It is commonly used as a ligand in affinity chromatography for the purification of proteins, enzymes and biopolymers. Reactive Blue 2: Reactive Blue 2 is an anionic dye containing two isomers of Cibacron blue F3GA, which is commonly used in affinity chromatography for the purification of proteins.	FITC: Green fluorescent, highly sensitive to pH TRITC: Orange fluorescent, non-pH dependent ATTO™-dyes: possibility to select dye based on the required feature Antonia Red™: Red-shifted dye, non-pH dependent, readily soluble in water Eosin-Y: Strong orange fluorescence at basic pH

Functionalization

- **Carboxymethyl (CM):** This modification increases the water solubility and binding properties of the polysaccharides and introduces negative charges, making them polyanionic.
- **Diethylaminoethyl (DEAE):** Adds a positive charge to the polysaccharide providing ion-exchange properties and increases the polysaccharide's ability to bind anionic molecules, making them effective in separation and purification processes.
- **Quaternary-Ammonium (Q):** Significantly enhances the solubility of polysaccharides due to the interaction between positively charged ammonium groups and water molecules.
- **Lysine:** Introduces amino groups, which can enhance the polysaccharide's biocompatibility, functionality, cell adhesion, and antimicrobial properties.
- **Phenyl:** This modification can enhance the hydrophobicity and thermal stability of the polysaccharides by reducing the overall polarity and providing rigidity to the polymer chains.

Pharma grade vs Technical grade

Our customers can choose between standard and pharma-grade products. The pharma-grade option includes additional rigorous testing for microbial contamination, bacterial endotoxins, and residual solvents, ensuring the highest quality and safety standards.

Antonia Red™-dextran

CAS number: NA

Antonia Red-dextran is supplied as a purple powder that is readily soluble in water or electrolyte solutions. It is non-pH dependent and has high photo and chemical stability.

Applications: It is primarily used to study permeability and transport in cells and tissues, cell lineage tracing, vasculature and drug delivery studies.

Spectral data: Antonia Red is a red-shifted dye exhibiting bright fluorescence. Excitation is best performed at 583 nm, and fluorescence is measured at 602 nm.



Catalogue no	Name	MW (Da)	Packsize
ARD4	Antonia Red™-dextran 4	4000	10mg
ARD4	Antonia Red™-dextran 4	4000	50mg
ARD20	Antonia Red™-dextran 20	20000	10mg
ARD20	Antonia Red™-dextran 20	20000	50mg
ARD40	Antonia Red™-dextran 40	40000	10mg
ARD40	Antonia Red™-dextran 40	40000	50mg
ARD150	Antonia Red™-dextran 150	150000	10mg
ARD150	Antonia Red™-dextran 150	150000	50mg

Antonia Red™-lysine-dextran

CAS number: NA

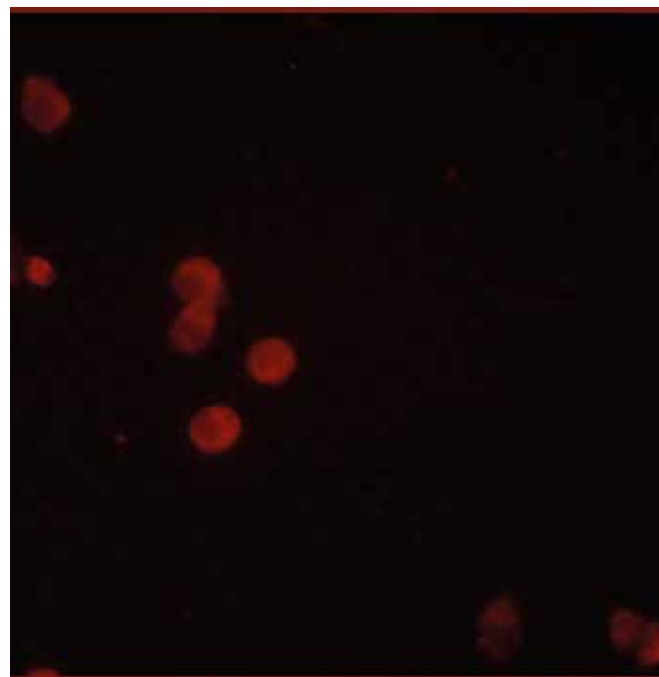
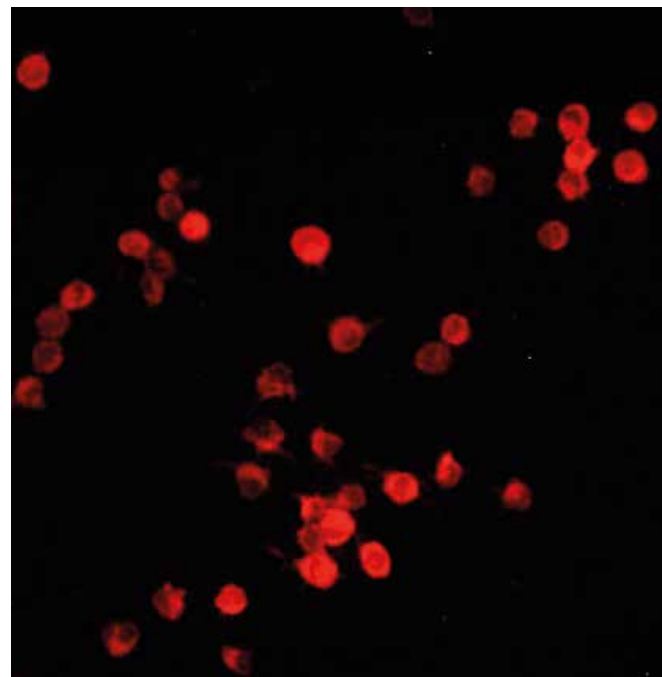
Antonia Red-lysine-dextran is supplied as a purple powder that is readily soluble in water or electrolyte solutions. Antonia Red-lysine-dextran is fixable through its lysine group when treated with formaldehyde or glutaraldehyde.

Applications: It is primarily used to study permeability and transport in cells and tissues, cell lineage tracing, and vasculature and drug delivery studies.

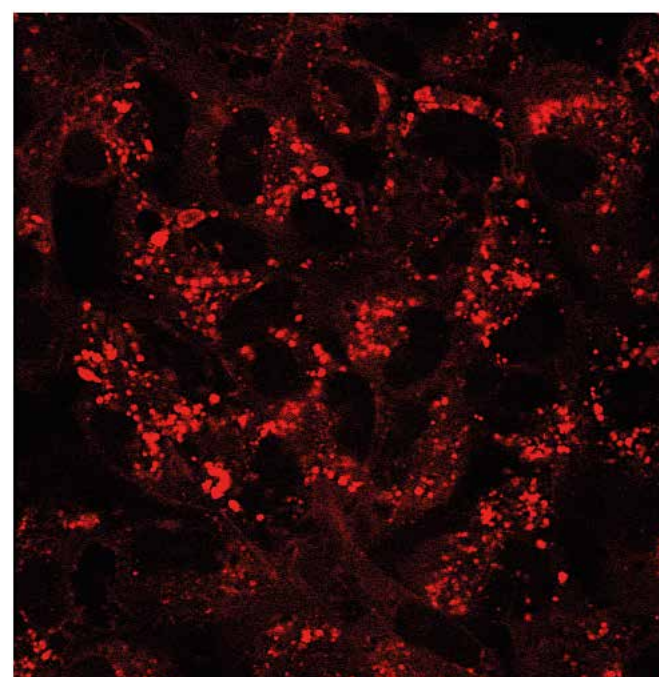
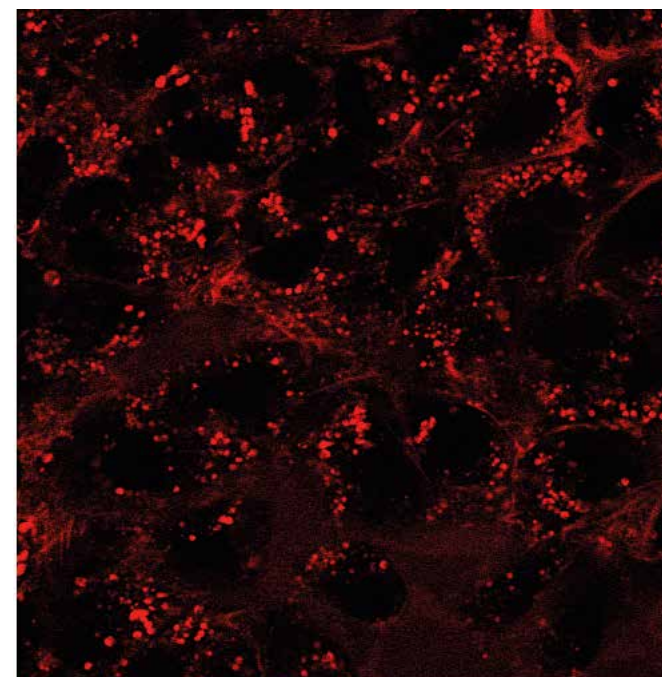
Spectral data: Antonia Red is a red-shifted dye exhibiting bright fluorescence. Excitation is best performed at 583 nm, and fluorescence is measured at 602 nm.



Catalogue no	Name	MW (Da)	Packsize
ARLD4	Antonia Red™-lysine-dextran 4	4000	10mg
ARLD4	Antonia Red™-lysine-dextran 4	4000	50mg
ARLD20	Antonia Red™-lysine-dextran 20	20000	10mg
ARLD20	Antonia Red™-lysine-dextran 20	10000	50mg
ARLD40	Antonia Red™-lysine-dextran 40	40000	10mg
ARLD40	Antonia Red™-lysine-dextran 40	40000	50mg
ARLD70	Antonia Red™-lysine-dextran 70	70000	10mg
ARLD70	Antonia Red™-lysine-dextran 70	70000	50mg
ARLD150	Antonia Red™-lysine-dextran 150	150000	10mg
ARLD150	Antonia Red™-Lysine dextran 150	150000	50mg



Comparison of Antonia Red™-dextran 40 kDa (TdB labs) (left) and Texas Red-dextran 10 kDa, lysine fixable available in the market (right). Antonia Red™-dextran shows a superior fluorescent signal, less aggregation, less free dye, and excellent cellular uptake.



Pictures of live (left) and fixed cells (right) stained with Antonia Red™-dextran.

ATTO488™-dextran

CAS number: NA

ATTO488™-dextran is supplied as an orange powder that is readily soluble in water.

Applications: ATTO488-dextran is primarily used for studying permeability and transport in cells and tissues.

Spectral data: Excitation is best performed at 502 nm, and fluorescence is measured at 524 nm.



Catalogue no	Name	MW (Da)	Packsize
AT488D4	ATTO488™-dextran 4	4000	5mg

ATTO488™-lysine-dextran

CAS number: NA

ATTO488™-lysine dextran 10 is an orange powder that dissolves readily in water.

Applications: It is fixable via lysine when treated with formaldehyde or glutaraldehyde and is thus highly suitable for bioconjugation and fixation.

Spectral data: Excitation is best performed at 502 nm (in borate buffer, pH



Catalogue no	Name	MW (Da)	Packsize
AT488LD10	ATTO488™-lysine-dextran 10	10000	5mg

ATTO647N™-lysine-dextran

CAS number: NA

ATTO647N™-lysine-dextran 70 is a blue powder that is readily soluble in water or electrolyte solutions. ATTO647N™-lysine-dextran 70 is fixable via lysine when treated with formaldehyde or glutaraldehyde.

Applications: This product is highly suitable for single-molecule detection applications and high-resolution microscopy.

Spectral data: Excitation is best performed at 646 nm, and fluorescence is measured at 664 nm.



Catalogue no	Name	MW (Da)	Packsize
AT647NLD70	ATTO647N™-lysine-dextran 70	70000	5mg

FITC-dextran

CAS number: 60842-46-8

FITC-dextran is supplied as a yellow/orange powder that dissolves freely in water or salt solutions, giving a yellow solution.

Applications: FITC-dextran is primarily used for studying permeability and transport in cells and tissues.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 518 nm.



Catalogue no	Name	MW (Da)	Packsize
FD4	FITC-dextran 4	4000	100mg
FD4	FITC-dextran 4	4000	1g
FD4	FITC-dextran 4	4000	5g
FD10	FITC-dextran 10	10000	100mg
FD10	FITC-dextran 10	10000	1g
FD10	FITC-dextran 10	10000	5g
FD20	FITC-dextran 20	20000	100mg
FD20	FITC-dextran 20	20000	1g
FD20	FITC-dextran 20	20000	5g
FD40	FITC-dextran 40	40000	100mg
FD40	FITC-dextran 40	40000	1g
FD40	FITC-dextran 40	40000	5g
FD70	FITC-dextran 70	70000	100mg
FD70	FITC-dextran 70	70000	1g
FD70	FITC-dextran 70	70000	5g
FD110	FITC-dextran 110	110000	100mg
FD110	FITC-dextran 110	110000	1g
FD110	FITC-dextran 110	110000	5g
FD150	FITC-dextran 150	150000	100mg
FD150	FITC-dextran 150	150000	1g
FD150	FITC-dextran 150	150000	5g
FD500	FITC-dextran 500	500000	100mg
FD500	FITC-dextran 500	500000	1g
FD500	FITC-dextran 500	500000	5g
FD2000	FITC-dextran 2000	2000000	100mg
FD2000	FITC-dextran 2000	2000000	1g
FD2000	FITC-dextran 2000	2000000	5g

FITC-lysine-dextran

CAS number: NA

FITC-lysine-dextran is supplied as a yellow to orange powder, which is readily soluble in water.

Applications: FITC-lysine-dextran fixes well in cells and tissues when treated with formaldehyde or glutaraldehyde. It is primarily used for studying permeability and transport in cells, vessels, and tissues.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 520 nm.



Catalogue no	Name	MW (Da)	Packsize
FLD4	FITC-lysine-dextran 4	4000	10mg
FLD4	FITC-lysine-dextran 4	4000	50mg
FLD10	FITC-lysine-dextran 10	10000	10mg
FLD10	FITC-lysine-dextran 10	10000	50mg
FLD70	FITC-lysine-dextran 70	70000	10mg
FLD70	FITC-lysine-dextran 70	70000	50mg
FLD150	FITC-lysine-dextran 150	150000	10mg
FLD150	FITC-lysine-dextran 150	150000	50mg
FLD500	FITC-lysine-dextran 500	500000	10mg
FLD500	FITC-Lysine dextran 500	500000	50mg

FITC-CM-polysucrose

CAS number: NA

FITC-CM-polysucrose is supplied as a yellow powder that is readily soluble in water.

Applications: The product can be used to elucidate the permselectivity properties of the glomerular membrane.

Spectral data: Excitation is best performed at 495 nm, and fluorescence is measured at 517 nm.



Catalogue no	Name	MW (Da)	Packsize
FCMP70	FITC-CM-polysucrose 70	70000	100mg
FCMP70	FITC-CM-polysucrose 70	70000	1g
FCMP400	FITC-CM-polysucrose 400	400000	100mg
FCMP400	FITC-CM-polysucrose 400	400000	1g

FITC-CM-dextran

CAS number: NA

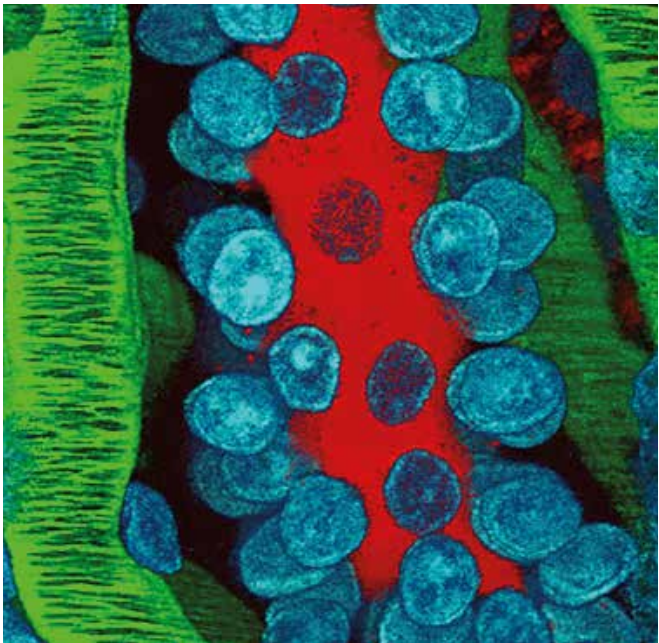
FITC-CM-dextran is supplied as a yellow powder that is freely soluble in water or electrolyte solutions. The carboxyl groups impart an overall negative charge to the molecule.

Applications: This anionic fluorescent dextran is valuable for gaining information on the permeability characteristics of cell membranes and tissues. Mechanistic studies of drug delivery using FITC-CM-dextran have also been reported.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 517 nm.

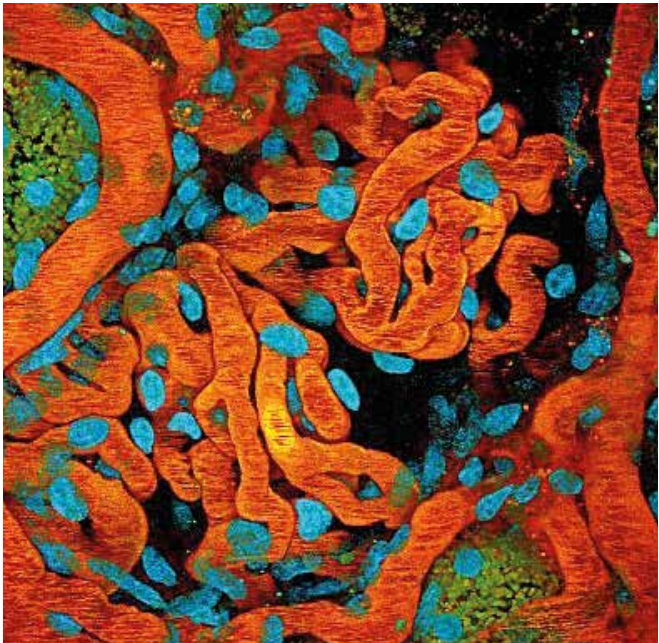


Catalogue no	Name	MW (Da)	Packsize
FCMD4	FITC-CM-dextran 4	4000	100mg
FCMD4	FITC-CM-dextran 4	4000	1g
FCMD20	FITC-CM-dextran 20	20000	100mg
FCMD20	FITC-CM-dextran 20	20000	1g
FCMD40	FITC-CM-dextran 40	40000	100mg
FCMD40	FITC-CM-dextran 40	40000	1g
FCMD70	FITC-CM-dextran 70	70000	100mg
FCMD70	FITC-CM-dextran 70	70000	1g
FCMD150	FITC-CM-dextran 150	150000	100mg
FCMD150	FITC-CM-dextran 150	150000	1g



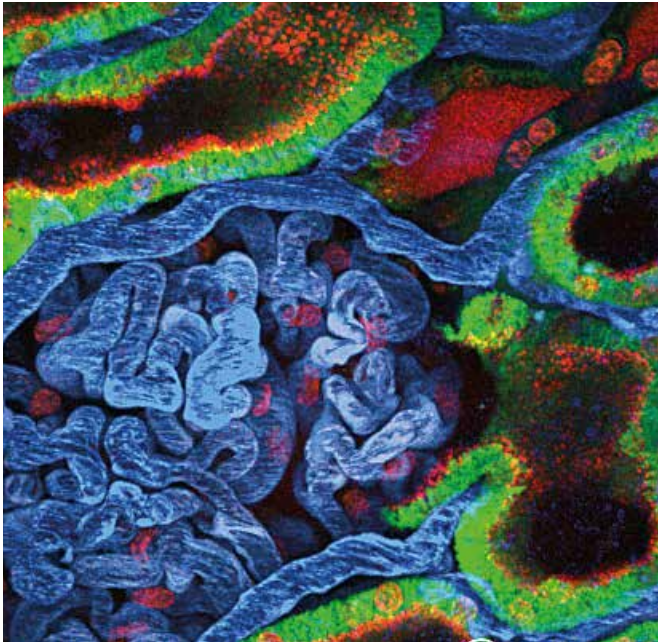
FITC-CM-dextran 150 kDa

A high magnification 3D intravital 2-photon image shows the peritubular vasculature, labeled with a TdB 150kDa FITC-CM dextran (green). Note the red blood cells, which appear as dark streaks circulating throughout the vessels. The streaks are motion artifacts caused by red blood cells moving faster than the microscope's acquisition rate. At the center is a 3kDa red dextran given prior, which is shown accumulating in the lumen of two distal tubules. Distal tubules have no inherent autofluorescence, which is why their nuclei encircle the red dextran bolus in the tubular lumen without showing the cells that contain it.



FITC-CM-dextran 150 kDa

A 3-D volume of a rat kidney was acquired using intravital 2-photon microscopy, showing glomerulus in the center/right and accumulation of a red fluorescent protein and a small blue dextran given 24 hours prior. The peritubular microvasculature and glomerular capillary loops are seen using a TdB 150 kDa FITC-CM dextran. Some accumulation of the red protein is seen in a few endothelial cells within the capillary loops.



FITC-CM-dextran 150 kDa

Intravital 2-photon 3D image shows a TdB Labs 150kDa FITC CM-dextran (blue color in this image), which outlines the peritubular microvasculature and a glomerulus at the center of the image. Also seen in the image are mitochondria labeled with Rhodamine 123 (shown in green), the nuclei (shown in red, labeled with Hoechst 33342), and a small 3kDa dextran given earlier, which is now in the lumen of a distal tubule in the upper right (also in red).

FITC-DEAE-polysucrose

CAS number: NA

FITC-DEAE-polysucrose is supplied as a yellow powder that is freely soluble in water or buffer solutions.

Applications: The product is used for studying the permeability of poly-cationic polymers relative to neutral polymers in organs, tissues, and cells.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 523 nm.



Catalogue no	Name	MW (Da)	Packsize
FDP70	FITC-DEAE-polysucrose 70	70000	100mg
FDP70	FITC-DEAE-polysucrose 70	70000	1g
FDP400	FITC-DEAE-polysucrose 400	400000	100mg
FDP400	FITC-DEAE-polysucrose 400	400000	1g

FITC-Q-dextran

CAS number: NA

FITC Q-dextran is supplied as a yellow to orange powder that is readily soluble in water or electrolyte solutions.

Applications: FITC-Q-dextran is mainly used for studying permeability and microcirculation. The Q-groups impart an overall positive charge to the molecule, which may be valuable in gaining information on the permeability characteristics of cell membranes and tissues. FITC-Q-dextran has a much stronger net charge than the corresponding DEAE-dextran.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 520 nm.



Catalogue no	Name	MW (Da)	Packsize
FQD10	FITC-Q-dextran 10	10000	100mg
FQD10	FITC-Q-dextran 10	10000	1g

FITC-DEAE-dextran

CAS number: NA

FITC-DEAE-dextran is supplied as a yellow powder that is freely soluble in water or electrolyte solutions.

Applications: FITC-DEAE-dextran is a cationic fluorescent dextran that has been used to study, e.g. delivery of positively charged molecules into nucleated cells via the perforin pore.

Spectral data: Excitation is best performed at 495 nm, and fluorescence is measured at 520 nm.



Catalogue no	Name	MW (Da)	Packsize
FDD4	FITC-DEAE-dextran 4	4000	100mg
FDD4	FITC-DEAE-dextran 4	4000	1g
FDD10	FITC-DEAE-dextran 10	10000	100mg
FDD10	FITC-DEAE-dextran 10	10000	1g
FDD20	FITC-DEAE-dextran 20	20000	100mg
FDD20	FITC-DEAE-dextran 20	20000	1g
FDD40	FITC-DEAE-dextran 40	40000	100mg
FDD40	FITC-DEAE-dextran 40	40000	1g
FDD70	FITC-DEAE-dextran 70	70000	100mg
FDD70	FITC-DEAE-dextran 70	70000	1g
FDD150	FITC-DEAE-dextran 150	150000	100mg
FDD150	FITC-DEAE-dextran 150	150000	1g

FITC-dextran sulfate

CAS number: NA

FITC-dextran sulfate is supplied as a yellow powder that dissolves readily in water or buffer solutions.

Applications: FITC-dextran sulfate is used in gastroenterology to investigate the initial effects of dextran sulfate sodium (DSS) on epithelial tissue permeability in DSS-induced colitis models.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 520 nm.



Catalogue no	Name	MW (Da)	Packsize
FDSS4	FITC-dextran sulfate 4	4000	100mg
FDSS4	FITC-dextran sulfate 4	4000	1g
FDSS10	FITC-dextran sulfate 10	10000	100mg
FDSS10	FITC-dextran sulfate 10	10000	1g
FDSS40	FITC-dextran sulfate 40	40000	100mg
FDSS40	FITC-dextran sulfate 40	40000	1g
FDSS500	FITC-dextran sulfate 500	500000	100mg
FDSS500	FITC-dextran sulfate 500	500000	1g

Fluorescein Hyaluronic Acid

CAS number: NA

Hyaluronic acid is a polysaccharide that is composed of alternating $\beta(1-3)$ glucuronide and $\beta(1-4)$ glucosaminide units derived from *Streptococcus equi*. The hyaluronic acid (HA) is labeled with 5-amino-fluorescein (FHA-Se) and is supplied as a yellow powder that is readily soluble in water. The degree of substitution lies between 0.001 and 0.008. The labeling procedure does not lead to depolymerization of the HA.

Application: FHA-Se has been used to study the hyaluronan uptake in siloxane-hydrogel contact lenses.

Spectral data: FHA-Se has an excitation maximum of 490 – 495 nm and an emission maximum of 520 ± 5 nm.



Catalogue no	Name	MW (Da)	Packsize
FHA-Se	Fluorescein Hyaluronic Acid-Se	Approx. 1.5 MDa	100mg

FITC-inulin

CAS number: NA

FITC-inulin is supplied as a yellow powder, which dissolves in water or salt solutions, giving a yellow solution.

Applications: FITC-inulin is ideal for studying glomerular filtration rate and monitoring renal clearance in experimental animals as it is stable during filtration and renal passage and does not bind to plasma proteins or penetrate the renal cells.

Spectral data: Excitation is best performed at 490 nm, and fluorescence is measured at 520 nm.



Catalogue no	Name	MW (Da)	Packsize
FI	FITC-inulin	4500	100mg
FI	FITC-inulin	4500	1g
FI	FITC-inulin	4500	5g

FITC-hydroxyethyl starch

CAS number: NA

Starch is a naturally abundant (1-4 β)-glucose polymer that is insoluble in water. However, when functionalized with hydroxyethyl groups, the starch chain becomes water-soluble and has become a useful tool in life sciences. Hydroxyethyl starch (HES) is a non-ionic starch derivative that can be of varying molecular weight. HES is also known as HAES, Tetrastarch (Voluven™), Pentastarch (Pentastan™), and Hetastarch (Hespan™). FHES is manufactured by reacting FITC with HES. The product is carefully purified from reagents, solvents, and by-products. It is supplied as an orange to dark orange powder that is readily soluble in water and DMSO.

Applications: HES may be used to treat hypovolemia or sudden blood loss. After being labeled with FITC, it can be used in studies to evaluate the function and behaviour of either HES or a biological system like the renal and circulatory systems or to measure blood volume.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 520 nm.



Catalogue no	Name	MW (Da)	Packsize
FHES	FITC-hydroxyethyl starch	Approx. 200000 Da	1g

FITC-polysucrose

CAS number: NA

FITC-polysucrose is supplied as a yellow powder that dissolves freely in water or salt solutions, giving a yellow solution.

Applications: FITC-polysucrose is primarily used for studying permeability and transport in cells, vessels, and tissues. It is often used to study glomerular filtration due to its spherical structure.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 523 nm.



Catalogue no	Name	MW (Da)	Packsize
FP20	FITC-polysucrose 20	20000	100mg
FP20	FITC-polysucrose 20	20000	1g
FP40	FITC-polysucrose 40	40000	100mg
FP40	FITC-polysucrose 40	40000	1g
FP50	FITC-polysucrose 50	50000	100mg
FP50	FITC-polysucrose 50	50000	1g
FP70	FITC-polysucrose 70	70000	100mg
FP70	FITC-polysucrose 70	70000	1g
FP100	FITC-polysucrose 100	100000	100mg
FP100	FITC-polysucrose 100	100000	1g
FP170	FITC-polysucrose 170	170000	100mg
FP170	FITC-polysucrose 170	170000	1g
FP400	FITC-polysucrose 400	400000	100mg
FP400	FITC-polysucrose 400	400000	1g

FITC-trehalose

CAS number: NA

A fluorescent derivative of trehalose. Supplied as an orange to dark orange powder, which is readily soluble in water.

Applications: FITC-trehalose can be used to selectively label and image *Mycobacterium tuberculosis in vivo*, as the molecule is incorporated into the cell envelope of the bacteria.

Spectral data: Excitation is best performed at 493 nm, and fluorescence is measured at 520 nm.



Catalogue no	Name	MW (Da)	Packsize
FTRE	FITC-trehalose	731.7	1mg

TRITC-dextran

CAS number: NA

TRITC-dextran is supplied as a pink powder that is readily soluble in water and electrolytes.

Applications: TRITC-dextran are primarily used for studying permeability and transport in cells, vessels, and tissues.

Spectral data: Excitation is best performed at 550 nm, and fluorescence is measured at 572 nm.



Catalogue no	Name	MW (Da)	Packsize
TD4	TRITC-dextran 4	4000	100mg
TD4	TRITC-dextran 4	4000	1g
TD20	TRITC-dextran 20	20000	100mg
TD20	TRITC-dextran 20	20000	1g
TD40	TRITC-dextran 40	40000	100mg
TD40	TRITC-dextran 40	40000	1g
TD70	TRITC-dextran 70	70000	100mg
TD70	TRITC-dextran 70	70000	1g
TD150	TRITC-dextran 150	150000	100mg
TD150	TRITC-dextran 150	150000	1g
TD500	TRITC-dextran 500	500000	100mg
TD500	TRITC-dextran 500	500000	1g
TD2000	TRITC-dextran 2000	2000000	100mg
TD2000	TRITC-dextran 2000	2000000	1g

Tetramethylrhodamine Hyaluronic Acid

CAS number: NA

THA-Se is supplied as a pink powder, which is soluble in water.

Applications: Tetramethylrhodamine hyaluronic acid (THA-Se) has similar applications to those described for fluorescein hyaluronic acid (see FHA-Se) but has certain advantages. As mentioned earlier, the fluorescence of tetramethylrhodamine is less dependent on pH than FITC labels. Also, the longer emission wavelength avoids interference from background images in experimental environments. Invasive growth into brain tissue employing THA-Se and 2-photon imaging has been described.

Spectral data: Excitation is best performed at 552 nm, and fluorescence is measured at 576 nm.

Catalogue no	Name	MW (Da)	Packsize
THA-Se	Tetramethylrhodamine Hyaluronic acid 1.5 MDa	Approx. 1.5 MDa	100mg



TRITC-lysine-dextran

CAS number: NA

TRITC-lysine-dextran is supplied as a pink powder that is readily soluble in water.

Applications: TRITC-lysine-dextran is fixable via lysine when treated with formaldehyde or glutaraldehyde, and is primarily used for studying permeability and transport in cells, vessels, and tissues.

Spectral data: Excitation is best performed at 550 nm, and fluorescence is measured at 572 nm.

Catalogue no	Name	MW (Da)	Packsize
TLD4	TRITC-lysine-dextran 4	4000	10mg
TLD4	TRITC-lysine-dextran 4	4000	50mg
TLD10	TRITC-lysine-dextran 10	10000	10mg
TLD10	TRITC-lysine-dextran 10	10000	50mg
TLD70	TRITC-lysine-dextran 70	70000	10mg
TLD70	TRITC-lysine-dextran 70	70000	50mg
TLD500	TRITC-lysine-dextran 500	500000	10mg
TLD500	TRITC-lysine-dextran 500	500000	50mg



TRITC-polysucrose

CAS number: NA

TRITC-polysucrose is supplied as a pink powder that is readily soluble in water.

Applications: TRITC-polysucrose has similar applications to those described for FITC-polysucrose but has certain advantages. It is less dependent on pH than FITC-labels. Also, the longer emission wavelength avoids background interference in experimental environments.

Spectral data: TRITC-polysucrose has an excitation maximum at 522 and an emission maximum at 552 nm at pH 9.

Catalogue no	Name	MW (Da)	Packsize
TP20	TRITC-polysucrose 20	20000	100mg
TP20	TRITC-polysucrose 20	20000	1g
TP40	TRITC-polysucrose 40	40000	100mg
TP40	TRITC-polysucrose 40	40000	1g
TP70	TRITC-polysucrose 70	70000	100mg
TP70	TRITC-polysucrose 70	70000	1g
TP400	TRITC-polysucrose 400	400000	100mg
TP400	TRITC-polysucrose 400	400000	1g





TRITC-polysucrose

TRITC-Polysucrose 40 kDa* was administered, and a short 3D volume of a glomerulus is seen at the center of this intravital, 2-photon image of a rat kidney, containing two lobes with clearly outlined capillary loops. Below the glomerulus is the lumen of either a distal tubule or a collecting duct. Here, the filtered polysaccharide has concentrated in the lumen on its way to the bladder. Cellular nuclei are labeled with Hoechst 33342 (Cyan). Note the lack of autofluorescence in the cells compared to the proximal tubules, which show their inherent yellow/brown lysosomal autofluorescence.

Image courtesy: **Ruben Sandoval**

*This product is provided as a customized product

Eosin-Y-dextran 10

CAS number: NA

Eosin-Y-dextran 10 is supplied as a dark ruby red amorphous powder that is readily soluble at concentrations close to 100 mg/ml in water and 50 mg/ml in DMSO. It is sensitive to pH due to the presence of Eosin Y, as its absorbance and fluorescence decrease when the pH is lowered from 9 to 1.

Applications: It is highly useful for developing pH probes, environment-responsive biosensors, and potentially diagnostic systems. It is also suitable for studying cell permeability and can serve as a fluorescent nanocarrier for drug delivery applications.

Spectral data: Excitation is best performed at 532 nm, and fluorescence is measured at 555 nm in water, where it exhibits orange fluorescence.



Catalogue no	Name	MW (Da)	Packsize
EYD10	Eosin-Y-dextran 10	10000	10mg
EYD10	Eosin-Y-dextran 10	10000	25mg

Eosin-Y-lysine-dextran 500

CAS number: NA

Eosin-Y-lysine-dextran 500 is part of a family of fixable fluorescent labeled lysine-dextran derivatives, and is supplied as a pink amorphous powder that is readily soluble at concentrations close to 100 mg/ml in water and 50 mg/ml in DMSO. It is sensitive to pH due to the presence of Eosin Y, where its absorbance and fluorescence diminish by decreasing the pH from 9 to 1.

Applications: This product is highly useful for developing pH probes, environment-responsive biosensors, and potentially diagnostic systems. It is also suitable for cell and tissue imaging, studying cell permeability, and can serve as a fluorescent nanocarrier for drug delivery applications.

Spectral data: Excitation is best performed at 530 nm, and fluorescence is measured at 548 nm in water, where it exhibits orange fluorescence.



Catalogue no	Name	MW (Da)	Packsize
EYLD500	Eosin-Y-lysine-dextran 500	500000	10mg
EYLD500	Eosin-Y-lysine-dextran 500	500000	25mg

FITC

CAS number: 3326-32-7

Molecular Formula: $C_{21}H_{11}NO_5S$

Fluorescein isothiocyanate (widely known as FITC) is a derivative of fluorescein that contains an isothiocyanate group at either position 5 or position 6 of the bottom benzene ring. Therefore FITC has two isomers with minor differences in excitation and emission wavelengths:

- Isomer I, also referred to as fluorescein 5-isothiocyanate or 5-FITC
- Isomer II, also referred to as fluorescein 6-isothiocyanate or 6-FITC

Our FITC is based on Isomer I (5-FITC), ensuring high specificity and consistency for your fluorescence-based applications. FITC is supplied as a yellow powder that is readily soluble in polar organic solvents such as DMSO and DMF.

Applications: FITC can be easily used as a labeling agent for various substrates such as proteins or polysaccharides. Isothiocyanate easily reacts with nucleophiles such as amines under mild conditions. FITC can also be used in flow cytometry.

Spectral data: FITC exhibits an excitation maximum at 495 nm and an emission maximum at approximately 519 nm.



Catalogue no	Name	MW (Da)	Packsize
FITC	FITC (isomer I)	n/a	100mg
FITC	FITC (isomer I)	n/a	250mg
FITC	FITC (isomer I)	n/a	1g

TRITC

CAS number: 95197-95-8

Molecular Formula: $C_{25}H_{21}N_3O_3S$

TRITC, a rhodamine dye, is a dark red powder highly soluble in polar organic solvents like DMSO and DMF, as well as methanol and ethanol. It emits strong orange fluorescence that is nearly insensitive to pH changes. TRITC has two isomers with minor differences in excitation and emission wavelengths:

- Isomer I, also referred to as tetramethylrhodamine 5-isothiocyanate or 5-TRITC
- Isomer II, also referred to as tetramethylrhodamine 6-isothiocyanate or 6-TRITC

Applications: It's high brightness and fluorescence quantum yield, as well as its capacity to covalently conjugate to proteins and polysaccharides efficiently under mild conditions, renders TRITC as an indispensable fluorescent labeling agent.

Spectral data: TRITC has an excitation maximum at 560 nm and an emission maximum at approximately 590 nm in DMSO solutions. In general, TRITC-functionalized biopolymers, such as TRITC-dextran, exhibit similar excitation and emission.



Catalogue no	Name	MW (Da)	Packsize
TRITC	TRITC (5- and 6- isothiocyanate isomers)	n/a	5mg
TRITC	TRITC (5- and 6- isothiocyanate isomers)	n/a	10mg

pH probes

Utilizing dual fluorophores, FITC and TRITC or Antonia Red, these probes offer exceptional sensitivity and stability. FITC's fluorescence is highly pH-dependent, making it ideal for accurate pH determination, while TRITC and Antonia Red provide consistent fluorescence across a wide pH range. This unique combination allows for effective pH monitoring in living cells and tissues, spanning pH levels from 3.5 to 8.0. Our pH probes are readily soluble in water and DMSO, and have strong fluorescence at basic pH.

Two products in this category are as follows:

- FITC-Antonia Red™-dextran 20
- FITC-TRITC-dextran 500

FITC Antonia Red™-dextran

CAS number: NA

FITC-Antonia Red-dextran is supplied as a light brown to dark purple powder or crystals that are readily soluble in water and DMSO. It is a fluorescent derivative of dextran that is labeled with two fluorophores, FITC and Antonia Red™. Both the fluorescence and absorbance of FITC are highly dependent on pH, while that of Antonia Red™ remains nearly unchanged.

Applications: FARD20 is suitable for applications requiring accurate detection and monitoring of pH in living cells or tissues, where it can operate across a wide range of pH spanning from 3.5 to 8.0.

Spectral data: Due to the dual fluorescent labeling of dextran, excitation and fluorescence are assessed across two spectral ranges:

- Excitation is best performed at 493 nm with fluorescence measured at 517±5 nm due to the presence of FITC.
- Excitation is best performed at 585±5, nm with fluorescence measured at 600±5 nm due to the presence of Antonia Red.

Catalogue no	Name	MW (Da)	Packsize
FARD20	FITC-Antonia Red™-dextran 20	20000	1mg
FARD20	FITC-Antonia Red™-dextran 20	20000	5mg

FITC-TRITC-dextran 500

CAS number: NA

Applications: FITC-TRITC-dextran 500 is supplied as a pink powder which is readily soluble in water and DMSO. It is suitable for applications requiring monitoring of pH at a wide range from 3.5 to 8.0 in living cells or tissues, and thus it serves as an invaluable tool for intravital microscopy.

Spectral data: Due to the dual fluorescent labeling of dextran, excitation and fluorescence are assessed across two spectral ranges:

- Excitation is best performed at 493 nm with fluorescence measured at 517±5 nm due to the presence of FITC
- Excitation is best performed at 550 nm with fluorescence measured at 575±5 nm due to the presence of TRITC

Catalogue no	Name	MW (Da)	Packsize
FTD500	FITC-TRITC-dextran 500	n/a	1mg
FTD500	FITC-TRITC-dextran 500	n/a	5mg

Dextran sulfate high sulfated

CAS number: 9011-18-1

Dextran sulfate is supplied as a white powder that dissolves freely in water or salt solutions, giving a clear solution. Dextran sulfates are produced in a wide range of molecular weights and degrees of sulfation. Each of the products within this range is supplied with a sulfur content of 16-20%.

Applications: Dextran sulfates act as potent polyanions and offer many interesting pharmacological and biophysical properties. Some examples of the areas of application are given below:

- Cosmetic formulations
- Stabilisation of sensitive biopolymers during processing or formulation
- Enzyme activation or inhibition
- Anti-viral preparations
- Acceleration of DNA hybridisation

Catalogue no	Name	MW (Da)	Packsize
DB004	Dextran sulfate HS 5	5000	10g
DB004	Dextran sulfate HS 5	5000	100g
DB008	Dextran sulfate HS 10	10000	10g
DB008	Dextran sulfate HS 10	10000	100g
DB012	Dextran sulfate HS 20	20000	10g
DB012	Dextran sulfate HS 20	20000	100g
DB016	Dextran sulfate HS 100	100000	10g
DB016	Dextran sulfate HS 100	100000	100g
DB050	Dextran sulfate HS 500	500000	10g
DB050	Dextran sulfate HS 500	500000	100g
DB054	Dextran sulfate HS 2000	2000000	10g
DB054	Dextran sulfate HS 2000	2000000	100g

Dextran sulfate low sulfated

CAS number: 9011-18-1

Dextran sulfate is supplied as a white powder that dissolves freely in water or salt solutions, giving a clear solution. Dextran sulfates are produced in a wide range of molecular weights and degrees of sulfation. Each of the products within this range is supplied with a sulfur content of 9-13%.

Applications: Dextran sulfates act as potent polyanions and offer many interesting pharmacological and biophysical properties. Some examples of the areas of application are given below:

- Cosmetic formulations
- Stabilisation of sensitive biopolymers during processing or formulation
- Enzyme activation or inhibition
- Anti-viral preparations
- Acceleration of DNA hybridisation
- Conjugate in immunoassay

Catalogue no	Name	MW (Da)	Packsize
DB005	Dextran sulfate LS 5	5000	10g
DB005	Dextran sulfate LS 5	5000	100g
DB009	Dextran sulfate LS 10	10000	10g
DB009	Dextran sulfate LS 10	10000	100g
DB013	Dextran sulfate LS 20	20000	10g
DB013	Dextran sulfate LS 20	20000	100g
DB003	Dextran sulfate LS 40	40000	10g
DB003	Dextran sulfate LS 40	40000	100g
DB015	Dextran sulfate LS 100	100000	10g
DB015	Dextran sulfate LS 100	100000	100g
DB051	Dextran sulfate LS 500	500000	10g
DB051	Dextran sulfate LS 500	500000	100g

Dextran sulfate sodium (DSS) for colitis

CAS number: 9011-18-1

DSS is supplied as a white powder that dissolves freely in water or salt solutions, giving a clear solution.

Applications: Dextran sulfate sodium (DSS), with a mol. wt. of approx. 40000 when administered orally in drinking water has been found to induce colitis in experimental animals. Concentrations from 2 to 5% have been used, and symptoms develop within one week.

Catalogue no	Name	MW (Da)	Packsize
DB001	Dextran sulfate sodium 40	40000	10g
DB001	Dextran sulfate sodium 40	40000	50g
DB001	Dextran sulfate sodium 40	40000	100g
DB001	Dextran sulfate sodium 40	40000	500g

Dextran sulfate Pharma grade

CAS number: 9011-18-1

Dextran sulfate is supplied as a white powder that dissolves freely in water or salt solutions, giving a clear solution. Pharmaceutical-grade high-sulfated dextran sulfates are produced with a mean molecular weight ranging from 5 kDa to 10 kDa* and are tested for microbial contamination, bacterial endotoxins, and residual solvents according to the European Pharmacopeia.

Applications: Dextran sulfate Pharma grade products are suitable for use as raw materials in pharmaceutical formulations, medical devices, cosmetics, or related applications, such as:

- Anti-coagulation agent in cell media
- Selective precipitation of lipoproteins
- Acceleration of DNA hybridization
- Release of DNA from the DNA-histone complexes
- Inhibition of tRNA-binding to ribosomes
- Inhibition of ribonucleases
- Antiviral properties
- Anti-inflammatory properties and osmotic retention of water in cosmetics
- Separation of microorganisms and macromolecules
- Adjuvant in vaccines
- Studies on the perm selectivity of membranes

Catalogue no	Name	MW (Da)	Packsize
DS5 HS PG	Dextran sulfate 5kDa HS Pharma grade	5000	10g
DS5 HS PG	Dextran sulfate 5kDa HS Pharma grade	5000	100g
DS8 HS PG	Dextran sulfate 8kDa HS Pharma grade	8000	10g
DS8 HS PG	Dextran sulfate 8kDa HS Pharma grade	8000	100g
DS10 HS PG	Dextran sulfate 10kDa HS Pharma grade	10000	10g
DS10 HS PG	Dextran sulfate 10kDa HS Pharma grade	10000	100g

* DS5LS Pharma grade, DS10LS Pharma grade (Pharmaceutical-grade low-sulfated dextran sulfates), and DSS40 Pharma grade will be available upon request.



Lysine-dextran

CAS number: NA

Lysine-dextran is supplied as a white powder that is readily soluble in water or electrolyte solutions.

Applications: Lysine-dextran is primarily used as a tool for bioconjugation and fixation in living systems.



Catalogue no	Name	MW (Da)	Packsize
LD4	Lysine-dextran 4	4000	10mg
LD4	Lysine-dextran 4	4000	100mg
LD4	Lysine-dextran 4	4000	1g
LD10	Lysine-dextran 10	10000	10mg
LD10	Lysine-dextran 10	10000	100mg
LD10	Lysine-dextran 10	10000	1g
LD20	Lysine-dextran 20	20000	10mg
LD20	Lysine-dextran 20	20000	100mg
LD20	Lysine-dextran 20	20000	1g
LD40	Lysine-dextran 40	40000	10mg
LD40	Lysine-dextran 40	40000	100mg
LD40	Lysine-dextran 40	40000	1g
LD70	Lysine-dextran 70	70000	10mg
LD70	Lysine-dextran 70	70000	100mg
LD70	Lysine-dextran 70	70000	1g
LD150	Lysine-dextran 150	150000	10mg
LD150	Lysine-dextran 150	150000	100mg
LD150	Lysine-dextran 150	150000	1g
LD500	Lysine-dextran 500	500000	10mg
LD500	Lysine-dextran 500	500000	100mg
LD500	Lysine-dextran 500	500000	1g

DEAE-dextran

CAS number: 9015-73-0

DEAE-dextran is supplied as a white hygroscopic powder that is readily soluble in water and salt solutions. The nitrogen content is between 2-5%.

Applications: DEAE-dextran is used in various areas:

- As an adjuvant for vaccines
- In transfection techniques and viral infectivity
- For stabilisation of proteins (enzymes)



Catalogue no	Name	MW (Da)	Packsize
DD4	DEAE-dextran 4	4000	1g
DD4	DEAE-dextran 4	4000	10g
DD4	DEAE-dextran 4	4000	100g
DD10	DEAE-dextran 10	10000	1g
DD10	DEAE-dextran 10	10000	10g
DD10	DEAE-dextran 10	10000	100g
DD20	DEAE-dextran 20	20000	1g
DD20	DEAE-dextran 20	20000	10g
DD20	DEAE-dextran 20	20000	100g
DD40	DEAE-dextran 40	40000	1g
DD40	DEAE-dextran 40	40000	10g
DD40	DEAE-dextran 40	40000	100g
DD70	DEAE-dextran 70	70000	1g
DD70	DEAE-dextran 70	70000	10g
DD70	DEAE-dextran 70	70000	100g
DD150	DEAE-dextran 150	150000	1g
DD150	DEAE-dextran 150	150000	10g
DD150	DEAE-dextran 150	150000	100g
DD500	DEAE-dextran 500	500000	1g
DD500	DEAE-dextran 500	500000	10g
DD500	DEAE-dextran 500	500000	100g
DD2000	DEAE-dextran 2000	2000000	1g
DD2000	DEAE-dextran 2000	2000000	10g
DD2000	DEAE-dextran 2000	2000000	100g

CM-dextran

CAS number: 39422-83-8

CM-dextran is supplied as a white, odorless, and tasteless powder that is freely soluble in water and electrolyte solutions. The carboxymethyl content corresponds to approximately one CM group per five glucose units, with a carboxyl content ranging from 3 to 7%.

Applications: CM-dextran is used in various areas like:

- As a reagent for binding cations (inorganic and organic) via carboxyl reactions
- As a non-toxic ingredient in formulations
- As a stabiliser for sensitive biopolymers



Catalogue no	Name	MW (Da)	Packsize
CMD4	CM-dextran 4	4000	10g
CMD4	CM-dextran 4	4000	100g
CMD10	CM-dextran 10	10000	10g
CMD10	CM-dextran 10	10000	100g
CMD20	CM-dextran 20	20000	10g
CMD20	CM-dextran 20	20000	100g
CMD40	CM-dextran 40	40000	10g
CMD40	CM-dextran 40	40000	100g
CMD70	CM-dextran 70	70000	10g
CMD70	CM-dextran 70	70000	100g
CMD150	CM-dextran 150	150000	10g
CMD150	CM-dextran 150	150000	100g
CMD500	CM-dextran 500	500000	10g
CMD500	CM-dextran 500	500000	100g

Blue dextran

CAS number: 87915-38-6

Blue dextran is produced by reacting controlled dextran fractions with Cibacron Blue F3GA. It is supplied as a blue powder that is readily soluble in water or electrolyte solutions.

Applications: Blue dextran 2000 has long been used as a void volume marker in chromatography, and Blue dextran gel conjugates for chromatography have been available for many years. Other important areas of research, where blue dextran has been used, are:

- Studies on lysosomal activity
- Endothelial cell permeability
- Bovine sperm permeability
- Corneal permeability
- Flow studies in the lung
- Cerebral permeability
- Binding of proteins and enzymes to blue dextran

Spectral data: The blue chromophore has an absorbance maximum at 621.5 nm.



Catalogue no	Name	MW (Da)	Packsize
BD5	Blue dextran 5	5000	1g
BD5	Blue dextran 5	5000	10g
BD10	Blue dextran 10	10000	1g
BD10	Blue dextran 10	10000	10g
BD20	Blue dextran 20	20000	1g
BD20	Blue dextran 20	20000	10g
BD40	Blue dextran 40	40000	1g
BD40	Blue dextran 40	40000	10g
BD70	Blue dextran 70	70000	1g
BD70	Blue dextran 70	70000	10g
BD110	Blue dextran 110	110000	1g
BD110	Blue dextran 110	110000	10g
BD500	Blue dextran 500	500000	1g
BD500	Blue dextran 500	500000	10g
BD2000	Blue dextran 2000	2000000	1g
BD2000	Blue dextran 2000	2000000	10g

Q-dextran

CAS number: NA

Q-dextran is supplied as a coarse white powder and is readily soluble in water. The nitrogen content is approx. 2% (by elemental analysis), which corresponds to approximately one quaternary ammonium group for every four glucose units. Unlike DEAE-dextran, Q-dextran remains charged over a wide range of pH (pH 4-10). They also have a much stronger net charge and thus give enhanced responses in systems where this effect is important.

Applications: Polycationic products exhibit a wide variety of effects in cellular systems and are of interest as adjuvants in vaccines.



Catalogue no	Name	MW (Da)	Packsize
QD4	Q-dextran 4	4000	1g
QD4	Q-dextran 4	4000	10g
QD10	Q-dextran 10	10000	1g
QD10	Q-dextran 10	10000	10g
QD20	Q-dextran 20	20000	1g
QD20	Q-dextran 20	20000	10g
QD70	Q-dextran 70	70000	1g
QD70	Q-dextran 70	70000	10g
QD150	Q-dextran 150	150000	1g
QD150	Q-dextran 150	150000	10g

Phenyl-dextran

CAS number: NA

Phenyl-dextran is supplied as a white coarse powder, that is moderately soluble in water.

Applications: A number of applications of phenyl-dextran have appeared in patents. An essential property of phenyl-dextran is its potential for coating plastic and related surfaces to impart a more hydrophobic character.

This property has proved to be valuable in many diagnostic devices.



Catalogue no	Name	MW (Da)	Packsize
PhD5	Phenyl-dextran 5	5000	10g
PhD5	Phenyl-dextran 5	5000	100g
PhD40	Phenyl-dextran 40	40000	10g
PhD40	Phenyl-dextran 40	40000	100g
PhD150	Phenyl-dextran 150	150000	10g
PhD150	Phenyl-dextran 150	150000	100g

DEAE-polysucrose

CAS number: NA

DEAE-polysucrose is supplied as a white, odorless, and tasteless powder that is freely soluble in water or electrolyte solutions.

Applications: Positively charged DEAE-polysucrose can be used in permeability studies and the diffusion of macromolecules across biological tissues.



Catalogue no	Name	MW (Da)	Packsize
DP70	DEAE-polysucrose 70	70000	1g

CM-polysucrose

CAS number: NA

Carboxymethyl-polysucroses (CM-polysucrose) are white, odorless, and tasteless powders that are freely soluble in water or electrolyte solutions.

Applications: CM-polysucrose is often used in hydrogels.



Catalogue no	Name	MW (Da)	Packsize
CMP70	CM-polysucrose 70	70000	1g

Polysucrose

CAS number: 26873-85-8

Polysucrose is supplied as a white powder, which is freely soluble in water and electrolyte solutions.

Applications: Many investigators have considered polysucrose to be a suitable molecule for studying glomerular physiology, since it is biocompatible and not readily degraded in the bloodstream. Furthermore, it has conformational properties more like proteins. Polysucrose (and particularly FITC- and TRITC-labelled polysucrose) has been used extensively in studies of vascular permeability, in particular glomerular permselectivity. Polysucroses have been used for many decades for purposes such as gradient centrifugation of cells and organelles, nucleic acid hybridization, serving as a hapten carrier, in concentration dialysis, supporting the growth of cell lines, and phase partitioning.



Catalogue no	Name	MW (Da)	Packsize
P20	Polysucrose 20	20000	1g
P40	Polysucrose 40	40000	1g
P50	Polysucrose 50	50000	1g
P400	Polysucrose 400	400000	1g
P1000	Polysucrose 1000	1000000	1g

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