

polyclonal antisera and conjugates against human and animal serum proteins
monoclonal antisera and conjugates against human IgG and IgA subclasses
polyclonal IgG fractions, biotin conjugates and isolated antibodies against enzymes
serum references and purified immunoglobulins and albumins

NORDIC



**NORDIC
IMMUNOLOGICAL
LABORATORIES
REAGENTS FOR
LABORATORY
IMMUNOLOGY
CATALOGUE
2010**

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Introduction

Almost 35 years ago Nordic Immunological Laboratories pioneered the development and production of immunologic reagents. Its experience in the purification of human and animal plasma proteins and in the production of and selection of antisera for fractionation and conjugation purposes has contributed to a wide variety of reagents for use in techniques associated with fundamental and applied research and with human and veterinary investigation.

Today we offer a range of about 1800 reagents, listed in 38 separate product groups including:

polyclonal precipitating antisera,
cytochemical grade purified IgG(7S) fractions of antisera,
monoclonal antibodies,
polyclonal and monoclonal fluorescent immunoconjugates, enzyme-immunoconjugates,
polyclonal antisera to enzymes,
immunoglobulin reference preparations and calibrators,
purified proteins.

Over the years, we have established working reference standards of reactivity, specificity, purity, and stability, and these are periodically reviewed in the light of current progress. Each batch of product is subjected to extensive quality assessment and performance tests before being released.

Specialized fields of research and production

- the **human immunoglobulin system** and other plasma proteins, with special emphasis on isotypic and allotypic subspecificities, subclasses of IgG and IgA, secretory Ig variants, the secretory component, and J chain;
- components of **animal immunoglobulin systems**, especially of laboratory animal species (mouse, rat, rabbit, guinea pig, monkey), farm animals (cattle, horse, pig, goat, sheep, chicken, etc.), and domestic animals (e.g. dog, cat), with special emphasis on isotypic subspecificities;
- protein components of the **human and animal complement systems**. The development of antisera for use in animal models to study activation of complement with special emphasis on the rat model;
- protein components of **exocrine body fluids** in man, mouse, and rat, in particular the **mucosal IgA systems**;
- coagulation, haemostasis, thrombosis and fibrinolysis. **Coagulation factors** and functionally associated plasma proteins and their interrelationship with other plasma protein systems (**contact activation system, kinin-forming systems, etc.**);
- purification of **immunoglobulins and other plasma proteins** for use as reference antigens, calibrators and primary standards;
- the development of cytochemical and immunoassay grade reagents meeting special performance criteria, for use in immunofluorescence microscopy, flow cytometry, cell sorting and separating, enzyme-immunofluorescence microscopy, flow cytometry, enzyme-immunocytochemistry and non-isotopic solid phase immunoassays (ELISA, Western immunoblotting, DIBA);
- the application of hybridoma techniques to the development of **monoclonal antibodies** and performance tested monoclonal antibody reagents to human protein components.

Technical information

Assay-related characteristics

Contrary to still widely held opinion, immunologic reagents are usually not general purpose reagents for universal use. Different techniques and even different modifications or arrangements of an otherwise established method frequently result in different requirements for the reagents. These differences are not only associated with the properties of the antibody, but also with the characteristics of other humoral or cellular components under the conditions of the test system. Specifications given for the defined antibody activity and specificity of NORDIC reagents are based on the characteristics of the immunogen, the immunization and adsorption procedures applied, and on the results obtained in **performance test procedures** pioneered and first introduced on a commercial scale as an essential quality assurance procedure by Nordic Immunology. This includes an adequate evaluation of reactivity and specificity at the level of sensitivity at which the reagent ultimately will be used.

When stating the antibody specificity of polyclonal reagents, the term 'monospecific' is deliberately avoided since it is highly ambiguous and easily misleading.

Assay-related characteristics are of even greater importance in the case of monoclonal antibodies. The activity of monoclonal antibodies (MAbs) is restricted to one given epitope. This frequently makes it highly assay-specific which is not always an advantage since it increases the possibility of no reaction. A positive reaction depends not only on the properties of the MAb, but also on those of the epitope under the test conditions. While the specificity of a polyclonal antibody depends primarily on the absence of unwanted antibodies (which can be removed by appropriate immunoadsorption), that of the MAb depends entirely on the presence of its complementary epitope. It explains why a MAb often shows variable performances in different methods and why performance testing is essential. NORDIC IMMUNOLOGY provides adequate information based on the performance of its MAb products in different types of assays.

NORDIMMUNE™ products are purified and conjugated MAb reagents which are extensively standardized, performance-tested, cost-effective and easy to use specialty immunochemicals meeting end-use criteria based on assay-related characteristics.

Antibody titres

The potency of an antiserum is commonly expressed as its titre, a figure referring to the end-point of an immunological test. Usually an immunoprecipitation test is used for this purpose. Polyclonal antisera always contain a wide spectrum of antibodies, even if they are raised against a single antigen. They react with different antigenic determinants for which they have a variable affinity under different experimental conditions. Only part of the antibodies present will contribute to the immunologic reaction. Precipitating antibodies may not participate in non-precipitating antibody-binding techniques. On the other hand, antibodies contributing to a performance test in cell or tissue staining methods may be inactive in a precipitation test. Consequently, the antibody titre of an antiserum, a purified IgG or isolated antibody, or its conjugated form, is not a generally valid and constant characteristic.

Since precipitating antisera are primarily intended for use in gel immunodiffusion techniques such as immunoelectrophoresis, single and double immunodiffusion, each batch is extensively tested against panels of appropriate antigens in multiple arrangements of those techniques. Although total protein and IgG concentrations are irrelevant to the performance of the hyperimmune antiserum, it may serve as a general guideline that rabbit antisera contain between 4 and 8 mg IgG per ml antiserum; goat, sheep and swine antisera between 10 and 20 mg IgG per ml. The specific IgG antibody content is usually between 1 and 4 mg per ml as determined by quantitative precipitin analysis, while the precipitin titre as measured in an agar-precipitin-block-titration using an appropriate antigen is not less than 1:32.

The antibody titre of an immunoconjugate is effectively reflected by the optimal working dilution determined by titration in a selected test arrangement. Working dilutions suggested for individual types of products are intended only as a general guideline for titration. However, they provide a much more realistic and useful reflection of antibody reactivity and titre than precipitating antibody concentrations expressed in mg/ml.

Precipitating antisera

Precipitating antisera are pooled whole sera and have a total protein and immunoglobulin concentration comparable to that of pooled normal serum of the same species. Precipitating antibodies are mainly obtained by hyperimmunization of rabbits, goats and sheep with highly purified proteins, since antibodies of these host animals provide characteristic sharp precipitates in gel diffusion tests. The required specificity is obtained by immunoaffinity adsorption using insolubilized antigens.

Polyclonal precipitating antisera are primarily intended for use in immunoelectrophoresis, qualitative and quantitative radial immunodiffusion techniques (Ouchterlony, Mancini), and electroimmunodiffusion. This does not exclude their potential use in non-precipitating antibody-binding assays (histochemistry, ELISA, immunoblotting, etc.) which frequently have a significantly higher sensitivity. Such use, however, may require extra controls.

NORDIC IMMUNOLOGY supplies two Standard Test Plates that can contribute significantly to the standardization of immunoprecipitation techniques. The Immunoelectrophoresis Standard Test Plate is designed to obtain uniform and reproducible patterns of immunoelectrophoresis in agar or agarose gels. The design makes for economy in the use of antisera, and permits multiple simultaneous runs on standard glass slides. The amount of antigen and antiserum used for filling the wells and channels is highly reproducible for each run.

The purpose of the Special Standard Test Plate is to obtain optimal and reproducible results in the demonstration of minor components of complex protein systems (e.g. Ig subclasses, fragments of complement components) by immunoelectrophoresis and double-immunodiffusion in agar.

Cytochemical and immunoassay grade reagents

Hyperimmune antisera with strong precipitating activity are selected for the production of IgG (7S) preparations by fractionation and DEAE-chromatography. They consist of immunochemically pure IgG as tested by immunoelectrophoresis. The IgG (7S) fractions contain the bulk of the defined antibody activity and are made specific by appropriate immunoaffinity adsorption. Titre, specificity and purity are monitored by immunodiffusion and immunoelectrophoresis. Strict isotypic specificity is further verified at the increased level of sensitivity of single and double immunofluorescence staining, ELISA and immunoblotting. This ensures reliable specificity in versatile methodology.

IgG (7S) preparations are used for the production of NORDIC immunoconjugates, for labelling with a probe of the investigator's own choice, as catching or detection antibody in sandwich arrangements, or to prepare an immunoabsorbent for the purification of an antigen. No extraneous protein or chemical preservative has been added and they are free of adsorbent proteins and soluble immune complexes. Sodium azide is not used as a preservative because of its potential toxicity and possible interference when carrying out conjugation. When coupling the purified fraction to a solid carrier, its antigen binding capacity should be tested in relation to the amount of bound IgG protein.

Characteristics of immunoconjugates

The presence of an antigen or an antibody in tissues, cells, or body fluids can be detected under the light, fluorescence, or electron microscope after reaction with complementary antibody labelled with a suitable marker. The great advantage of these techniques lies in the degree of amplification resulting from the high level of specificity of the immunological reaction, combined with the sensitivity of the marker and the resolution power of the microscope. Although the immunological characteristics are essentially identical in all three techniques, certain applications impose additional requirements.

Immunoconjugates with specificity against one or more immunoglobulins are widely used for the localization of antigens, immunoglobulins, antibodies, or immune complexes in cells, tissue sections or smears, and for the detection, identification and quantitation of specific antibodies in serum or other body fluids. They are further used for the tracing of viral, bacterial, protozoal, helminthic, fungal, or cell and tissue antigens.

Immunoaffinity-adsorbed and chromatographically purified IgG (7S) preparations are used for conjugation, followed by several purification steps. Immunoconjugates are standardized using protein, antibody and marker assay techniques. No foreign protein or chemical preservative has been added. Conjugates are lyophilised from a solution in phosphate buffered saline (PBS, pH 7.2) containing 5-10 mg proteins per ml, of which at least 2 mg is defined specific antibody. Fluorochrome conjugates have a molar fluorochrome/protein (F/P) ratio of approximately 1.5-2.0. Horseradish peroxidase immunoconjugates have a mean enzyme/IgG protein ratio (E/P) of approximately 1.7, biotin conjugates have a biotin/IgG protein ratio (B/P) of 3-7. After reconstitution of the lyophilised conjugate with distilled water and preparation of working dilutions by adding PBS, the immunoconjugate is ready for use.

NORDIC immunoconjugates are not pre-diluted. It is of critical importance always to establish by titration the optimum working dilution of the conjugate, since it depends on the variables of the test arrangement. Arbitrarily chosen working dilutions should be avoided. Excess of labelled antibody, resulting from insufficient dilution of the conjugate, may by itself cause high unspecific staining and reduction of specific signal.

Purity and specificity of the reagent are distinct characteristics. Purity refers to its molecular composition, normally achieved by fractionation, chromatography and gel filtration procedures which do not aim at a change in antibody specificity. Specificity, on the other hand, defines the antibody activity in a selected test procedure. Specificity and titre are assay-related characteristics and always of limited validity. The required specificity is obtained by removing unwanted antibodies by adsorption. This procedure is known as immunoaffinity adsorption or solid-phase adsorption, frequently confusingly referred to as affinity purification. Specific antibodies may be isolated by binding to, and subsequent elution from an insolubilized antigen (immuno-adsorbent). It yields immunoaffinity-isolated antibodies and is the reverse of the previous procedure.

Isolated polyclonal antibodies may be very pure but they are not necessarily highly specific. Isolation of antibodies neither substitutes for adsorption, nor for specificity and performance testing. Furthermore, it does not eliminate or diminish undesired cross reactivity between components of the test system. Isolated antibodies have several known disadvantages, such as their potential instability, a tendency to aggregation and short shelf life. In general, immunoconjugates consisting of properly purified, adsorbed and conjugated IgG (7S) fractions will provide adequate results with respect to specificity, performance, and reproducibility, provided the antibody activity has been adequately established and the assay procedure is correctly carried out and interpreted. They are also less expensive.

Fluorescence activated cell sorting (FACS, flow cytometry, or flow microfluorometry) has been developed as a technique for quantifying a selected antigen expression through a population of cells surface-stained with fluorescent antibodies. In flow cytometry cells can be analysed and separated on the basis of their fluorescence emission and light scattering properties.

For sorting, separating and quantifying human cells on the basis of membrane Ig expression, it is recommended to use Nordic Specificity Reference Conjugates (Product Group 14 in this catalogue).

These Reference Reagents also simplify the control of specificity and performance in other commonly used methods. Performance test facilities require the availability of cellular and molecular reference materials not readily available in every laboratory. The alternative is to use reagents already performance-tested by the manufacturer and supplied together with the relevant test conditions and results.

Nordic Specificity Reference Reagents are not prediluted and their optimum working dilution should be established by titration in each case.

Immunoconjugates with an enzyme marker are used as enzyme-immunocytochemical staining probes for the detection of antigens or antibodies at the cellular and subcellular level. After the enzyme has reacted with one of its substrates yielding an insoluble coloured stable complex, this can be observed under the light microscope. Since the reaction complex between the antigen and the enzyme-conjugated antibody also has electron-dense properties, it can be detected by its characteristic appearance under the electron microscope.

Appropriate care must be given to the effect of fixation on the antigens in the substrate. No particular method is entirely suitable for all purposes. Fresh frozen cryostat sections fixed with acetone are in general preferred to preserve maximum antigenicity of extracellular and cell surface antigens. To maintain maximum morphology in histopathological examinations, tissue slices should be fixed followed by paraffin processing. Fixatives frequently applied are 5% formalin-acetic acid, and formalin-sublimate.

Immunoconjugates with peroxidase are prepared with horseradish peroxidase (PO) of the highest purity and specific activity (>90% isoenzyme C, RZ=3.30). A proprietary modification of the periodate coupling technique is used, followed by several purification steps to remove free reactants and protein aggregates. Many different enzymes have been introduced as markers, especially for conjugation to antibodies, but horseradish peroxidase is still the most universally used. For the use of other markers, conjugates with biotin are available allowing work with a variety of markers bound to avidin.

Enzyme-immunoconjugates are also intended for use in non-isotopic solid phase assays (enzyme immunoassays). This methodology has become very popular because it is relatively simple to perform, versatile, making an economic use of stable reagents, and providing a simple separation of bound and free molecules.

Solid phase chemistry was originally developed to insolubilize antigens and antibodies in the preparing of immunoaffinity adsorbents used for the purification of antisera. The introduction of the ELISA technique resulted in a general preference for solid phase techniques in immunoassays because it greatly facilitates the separation of bound and free reactants.

These can be linked covalently or by passive adsorption to the surface of the solid phase. In ELISA, passive adsorption of the protein to a plastic surface is routinely used and in general gives satisfactory results. Immunoblotting (Western blotting) is a technique in which antibodies are used to identify a particular antigen or antibody component in a mixture of proteins after these have been separated and transferred to a membrane carrier. Fixation of the proteins is not necessary, avoiding the destructive loss of antigenic determinants. Nearly all immunoconjugates developed for immunocytochemistry have also been adopted for immunoblotting, but peroxidase appears to be the most used and convenient label. Different materials have been described for use as carriers but nitrocellulose membranes are particularly recommended. Immunoblotting is gradually becoming a favoured technique because of its very high sensitivity and speed but it also imposes extra requirements on the specificity of the antibody reagents.

Monoclonal antibodies

NORDIMMUNE PRODUCTS are laboratory reagents consisting of monoclonal antibodies (MAbs). They are available as clarified ascites, as purified unlabelled antibodies, and as immunoconjugates with fluorescein (FITC), rhodamine (TRITC), horseradish peroxidase (PO) and biotin (Bio). Compared to polyclonal antibodies, MAbs have several restrictive characteristics (single epitope type specificity, isotype and avidity) which emphasize assay-related requirements. Although the specificity of a MAb is independent from assay conditions, titration of the antibody remains indispensable to avoid binding other than to the complementary epitope.

Most MAb reagents are isotype-specific. Additionally available are two allotypic variants of special importance: directed to IgG3m(U) and to IgA2(m)2. Where two MAbs are available for the same specificity, they can be used in a combination because of their complementary activity that was shown to be of advantage in individual applications (e.g., nephelometry, ELISA, DIBA, fluorescence techniques, immunoblotting and immunodiffusion techniques). All Nordimmune MAb products can be used on cells and tissues fixed in formalin/acetic acid/mercury chloride, and in paraffin embedded tissue sections using light microscopy visualisation, in electron microscopy, in ELISA, in Western immunoblotting and in DIBA. With these methods maximum morphology in histopathological examinations is maintained. Acetone-fixed fresh frozen cryostat sections are preferred to preserve maximum native antigenicity of extracellular and cell surface antigens. Most of Nordic MAbs were subject of extensive testing in IUIS/WHO collaborative studies. An additional information on the characteristics and performance of Nordic MAbs can be found in the relevant publications (Literature references are available on request).

Purified human immunoglobulins and calibrators

Purified human immunoglobulins represent a single subclass, L chain type and allotype. Their purity exceeds 98% as determined by agar-gel electrophoresis, quantitative densitometry, immunoelectrophoresis and double-radial-immunodiffusion (Ouchterlony). IgG preparations may still contain a trace of polyclonal "background" IgG. To inhibit proteolysis during storage, they have been dialysed against physiological saline containing 1% epsilon-aminocaproic acid. The high level of purity makes them suitable for use as reference antigens, calibrators, coating proteins, and blocking agents in a variety of immunoassays.

Also available are Serum Immunoglobulin Isotype Standards for quantitative determinations in human, mouse and rat body fluids.

Cross-reactivity

Inter-species cross-reactivity is a normal feature of antibodies to animal proteins including immunoglobulins, since homologous proteins of different species frequently share antigenic determinants. The occurrence of inter-species reactivity is relatively common regardless of the host animal origin, whether or not they have been affinity adsorbed or affinity purified, or whether they are polyclonal or monoclonal in origin. The degree of cross-reactivity is also dependent on the nature and origin of the immunogen, the concentrations of the reactants and the sensitivity of the technical

arrangement in which the antiserum or immunoconjugate is applied. Although inter-species cross-reactivity of polyclonal antisera in principle can be removed by specific cross-adsorption, it is frequently difficult to achieve this even for a single species and it may result in a significant loss of required antibody activity. On the other hand, it can be used to advantage if a comparable primary antiserum is not available and the reaction pattern is correctly recognized and understood.

For use in mixed mouse/human test systems, Nordic makes available cytochemical grade IgG(7S) products and immunoconjugates with the widest possible antibody spectrum to all known mouse Ig-isotypes (classes, subclasses, L chains), immunoaffinity cross-adsorbed and tested to minimize reactivity with any component of the human Ig system or with receptors present in human cell surface membranes. See group 16 on page 28.

The cytochemical grade reagents and immunoconjugates of group 19 (page 30) to rat Ig for mixed rat/human and rat/mouse test arrangements are cross-adsorbed and consequently assayed to eliminate cross-reactivity.

If these reagents are to be used in the presence of material originating from any other species, prior screening for inter-species reactivity is essential and additional cross-adsorption may be required to ensure intra-assay specificity.

Product specifications

Each product will be accompanied by a product specification with general and batch related characteristics. They are also available on request and can be sent by fax or email.

Storage and handling

Products are supplied in a stabilized and lyophilised form, and shipped at ambient temperature. After arrival store at +4°C; prolonged storage at or below -20°C. After warming to ambient temperature, reconstitute by adding the required amount of sterile distilled water. Products intended for immunocytochemical use should be centrifuged at 10.000 x g for 10 minutes to remove aggregates, divided into small aliquots, frozen and stored at -20°C. Avoid repeated thawing and freezing. Dilutions are prepared by adding phosphate buffered saline (PBS, pH 7.2). Working dilutions should be stored at +4°C and not refrozen. MAb products must not be stored at a temperature below -25°C due to the aggregation effect on the antibody. In immunodiffusion techniques, antisera are usually applied neat, adjusting the amount of antigen as required to obtain a clear precipitation. Nordic immunoconjugates and immunocytochemical grade reagents are not prediluted. The optimum working dilution is an assay-related characteristic and should be determined by titration. If a slight precipitation occurs upon storage of the reconstituted product, this can be removed by centrifugation and will not affect the performance of the product.

Shelf life:	lyophilised at +4°C	10 years
	reconstituted at or below -20°C	3-5 years
	reconstituted at +4°C	7 days
	working dilutions at +4°C	24 hours

Caution: antisera should be handled only by qualified persons and appropriate safety precautions should be taken in their handling and disposal and of all associated materials

Designation of immunological products

Each product is designated by a code name consisting of abbreviations of the full product description, reflecting the main characteristics of the product. (e.g., GAMon/IgG(Fc)/PO = **Goat Anti Monkey IgG, Fc** specific, labelled with horseradish **PerOxidase**). This enables easy and fast identification of its main characteristics and properties, such as host animal species, source of the immunogen, defined antibody specificity, physicochemical purity, and conjugation form. Antisera are produced using mainly rabbits (R), goats (G), sheep (Sh), and swine (Sw) as host animals. Other abbreviations are listed on the following page.

Abbreviations

A	anti	H	heavy chain
A1Lp	alpha-1 lipoprotein	H+L	heavy and light chains
A1O	alpha-1 orosomucoid (alpha-1 acid glycoprotein)	Ha	hamster
A2M	alpha-2 macroglobulin	HAA	hepatitis B associated antigen
AbF(ab') ₂	F(ab') ₂ fragment of antibody	HCFII	heparin cofactor II
ACHy	alpha-1 antichymotrypsin	HD	hidden determinants
AFP	alpha-1 foetoprotein	HMWK	high molecular weight kininogen
AGGS	non-Ig serum proteins	Ho	horse
ALalb	alpha lactalbumin	Hp	haptoglobulin
Alb	albumin	Hpx	hemopexin
AP	alkaline phosphatase	HSA	human serum albumin
Apl	alpha-2 antiplasmin (plasmin inhibitor)	Hu	human
ATh III	antithrombin III	IATI	inter-alpha trypsin inhibitor
Atr	alpha-1 antitrypsin	IFix	immunofixation
B	bovine	Ig	immunoglobulins
B1Lp	beta-1 lipoprotein	Ins	insulin
B2GP1	beta-2 glycoprotein 1	J	joining chain of polymeric IgA and IgM
B2mg	beta-2 microglobulin	Kg	kininogen
BGG	bovine gammaglobulin	L	light chain
Bio	biotin	Lfr	lactoferrin
BJK	Bence Jones kappa protein	Lp	lipoprotein
BJL	Bence Jones lambda protein	LPO	lactoperoxidase
BLgl	beta lactoglobulin	Lys	lysozyme (muramidase)
BSA	bovine serum albumin	M	mouse
BTG	beta thromboglobulin	MAB	monoclonal antibody
C	complement	Mk	milk
C4bp	C4 binding protein	Mon	monkey
Ca	cat	MSP	milk specific proteins
CBG	cortisol binding globulin	MUP	major urinary protein
CEI	C-1 esterase inhibitor	NbC	newborn calf
Ch	chicken	OAlb	ovalbumin
Col	colostrum	P	pigeon
ConA	concanavalin A	PAb	polyclonal antibody
Cp	chimpanzee	pAlb	transthyretin (prealbumin)
Cpl	alpha-2 ceruloplasmin	PAP	peroxidase-anti-peroxidase complex
CRP	C-reactive protein	PBS	phosphate buffered saline
D	dog	pC	protein C
DIBA	dot immuno blotting assay	PF4	platelet factor 4
Do	donkey	PFB	Factor B
Du	duck	PKK	prekallikrein
ELISA	enzyme linked immuno sorbent assay	Plg	plasminogen
Ery	erythrocyte	PO	horseradish peroxidase
FV	coagulation factor V	PPD	properdin
FVII	coagulation factor VII	pS	protein S
FVIII	coagulation factor VIII	R	rabbit
FIX	coagulation factor IX	Ra	rat
FX	coagulation factor X	S	serum
FXI	coagulation factor XI	SAv	streptavidin
FXII	coagulation factor XII	SC	secretory component
FXIII-A	coagulation factor XIII-A	SD	surface determinants
FXIII-S	coagulation factor XIII-S	Sh	sheep
Fab	Fab fragment of immunoglobulin	slgA	secretory IgA
Fbg	fibrinogen	SR	specificity reference
Fbn	fibronectin	Sw	swine
FC	foetal calf	TBG	thyroxine binding globulin
Fc	Fc fragment of immunoglobulin	Ths	thrombospondin
FH	Factor H	TM	total milk proteins
FI	Factor I	TR	texas red
FITC	fluorescein isothiocyanate isomer 1	Trf	transferrin
FPA	fibrinopeptide A	TRITC	tetramethyl rhodamine isothiocyanate isomer R
FPD	fibrinopeptide D	TS	total saliva proteins
FPE	fibrinopeptide E	TSP	total serum proteins
G	goat	Tu	turkey
Gp	guinea pig	VWD	Von Willebrand disease

Ordering information and terms

This catalogue contains over 1800 products and assists the immunologist and the biomedical investigator in their search for reagents that meet their own specific requirements. It provides a unique source for the selection of defined, quality-controlled and performance tested reagents.

Products included in this catalogue are normally available from stock but availability and prices are subject to change without prior notice. Any damage or shortage must be reported to NORDIC IMMUNOLOGICAL LABORATORIES or its authorized distributor in writing within 3 days of delivery.

No products shall be returned for replacement or credit without prior written authorization and instructions for return. Damaged goods subject to claim must be retained for possible inspection and must not be returned without our specific agreement.

Orders may be submitted by mail, fax, email or telephone provided that a purchase order number is supplied. Written order confirmations must be clearly marked "**confirmation**" to prevent duplicate deliveries. When ordering, please specify complete product description, product code, package form and quantity required. For local distributors please see the addresses on our website.

Orders are normally sent by priority mail. On request shipments can be forwarded by express and / or registered priority mail. C.I.F. charges will be prepaid and added to the invoice. In special cases we request for prepayment, by a certified bank cheque in our favour covering the amount and currency shown on the Proforma Invoice, which will be sent after receipt of your requisition.

Orders from individuals are subject to rejection because of the possible risks involved. All orders should be approved by a responsible official of an established institution or company.

Technical information and data relating to the products described in this catalogue are believed to be accurate at the time of publication. NORDIC cannot be held liable for any error or damage that may occur due to misuse of the information given. Products and information are offered without warranty or guarantee since the ultimate conditions of use and the variability of the materials under investigation are beyond our control.

Nothing disclosed in this catalogue is to be construed as a recommendation to use our products in violation of any patents.

All products listed are offered on the basis "for laboratory research only, not for any specific medical, therapeutic, or diagnostic use".

These terms and any transaction or sale to which they relate shall be governed by the Law of the Netherlands.

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1

Polyspecific precipitating antisera to human and animal total serum proteins

Antisera to total serum proteins are intended for use in precipitating techniques as immunoelectrophoresis and double radial immunodiffusion to identify the serum protein pattern, or the presence or absence of an individual component. They can be used to evaluate the purity of an isolated serum protein, e.g., immunoglobulins. Analyses of immunoelectrophoresis plates are based on the place, intensity and morphology of the precipitin lines. Since immunoprecipitation depends on a correct antigen/antibody concentration ratio (zone of equivalence) in the gel medium, the protein analysis by immunoelectrophoresis of serum or any other biological fluid or protein fraction should include different proportions of the reactants. In a complex mixture of proteins it is not possible to obtain an optimal protein pattern in a single analysis. The electroendosmosis effect of different types of agar on proteins with a different net charge can be used to optimize the resolution power of the system. Agar Nordic nr. 2 contains sufficient positively charged ions to optimize the resolution of the proteins in the beta-gamma regions, while the alpha regions will become more dense. It is especially recommended for analyses of immunoglobulins. Highly purified agar, Agar Nordic nr. 1, with low electroendosmosis, favours the resolution of the proteins in the alpha regions, while the major components in the beta-gamma regions can still be identified.

Antiserum to	Source	Code	Size
Bovine serum proteins	goat	GAB/TSP	1 ml
	rabbit	RAB/TSP	1 ml
	sheep	ShAB/TSP	1 ml
Cat serum proteins	goat	GACa/TSP	1 ml
	rabbit	RACa/TSP	1 ml
Chicken serum proteins	goat	GACH/TSP	1 ml
	rabbit	RACH/TSP	1 ml
Dog serum proteins	goat	GAD/TSP	1 ml
	rabbit	RAD/TSP	1 ml
	sheep	ShAD/TSP	1 ml
Duck serum proteins	rabbit	RADu/TSP	1 ml
Goat serum proteins	rabbit	RAG/TSP	1 ml
Guinea pig serum proteins	goat	GAGp/TSP	1 ml
	rabbit	RAGp/TSP	1 ml
	sheep	ShAGp/TSP	1 ml
Hamster serum proteins	rabbit	RAHa/TSP	1 ml
Horse serum proteins	rabbit	RAHo/TSP	1 ml
Human serum proteins	goat	GAHu/TSP	1 ml
	rabbit	RAHu/TSP	1 ml
Monkey serum proteins	rabbit	RAMon/TSP	1 ml
Mouse serum proteins	goat	GAM/TSP	1 ml
	rabbit	RAM/TSP	1 ml
Pigeon serum proteins	rabbit	RAP/TSP	1 ml
Rabbit serum proteins	goat	GAR/TSP	1 ml
	sheep	ShAR/TSP	1 ml
	swine	SwAR/TSP	1 ml

Antiserum to	Source	Code	Size
Rat serum proteins	goat	GARa/TSP	1 ml
	rabbit	RARa/TSP	1 ml
	sheep	ShARa/TSP	1 ml
Sheep serum proteins	rabbit	RASh/TSP	1 ml
Swine serum proteins	goat	GASw/TSP	1 ml
	rabbit	RASw/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

2

Polyclonal precipitating antisera to human immunoglobulins and related proteins

This product group includes antisera to human immunoglobulins, their fragments and structurally related proteins for routine use in immunoprecipitation techniques. They contain antibodies referred to as precipitins, and are mainly obtained from rabbits, swine, goats and sheep. Such antisera are preferred for use in gel-precipitation techniques as immunoelectrophoresis, double radial immunodiffusion (Ouchterlony), single radial immunodiffusion (Mancini) and electroimmunodiffusion (Laurell).

Precipitating antibodies are capable of insolubilizing dissolved antigens in vitro. They have the advantage of precipitating within a wide range of antibody-antigen ratio's.

Specificity of the antisera is obtained by removing undesired antibodies using appropriate insoluble immunoabsorbents.

Antiserum to human	Source	Code	Size
Immunoglobulins (IgG, IgA, IgM, Fc and Fab)	goat	GAHu/Ig	1 ml
	rabbit	RAHu/Ig	1 ml
	swine	SwAHu/Ig	1 ml
Immunoglobulins (IgG, IgA, IgM, Fc specific)	goat	GAHu/Ig(Fc)	1 ml
Immunoglobulins (IgG, IgA, IgM, IgD, Fc and Fab)	goat	GAHu/Ig(GAMD)	1 ml
	rabbit	RAHu/Ig(GAMD)	1 ml
Immunoglobulins (IgG, IgA, IgM, IgD, IgE, Fc and Fab)	goat	GAHu/Ig(GAMDE)	1 ml
	rabbit	RAHu/Ig(GAMDE)	1 ml
IgG (Fc specific)	goat	GAHu/IgG(Fc)	1 ml
	rabbit	RAHu/IgG(Fc)	1 ml
	swine	SwAHu/IgG(Fc)	1 ml
IgG (H and L chains)	goat	GAHu/IgG(H+L)	1 ml
Fab of IgG	goat	GAHu/Fab	1 ml
	rabbit	RAHu/Fab	1 ml
	swine	SwAHu/Fab	1 ml
IgA (Fc specific)	goat	GAHu/IgA(Fc)	1 ml
	rabbit	RAHu/IgA(Fc)	1 ml
	swine	SwAHu/IgA(Fc)	1 ml

Antiserum to human	Source	Code	Size
IgM (Fc specific)	goat	GAHu/IgM(Fc)	1 ml
	rabbit	RAHu/IgM(Fc)	1 ml
	swine	SwAHu/IgM(Fc)	1 ml
IgD (Fc specific)	goat	GAHu/IgD(Fc)	1 ml
	rabbit	RAHu/IgD(Fc)	1 ml
	sheep	ShAHu/IgD(Fc)	1 ml
IgE (Fc specific)	goat	GAHu/IgE(Fc)	1 ml
	rabbit	RAHu/IgE(Fc)	1 ml
	sheep	ShAHu/IgE(Fc)	1 ml
	swine	SwAHu/IgE(Fc)	1 ml
Kappa chain , free and bound (i.e. Bence Jones kappa, surface and hidden determinants)	goat	GAHu/BJK(SD+HD)	1 ml
	rabbit	RAHu/BJK(SD+HD)	1 ml
	swine	SwAHu/BJK(SD+HD)	1 ml
Kappa chain , free (i.e. Bence Jones kappa, hidden determinants)	goat	GAHu/BJK(HD)	1 ml
	rabbit	RAHu/BJK(HD)	1 ml
	sheep	ShAHu/BJK(HD)	1 ml
Lambda chain , free and bound (i.e. Bence Jones lambda, surface and hidden determinants)	goat	GAHu/BJL(SD+HD)	1 ml
	rabbit	RAHu/BJL(SD+HD)	1 ml
	swine	SwAHu/BJL(SD+HD)	1 ml
Lambda chain , free (i.e. Bence Jones lambda, hidden determinants)	goat	GAHu/BJL(HD)	1 ml
	rabbit	RAHu/BJL(HD)	1 ml
	sheep	ShAHu/BJL(HD)	1 ml
J chain of dimeric IgA	goat	GAHu/J	0.5 ml
	rabbit	RAHu/J	0.5 ml
J chain Test Set (0.5 ml antiserum and 0.1 ml free J chain reference solution)	goat	GAHu/J Test Set	

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

3

Polyclonal precipitating antisera to human subclasses of IgG and IgA

Precipitating polyclonal antisera to the subclasses of human IgG and IgA are obtained by immunization with myeloma proteins or their Fc fragments, followed by adsorption of the antiserum with insolubilized highly purified myelomaproteins of the other subclasses, including all heavy/light chain combinations. With the use of these antisera, the four subclasses of IgG and the two of IgA present in normal serum can selectively be detected using immunoprecipitating techniques. At the level of sensitivity of these techniques, these antisera react exclusively with one single subclass. In the case of a gammopathy, where the monoclonal gradient is clearly visible in agar-electrophoresis, the double radial immunodiffusion technique is usually adequate for the determination of the subclass of the pathological immunoglobulin. If the M-component is not strongly pronounced, immunoelectrophoresis is recommended.

Antiserum to human	Source	Code	Size
IgG1, IgG2, IgG3 and IgG4 subclasses, set antisera	sheep	ShAHu/IgG1-4 Set	4x0.5 ml
	swine	SwAHu/IgG1-4 Set	4x0.5 ml
IgG3 subclass	sheep	ShAHu/IgG3	1 ml
	rabbit	RAHu/IgG3	1 ml
IgG4 subclass	sheep	ShAHu/IgG4	1 ml
IgA1 and IgA2 subclasses, set antisera	rabbit	RAHu/IgA1-2 Set	2x0.5 ml
	sheep	ShAHu/IgA1-2 Set	2x0.5 ml

Packing: vial(s) with lyophilized antiserum

Storage and handling: see Technical information page 8

4

Polyclonal precipitating antisera to human plasma proteins

Specific antisera against one human plasma protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

The qualitative techniques have a detection limit of about 0.5 to 5 mg per 100 ml. The quantitative techniques have a threshold of detection of about 0.25 mg per 100 ml. It may serve as a general guideline that rabbit antisera contain between 3 and 8 mg IgG per 1 ml; goat, sheep and swine antisera between 8 and 15 mg IgG per ml. The total protein content of the antisera is comparable to that of a pooled normal serum of the same species, although it may be slightly changed as a result of the adsorption procedures applied.

Antiserum to human	Source	Code	Size
Albumin	goat	GAHu/Alb	1 ml
	rabbit	RAHu/Alb	1 ml
Alpha and beta lipoproteins	goat	GAHu/Lp	1 ml
Alpha-1 acid glycoprotein (alpha-1 orosomucoid)	rabbit	RAHu/A1O	1 ml

Antiserum to human	Source	Code	Size
Alpha-1 antichymotrypsin	sheep	ShAHu/ACHy	1 ml
Alpha-1 antitrypsin	goat	GAHu/Atr	1 ml
Alpha-1 foetoprotein	rabbit	RAHu/AFP	1 ml
Alpha-1 lipoprotein	goat	GAHu/A1Lp(HDL)	1 ml
Alpha-2 macroglobulin	goat	GAHu/A2M	1 ml
Beta-1 lipoproteins	rabbit	RAHu/B1Lp(LDL)	1 ml
Beta-2 microglobulin	rabbit	RAHu/B2mg	1 ml
C-reactive protein	goat	GAHu/CRP	1 ml
C1q	goat	GAHu/C1q	1 ml
	rabbit	RAHu/C1q	1 ml
C1r	goat	GAHu/C1r	1 ml
C1s	goat	GAHu/C1s	1 ml
C1 esterase inhibitor	goat	GAHu/CEI	1 ml
	rabbit	RAHu/CEI	1 ml
C2	rabbit	RAHu/C2	1 ml
C3a	rabbit	RAHu/C3a	1 ml
C3b	rabbit	RAHu/C3b	1 ml
C3c	goat	GAHu/C3c	1 ml
	rabbit	RAHu/C3c	1 ml
	swine	SwAHu/C3c	1 ml
C3d	goat	GAHu/C3d	1 ml
C4	goat	GAHu/C4	1 ml
	rabbit	RAHu/C4	1 ml
C4 binding protein	rabbit	RAHu/C4bp	1 ml
	sheep	ShAHu/C4bp	1 ml
C5	goat	GAHu/C5	1 ml
Ceruloplasmin	rabbit	RAHu/Cpl	1 ml
	goat	GAHu/Cpl	1 ml
Complement (C3c, C3d, C4)	rabbit	RAHu/C	1 ml
Cortisol binding globulin	rabbit	RAHu/CBG	1 ml
Factor B	goat	GAHu/PFB	1 ml
Factor H	sheep	ShAHu/FH	1 ml
Factor I	sheep	ShAHu/FI	1 ml
Fibrinogen	goat	GAHu/Fbg	1 ml
	rabbit	RAHu/Fbg	1 ml
Haptoglobin	goat	GAHu/Hp	1 ml
Hemopexin	rabbit	RAHu/Hpx	1 ml
Inter-alpha trypsin inhibitor	sheep	ShAHu/IATI	1 ml
Properdin	goat	GAHu/PPD	1 ml
Serum proteins	rabbit	RAHu/TSP	1 ml
	goat	GAHu/TSP	1 ml
Serum proteins (non-Ig)	goat	GAHu/AGGS	1 ml
	rabbit	RAHu/AGGS	1 ml

Antiserum to human	Source	Code	Size
Transferrin	goat	GAHu/Trf	1 ml
	rabbit	RAHu/Trf	1 ml
Transthyretin (prealbumin)	goat	GAHu/pAlb	1 ml
	swine	SwAHu/pAlb	1 ml
Thyroxine binding globulin	goat	GAHu/TBG	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

5

Polyclonal precipitating antisera to human secretory proteins

Proteins in human secretions can be studied with reasonably satisfactory results using the same procedures routinely employed for the study of serum proteins, including immunoelectrophoresis, double radial immunodiffusion (Ouchterlony), single radial immunodiffusion (Mancini) and electroimmunodiffusion (Laurell).

Antiserum to human	Source	Code	Size
Alpha lactalbumin	rabbit	RAHu/ALalb	1 ml
Lactoferrin	goat	GAHu/Lfr	1 ml
	rabbit	RAHu/Lfr	1 ml
Lysozyme (muramidase)	rabbit	RAHu/Lys	1 ml
Milk proteins	rabbit	RAHu/TM	1 ml
Saliva proteins	rabbit	RAHu/TS	1 ml
Salivary amylase	sheep	ShAHu/sAmy	1 ml
Secretory component , free and bound	goat	GAHu/SC	1 ml
	rabbit	RAHu/SC	1 ml
	sheep	ShAHu/SC	1 ml
Secretory component , free	rabbit	RAHu/SC(HD)	1 ml
Secretory IgA (Fc and secretory component)	sheep	ShAHu/sIgA	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

6

Antisera to human hepatitis B associated antigen

Antiserum to human	Source	Code	Size
HAA (HBsAg)	swine	SwAHu/HAA	1 ml

IgG(7s) fraction to	Source	Code	Size
HAA (HBsAg)	swine	SwAHu/HAA/7S	10 mg

Packing: vial with lyophilized antiserum / 7S fraction
Storage and handling: see Technical information page 8

7 Polyclonal precipitating antisera to human coagulation factors and related plasma proteins

In 1973 Nordic Immunological Laboratories introduced the first commercially available antiserum to human coagulation factor VIII for use in a quantitative immunodiffusion technique. Since then the study of plasma proteins with a role in coagulation and related physiological systems and the development of specific antisera and application techniques have always occupied a prominent position in our activities. Today a range of specific antisera is available for the determination of plasma protein components associated with these systems.

Antiserum to human	Source	Code	Size
Alpha-2 antiplasmin (plasmin inhibitor)	goat	GAHu/Apl	1 ml
	rabbit	RAHu/Apl	1 ml
Antithrombin III	goat	GAHu/ATh III	1 ml
Beta-2 glycoprotein 1 (apolipoprotein H)	rabbit	RAHu/B2GP1	1 ml
Beta-thromboglobulin	rabbit	RAHu/BTG	1 ml
C4b binding protein	sheep	ShAHu/C4bp	1 ml
	rabbit	RAHu/C4bp	1 ml
Factor V	rabbit	RAHu/FV	1 ml
Factor VII	rabbit	RAHu/FVII	1 ml
Factor VIII related antigen (VWD)	rabbit	RAHu/FVIII(VWD)	1 ml
	goat	GAHu/FVIII(VWD)	1 ml
Factor IX	rabbit	RAHu/FIX	1 ml
Factor X	rabbit	RAHu/FX	1 ml
Factor XI	goat	GAHu/FXI	1 ml
Factor XII	goat	GAHu/FXII	1 ml
Factor XIII-A	rabbit	RAHu/FXIII-A	1 ml
Factor XIII-S	rabbit	RAHu/FXIII-S	1 ml
Fibrinogen (factor I)	goat	GAHu/Fbg	1 ml
	rabbit	RAHu/Fbg	1 ml
Fibronectin	rabbit	RAHu/Fbn	1 ml
Fibrinopeptide A	rabbit	RAHu/FPA	1 ml
Fibrinopeptide D	rabbit	RAHu/FPD	1 ml
Fibrinopeptide E	rabbit	RAHu/FPE	1 ml

Antiserum to human	Source	Code	Size
Heparin cofactor II	rabbit	RAHu/HCFII	1 ml
High molecular weight kininogen, (L-chain specific)	goat	GAHu/HMWK	1 ml
Kininogen	goat	GAHu/Kg	1 ml
Plasminogen	goat	GAHu/PIg	1 ml
	rabbit	RAHu/PIg	1 ml
Platelet factor 4	rabbit	RAHu/PF4	1 ml
Prekallikrein	goat	GAHu/PKK	1 ml
Protein C	goat	GAHu/pC	1 ml
Protein S	goat	GAHu/pS	1 ml
Thrombospondin	rabbit	RAHu/ThS	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

8

Polyclonal antisera for immunofixation of human immunoglobulins

The detection and identification of a high and progressively increasing paraprotein in serum and /or Bence Jones protein in urine is a very valuable diagnostic sign of a B cell malignancy. Problems frequently related to the identification of a low level of paraprotein and its L chain type, the demonstration of an IgM or IgA paraprotein in a protein-rich region can be solved using immunofixation. Available upon request is Nordic Recommended Working Procedure (RWP 4E/88): Detection and isotyping of human paraproteins by immunofixation electrophoresis.

Specificity	Source	Code	Size
Immunoglobulins (IgG, IgA, IgM, IgD, Fc and Fab)	goat	GAHu/Ig/IFix	1 ml
IgG (Fc specific)	goat	GAHu/IgG(Fc)/IFix	1 ml
IgA (Fc specific)	goat	GAHu/IgA(Fc)/IFix	1 ml
IgM (Fc specific)	goat	GAHu/IgM(Fc)/IFix	1 ml
IgD (Fc specific)	goat	GAHu/IgD(Fc)/IFix	1 ml
IgE (Fc specific)	goat	GAHu/IgE(Fc)/IFix	1 ml
Kappa chain, free and bound (i.e. Bence Jones kappa, surface and hidden determinants)	goat	GAHu/BJK(SD+HD)/IFix	1 ml
Lambda chain, free and bound (i.e. Bence Jones lambda, surface and hidden determinants)	rabbit	RAHu/BJL(SD+HD)/IFix	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

9

Cytochemical grade IgG(7S) preparations and their conjugates with FITC, TRITC, peroxidase and biotin to human proteins

Whereas precipitating antisera are offered for the use in immunodiffusion techniques, the 7S fractions and their conjugates are prepared for more sensitive techniques such as, e.g., immunofluorescence, ELISA, DIBA, immunoblotting, immunohistochemical techniques etc.

For more details see Technical information, page 5.

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
Immunoglobulins (IgG, IgA, IgM, Fc and Fab)	goat	GAHu/Ig	10 mg	1 ml	1 ml	1 ml	1 ml
	swine	SwAHu/Ig	10 mg	1 ml	1 ml		
Immunoglobulins (IgG, IgA, IgM, Fc specific)	goat	GAHu/Ig(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
Immunoglobulins (IgG, IgA, IgM, IgD, Fc and Fab)	goat	GAHu/Ig(GAMD)	10 mg				
IgG (Fc and Fab)	goat	GAHu/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
	rabbit	RAHu/IgG(H+L)	10 mg	2 ml			
	swine	SwAHu/IgG(H+L)	10 mg	2 ml			1 ml
IgG (Fc specific)	goat	GAHu/IgG(Fc)	10 mg		1 ml	1 ml	1 ml
	rabbit	RAHu/IgG(Fc)	10 mg	1 ml	1 ml		
	swine	SwAHu/IgG(Fc)	10 mg	1 ml	1 ml		
Fab of normal IgG	goat	GAHu/Fab	10 mg	1 ml	1 ml	1 ml	1 ml
IgA (Fc specific)	goat	GAHu/IgA(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAHu/IgA(Fc)	10 mg	1 ml	1 ml		
	swine	SwAHu/IgA(Fc)	10 mg	1 ml	1 ml		
IgM (Fc specific)	goat	GAHu/IgM(Fc)	10 mg		1 ml	1 ml	1 ml
	rabbit	RAHu/IgM(Fc)	10 mg	1 ml	1 ml		
	swine	SwAHu/IgM(Fc)	10 mg	1 ml	1 ml		
IgD (Fc specific)	goat	GAHu/IgD(Fc)		1 ml	1 ml	1 ml	1 ml
	sheep	ShAHu/IgD(Fc)	10 mg	1 ml	1 ml		
IgE (Fc specific)	goat	GAHu/IgE(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	swine	SwAHu/IgE(Fc)	10 mg	1 ml	1 ml	1 ml	
Kappa chain , free and bound (i.e. Bence Jones kappa, surface and hidden determinants)	goat	GAHu/BJK(SD+HD)	10 mg	1 ml	1 ml		
	rabbit	RAHu/BJK(SD+HD)	10 mg	1 ml	1 ml		1 ml
	swine	SwAHu/BJK(SD+HD)	10 mg	1 ml	1 ml		
Lambda chain , free and bound, (i.e. Bence Jones lambda, surface and hidden determinants)	goat	GAHu/BJL(SD+HD)	10 mg	1 ml	1 ml		
	rabbit	RAHu/BJL(SD+HD)	10 mg	1 ml	1 ml		1 ml
	swine	SwAHu/BJL(SD+HD)	10 mg	1 ml	1 ml		
Secretory component , free and bound)	goat	GAHu/SC		1 ml		1 ml	1 ml
	sheep	ShAHu/SC	10 mg				
J chain of dimeric IgA	goat	GAHu/J	10 mg	1 ml		1 ml	1 ml
	rabbit	RAHu/J		1 ml	1 ml		

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
Albumin	goat	GAHu/Alb	10 mg	1 ml		1 ml	1 ml
Alpha lactalbumin	rabbit	RAHu/ALalb	10 mg	1 ml	1 ml	1 ml	1 ml
Alpha-1 foetoprotein	rabbit	RAHu/AFP		1 ml			
C1q	goat	GAHu/C1q		1 ml			
C3c	goat	GAHu/C3c		1 ml	1 ml	1 ml	1 ml
	sheep	ShAHu/C3c		1 ml			
	swine	SwAHu/C3c	10 mg	1 ml	1 ml		
C5	goat	GAHu/C5		1 ml			
Fibrinogen	goat	GAHu/Fbg	10 mg	1 ml		1 ml	1 ml
Lactoferrin	goat	GAHu/Lfr	10 mg	1 ml		1 ml	1 ml
Lysozyme	rabbit	RAHu/Lys	10 mg	1 ml		1 ml	1 ml
Properdin	goat	GAHu/PPD		1 ml			
Serum proteins	swine	SwAHu/TSP		1 ml			

Packing: vial with lyophilized 7S fraction / conjugate

Storage and handling: see Technical information page 8

Ordering code: combine the code with the label in the outlined heading

10

Immunoconjugates of affinity-isolated F(ab')₂ fragment antibodies to human immunoglobulins

The absence of the Fc domains in the conjugates of this group of preparations ensures minimal interaction with tissue components and cell surfaces other than the primary antibody activity. Ab(Fab')₂ conjugates specific to one isotype of the human Ig system are primarily intended for use in cell surface membrane staining procedures, to identify and quantitate Ig specificities on human B cells, especially if interference by Fc activity is expected.

F(ab') ₂ fraction to human	Source	Code	/FITC	/TRITC
IgG (Fc specific)	sheep	FShAHu/IgG(Fc)		1 ml
Fab of normal IgG	goat	FGAHu/Fab	1 ml	1 ml
IgA (Fc specific)	sheep	FShAHu/IgA(Fc)		1 ml
IgM (Fc specific)	goat	FGAHu/IgM(Fc)	1 ml	1 ml

Packing: vial with lyophilized conjugate

Storage and handling: see Technical information page 8

Ordering code: combine the code with the label in the outlined heading

Specificity reference reagents to human immunoglobulins

In the absence of international standards, the Nordic Reference Reagents will greatly simplify specificity controls to be carried out by the investigator. Final evidence of performance and specificity at an appropriate high level of assay sensitivity is obtained in a series of immunofluorescence tests on human lymphoid cells. Optimum dilutions for use in indirect techniques are determined by titration on fixed bone marrow and on normal vital peripheral blood mononuclear cells.

When used for direct staining of cIg or sIg, followed by evaluation under fluorescence microscope or in the fluorescence activated cell sorter (FACS), a working dilution of approximately 1:40 to 1:80 may serve as a general guideline. When used in indirect techniques the working dilution may vary from 1:60 to 1:120.

To carry out double immunofluorescence staining, specificity reference conjugates with different markers may be mixed in equal proportions prior to use.

For histochemical use peroxidase and biotine conjugates may be diluted between 1:100 and 1:500 for direct staining, or from 1:400 to 1:2000 for indirect methods. When used in ELISA and immunoblotting, working dilutions may show a much larger variation, usually between 1:1000 and 1:10000.

IgG fraction to human	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
IgG (Fc specific)	goat	SR/GAHu/IgG(Fc)	10 mg	1 ml	1 ml	1 ml	n.a.
IgA (Fc specific)	goat	SR/GAHu/IgA(Fc)	10 mg	n.a.	1 ml	1 ml	1 ml
IgM (Fc specific)	goat	SR/GAHu/IgM(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
IgD (Fc specific)	goat	SR/GAHu/IgD(Fc)	10 mg	1 ml	1 ml	n.a.	n.a.
IgE (Fc specific)	goat	SR/GAHu/IgE(Fc)	10 mg	1 ml	1 ml	1 ml	n.a.
Kappa chain , free and bound, (i.e. Bence Jones kappa, surface and hidden determinants)	goat	SR/GAHu/BJK(SD+HD)	10 mg	1 ml	1 ml	1 ml	1 ml
Lambda chain , free and bound, (i.e. Bence Jones lambda, surface and hidden determinants)	goat	SR/GAHu/BJL(SD+HD)	10 mg	1 ml	1 ml	1 ml	1 ml

Packing: vial with lyophilized 7S fraction / conjugate

Storage and handling: see Technical information page 8

Ordering code: combine the code with the label in the outlined heading

12

Reagents for human J chain

Human J chain used as immunogen in the production of Nordic antisera has been released from dimeric myeloma IgA by sulfitolysis and subsequently highly purified to obtain it free of IgA heavy or light chain contaminants.

The precipitating antisera are intended for use in immunodiffusion techniques, the 7S fractions and the conjugates are prepared for more sensitive techniques such as, e.g., immunofluorescence, ELISA, DIBA, immunoblotting, immunohistochemical methods etc.

For more details see Technical information.

The J chain test set contains, in addition to the antiserum, a partially purified free human J chain as a reference. Its concentration is about 3 mg/ml.

Antiserum to human	Source	Code	Size
J chain	goat	GAHu/J	0.5 ml
	rabbit	RAHu/J	0.5 ml
J chain Test Set (0.5 ml precipitating antiserum and 0.1 ml free J chain in PBS)	goat	GAHu/J Test Set	

IgG fraction to human	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
J chain	goat	GAHu/J	10 mg	1 ml		1 ml	1 ml
	rabbit	RAHu/J		1 ml	1 ml		

Packing: vial with lyophilized 7S fraction / conjugate

Storage and handling: see Technical information page 8

Ordering code: combine the code with the label in the outlined heading

The concept of assay-related requirements for immunologic reagents is well-known and applies especially to the highly variable characteristics of single-cell derived monoclonal antibodies (Mabs).

In addition to the restrictive characteristics of the MAb (single epitope, specificity, isotype and avidity), the concept of assay-related requirements for immunologic reagents can also be explained by the difference in properties and condition of the target epitopes in the test system. Preparative techniques may have obstructive or destructive effects on the expression of the epitope.

The optimum working dilution of any MAb reagent may vary considerably with its type and specificity and with the test procedure in which it should always be determined by titration. For fluorescence staining procedure, working dilutions of the conjugate usually vary between 1:40 and 1:100. For histochemical use dilutions of Mab conjugates with peroxidase or biotin may be from 1:25 upwards. When used in ELISA systems optimum dilutions may show a much larger variation, but these will usually be from 1:50 upwards; in immunoblotting and DIBA from 1:100 upwards. These data are a general guideline only.

When two MABs are given for the same specificity, they are used in a combination because of their complementary activity that has been shown to be of advantage in individual applications (e.g., nephelometry, ELISA, DIBA, fluorescence techniques, immunoblotting and immunodiffusion techniques).

Specificity	Clone(s)		Code		/Mab	/FITC	/TRITC	/PO	/Bio
	Nordic number	IUIS/WHO number							
Human	ascites								
IgG isotype (4 subclasses)	NI 335 NI 343		MAHu/IgGc	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgG1 subclass	NI 132	HP 6186	MAHu/IgG1	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgG2 subclass	NI 6014	HP 6014	MAHu/IgG2	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgG2 subclass	NI 25-1	HP 6207	MAHu/IgG2Fc	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgG3 subclass	NI 330	HP 6050	MAHu/IgG3	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgG3m(u) allotype	NI 86	HP 6080	MAHu/IgG3m(u)	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgG4 subclass	NI 315	HP 6206	MAHu/IgG4	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgA isotype (IgA1 and IgA2)	NI 69 NI 184	A89-034 A89-035	MAHu/IgAc	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgA1 subclass	NI 69-11	A89-036	MAHu/IgA1	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgA2 subclass	NI 512	A89-038	MAHu/IgA2	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgA2(m)2 allotype	NI 194-3	A89-040	MAHu/IgA2(m)2	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgM isotype	NI 179		MAHu/IgM	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgD isotype	NI 158		MAHu/IgD	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
IgE isotype	NI 307		MAHu/IgE	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
Kappa chain , free and bound	NI 285 NI 250		MAHu/BJK	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
Lambda chain , free and bound	NI 412 NI 268		MAHu/BJL	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
Secretory component free and bound	NI 194-4	A89-039	MAHu/SC	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg
Lactoferrin	NI 25		MAHu/Lfr	0.5 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg	0.2 mg

Specificity	Clone	Code		/Mab	/PO	/Bio
	Nordic number					
ascites						
Horseradish peroxidase	NI 191	MA/PO	0.5 mg	0.2 mg		
Fluorescein isothiocyanate isomer 1	NI 239	MA/FITC	0.5 mg	0.2 mg	0.2 mg	0.2 mg
Rhodamine isothiocyanate isomer R	NI 308	MA/TRITC	0.5 mg	0.2 mg	0.2 mg	

All NORDIMMUNE™ mouse monoclonal antibodies are of the IgG1-κ isotype.

Packing : vial with ascites / Mab / conjugate lyophilized from 0.5 ml

Ordering code: combine the code with the label in the outlined heading

Test Sets to human Ig isotypes and subclasses of IgG and IgA

Human Ig class isotype set	form	Clone(s)		Mouse isotype	Code	Size
		Nordic number	IUIS/WHO number			
IgG isotype (4 subclasses)	ascites	NI 335		IgG1-κ	MAHu/IgGc	0.5 mg
	ascites	NI 343		IgG1-κ		
IgA isotype (IgA1 and IgA2)	ascites	NI 69	A89-034	IgG1-κ	MAHu/IgAc	0.5 mg
	ascites	NI 184	A89-035	IgG1-κ		
IgM isotype	ascites	NI 179		IgG1-κ	MAHu/IgM	0.5 mg
IgD isotype	ascites	NI 158		IgG1-κ	MAHu/IgD	0.5 mg
IgE isotype	ascites	NI 307		IgG1-κ	MAHu/IgE	0.5 mg

Code: MAHu/Ig Set

Human IgG subclass set	form	Clone		Mouse isotype	Code	Size
		Nordic number	IUIS/WHO number			
IgG1 subclass	ascites	NI 132	HP 6186	IgG1-κ	MAHu/IgG1	0.5 mg
IgG2 subclass	ascites	NI 6014	HP 6014	IgG1-κ	MAHu/IgG2	0.5 mg
	ascites	NI 25-1	HP 6207	IgG1-κ	MAHu/IgG2Fc	0.5 mg
IgG3 subclass	ascites	NI 330	HP 6050	IgG1-κ	MAHu/IgG3	0.5 mg
IgG4 subclass	ascites	NI 315	HP 6206	IgG1-κ	MAHu/IgG4	0.5 mg

Code: MAHu/IgG1-4 Set

Human IgA subclass and secretory component isotype set	form	Clone		Mouse isotype	Code	Size
		Nordic number	IUIS/WHO number			
IgA isotype (IgA1 and IgA2)	ascites	NI 69	A89-034	IgG1-κ	MAHu/IgAc	0.5 mg
	ascites	NI 184	A89-035	IgG1-κ		
IgA1 subclass	ascites	NI 69-11	A89-036	IgG1-κ	MAHu/IgA1	0.5 mg
IgA2 subclass	ascites	NI 512	A89-038	IgG1-κ	MAHu/IgA2	0.5 mg
Secretory component , free and bound	ascites	NI 194-4	A89-039	IgG1-κ	MAHu/SC	0.5 mg

Code: MAHu/IgA Set

Storage and handling: see Technical information page 8

Polyclonal precipitating antisera to mouse immunoglobulins and other proteins

Specific antisera against one mouse protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

The qualitative techniques have a detection limit of about 0.5 to 5 mg per 100 ml. The quantitative techniques have a threshold of detection of about 0.25 mg per 100 ml. It may serve as a general guideline that rabbit antisera contain between 3 and 8 mg IgG per 1 ml; goat, sheep and swine antisera between 8 and 15 mg IgG per ml. The total protein content of the antisera is comparable to that of a pooled normal serum of the same species, although it may be slightly changed as a result of the adsorption procedures applied.

Antiserum to mouse	Source	Code	Size
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG3, IgA, IgM, Fc and Fab)	goat	GAM/Ig	1 ml
	rabbit	RAM/Ig	1 ml
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG3, IgA, IgM, IgD, Fc and Fab)	goat	GAM/Ig(GAMD)	1 ml
	rabbit	RAM/Ig(GAMD)	1 ml
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG3, IgA, IgM, IgD, IgE, Fc and Fab)	goat	GAM/Ig(GAMDE)	1 ml
	rabbit	RAM/Ig(GAMDE)	1 ml
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG3, IgA, IgM, Fc specific)	goat	GAM/Ig(Fc)	1 ml
IgG (IgG1, IgG2, H and L chains)	swine	SwAM/IgG(H+L)	1 ml
IgG (IgG1, IgG2a, IgG2b, IgG3, H and L chains)	goat	GAM/IgG(H+L)	1 ml
	rabbit	RAM/IgG(H+L)	1 ml
IgG (IgG1, IgG2a, IgG2b, IgG3, Fc specific)	goat	GAM/IgG(Fc)	1 ml
	rabbit	RAM/IgG(Fc)	1 ml
Fab of normal IgG	goat	GAM/Fab	1 ml
	rabbit	RAM/Fab	1 ml
	sheep	ShAM/Fab	1 ml
IgG1 (subclass specific)	goat	GAM/IgG1	1 ml
	rabbit	RAM/IgG1	1 ml
IgG2ab (subclass specific)	goat	GAM/IgG2ab	1 ml
	rabbit	RAM/IgG2ab	1 ml
IgG2a (subclass specific)	goat	GAM/IgG2a	1 ml
	rabbit	RAM/IgG2a	1 ml
	sheep	ShAM/IgG2a	1 ml
IgG2a (1a allotype specific)	rabbit	RAM/IgG2a(1a)	1 ml
	sheep	ShAM/IgG2a(1a)	1 ml
IgG2a (1b allotype specific)	rabbit	RAM/IgG2a(1b)	1 ml
	sheep	ShAM/IgG2a(1b)	1 ml
IgG2b (subclass specific)	goat	GAM/IgG2b	1 ml
	rabbit	RAM/IgG2b	1 ml
	sheep	ShAM/IgG2b	1 ml
IgG3 (subclass specific)	goat	GAM/IgG3	1 ml
	rabbit	RAM/IgG3	1 ml

Specificity	Source	Code	Size
IgA (Fc specific)	goat	GAM/IgA(Fc)	1 ml
	rabbit	RAM/IgA(Fc)	1 ml
	swine	SwAM/IgA(Fc)	1 ml
IgM (Fc specific)	goat	GAM/IgM(Fc)	1 ml
	rabbit	RAM/IgM(Fc)	1 ml
IgD (Fc specific)	goat	GAM/IgD(Fc)	1 ml
	rabbit	RAM/IgD(Fc)	1 ml
	sheep	ShAM/IgD(Fc)	1 ml
IgE (Fc specific)	goat	GAM/IgE(Fc)	1 ml
	rabbit	RAM/IgE(Fc)	1 ml
Kappa chain , free and bound (i.e. Bence Jones kappa, surface and hidden determinants)	goat	GAM/BJK(SD+HD)	1 ml
	sheep	ShAM/BJK(SD+HD)	1 ml
Lambda chain , free and bound, (i.e. Bence Jones lambda, surface and hidden determinants)	goat	GAM/BJL(SD+HD)	1 ml
	sheep	ShAM/BJL(SD+HD)	1 ml
Albumin	rabbit	RAM/Alb	1 ml
Alpha-2 macroglobulin	rabbit	RAM/A2M	1 ml
	rat	RaAM/A2M	1 ml
Complement C3c	goat	GAM/C3c	1 ml
Fibrinogen	goat	GAM/Fbg	1 ml
Major urinary protein	goat	GAM/MUP	1 ml
Milk proteins	rabbit	RAM/TM	1 ml
Milk-specific proteins	rabbit	RAM/MSP	1 ml
Serum proteins	goat	GAM/TSP	1 ml
	rabbit	RAM/TSP	1 ml
Serum proteins (non-Ig)	rabbit	RAM/AGGS	1 ml
Transferrin	goat	GAM/Trf	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

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Polyclonal cytochemical grade IgG(7S) preparations and their conjugates with FITC, TRITC, peroxidase and biotin to mouse proteins

Whereas precipitating antisera are offered for the use of immunodiffusion techniques, the 7S fractions and their conjugates are prepared for more sensitive techniques such as e.g. immunofluorescence, ELISA, DIBA, immunoblotting, immunohistochemical techniques etc.

For more details see Technical information, page 5.

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG3, IgA, IgM, Fc and Fab)	goat	GAM/Ig	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/Ig	10 mg	1 ml	1 ml	1 ml	1 ml

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG3, IgA, IgM, Fc specific)	goat	GAM/Ig(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
IgG (Fc and Fab)	swine	SwAM/IgG(H+L)	10 mg	2 ml			
IgG (IgG1, IgG2a, IgG2b, IgG3, Fc specific)	goat	GAM/IgG(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/IgG(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
IgG (IgG1, IgG2a, IgG2b, IgG3, Fc and Fab)	rabbit	RAM/IgG(H+L)	10 mg	2 ml	2 ml	1 ml	1 ml
	goat	GAM/IgG(H+L)	10 mg	2 ml	2 ml	1 ml	1 ml
Fab of normal IgG	goat	GAM/Fab	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/Fab	10 mg	1 ml	1 ml		
	sheep	ShAM/Fab		1 ml	1 ml		
IgG1 (subclass specific)	goat	GAM/IgG1	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/IgG1	10 mg	1 ml	1 ml		
IgG2 (subclass specific)	goat	GAM/IgG2	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/IgG2		1 ml	1 ml		
IgG2a (subclass specific)	goat	GAM/IgG2a	10 mg	1 ml	1 ml	1 ml	1 ml
	sheep	ShAM/IgG2a		1 ml	1 ml		
IgG2a (1a allotype specific)	sheep	ShAM/IgG2a(1a)	10 mg	1 ml		1 ml	1 ml
IgG2a (1b allotype specific)	sheep	ShAM/IgG2a(1b)	10 mg	1 ml		1 ml	1 ml
IgG2b (subclass specific)	goat	GAM/IgG2b	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/IgG2b	10 mg	1 ml	1 ml		
IgG3 (subclass specific)	goat	GAM/IgG3	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/IgG3	10 mg	1 ml	1 ml		
IgA (Fc specific)	goat	GAM/IgA(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/IgA(Fc)	10 mg	1 ml	1 ml		
IgM (Fc specific)	goat	GAM/IgM(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/IgM(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
IgD (Fc specific)	goat	GAM/IgD(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	sheep	ShAM/IgD(Fc)		1 ml			
IgE (Fc specific)	goat	GAM/IgE(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/IgE(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
Kappa chain, free and bound, (i.e. Bence Jones kappa, surface and hidden determinants)	goat	GAM/BJK(SD+HD)				1 ml	1 ml
	sheep	ShAM/BJK(SD+HD)	10 mg	1 ml	1 ml		
Lambda chain, free and bound, (i.e. Bence Jones lambda, surface and hidden determinants)	sheep	ShAM/BJL(SD+HD)	10 mg	1 ml	1 ml	1 ml	1 ml
Albumin	rabbit	RAM/Alb	10 mg	1 ml		1 ml	1 ml
Complement C3c	goat	GAM/C3c	10 mg	1 ml		1 ml	1 ml
Fibrinogen	goat	GAM/Fbg	10 mg	1 ml		1 ml	1 ml
Total serum proteins	goat	GAM/TSP		1 ml			

Packing: vial with lyophilized 7S fraction / conjugate

Ordering code: combine the code with the code of the label of the outlined heading

Storage and handling: see Technical information page 8

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Polyclonal screening reagents for mouse monoclonal antibodies

These reagents have the widest possible antibody spectrum to all known isotypes of the mouse Ig system. To make them species specific for use in mixed murine/human test systems, they have been extensively immunoaffinity adsorbed to remove cross reactivity with any non-Ig murine or human cell or serum component.

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG3, IgA, IgM, Fc and Fab), adsorbed for human cross reactivity	goat	GAM/mlg	10 mg	1 ml	1 ml	1 ml	1 ml
	rabbit	RAM/mlg	10 mg	1 ml	1 ml	1 ml	1 ml

Packing: vial with lyophilized 7S fraction / conjugate

Ordering code: combine the code with the label of the outlined heading

Storage and handling: see Technical information page 8

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Polyclonal precipitating antisera to rat immunoglobulins and other proteins

Specific antisera against one rat protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

The qualitative techniques have a detection limit of about 0.5 to 5 mg per 100 ml. The quantitative techniques have a threshold of detection of about 0.25 mg per 100 ml.

The total protein content of the antisera is comparable to that of a pooled normal serum of the same species, although it may be slightly changed as a result of the adsorption procedures applied.

Antiserum to rat	Source	Code	Size
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG2c, IgA, IgM, Fc and Fab)	goat	GARa/Ig	1 ml
	rabbit	RARa/Ig	1 ml
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG2c, IgA, IgM, Fc specific)	goat	GARa/Ig(Fc)	1 ml
IgG (IgG1, IgG2a, IgG2b, IgG2c, H and L chains)	goat	GARa/IgG(H+L)	1 ml
	rabbit	RARa/IgG(H+L)	1 ml
IgG (IgG1, IgG2a, IgG2b, IgG2c, Fc specific)	goat	GARa/IgG(Fc)	1 ml
	rabbit	RARa/IgG(Fc)	1 ml
Fab of normal IgG	goat	GARa/Fab	1 ml
	sheep	ShARa/Fab	1 ml
IgG1 (subclass specific)	goat	GARa/IgG1	1 ml
	rabbit	RARa/IgG1	1 ml
	sheep	ShARa/IgG1	1 ml
IgG2ab (subclass specific)	goat	GARa/IgG2ab	1 ml
	rabbit	RARa/IgG2ab	1 ml

Antiserum to rat	Source	Code	Size
IgG2a (subclass specific)	goat	GARa/IgG2a	1 ml
	rabbit	RARa/IgG2a	1 ml
IgG2b (subclass specific)	goat	GARa/IgG2b	1 ml
	rabbit	RARa/IgG2b	1 ml
	sheep	ShARa/IgG2b	1 ml
IgG2c (subclass specific)	goat	GARa/IgG2c	1 ml
	rabbit	RARa/IgG2c	1 ml
IgA (Fc specific)	goat	GARa/IgA(Fc)	1 ml
	rabbit	RARa/IgA(Fc)	1 ml
	sheep	ShARa/IgA(Fc)	1 ml
IgM (Fc specific)	goat	GARa/IgM(Fc)	1 ml
	rabbit	RARa/IgM(Fc)	1 ml
IgE (Fc specific)	goat	GARa/IgE(Fc)	1 ml
	rabbit	RARa/IgE(Fc)	1 ml
L chains (kappa and lambda type, surface and hidden determinants)	goat	GARa/L(SD+HD)	1 ml
Albumin	goat	GARa/Alb	1 ml
	rabbit	RARa/Alb	1 ml
Alpha-2 macroglobulin	goat	GARa/A2M	1 ml
Alpha foetoprotein	sheep	ShARa/AFP	1 ml
Complement C3c	goat	GARa/C3c	1 ml
Fibrinogen	goat	GARa/Fbg	1 ml
	rabbit	RARa/Fbg	1 ml
Serum proteins	goat	GARa/TSP	1 ml
	rabbit	RARa/TSP	1 ml
	sheep	ShARa/TSP	1 ml
Transferrin	goat	GARa/Trf	1 ml
	rabbit	RARa/Trf	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

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Polyclonal cytochemical grade IgG(7S) preparations and their conjugates with FITC, TRITC, peroxidase and biotin to rat proteins

Whereas precipitating antisera are offered for the use of immunodiffusion techniques, the 7S fractions and their conjugates are prepared for more sensitive techniques such as e.g. immunofluorescence, ELISA, DIBA, immunoblotting, immunohistochemical techniques etc.

For more details see Technical information, page 5.

Specificity	Source	Code	/7S	/FITC	/RIT	/PO	/Bio
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG2c, IgA, IgM, Fc and Fab)	goat	GARa/Ig	10 mg	1 ml	1 m	1 ml	1 ml
	rabbit	RARa/Ig	10 mg	1 ml		1 ml	1 ml

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG2c, IgA, IgM, Fc specific)	goat	GARa/Ig(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
IgG (IgG1, IgG2a, IgG2b, IgG2c, H and L chains)	goat	GARa/IgG(H+L)	10 mg	2 ml	2 ml	1 ml	1 ml
	rabbit	RARa/IgG(H+L)	10 mg	2 ml	2 ml	1 ml	1 ml
IgG (IgG1, IgG2a, IgG2b, IgG2c, Fc specific)	goat	GARa/IgG(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
Fab of normal IgG	sheep	ShARa/Fab	10 mg	1 ml	1 ml	1 ml	1 ml
IgG1 (subclass specific)	goat	GARa/IgG1	10 mg	1 ml	1 ml	1 ml	1 ml
IgG2ab (subclass specific)	goat	GARa/IgG2ab	10 mg	1 ml	1 ml	1 ml	1 ml
IgG2a (subclass specific)	goat	GARa/IgG2a	10 mg	1 ml	1 ml	1 ml	1 ml
IgG2b (subclass specific)	goat	GARa/IgG2b	10 mg	1 ml	1 ml	1 ml	1 ml
IgG2c (subclass specific)	goat	GARa/IgG2c	10 mg	1 ml	1 ml	1 ml	1 ml
IgA (Fc specific)	goat	GARa/IgA(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
IgM (Fc specific)	goat	GARa/IgM(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
IgE (Fc specific)	goat	GARa/IgE(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
Albumin	goat	GARa/Alb	10 mg	1 ml		1 ml	1 ml
	rabbit	RARa/Alb	10 mg	1 ml		1 ml	1 ml
Alpha foetoprotein	sheep	ShARa/AFP	10 mg	1 ml			
Complement C3c	goat	GARa/C3c	10 mg	1 ml		1 ml	1 ml
Fibrinogen	goat	GARa/Fbg	10 mg	1 ml		1 ml	1 ml
Serum proteins	goat	GARa/TSP		1 ml			

Packing: vial with lyophilized 7S fraction / conjugate

Ordering code: combine the code with the label in the outlined heading

Storage and handling: see Technical information page 8

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Polyclonal screening reagents for rat monoclonal antibodies

These reagents have the widest possible antibody spectrum to all known isotypes of the rat Ig system. To make them species specific for use in mixed rat/human and rat/murine test systems, they have been extensively immunoaffinity adsorbed to remove cross reactivity with any non-Ig rat, murine or human cell or serum component

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio
Immunoglobulins (IgG1, IgG2a, IgG2b, IgG2c, IgA, IgM, Fc and Fab), adsorbed for human and mouse cross reactivity	goat	GARa/mlg	10 mg	1 ml	1 ml	1 ml	1 ml

Packing: vial with lyophilized 7S fraction / conjugate

Storage and handling: see Technical information page 8

Ordering code: combine the code with the label in the outlined heading

Polyclonal precipitating antisera to bovine immunoglobulins and other proteins

Specific antisera against one bovine protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to bovine	Source	Code	Size
IgG (H and L chains)	goat	GAB/IgG(H+L)	1 ml
	rabbit	RAB/IgG(H+L)	1 ml
IgG (Fc specific)	goat	GAB/IgG(Fc)	1 ml
IgG1 (subclass specific)	rabbit	RAB/IgG1	1 ml
	sheep	ShAB/IgG1	1 ml
IgG2 (subclass specific)	rabbit	RAB/IgG2	1 ml
	sheep	ShAB/IgG2	1 ml
IgM (Fc specific)	rabbit	RAB/IgM(Fc)	1 ml
Secretory IgA (Fc and secretory component)	rabbit	RAB/sIgA	1 ml
Albumin	rabbit	RAB/Alb	1 ml
	sheep	ShAB/Alb	1 ml
Alpha lactalbumin	rabbit	RAB/ALalb	1 ml
Beta lactoglobulin	rabbit	RAB/BLgl	1 ml
Complement C3c	rabbit	RAB/C3c	1 ml
Serum proteins	goat	GAB/TSP	1 ml
	rabbit	RAB/TSP	1 ml
	sheep	ShAB/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

Polyclonal precipitating antisera to cat immunoglobulins and other proteins

Specific antisera against one cat protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to cat	Source	Code	Size
Immunoglobulins (IgG, IgA, IgM, Fc and Fab)	goat	GACa/Ig	1 ml
IgG (H and L chains)	goat	GACa/IgG(H+L)	1 ml
	rabbit	RACa/IgG(H+L)	1 ml
IgG (Fc specific)	rabbit	RACa/IgG(Fc)	1 ml
IgA (Fc specific)	goat	GACa/IgA(Fc)	1 ml
	rabbit	RACa/IgA(Fc)	1 ml
IgM (Fc specific)	goat	GACa/IgM(Fc)	1 ml
Secretory IgA (Fc and secretory component)	goat	GACa/sIgA	1 ml
Albumin	goat	GACa/Alb	1 ml
Serum proteins	goat	GACa/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

Polyclonal precipitating antisera to chicken, duck, pigeon and turkey immunoglobulins and other proteins

Specific antisera against one avian protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to	Source	Code	Size	
Chicken	Immunoglobulins (IgG, IgA, IgM, Fc and Fab)	goat	GACH/Ig	1 ml
		rabbit	RACH/Ig	1 ml
	IgG (H and L chains)	rabbit	RACH/IgG(H+L)	1 ml
	IgG (Fc specific)	goat	GACH/IgG(Fc)	1 ml
	Fab of IgG	goat	GACH/Fab	1 ml
	IgA (Fc specific)	goat	GACH/IgA(Fc)	1 ml
	IgM (Fc specific)	goat	GACH/IgM(Fc)	1 ml
	Albumin	rabbit	RACH/Alb	1 ml
	Ovalbumin	rabbit	RACH/OAlb	1 ml
	Serum proteins	goat	GACH/TSP	1 ml
	rabbit	RACH/TSP	1 ml	
Duck	Immunoglobulins (IgG, IgA, IgM, Fc and Fab)	goat	GADu/Ig	1 ml
		rabbit	RADu/Ig	1 ml
	IgG (H and L chains)	rabbit	RADu/IgG(H+L)	1 ml
	IgM (Fc specific)	goat	GADu/IgM(Fc)	1 ml
	Albumin	goat	GADu/Alb	1 ml
	Serum proteins	rabbit	RADu/TSP	1 ml
	Transferrin	goat	GADu/Trf	1 ml
Pigeon	IgG (H and L chains)	rabbit	RAP/IgG(H+L)	1 ml
	Serum proteins	rabbit	RAP/TSP	1 ml
Turkey	IgG (H and L chains)	goat	GATu/IgG(H+L)	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

Polyclonal precipitating antisera to dog immunoglobulins and other proteins

Specific antisera against one dog protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to dog	Source	Code	Size
IgG (H and L chains)	goat	GAD/IgG(H+L)	1 ml
	rabbit	RAD/IgG(H+L)	1 ml
IgG (Fc specific)	goat	GAD/IgG(Fc)	1 ml
	rabbit	RAD/IgG(Fc)	1 ml
	sheep	ShAD/IgG(Fc)	1 ml
IgA (Fc specific)	goat	GAD/IgA(Fc)	1 ml
	rabbit	RAD/IgA(Fc)	1 ml
IgM (Fc specific)	goat	GAD/IgM(Fc)	1 ml
	rabbit	RAD/IgM(Fc)	1 ml
Albumin	rabbit	RAD/Alb	1 ml
Complement C3c	goat	GAD/C3c	1 ml
Fibrinogen	goat	GAD/Fbg	1 ml
	rabbit	RAD/Fbg	1 ml
Serum proteins	goat	GAD/TSP	1 ml
	rabbit	RAD/TSP	1 ml
	sheep	ShAD/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

Precipitating antisera to goat immunoglobulins and other proteins

Specific antisera against one goat protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to goat	Source	Code	Size
Immunoglobulins (IgG1, IgG2, IgA, IgM, Fc and Fab)	rabbit	RAG/Ig	1 ml
IgG (H and L chains)	donkey	DoAG/IgG(H+L)	1 ml
	rabbit	RAG/IgG(H+L)	1 ml
IgG (Fc specific)	rabbit	RAG/IgG(Fc)	1 ml
IgA (Fc specific)	swine	SwAG/IgA(Fc)	1 ml
IgM (Fc specific)	rabbit	RAG/IgM(Fc)	1 ml
	swine	SwAG/IgM(Fc)	1 ml
IgM (H and L chains)	rabbit	RAG/IgM(H+L)	1 ml
Secretory IgA (Fc and secretory component)	swine	SwAG/sIgA	1 ml
L chains (kappa and lambda chains, surface and hidden determinants)	rabbit	RAG/L(SD+HD)	1 ml
Albumin	rabbit	RAG/Alb	1 ml
Serum proteins	rabbit	RAG/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

Polyclonal precipitating antisera to guinea pig immunoglobulins and other proteins

Specific antisera against one guinea pig protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to guinea pig	Source	Code	Size
Immunoglobulins (IgG1, IgG2, IgA, IgM, Fc and Fab)	sheep	ShAGp/Ig	1 ml
IgG (IgG1, IgG2, H and L chains)	goat	GAGp/IgG(H+L)	1 ml
	rabbit	RAGp/IgG(H+L)	1 ml
IgG (IgG1, IgG2, Fc specific)	goat	GAGp/IgG(Fc)	1 ml
Fab of IgG	rabbit	RAGp/Fab	1 ml
	goat	GAGp/Fab	1 ml
IgG1 (subclass specific)	goat	GAGp/IgG1	1 ml
	rabbit	RAGp/IgG1	1 ml
	sheep	ShAGp/IgG1	1 ml
IgG2 (subclass specific)	goat	GAGp/IgG2	1 ml
	rabbit	RAGp/IgG2	1 ml
IgA (Fc specific)	sheep	ShAGp/IgA(Fc)	1 ml
IgM (Fc specific)	sheep	ShAGp/IgM(Fc)	1 ml
Albumin	rabbit	RAGp/Alb	1 ml
Complement C3c	goat	GAGp/C3c	1 ml
	rabbit	RAGp/C3c	1 ml
Serum proteins	goat	GAGp/TSP	1 ml
	rabbit	RAGp/TSP	1 ml
	sheep	ShAGp/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

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Polyclonal precipitating antisera to hamster immunoglobulins and other proteins

Specific antisera against one hamster protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to hamster	Source	Code	Size
IgG (H and L chains)	goat	GAHa/IgG(H+L)	1 ml
	rabbit	RAHa/IgG(H+L)	1 ml
Albumin	rabbit	RAHa/Alb	1 ml
Serum proteins	rabbit	RAHa/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

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Polyclonal precipitating antisera to horse immunoglobulins and other proteins

Specific antisera against one horse protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to horse	Source	Code	Size
Immunoglobulins (IgG1, IgG2, IgA, IgM, Fc and Fab)	rabbit	RAHo/Ig	1 ml
IgG (H and L chains)	rabbit	RAHo/IgG(H+L)	1 ml
	sheep	ShAHo/IgG(H+L)	1 ml
	swine	SwAHo/IgG(H+L)	1 ml
IgG (Fc specific)	goat	GAHo/IgG(Fc)	1 ml
IgG1 (T) (subclass specific)	goat	GAHo/IgG1(T)	1 ml
IgA (Fc specific)	rabbit	RAHo/IgA(Fc)	1 ml
IgM (Fc specific)	goat	GAHo/IgM(Fc)	1 ml
	rabbit	RAHo/IgM(Fc)	1 ml
L chains (kappa and lambda chains, surface and hidden determinants)	swine	SwAHo/L(SD+HD)	1 ml
Albumin	rabbit	RAHo/Alb	1 ml
Serum proteins	rabbit	RAHo/TSP	1 ml
Transferrin	rabbit	RAHo/Trf	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

Polyclonal precipitating antisera to (Rhesus) monkey immunoglobulins and other proteins

Specific antisera against one monkey protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to monkey	Source	Code	Size
Immunoglobulins (IgG, IgA, IgM, Fc and Fab)	goat	GAMon/Ig	1 ml
	rabbit	RAMon/Ig	1 ml
Immunoglobulins (IgG, IgA, IgM, Fc specific)	goat	GAMon/Ig(Fc)	1 ml
IgG (H and L chains)	goat	GAMon/IgG(H+L)	1 ml
	rabbit	RAMon/IgG(H+L)	1 ml
IgG (Fc specific)	goat	GAMon/IgG(Fc)	1 ml
	rabbit	RAMon/IgG(Fc)	1 ml
Fab of IgG	rabbit	RAMon/Fab	1 ml
IgA (Fc specific)	goat	GAMon/IgA(Fc)	1 ml
	rabbit	RAMon/IgA(Fc)	1 ml
IgM (Fc specific)	goat	GAMon/IgM(Fc)	1 ml
	rabbit	RAMon/IgM(Fc)	1 ml
Albumin	rabbit	RAMon/Alb	1 ml
Complement C3c	goat	GAMon/C3c	1 ml
DNP-albumin	rabbit	RAMon/AlbDNP	1 ml
Lactoferrin	goat	GAMon/Lfr	1 ml
Milk proteins	goat	GAMon/TM	1 ml
Secretory component , free and bound	goat	GAMon/SC	1 ml
Serum proteins	rabbit	RAMon/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

Polyclonal precipitating antisera to rabbit immunoglobulins and other proteins

Specific antisera against one rabbit protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to rabbit	Source	Code	Size
Immunoglobulins (IgG, IgA, IgM, Fc and Fab)	goat	GAR/Ig	1 ml
IgG (H and L chains)	goat	GAR/IgG(H+L)	1 ml
	swine	SwAR/IgG(H+L)	1 ml
IgG (Fc specific)	goat	GAR/IgG(Fc)	1 ml
Fab of IgG	goat	GAR/Fab	1 ml
IgA (Fc specific)	goat	GAR/IgA(Fc)	1 ml
IgM (Fc specific)	goat	GAR/IgM(Fc)	1 ml
	sheep	ShAR/IgM(Fc)	1 ml
L chains (kappa and lambda type, surface and hidden determinants)	swine	SwAR/L(SD+HD)	1 ml
Albumin	goat	GAR/Alb	1 ml
Complement C3c	goat	GAR/C3c	1 ml
Fibrinogen	goat	GAR/Fbg	1 ml
Milk proteins	goat	GAR/TM	1 ml
Serum proteins	goat	GAR/TSP	1 ml
	sheep	ShAR/TSP	1 ml
	swine	SwAR/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

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Polyclonal precipitating antisera to sheep immunoglobulins and other proteins

Specific antisera against one sheep protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to sheep	Source	Code	Size
IgG (H and L chains)	rabbit	RASh/IgG(H+L)	1 ml
IgM (Fc specific)	rabbit	RASh/IgM(Fc)	1 ml
	swine	SwASh/IgM(Fc)	1 ml
IgM (H and L chains)	rabbit	RASh/IgM(H+L)	1 ml
Albumin	rabbit	RASh/Alb	1 ml
Serum proteins	rabbit	RASh/TSP	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

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Polyclonal precipitating antisera to swine immunoglobulins and other proteins

Specific antisera against one swine protein will react exclusively with the declared protein in any of the conventional immunodiffusion techniques: single and double radial immunodiffusion, electroimmunodiffusion and immunoelectrophoresis.

Antiserum to swine	Source	Code	Size
IgG (H and L chains)	goat	GASw/IgG(H+L)	1 ml
	rabbit	RASw/IgG(H+L)	1 ml
IgG (Fc specific)	goat	GASw/IgG(Fc)	1 ml
	rabbit	RASw/IgG(Fc)	1 ml
IgA (Fc specific)	goat	GASw/IgA(Fc)	1 ml
	rabbit	RASw/IgA(Fc)	1 ml
	sheep	ShASw/IgA(Fc)	1 ml
IgM (Fc specific)	goat	GASw/IgM(Fc)	1 ml
	rabbit	RASw/IgM(Fc)	1 ml
Secretory IgA	rabbit	RASw/sIgA	1 ml
L chains (kappa and lambda type, surface and hidden determinants)	rabbit	RASw/L(SD+HD)	1 ml

Antiserum to swine	Source	Code	Size
Albumin	rabbit	RASw/Alb	1 ml
Antitrypsin	goat	GASw/Atr	1ml
Fibrinogen	rabbit	RASw/Fbg	1 ml
Haptoglobin	goat	GASw/Hp	1 ml
Serum proteins	goat	GASw/TSP	1 ml
	rabbit	RASw/TSP	1 ml
Transferrin	goat	GASw/Trf	1 ml

Packing: vial with lyophilized antiserum

Storage and handling: see Technical information page 8

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Polyclonal antisera to bovine and sheep red blood cells

These products are intended for use in hemolytic test systems. Hemolytic titre, at which 50% lysis occurs following mixing of equal volumes of antiserum or 7S fraction, guinea pig complement (at a 1:60 dilution) and 5×10^8 RBC/ml, is not less than 1:3000 when tested with bovine, respectively sheep erythrocytes.

Antiserum to	Source	Code	Size
Bovine erythrocyte stroma	rabbit	RAB/Ery	1 ml
Sheep erythrocyte stroma	rabbit	RASh/Ery	1 ml

IgG (7S) fraction to	Source	Code	Size
Bovine erythrocyte stroma	rabbit	RAB/Ery/7S	10 mg
Sheep erythrocyte stroma	rabbit	RASh/Ery/7S	10 mg

Packing: vial with lyophilized antiserum / IgG fraction

Storage and handling: see Technical information page 8

Polyclonal cytochemical grade IgG(7S) preparations and their conjugates with FITC, TRITC, peroxidase and biotin to animal immunoglobulins and other proteins

Whereas precipitating antisera are offered for the use of immunodiffusion techniques, the 7S fractions and their conjugates are prepared for more sensitive techniques such as e.g. immunofluorescence, ELISA, DIBA, immunoblotting, immunohistochemical techniques etc.

For more details see Technical information, page 5.

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio	
Bovine	IgG (Fc and Fab)	goat	GAB/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
		rabbit	RAB/IgG(H+L)	10 mg	2 ml	2 ml	1 ml	1 ml
	IgM (Fc specific)	rabbit	RAB/IgM(Fc)	10 mg	1 ml		1 ml	1 ml
	Albumin	rabbit	RAB/Alb	10 mg	1 ml		1 ml	1 ml
	Lactoperoxidase	rabbit	RAB/LPO					1 ml
	Serum proteins	goat	GAB/TSP		1 ml			
Cat	IgG (Fc and Fab)	rabbit	RACa/IgG(H+L)		2 ml		1 ml	1 ml
Chicken	IgG (Fc and Fab)	rabbit	RACH/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
	IgA (Fc specific)	goat	GACH/IgA(Fc)	10 mg	1 ml		1 ml	1 ml
	IgM (Fc specific)	goat	GACH/IgM(Fc)	10 mg	1 ml		1 ml	1 ml
	Ovalbumin	rabbit	RACH/OAlb		1 ml			
Dog	IgG (Fc and Fab)	rabbit	RAD/IgG(H+L)	10 mg	2 ml	2 ml	1 ml	1 ml
		goat	GAD/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
	IgG (Fc specific)	goat	GAD/IgG(Fc)	10 mg	1 ml		1 ml	1 ml
	IgA (Fc specific)	goat	GAD/IgA(Fc)	10 mg	1 ml		1 ml	1 ml
	IgM (Fc specific)	goat	GAD/IgM(Fc)	10 mg	1 ml		1 ml	1 ml
	Albumin	rabbit	RAD/Alb		1 ml			
	Complement C3c	goat	GAD/C3c		1 ml			
	Fibrinogen	goat	GAD/Fbg	10 mg	1 ml		1 ml	1 ml
Serum proteins	rabbit	RAD/TSP		1 ml				
Duck	IgG (Fc and Fab)	rabbit	RADu/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
	IgM (Fc)	goat	GADu/IgM(Fc)	10 mg	1 ml		1 ml	1 ml

Specificity	Source	Code	/7S	/FITC	/TRITC	/PO	/Bio	
Goat	IgG (Fc and Fab)	donkey	DoAG/IgG(H+L)	10 mg	2 ml	2 ml	1 ml	1 ml
		rabbit	RAG/IgG(H+L)	10 mg	2 ml	2 ml	1 ml	1 ml
	IgG (Fc and Fab) immunoaffinity adsorbed for cross reactivity with human and murine Ig	rabbit	R7AG/IgG(H+L)		1 ml		1 ml	1 ml
	IgG (Fc specific)	rabbit	RAG/IgG(Fc)	10 mg	1 ml		1 ml	1 ml
	IgM (Fc specific)	rabbit	RAG/IgM(Fc)	10 mg	1 ml		1 ml	1 ml
	IgM (Fc and Fab)	rabbit	RAG/IgM(H+L)	10 mg	1 ml		1 ml	1 ml
Guinea pig	IgG (Fc and Fab)	goat	GAGp/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
		rabbit	RAGp/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
		swine	SwAGp/IgG(H+L)	10 mg	2 ml			
	IgG (Fc specific)	sheep	ShAGp/IgG(Fc)		1 ml		1 ml	1 ml
	Fab of IgG	goat	GAGp/Fab		1 ml			
	IgG1 (subclass specific)	goat	GAGp/IgG1		1 ml		1 ml	1 ml
	IgG2 (subclass specific)	goat	GAGp/IgG2		1 ml		1 ml	1 ml
	IgM (Fc specific)	goat	GAGp/IgM(Fc)		1 ml		1 ml	1 ml
	Albumin	rabbit	RAGp/Alb		1 ml			
	Complement C3c	goat	GAGp/C3c		1 ml		1 ml	1 ml
Hamster	IgG (Fc and Fab)	goat	GAHa/IgG(H+L)		2 ml		1 ml	1 ml
		rabbit	RAHa/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
Horse	IgG (Fc and Fab)	rabbit	RAHo/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
Monkey (Rhesus)	Immunoglobulins (IgG, IgA, IgM, Fc and Fab)	goat	GAMon/Ig	10 mg	1 ml	1 ml	1 ml	1 ml
		rabbit	RAMon/Ig	10 mg	1 ml		1 ml	1 ml
	Immunoglobulins (IgG, IgA, IgM, Fc specific)	goat	GAMon/Ig(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	IgG (Fc and Fab)	goat	GAMon/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
		rabbit	RAMon/IgG(H+L)	10 mg	2 ml		1 ml	1 ml
	IgG (Fc specific)	goat	GAMon/IgG(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	Fab of IgG	rabbit	RAMon/Fab	10 mg	1 ml	1 ml	1 ml	1 ml
	IgA (Fc specific)	goat	GAMon/IgA(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
		rabbit	RAMon/IgA(Fc)		1 ml			
	IgM (Fc specific)	goat	GAMon/IgM(Fc)	10 mg	1 ml	1 ml	1 ml	1 ml
	Complement C3c	goat	GAMon/C3c	10 mg	1 ml	1 ml	1 ml	1 ml
	Lactoferrin	goat	GAMon/Lfr	10 mg	1 ml	1 ml	1 ml	1 ml
	Secretory component	goat	GAMon/SC	10 mg	1 ml	1 ml	1 ml	1 ml

Specificity	Source	Code	/TS	/FITC	/TRITC	/PO	/Bio	
Pigeon		IgG (Fc and Fab)	rabbit	RAP/IgG(H+L)	1 ml	1 ml	1 ml	
Rabbit		Immunoglobulins (IgG1, IgG2, IgA, IgM, Fc and Fab)	goat	GAR/Ig	10 mg	1 ml	1 ml	1 ml
		IgG (Fc and Fab)	goat	GAR/IgG(H+L)	10 mg	2 ml	2 ml	1 ml
			swine	SwAR/IgG(H+L)	10 mg	2 ml	2 ml	
		IgG (Fc specific)	goat	GAR/IgG(Fc)	10 mg	1 ml	1 ml	1 ml
		IgA (Fc specific)	goat	GAR/IgA(Fc)	10 mg	1 ml	1 ml	1 ml
		IgM (Fc specific)	goat	GAR/IgM(Fc)	10 mg	1 ml	1 ml	1 ml
			sheep	ShAR/IgM(Fc)			1 ml	
		Albumin	goat	GAR/Alb		1 ml		1 ml
		Complement C3c	goat	GAR/C3c		1 ml		
		Serum proteins	goat	GAR/TSP		1 ml		
Sheep		IgG (Fc and Fab)	rabbit	RASh/IgG(H+L)	10 mg	2 ml	1 ml	1 ml
		IgG (Fc specific)	rabbit	RASh/IgG(Fc)	10 mg	1 ml	1 ml	1 ml
		IgM (Fc specific)	rabbit	RASh/IgM(Fc)	10 mg	1 ml	1 ml	1 ml
		IgM (Fc and Fab)	rabbit	RASh/IgM(H+L)	10 mg	1 ml	1 ml	1 ml
Swine		IgG (Fc and Fab)	rabbit	RASw/IgG(H+L)	10 mg	2 ml	2 ml	1 ml
		IgG (Fc and Fab)	goat	GASw/IgG(H+L)			1 ml	
		IgG (Fc specific)	rabbit	RASw/IgG(Fc)			1 ml	1 ml
		IgM (Fc specific)	goat	GASw/IgM(Fc)			1 ml	1 ml
		Insulin	guinea pig	GpASw/Ins	10 mg	1 ml		
		Transferrin	rabbit	RASw/Trf	10 mg	1 ml	1 ml	1 ml
Turkey		IgG (Fc and Fab)	goat	GATu/IgG(H+L)		1 ml	1 ml	1 ml

Packing: vial with lyophilized IgG fraction / conjugate

Storage and handling: see Technical information page 8

Ordering code: combine the code with the label in the outlined heading

Polyclonal cytochemical grade (7S) preparations to enzymes and their biotin conjugates and purified antibodies

NORDENZYME is the name of a group of polyclonal immunologic reagents to enzymes. Two different types of rabbit or sheep anti-enzyme products are offered: the isolated IgG fractions and the isolated antibodies (PAb) to the enzymes. Products against some 180 enzymes are available either as 7S or PAb or in both forms. The 7S fractions are also available in biotinylated form. The NORDENZYME products has been obtained by immunisation with highly purified enzymes. These products are intended for use in precipitating and non precipitating antibody binding assays (such as e.g. ELISA and Western blotting).

Specificity	Origin	Species immunized	code nr.	/7S	/Bio	/PAb
Acetate kinase	Escherichia coli	rabbit	NE161	10 mg	10 mg	
S-Acetyl Coenzyme A synthetase	Baker's yeast	rabbit	NE001	10 mg	10 mg	1 mg
Acetylcholinesterase	Electric eel	rabbit	NE166	10 mg	10 mg	1 mg
β -N-Acetylglucosaminidase	Bovine kidney	rabbit	NE002	10 mg	10 mg	1 mg
Acylase I	Porcine kidney	rabbit	NE163			1 mg
Adenosine deaminase	Calf intestine	rabbit	NE003	10 mg	10 mg	1 mg
L-Alanine dehydrogenase	Bacillus subtilis	rabbit	NE004	10 mg	10 mg	1 mg
Alcohol dehydrogenase	Baker's yeast	rabbit	NE007	10 mg	10 mg	1 mg
Alcohol dehydrogenase	Horse liver	rabbit	NE006	10 mg	10 mg	1 mg
Alcohol dehydrogenase	Leuconostoc mesenteroides	rabbit	NE005	10 mg	10 mg	1 mg
Alcohol oxidase	Candida boidinii	rabbit	NE008	10 mg	10 mg	1 mg
Aldehyde dehydrogenase	Baker's yeast	rabbit	NE009	10 mg	10 mg	1 mg
Aldolase	Rabbit muscle	sheep	NE010	10 mg	10 mg	1 mg
Amino acid arylamidase	Porcine kidney	rabbit	NE011	10 mg	10 mg	1 mg
D-Amino acid oxidase	Porcine kidney	rabbit	NE013	10 mg	10 mg	
L-Amino acid oxidase	Crotalus durissus terrificus venom	rabbit	NE012			1 mg
α -Amylase	Bacillus subtilis	rabbit	NE015	10 mg	10 mg	
α -Amylase	Human saliva	rabbit	NE014		10 mg	1 mg
β -Amylase	Sweet potato	rabbit	NE017	10 mg	10 mg	1 mg
Amyloglucosidase	Aspergillus niger	rabbit	NE018	10 mg	10 mg	1 mg
Arginase	Calf liver	rabbit	NE164	10 mg	10 mg	
Aryl sulfatase	Helix pomatia	rabbit	NE019	10 mg	10 mg	1 mg
Ascorbate oxidase	Cucurbita species	rabbit	NE020	10 mg	10 mg	1 mg
L-Asparaginase	Escherichia coli	rabbit	NE021	10 mg	10 mg	1 mg
Bromelain	Pineapple stem	rabbit	NE022	10 mg	10 mg	1 mg
Butyrylcholinesterase	Human serum	rabbit	NE036	10 mg	10 mg	1 mg
Carbonic anhydrase	Bovine erythrocytes	rabbit	NE023	10 mg	10 mg	1 mg
Carbonic anhydrase I	Human erythrocytes	rabbit	NE024	10 mg	10 mg	1 mg
Carboxypeptidase A	Bovine pancreas	rabbit	NE025	10 mg	10 mg	1 mg

Specificity	Origin	Species immunized	code nr.	/7S	/Bio	/PAb
Carboxypeptidase B	Porcine pancreas	rabbit	NE026			1 mg
Carboxypeptidase Y	Baker's yeast	rabbit	NE027	10 mg	10 mg	1 mg
Carnitine acetyltransferase	Pigeon breast muscle	rabbit	NE028	10 mg	10 mg	1 mg
Catalase	Bovine liver	rabbit	NE029	10 mg	10 mg	1 mg
Cathepsin C	Bovine spleen	rabbit	NE030	10 mg	10 mg	1 mg
Cellulase	Trichoma viride	rabbit	NE165	10 mg	10 mg	
Ceruloplasmin	Human	rabbit	NE031	10 mg	10 mg	1 mg
Cholesterol esterase	Candida cylindracea	rabbit	NE032	10 mg	10 mg	1 mg
Cholesterol oxidase	Nocardia erythropolis	rabbit	NE033	10 mg	10 mg	1 mg
Choline kinase	Baker's yeast	rabbit	NE034	10 mg	10 mg	1 mg
Choline oxidase	Arthrobacter globiformis	rabbit	NE035	10 mg	10 mg	1 mg
α -Chymotrypsin	Bovine pancreas	rabbit	NE037			1 mg
α -Chymotrypsinogen A	Bovine pancreas	rabbit	NE038	10 mg	10 mg	1 mg
Citrate lyase	Enterobacter aerogenes	rabbit	NE039	10 mg	10 mg	1 mg
Citrate synthase	Porcine heart	rabbit	NE040	10 mg	10 mg	1 mg
Clostripain	Clostridium histolyticum	rabbit	NE041	10 mg	10 mg	1 mg
Collagenase	Clostridium histolyticum	rabbit	NE042	10 mg	10 mg	1 mg
Creatine phosphokinase	Rabbit muscle	sheep	NE043	10 mg	10 mg	1 mg
Creatininase	Alcaligenes species	rabbit	NE044	10 mg	10 mg	1 mg
Cytochrome c	Horse heart	rabbit	NE045	10 mg	10 mg	1 mg
Deoxyribonuclease I	Bovine pancreas	rabbit	NE046			1 mg
Dextranase	Penicillium species	rabbit	NE047	10 mg	10 mg	1 mg
Diaphorase	Porcine heart	rabbit	NE167	10 mg	10 mg	
Elastase	Porcine pancreas	rabbit	NE048			1 mg
Endonuclease	Neurospora crassa	rabbit	NE168	10 mg	10 mg	
Enolase	Rabbit muscle	sheep	NE049	10 mg	10 mg	1 mg
Esterase	Porcine liver	rabbit	NE050	10 mg	10 mg	1 mg
Ficin	Fig tree latex	rabbit	NE169	10 mg	10 mg	
Formate dehydrogenase	Yeast	rabbit	NE051	10 mg	10 mg	
Fructose-6-phosphate kinase	Rabbit muscle	sheep	NE052	10 mg	10 mg	1 mg
α -L-Fucosidase	Bovine kidney	rabbit	NE053	10 mg	10 mg	1 mg
Fumarase	Porcine heart	rabbit	NE054	10 mg	10 mg	1 mg
α -Galactosidase	Green coffee beans	rabbit	NE055			1 mg
β -Galactosidase	Escherichia coli	rabbit	NE056	10 mg	10 mg	1 mg
β -Galactose dehydrogenase	Pseudomonas fluorescens	rabbit	NE170	10 mg	10 mg	
Gluconate kinase	Escherichia coli	rabbit	NE171	10 mg	10 mg	
Glucose oxidase	Aspergillus niger	rabbit	NE057	10 mg	10 mg	1 mg
Glucose-6-phosphate dehydrogenase	Baker's yeast	rabbit	NE059	10 mg	10 mg	1 mg
Glucose-6-phosphate dehydrogenase	Leuconostoc mesenteroides	rabbit	NE058	10 mg	10 mg	1 mg
α -Glucosidase	Baker's yeast	rabbit	NE060	10 mg	10 mg	1 mg
β -Glucosidase	Almonds	rabbit	NE061	10 mg	10 mg	1 mg

Specificity	Origin	Species immunized	code nr.	/7S	/Bio	/PAb
β -Glucuronidase	Escherichia coli	rabbit	NE062	10 mg	10 mg	1 mg
L-Glutamate dehydrogenase	Bovine liver	rabbit	NE063	10 mg	10 mg	1 mg
Glutamate-oxaloacetate transaminase	Porcine heart	rabbit	NE172	10 mg	10 mg	1 mg
Glutamic-pyruvic transaminase	Porcine heart	rabbit	NE064	10 mg	10 mg	1 mg
Glutathion reductase	Baker's yeast	rabbit	NE065	10 mg	10 mg	1 mg
Glyceraldehyde-3-phosphate dehydrogenase	Baker's yeast	rabbit	NE067	10 mg	10 mg	1 mg
Glyceraldehyde-3-phosphate dehydrogenase	Rabbit muscle	sheep	NE066	10 mg	10 mg	1 mg
Glycerokinase	Bacillus stearothermophilus	rabbit	NE069	10 mg	10 mg	1 mg
Glycerokinase	Candida mycoderma	rabbit	NE173	10 mg	10 mg	
Glycerol dehydrogenase	Enterobacter aerogenes	rabbit	NE068	10 mg	10 mg	1 mg
Glycerol-3-phosphate dehydrogenase	Rabbit muscle	sheep	NE070	10 mg	10 mg	1 mg
Glyoxalase I	Yeast	rabbit	NE071			1 mg
Glyoxalate reductase	Spinach	rabbit	NE072	10 mg	10 mg	1 mg
Guanase	Rabbit liver	sheep	NE073	10 mg	10 mg	
Guanylate kinase	Porcine brain	rabbit	NE074	10 mg	10 mg	
Hexokinase	Baker's yeast	rabbit	NE075	10 mg	10 mg	1 mg
Hyaluronidase	Sheep testes	rabbit	NE076	10 mg	10 mg	1 mg
β -Hydroxyacyl-CoA-dehydrogenase	Porcine heart	rabbit	NE077	10 mg	10 mg	1 mg
β -Hydroxybutyrate dehydrogenase	Rhodopseudomonas spheroides	rabbit	NE078	10 mg	10 mg	1 mg
3 α ,20 β -Hydroxysteroid dehydrogenase	Streptomyces hydrogenans	rabbit	NE080			1 mg
β -Hydroxysteroid dehydrogenase	Pseudomonas testosteroni cells	rabbit	NE079	10 mg	10 mg	1 mg
Inorganic pyrophosphatase	Yeast	rabbit	NE081	10 mg	10 mg	
Isocitrate dehydrogenase	Porcine heart	rabbit	NE082	10 mg	10 mg	1 mg
Lactate oxidase	Mycobacterium smegmatis	rabbit	NE083	10 mg	10 mg	
D-Lactate dehydrogenase	Lactobacillus leichmannii	rabbit	NE095	10 mg	10 mg	1 mg
L-Lactate dehydrogenase	Bovine heart	rabbit	NE084	10 mg	10 mg	1 mg
L-Lactate dehydrogenase	Bovine muscle	rabbit	NE085	10 mg	10 mg	1 mg
L-Lactate dehydrogenase	Porcine heart	rabbit	NE174	10 mg	10 mg	1 mg
L-Lactate dehydrogenase	Rabbit muscle	sheep	NE093	10 mg	10 mg	1 mg
L-Lactate dehydrogenase, LDH-1(H ₄)	Human erythrocytes	rabbit	NE087	10 mg	10 mg	
L-Lactate dehydrogenase, LDH-1(H ₄)	Rabbit heart	sheep	NE175			1 mg
L-Lactate dehydrogenase, LDH-1(H ₄)/LDH-2(H ₃ M)	Human erythrocytes	rabbit	NE090	10 mg	10 mg	
L-Lactate dehydrogenase, LDH-1(M ₄)	Porcine heart	rabbit	NE091	10 mg	10 mg	1 mg
L-Lactate dehydrogenase, LDH-2(H ₃ M)	Human erythrocytes	rabbit	NE088	10 mg	10 mg	
L-Lactate dehydrogenase, LDH-3(H ₂ M ₂)	Human erythrocytes	rabbit	NE089	10 mg	10 mg	
L-Lactate dehydrogenase, LDH-5(M ₄)	Human placenta	rabbit	NE086	10 mg	10 mg	1 mg
L-Lactate dehydrogenase, LDH-5(M ₄)	Porcine muscle	rabbit	NE092	10 mg	10 mg	1 mg
L-Lactate dehydrogenase, LDH-5(M ₄)	Rabbit muscle	sheep	NE094	10 mg	10 mg	
Lactoperoxidase	Bovine milk	rabbit	NE096		10 mg	
Leucine aminopeptidase	porcine kidney	rabbit	NE191			1 mg
Luciferase	Photinus pyralis	rabbit	NE097	10 mg	10 mg	1 mg

Specificity	Origin	Species immunized	code nr.	/7S	/Bio	/PAb
Luciferase	Photobacterium fischeri	rabbit	NE176	10 mg	10 mg	
Lysozyme	Chicken egg white	rabbit	NE098	10 mg	10 mg	1 mg
Lysozyme	Human	rabbit	NE099	10 mg	10 mg	
Malic dehydrogenase	Human erythrocytes	rabbit	NE100	10 mg	10 mg	1 mg
Malic dehydrogenase	Human placenta	rabbit	NE101	10 mg	10 mg	1 mg
Malic dehydrogenase	Porcine heart	rabbit	NE102	10 mg	10 mg	1 mg
α -Mannosidase	Jack beans	rabbit	NE103	10 mg	10 mg	1 mg
Mutarotase	Porcine kidney	rabbit	NE104	10 mg	10 mg	
Myokinase	Porcine muscle	rabbit	NE105	10 mg	10 mg	
Myokinase	Rabbit muscle	sheep	NE106	10 mg	10 mg	1 mg
NADH peroxidase	Streptococcus faecalis	rabbit	NE107	10 mg	10 mg	
NADH-FMN Oxidoreductase	Photobacterium fischeri	rabbit	NE177	10 mg	10 mg	
Neuraminidase	Arthrobacterium ureafaciens	rabbit	NE178	10 mg	10 mg	
Neuraminidase	Clostridium perfringens	rabbit	NE179	10 mg	10 mg	
Nuclease	Staphylococcus aureus	rabbit	NE180	10 mg	10 mg	
Nuclease P1	Penicillium citrinum	rabbit	NE108	10 mg	10 mg	
Nuclease S1	Aspergillus oryzae	rabbit	NE181	10 mg	10 mg	
Nucleoside 5'-diphosphate kinase	Bovine liver	rabbit	NE110	10 mg	10 mg	1 mg
Nucleoside monophosphate kinase	Bovine liver	rabbit	NE111	10 mg	10 mg	1 mg
Nucleoside phosphorylase	Calf spleen	rabbit	NE112	10 mg	10 mg	1 mg
Oxalate decarboxylase	Aspergillus species	rabbit	NE113	10 mg	10 mg	
Oxalate oxidase	Barley seedlings	rabbit	NE114	10 mg	10 mg	1 mg
Papain	Carica papaya	rabbit	NE115	10 mg	10 mg	1 mg
Penicillinase	Escherichia coli	rabbit	NE116			1 mg
Pepsin	Porcine stomach mucosa	rabbit	NE117	10 mg	10 mg	1 mg
Peroxidase	Horseradish	rabbit	NE118			1 mg
Peroxidase	Horseradish	sheep	NE119	10 mg		
Phosphatase, acid	Human seminal plasma	rabbit	NE120	10 mg	10 mg	
Phosphatase, acid	Potato	rabbit	NE121	10 mg	10 mg	1 mg
Phosphatase, alkaline	Calf intestine	rabbit	NE123			1 mg
Phosphatase, alkaline	Escherichia coli	rabbit	NE124	10 mg	10 mg	1 mg
Phospho-(enol)pyruvate carboxylase	Corn	rabbit	NE182	10 mg	10 mg	
Phosphodiesterase I	Crotalus durissus terrificus venom	rabbit	NE126	10 mg	10 mg	1 mg
Phosphodiesterase II	Calf spleen	rabbit	NE125	10 mg	10 mg	
Phosphoglucomutase	Rabbit muscle	sheep	NE127	10 mg	10 mg	1 mg
6-Phosphogluconic dehydrogenase	Yeast	rabbit	NE128			1 mg
Phosphoglucose isomerase	Baker's yeast	rabbit	NE129	10 mg	10 mg	
Phosphoglycerate mutase	Rabbit muscle	sheep	NE131	10 mg	10 mg	1 mg
3-Phosphoglyceric phosphokinase	Baker's yeast	rabbit	NE130	10 mg	10 mg	1 mg
Phospholipase A2	Bee venom	rabbit	NE132	10 mg	10 mg	1 mg
Phospholipase A2	Crotalus durissus terrificus venom	rabbit	NE133	10 mg	10 mg	1 mg

Specificity	Origin	Species immunized	code nr.	/7S	/Bio	/PAb
Phospholipase A2	Porcine pancreas	rabbit	NE134	10 mg	10 mg	1 mg
Phospholipase C	Bacillus cereus	rabbit	NE135	10 mg	10 mg	1 mg
Phospholipase D	Cabbage	rabbit	NE136	10 mg	10 mg	1 mg
Phospholipase D	Streptomyces chromofuscus	rabbit	NE137	10 mg	10 mg	
Phosphomannose isomerase	Baker's yeast	rabbit	NE138	10 mg	10 mg	1 mg
Phosphorylase a	Rabbit muscle	sheep	NE139	10 mg	10 mg	1 mg
Phosphorylase b	Rabbit muscle	sheep	NE140	10 mg	10 mg	1 mg
Phosphotransacetylase	Clostridium kluveri	rabbit	NE183	10 mg	10 mg	1 mg
Plasminogen	Human plasma	rabbit	NE141	10 mg	10 mg	1 mg
Polynucleotide phosphorylase	Micrococcus luteus	rabbit	NE184	10 mg	10 mg	1 mg
Pronase	Streptomyces griseus	rabbit	NE142	10 mg	10 mg	1 mg
Protease, neutral	Bacillus polymyxa	rabbit	NE143	10 mg	10 mg	1 mg
Proteinase K	Tritirachium album	rabbit	NE144	10 mg	10 mg	1 mg
Pullulanase	Enterobacter aerogenes	rabbit	NE145	10 mg	10 mg	1 mg
Pyroglutamate aminopeptidase	Calf liver	rabbit	NE185	10 mg	10 mg	1 mg
Pyruvate kinase	Rabbit muscle	sheep	NE146	10 mg	10 mg	1 mg
Pyruvate oxidase	Bacterial	rabbit	NE186	10 mg	10 mg	
Ribonuclease A	Bovine pancreas	rabbit	NE148	10 mg	10 mg	1 mg
Ribonuclease T1	Aspergillus oryzae	rabbit	NE187	10 mg	10 mg	
Ribonucleic acid polymerase	Escherichia coli	rabbit	NE188	10 mg	10 mg	
Sorbitol dehydrogenase	Sheep liver	rabbit	NE149			1 mg
Subtilisin	Bacillus subtilis	rabbit	NE150	10 mg	10 mg	1 mg
Succinic thiokinase	Porcine heart	rabbit	NE151	10 mg	10 mg	1 mg
Superoxide dismutase	Bovine erythrocytes	rabbit	NE152	10 mg	10 mg	1 mg
Thermolysin	Bacillus thermoproteolyticus rokko	rabbit	NE153			1 mg
Transaldolase	Baker's yeast	rabbit	NE154	10 mg	10 mg	1 mg
Triosephosphate isomerase	Baker's yeast	rabbit	NE155	10 mg	10 mg	1 mg
Triosephosphate isomerase	Rabbit muscle	sheep	NE156	10 mg	10 mg	1 mg
Trypsin	Bovine pancreas	rabbit	NE157	10 mg	10 mg	1 mg
Urease	Jack beans	rabbit	NE158	10 mg	10 mg	1 mg
Uricase	Porcine liver	rabbit	NE159	10 mg	10 mg	1 mg
Uridine-5'-diphosphoglucose dehydrogenase	Bovine liver	rabbit	NE189	10 mg	10 mg	1 mg
Uridine-5'-diphosphoglucose pyrophosphorylase	Bovine liver	rabbit	NE190	10 mg	10 mg	1 mg
Xanthineoxidase	Buttermilk	rabbit	NE160	10 mg	10 mg	1 mg

Packing: vial with lyophilized IgG fraction / conjugate

Storage and handling: see Technical information page 8

Ordering code: combine the code with the label in the outlined heading

Soluble PAP complexes, other reagents for immuno-enzyme techniques and streptavidin conjugates

Soluble peroxidase-anti-peroxidase (PAP) complexes enable the binding of the enzyme horseradish peroxidase via a specific antibody without use of a covalently labelled immunoconjugate. PAP complex and unlabelled primary antiserum must have been produced in the same host animal. The first layer consists of the primary antibody or antiserum. The second layer is an unlabelled antiserum or IgG(7S) preparation to the species of origin of the primary antibody. It is added in excess and acts as a bridge between the primary antibody and the PAP complex in the third layer. Typical working dilutions in histochemical and cytochemical techniques are between 1:250 and 1:500; in ELISA and other solid phase procedures between 1:20,000 and 1:60,000.

Horseradish peroxidase	Source	Code	Size
chromatographically purified, lyophilized, enzyme activity 283 U/mg, RZ=3.30	horseradish	PO	10 mg

Stability and shelf life: store at -20°C

Polyclonal soluble complexes	Source	Code	Size
	goat	G/PAP	1 ml
	mouse	M/PAP	0.25 ml
	rabbit	R/PAP	1 ml
	rat	RA/PAP	0.25 ml
	sheep	Sh/PAP	1 ml

Streptavidin conjugates	Labeled with	Code	Size
	Alkaline Phosphatase	SAv/AP	250 µg
	FITC	SAv/FITC	100 µg
	Horseradish peroxidase	SAv/PO	250 µg
	Sulforhodamine 101 acid chloride (Texas Red)	SAv/TR	100 µg

Antiserum to	Source	Code	Size
Horseradish peroxidase	goat	GA/PO	1 ml
	rabbit	RA/PO	1 ml
Concanavalin A, peroxidase conjugated	goat	GA/ConA/PO	1 ml

Packing: vial with lyophilized product

Storage and handling: see Technical information page 8

Fluorescein isothiocyanate Isomer I (FITC) has its primary adsorption band is at 495 nm, the green coloured emission has its maximum at 520 nm. The optimal degree of protein conjugation with FITC and TRITC for use in histochemistry and immunohistology is between 1.5 and 2.5 on a molar basis.

Bovine Serum Albumin conjugates are intended for use to enhance the optical contrast of the immunospecific staining against an evenly counter stained background.

Replacing specific immunoconjugates by control conjugates (labelled gammaglobulin or IgG fractions) enables the investigator to confirm that staining is not the result of unspecific protein-tissue interaction.

Fluorochromes	Code	Size
FITC (fluorescein isothiocyanate) Isomer I	FITC-1	100 mg

Storage: dry and dark, below -20 °C

Labeled proteins	Code	/FITC	/TRITC	/PO
Bovine Serum Albumin	BSA	10 mg	10 mg	
Bovine Gammaglobulin	BGG		10 mg	
Goat IgG	GIgG	10 mg		10 mg
Rabbit IgG	RIgG	10 mg		10 mg

Packing: vial with lyophilized conjugate

Storage and handling: see Technical information page 8

Ordering code: combine the code with the label in the outlined heading

Purified antigens, calibrators, standards and reference preparations

The purified myeloma immunoglobulins and Bence Jones proteins may be used as reference antigens, calibrators, coating proteins and blocking agents in a variety of immunoassays including immunodiffusion, immunoelectrophoresis, ELISA, Western immunoblotting, dot-immunobinding assays (DIBA), haemagglutination and cell-binding assays. The purity of each protein exceeds 98% as determined by agar-electrophoresis, quantitative densitometry, immunoelectrophoresis and double radial immunodiffusion.

Purified human immunoglobulins

Description	Code	Size
IgG1 lambda G1m (f)	P 106	0.5 mg
IgG1 lambda G1m (a)	P 210	0.5 mg
IgG2 lambda G2m (n+)	P 532	0.5 mg
IgG2 lambda G2m (n-)	P 315	0.5 mg
IgG3 lambda G3m (g)	P 289	0.5 mg
IgG3 kappa G3m (b)	P 411	0.5 mg
IgG4 kappa Gm4a	P 182	0.5 mg
IgG4 kappa Gm4b	P 304	0.5 mg
IgA1 lambda (dimer)	P 444	0.5 mg
IgA1 kappa (polymers)	P 430	0.5 mg
IgA2 lambda A2m (1+, 2-)	P 237	0.5 mg
IgA2 lambda A2m (1-, 2+)(dimer and polymers)	P 505	0.5 mg
IgE	P 050	0.1 mg
Secretory IgA	P 020	0.5 mg
Bence Jones kappa	P 016	1.0 mg
Bence Jones lambda	P 017	1.0 mg

Packing: vial with product lyophilized from 0.5 ml PBS

Storage and handling: see Technical information page 8

Standard references

The standard references are assayed sera/milk samples intended for use as calibrators to prepare standard curves in quantitative determinations of IgA and IgM and/or the IgG subclasses, c.q. secretory component. They are prepared by pooling serum obtained from a large number of healthy, non-medicated individuals.

Description	Protein	Concentration
Human Standard Serum , batch 5244, contains assigned values for each of the subclasses of human IgG and for total IgG	IgG1	5.57 mg/ml
	IgG2	3.08 mg/ml
	IgG3	0.39 mg/ml
	IgG4	0.55 mg/ml
	total IgG	9.55 mg/ml

Code: NOR-01

Packing: vial with 0.5 ml liquid serum

Storage and handling: see Technical information page 8

Description	Protein	Concentration
Human Standard Serum NOR-04 contains assigned values for each of the subclasses of human IgA.	IgA1	2.00 mg/ml
	IgA2	0.20 mg/ml
	total IgA	2.20 mg/ml

Code: NOR-04

Packing: vial with 0.25 ml liquid serum
Storage and handling: see Technical information page 8

Description	Protein	Concentration
Human milk NOR-05 contains assigned values for free secretory component (SC). It does not contain any immunoglobulins.	Free SC	0.82 mg/ml

Code: NOR-05

Packing: vial with 0.5 ml lyophilized milk
Storage and handling: see Technical information page 8

Description	Protein	Concentration
Mouse Standard Serum, NOR-05, batch 4347, contains assigned values for the immunoglobulins and the subclasses of IgG	IgG1	2.00 mg/ml
	IgG2a	8.54 mg/ml
	IgG2b	1.25 mg/ml
	IgG3	0.754 mg/ml
	IgA	2.75 mg/ml
	IgM	0.277 mg/ml

Code: NOR-02

Packing: vial with 0.5 ml lyophilized serum
Storage and handling: see Technical information page 8

Description	Protein	Concentration
Rat Standard Serum, NOR-03, batch 4227, contains assigned values for the classes of immunoglobulins and the subclasses of IgG	IgG1	1.68 mg/ml
	IgG2a	3.36 mg/ml
	IgG2b	7.66 mg/ml
	IgG2c	0.50 mg/ml
	IgA	2.43 mg/ml
	IgM	1.31 mg/ml

Code: NOR-03

Packing: vial with 0.5 ml lyophilized serum
Storage and handling: see Technical information page 8

Control ascites

The control ascites was obtained from mice bearing different hybridomas, pooled and depleted of all immunoglobulins. It is used as a negative control reagent for ELISA, immunoblotting, for indirect immunofluorescence and immunoperoxidase methods replacing the specific ascites in the test arrangement. The control ascites is used in a dilution comparable to that of the specific ascites.

Description

Mouse ascites without immunoglobulins

Code: NOR/AA

Packing: vial with 0.5 ml lyophilized ascites

Storage and handling: see Technical information page 8

Chromatographically purified IgG

Purified IgG fractions were prepared by chromatographical methods from pooled serum of the different species and lyophilized from a solution in PBS. The purity of the proteins is about 98 %. They are intended for use as a reference in a variety of immunologic techniques.

Description	Concentration	Code	size
Bovine IgG	50 mg/ml	BIgG	100 mg
Chicken IgG	10 mg/ml	ChIgG	10 mg
Goat IgG	50 mg/ml	GIgG	100 mg
Guinea pig IgG	10 mg/ml	GpIgG	10 mg
Human IgG	50 mg/ml	HuIgG	100 mg
Human IgG, extra purified	50 mg/ml	HuIgG(-IgA)	100 mg
Human Fab of normal IgG	10 mg/ml	HuFab	10 mg
Monkey (Rhesus) IgG	10 mg/ml	MonIgG	10 mg
Mouse IgG	10 mg/ml	MIgG	10 mg
Rabbit IgG	50 mg/ml	RIgG	100 mg
Rat IgG	10 mg/ml	RaIgG	10 mg
Sheep IgG	50 mg/ml	ShIgG	100 mg
Swine IgG	50 mg/ml	SwIgG	100 mg

Packing: vial with lyophilized IgG

Storage and handling: see Technical information page 8

Chromatographically purified albumin

Purified serum albumin fractions were prepared by chromatographical methods from pooled serum of the different species and lyophilized from a solution in PBS. The purity of the proteins is about 98 %. They are intended for use as a reference in a variety of immunologic techniques.

Description	Concentration	Code	Size
Bovine serum albumin	50 mg/ml	BAIb	100 mg
Goat serum albumin	50 mg/ml	GAIb	100 mg
Human serum albumin	10 mg/ml	HuAlb	10 mg
Monkey albumin	10 mg/ml	MonAlb	10 mg
Mouse serum albumin	10 mg/ml	MAIb	10 mg
Rabbit serum albumin	50 mg/ml	RAIb	100 mg
Rat serum albumin	10 mg/ml	RaAlb	10 mg
Sheep serum albumin	50 mg/ml	ShAlb	100 mg

Packing: vial with lyophilized albumin

Storage and handling: see Technical information page 8

Cohn fractions

Description	Code	Size
Human serum albumin Fr. V	HSA	1 gram
Bovine serum albumin Fr. V	BSA	1 gram
Bovine gamma globulin Fr. II	BGG	1 gram

Packing: vial with lyophilized fraction

Storage and handling: see Technical information page 8

Normal serum protein reference sera and milk for immunochemistry

Normal sera and milk are gathered from healthy animals, then pooled, delipidated and lyophilized. They can be used as reference or blocking agents.

Description	Code	Size
Bovine reference serum	NBS	1 ml
Foetal calf reference serum	FCS	1 ml
Newborn calf reference serum	NbCS	1 ml
Bovine milk	BMk	0.5 ml
Cat reference serum	NCaS	1 ml
Chicken reference serum	NChS	1 ml
Chimpanzee reference serum	NCpS	1 ml
Chimpanzee milk	CpMk	0.5 ml
Dog reference serum	NDS	1 ml
Dog milk	DMk	0.5 ml
Duck reference serum	NDuS	1 ml
Goat reference serum	NGS	1 ml
Goat colostrum	GCoI	0.5 ml
Guinea pig reference serum	NGpS	1 ml
Hamster reference serum	NHaS	1 ml
Horse reference serum	NHoS	1 ml
Horse milk	HoMk	0.5 ml
Human milk	HuMk	0.5 ml
Monkey (rhesus) reference serum	NMonS	1 ml
Mouse (pool) reference serum	NMS	1 ml
Mouse (CBA/BrARij, a-allotype) reference serum	NMS(a-allotype)	1 ml
Mouse (C57BL/KalwRij, b-allotype) reference serum	NMS(b-allotype)	1 ml
Pigeon reference serum	NPS	1 ml
Rabbit reference serum	NRS	1 ml
Rat (pool) reference serum	NRaS	1 ml
Rat BN/WAG/Fish reference serum	NRaS BN/Wag/Fish	1 ml
Rat BN/BI/Rij reference serum	NRaS BN/BI/Rij	1 ml
Rat Louvain reference serum	NRaS Louvain	1 ml
Rat Sprague Dawley reference serum	NRaS Sprague Dawley	1 ml
Rat Wistar reference serum	NRaS Wistar	1 ml
Sheep reference serum	NShS	1 ml
Swine reference serum	NSwS	1 ml
Swine milk	SwMk	0.5 ml
Turkey reference serum	NTuS	1 ml

Packing: vial with lyophilized serum / milk

Storage and handling: see Technical information page 8

Register of products

Product	page	Product	page	Product	page
BAIb	55	GAD/Fbg/FITC	42	GAHu/A1Lp(HDL)	15
BGG	55	GAD/Fbg/PO	42	GAHu/A2M	15
BGG/TRITC	51	GAD/IgA(Fc)	34	GAHu/AGGS	15
BlgG	54	GAD/IgA(Fc)/7S	42	GAHu/Alb	14
BMk	56	GAD/IgA(Fc)/Bio	42	GAHu/Alb/7S	20
BSA	55	GAD/IgA(Fc)/FITC	42	GAHu/Alb/Bio	20
BSA/FITC	51	GAD/IgA(Fc)/PO	42	GAHu/Alb/FITC	20
BSA/TRITC	51	GAD/IgG(Fc)	34	GAHu/Alb/PO	20
ChIgG	54	GAD/IgG(Fc)/7S	42	GAHu/Apl	17
CpMk	56	GAD/IgG(Fc)/Bio	42	GAHu/ATh III	17
DMk	56	GAD/IgG(Fc)/FITC	42	GAHu/Atr	15
DoAG/IgG(H+L)	35	GAD/IgG(Fc)/PO	42	GAHu/BJK(HD)	13
DoAG/IgG(H+L)/7S	43	GAD/IgG(H+L)	34	GAHu/BJK(SD+HD)	13
DoAG/IgG(H+L)/Bio	43	GAD/IgG(H+L)/7S	42	GAHu/BJK(SD+HD)/7S	19
DoAG/IgG(H+L)/FITC	43	GAD/IgG(H+L)/Bio	42	GAHu/BJK(SD+HD)/FITC	19
DoAG/IgG(H+L)/PO	43	GAD/IgG(H+L)/FITC	42	GAHu/BJK(SD+HD)/TRITC	19
DoAG/IgG(H+L)/TRITC	43	GAD/IgG(H+L)/PO	42	GAHu/BJK/IFix	18
FCS	56	GAD/IgM(Fc)	34	GAHu/BJL(HD)	13
FGAHu/Fab/FITC	20	GAD/IgM(Fc)/7S	42	GAHu/BJL(SD+HD)	13
FGAHu/Fab/TRITC	20	GAD/IgM(Fc)/Bio	42	GAHu/BJL(SD+HD)/7S	19
FGAHu/IgM(Fc)/FITC	20	GAD/IgM(Fc)/FITC	42	GAHu/BJL(SD+HD)/FITC	19
FGAHu/IgM(Fc)/TRITC	20	GAD/IgM(Fc)/PO	42	GAHu/BJL(SD+HD)/TRITC	19
FITC-1	51	GAD/TSP	11, 34	GAHu/C1q	15
FShAHu/IgA(Fc)/TRITC	20	GADu/Alb	33	GAHu/C1q/FITC	20
FShAHu/IgG(Fc)/TRITC	20	GADu/Ig	33	GAHu/C1r	15
G/PAP	50	GADu/IgM(Fc)	33	GAHu/C1s	15
GA/ConA/PO	50	GADu/IgM(Fc)/7S	42	GAHu/C3c	15
GA/PO	50	GADu/IgM(Fc)/Bio	42	GAHu/C3c/Bio	20
GAB/IgG(Fc)	31	GADu/IgM(Fc)/FITC	42	GAHu/C3c/FITC	20
GAB/IgG(H+L)	31	GADu/IgM(Fc)/PO	42	GAHu/C3c/PO	20
GAB/IgG(H+L)/7S	42	GADu/Trf	33	GAHu/C3c/TRITC	20
GAB/IgG(H+L)/Bio	42	GAGp/C3c	36	GAHu/C3d	15
GAB/IgG(H+L)/FITC	42	GAGp/C3c/Bio	43	GAHu/C4	15
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GAB/TSP	11, 31	GAGp/C3c/PO	43	GAHu/C5/FITC	20
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GACa/Alb	32	GAGp/Fab/FITC	43	GAHu/Cpl	15
GACa/Ig	32	GAGp/IgG(Fc)	36	GAHu/CRP	15
GACa/IgA(Fc)	32	GAGp/IgG(H+L)	36	GAHu/Fab	12
GACa/IgG(H+L)	32	GAGp/IgG(H+L)/7S	43	GAHu/Fab/7S	19
GACa/IgM(Fc)	32	GAGp/IgG(H+L)/Bio	43	GAHu/Fab/Bio	19
GACa/sIgA	32	GAGp/IgG(H+L)/FITC	43	GAHu/Fab/FITC	19
GACa/TSP	11, 32	GAGp/IgG(H+L)/PO	43	GAHu/Fab/PO	19
GACH/Fab	33	GAGp/IgG1	36	GAHu/Fab/TRITC	19
GACH/Ig	33	GAGp/IgG1/Bio	43	GAHu/Fbg	15,17
GACH/IgA(Fc)	33	GAGp/IgG1/FITC	43	GAHu/Fbg/7S	20
GACH/IgA(Fc)/7S	42	GAGp/IgG1/PO	43	GAHu/Fbg/Bio	20
GACH/IgA(Fc)/Bio	42	GAGp/IgG2	36	GAHu/Fbg/FITC	20
GACH/IgA(Fc)/FITC	42	GAGp/IgG2/Bio	43	GAHu/Fbg/PO	20
GACH/IgA(Fc)/PO	42	GAGp/IgG2/FITC	43	GAHu/FVIII VVWD	17
GACH/IgG(Fc)	33	GAGp/IgG2/PO	43	GAHu/FXI	17
GACH/IgM(Fc)	33	GAGp/IgM(Fc)/Bio	43	GAHu/FXII	17
GACH/IgM(Fc)/7S	42	GAGp/IgM(Fc)/FITC	43	GAHu/HMWK	18
GACH/IgM(Fc)/Bio	42	GAGp/IgM(Fc)/PO	43	GAHu/Hp	15
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GACH/IgM(Fc)/PO	42	GAHa/IgG(H+L)	37	GAHu/Ig/7S	19
GACH/TSP	11, 33	GAHa/IgG(H+L)/Bio	43	GAHu/Ig/Bio	19
GAD/C3c	34	GAHa/IgG(H+L)/FITC	43	GAHu/Ig/FITC	19
GAD/C3c/FITC	42	GAHa/IgG(H+L)/PO	43	GAHu/Ig/IFix	18
GAD/Fbg	34	GAHo/IgG(Fc)	37	GAHu/Ig/PO	19
GAD/Fbg/7S	42	GAHo/IgG1(T)	37	GAHu/Ig/TRITC	19
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GAHu/Ig(Fc)/PO	19	GAHu/SC/PO	19	GAM/IgG(Fc)/TRITC	27
GAHu/Ig(Fc)/TRITC	19	GAHu/TBG	16	GAM/IgG(H+L)	25
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GAHu/IgD(Fc)/FITC	19	GAM/C3c/7S	27	GAM/IgG1/FITC	27
GAHu/IgD(Fc)/IFix	18	GAM/C3c/Bio	27	GAM/IgG1/PO	27
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GAHu/IgE(Fc)/Bio	19	GAM/Fab/Bio	27	GAM/IgG2/PO	27
GAHu/IgE(Fc)/FITC	19	GAM/Fab/FITC	27	GAM/IgG2/TRITC	27
GAHu/IgE(Fc)/IFix	18	GAM/Fab/PO	27	GAM/IgG2a	25
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GAHu/IgG(Fc)/PO	19	GAM/Ig	25	GAM/IgG2b	25
GAHu/IgG(Fc)/TRITC	19	GAM/Ig/7S	26	GAM/IgG2b/7S	27
GAHu/IgG(H+L)	12	GAM/Ig/Bio	26	GAM/IgG2b/Bio	27
GAHu/IgG(H+L)/7S	19	GAM/Ig/FITC	26	GAM/IgG2b/FITC	27
GAHu/IgG(H+L)/Bio	19	GAM/Ig/PO	26	GAM/IgG2b/PO	27
GAHu/IgG(H+L)/FITC	19	GAM/Ig/TRITC	26	GAM/IgG2b/TRITC	27
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GAHu/J/FITC	19, 22	GAM/IgA(Fc)/FITC	27	GAM/IgM(Fc)/TRITC	27
GAHu/J/PO	19, 22	GAM/IgA(Fc)/PO	27	GAM/mIg/7S	28
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GAHu/Lfr/7S	20	GAM/IgD(Fc)/7S	27	GAM/mIg/PO	28
GAHu/Lfr/Bio	20	GAM/IgD(Fc)/Bio	27	GAM/mIg/TRITC	28
GAHu/Lfr/FITC	20	GAM/IgD(Fc)/FITC	27	GAM/MUP	26
GAHu/Lfr/PO	20	GAM/IgD(Fc)/PO	27	GAM/Trf	26
GAHu/Lp	14	GAM/IgD(Fc)/TRITC	27	GAM/TSP	11, 26
GAHu/pAlb	16	GAM/IgE(Fc)	26	GAM/TSP/FITC	27
GAHu/pC	18	GAM/IgE(Fc)/7S	27	GAMon/C3c	38
GAHu/PFB	15	GAM/IgE(Fc)/Bio	27	GAMon/C3c/7S	43
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GAMon/Ig/TRITC	43	GAR/IgG(Fc)/7S	44	GARa/IgG(Fc)/FITC	30
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GAMon/Ig(Fc)/PO	43	GAR/IgG(H+L)/7S	44	GARa/IgG(H+L)/Bio	30
GAMon/Ig(Fc)/TRITC	43	GAR/IgG(H+L)/Bio	44	GARa/IgG(H+L)/FITC	30
GAMon/IgA(Fc)	38	GAR/IgG(H+L)/FITC	44	GARa/IgG(H+L)/PO	30
GAMon/IgA(Fc)/7S	43	GAR/IgG(H+L)/PO	44	GARa/IgG(H+L)/TRITC	30
GAMon/IgA(Fc)/Bio	43	GAR/IgG(H+L)/TRITC	44	GARa/IgG1	28
GAMon/IgA(Fc)/FITC	43	GAR/IgM(Fc)	39	GARa/IgG1/7S	30
GAMon/IgA(Fc)/PO	43	GAR/IgM(Fc)/7S	44	GARa/IgG1/Bio	30
GAMon/IgA(Fc)/TRITC	43	GAR/IgM(Fc)/Bio	44	GARa/IgG1/FITC	30
GAMon/IgG(Fc)	38	GAR/IgM(Fc)/FITC	44	GARa/IgG1/PO	30
GAMon/IgG(Fc)/7S	43	GAR/IgM(Fc)/PO	44	GARa/IgG1/TRITC	30
GAMon/IgG(Fc)/Bio	43	GAR/TM	39	GARa/IgG2a	29
GAMon/IgG(Fc)/FITC	43	GAR/TSP	11, 39	GARa/IgG2a/7S	30
GAMon/IgG(Fc)/PO	43	GAR/TSP/FITC	44	GARa/IgG2a/Bio	30
GAMon/IgG(Fc)/TRITC	43	GARa/A2M	29	GARa/IgG2a/FITC	30
GAMon/IgG(H+L)	38	GARa/Alb	29	GARa/IgG2a/PO	30
GAMon/IgG(H+L)/7S	43	GARa/Alb/7S	30	GARa/IgG2a/TRITC	30
GAMon/IgG(H+L)/Bio	43	GARa/Alb/Bio	30	GARa/IgG2ab	28
GAMon/IgG(H+L)/FITC	43	GARa/Alb/FITC	30	GARa/IgG2ab/7S	30
GAMon/IgG(H+L)/PO	43	GARa/Alb/PO	30	GARa/IgG2ab/Bio	30
GAMon/IgM(Fc)	38	GARa/C3c	29	GARa/IgG2ab/FITC	30
GAMon/IgM(Fc)/7S	43	GARa/C3c/7S	30	GARa/IgG2ab/PO	30
GAMon/IgM(Fc)/Bio	43	GARa/C3c/Bio	30	GARa/IgG2ab/TRITC	30
GAMon/IgM(Fc)/FITC	43	GARa/C3c/FITC	30	GARa/IgG2b	29
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GAMon/IgM(Fc)/TRITC	43	GARa/Fab	28	GARa/IgG2b/Bio	30
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GAMon/Lfr/7S	43	GARa/Fbg/7S	30	GARa/IgG2b/PO	30
GAMon/Lfr/Bio	43	GARa/Fbg/Bio	30	GARa/IgG2b/TRITC	30
GAMon/Lfr/FITC	43	GARa/Fbg/FITC	30	GARa/IgG2c	29
GAMon/Lfr/PO	43	GARa/Fbg/PO	30	GARa/IgG2c/7S	30
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GAR/Alb	39	GARa/Ig(Fc)/Bio	30	GARa/IgM(Fc)/PO	30
GAR/Alb/Bio	44	GARa/Ig(Fc)/FITC	30	GARa/IgM(Fc)/TRITC	30
GAR/Alb/FITC	44	GARa/Ig(Fc)/PO	30	GARa/L(SD+HD)	29
GAR/C3c	39	GARa/Ig(Fc)/TRITC	30	GARa/mlg/7S	30
GAR/C3c/FITC	44	GARa/IgA(Fc)	29	GARa/mlg/Bio	30
GAR/Fab	39	GARa/IgA(Fc)/7S	30	GARa/mlg/FITC	30
GAR/Fbg	39	GARa/IgA(Fc)/Bio	30	GARa/mlg/PO	30
GAR/Ig	39	GARa/IgA(Fc)/FITC	30	GARa/mlg/TRITC	30
GAR/Ig/7S	44	GARa/IgA(Fc)/PO	30	GARa/Trf	29
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RAM/IgM(Fc)/7S	27	RARa/IgG2a	29	ShAB/TSP	11, 32
RAM/IgM(Fc)/Bio	27	RARa/IgG2ab	28	ShAD/IgG(Fc)	34
RAM/IgM(Fc)/FITC	27	RARa/IgG2b	29	ShAD/TSP	11, 34
RAM/IgM(Fc)/PO	27	RARa/IgG2c	29	ShAGp/Ig	36
RAM/IgM(Fc)/TRITC	27	RARa/IgM(Fc)	29	ShAGp/IgA(Fc)	36
RAM/mlg/7S	28	RARa/Trf	29	ShAGp/IgG(Fc)/Bio	43
RAM/mlg/Bio	28	RARa/TSP	12, 29	ShAGp/IgG(Fc)/FITC	43
RAM/mlg/FITC	28	RASh/Alb	40	ShAGp/IgG(Fc)/PO	43
RAM/mlg/PO	28	RASh/Ery	41	ShAGp/IgG1	36
RAM/mlg/TRITC	28	RASh/Ery/7S	41	ShAGp/IgM(Fc)	36
RAM/MSP	26	RASh/IgG(Fc)/7S	44	ShAGp/TSP	11, 36
RAM/TM	26	RASh/IgG(Fc)/Bio	44	ShAHo/IgG(H+L)	37
RAM/TSP	11, 26	RASh/IgG(Fc)/FITC	44	ShAHu/ACHy	15
RAMon/Alb	38	RASh/IgG(Fc)/PO	44	ShAHu/BJK(HD)	13
RAMon/AlbDNP	38	RASh/IgG(H+L)	40	ShAHu/BJL(HD)	13

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ShAHu/C4bp	15, 17	ShASw/IgA(Fc)	40	SwAHu/IgE(Fc)	13
ShAHu/FH	15	ShIlgG	54	SwAHu/IgE(Fc)/7S	19
ShAHu/FI	15	SR/GAHu/BJK(SD+HD)/7S	21	SwAHu/IgE(Fc)/FITC	19
ShAHu/IATI	15	SR/GAHu/BJK(SD+HD)/Bio	21	SwAHu/IgE(Fc)/PO	19
ShAHu/IgA1-2 Set	14	SR/GAHu/BJK(SD+HD)/FITC	21	SwAHu/IgE(Fc)/TRITC	19
ShAHu/IgD(Fc)	13	SR/GAHu/BJL(SD+HD)/PO	21	SwAHu/IgG1-4 Set	14
ShAHu/IgD(Fc)/7S	19	SR/GAHu/BJK(SD+HD)/TRITC	21	SwAHu/IgG(Fc)	12
ShAHu/IgD(Fc)/FITC	19	SR/GAHu/BJL(SD+HD)/7S	21	SwAHu/IgG(Fc)/7S	19
ShAHu/IgD(Fc)/TRITC	19	SR/GAHu/BJL(SD+HD)/Bio	21	SwAHu/IgG(Fc)/FITC	19
ShAHu/IgE(Fc)	13	SR/GAHu/BJL(SD+HD)/FITC	21	SwAHu/IgG(Fc)/TRITC	19
ShAHu/IgG1-4 Set	14	SR/GAHu/BJL(SD+HD)/PO	21	SwAHu/IgG(H+L)/7S	19
ShAHu/IgG3	14	SR/GAHu/BJL(SD+HD)/TRITC	21	SwAHu/IgG(H+L)/Bio	19
ShAHu/IgG4	14	SR/GAHu/IgA(Fc)/7S	21	SwAHu/IgG(H+L)/FITC	19
ShAHu/sAmy	16	SR/GAHu/IgA(Fc)/Bio	21	SwAHu/IgM(Fc)	13
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ShAHu/sIlgA	16	SR/GAHu/IgD(Fc)/7S	21	SwAHu/IgM(Fc)/TRITC	19
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ShAM/BJK(SD+HD)/7S	27	SR/GAHu/IgE(Fc)/7S	21	SwAM/IgA(Fc)	26
ShAM/BJK(SD+HD)/FITC	27	SR/GAHu/IgE(Fc)/FITC	21	SwAM/IgG(H+L)	25
ShAM/BJK(SD+HD)/TRITC	27	SR/GAHu/IgE(Fc)/PO	21	SwAM/IgG(H+L)/7S	27
ShAM/BJL(SD+HD)	26	SR/GAHu/IgE(Fc)/TRITC	21	SwAM/IgG(H+L)/FITC	27
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ShAM/BJL(SD+HD)/Bio	27	SR/GAHu/IgG(Fc)/FITC	21	SwAR/IgG(H+L)/7S	44
ShAM/BJL(SD+HD)/FITC	27	SR/GAHu/IgG(Fc)/PO	21	SwAR/IgG(H+L)/FITC	44
ShAM/BJL(SD+HD)/PO	27	SR/GAHu/IgG(Fc)/TRITC	21	SwAR/IgG(H+L)/TRITC	44
ShAM/BJL(SD+HD)/TRITC	27	SR/GAHu/IgM(Fc)/7S	21	SwAR/L(SD+HD)	39
ShAM/Fab	25	SR/GAHu/IgM(Fc)/Bio	21	SwAR/TSP	11, 39
ShAM/Fab/FITC	27	SR/GAHu/IgM(Fc)/FITC	21	SwASh/IgM(Fc)	40
ShAM/Fab/TRITC	27	SR/GAHu/IgM(Fc)/PO	21	SwIlgG	54
ShAM/IgD(Fc)	26	SR/GAHu/IgM(Fc)/TRITC	21	SwMk	56
ShAM/IgD(Fc)/FITC	27	SwAG/IgA(Fc)	35		
ShAM/IgG2a	25	SwAG/IgM(Fc)	35		
ShAM/IgG2a/FITC	27	SwAG/sIlgA	35		
ShAM/IgG2a/TRITC	27	SwAGp/IgG(H+L)/7S	43		
ShAM/IgG2a(1a)	25	SwAGp/IgG(H+L)/FITC	43		
ShAM/IgG2a(1a)/7S	27	SwAHo/IgG(H+L)	37		
ShAM/IgG2a(1a)/Bio	27	SwAHo/L(SD+HD)	37		
ShAM/IgG2a(1a)/FITC	27	SwAHu/BJK(SD+HD)	13		
ShAM/IgG2a(1a)/PO	27	SwAHu/BJK(SD+HD)/7S	19		
ShAM/IgG2a(1b)	25	SwAHu/BJK(SD+HD)/FITC	19		
ShAM/IgG2a(1b)/7S	27	SwAHu/BJK(SD+HD)/TRITC	19		
ShAM/IgG2a(1b)/Bio	27	SwAHu/BJL(SD+HD)	13		
ShAM/IgG2a(1b)/FITC	27	SwAHu/BJL(SD+HD)/7S	19		
ShAM/IgG2a(1b)/PO	27	SwAHu/BJL(SD+HD)/FITC	19		
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ShARa/AFP/FITC	30	SwAHu/Fab	12		
ShARa/Fab	28	SwAHu/HAA	16		
ShARa/Fab/7S	30	SwAHu/HAA/7S	17		
ShARa/Fab/Bio	30	SwAHu/Ig	12		
ShARa/Fab/FITC	30	SwAHu/Ig/7S	19		
ShARa/Fab/PO	30	SwAHu/Ig/FITC	19		
ShARa/Fab/TRITC	30	SwAHu/Ig/TRITC	19		
ShARa/IgA(Fc)	29	SwAHu/IgA(Fc)	12		
ShARa/IgG1	28	SwAHu/IgA(Fc)/7S	19		
ShARa/IgG2b	29	SwAHu/IgA(Fc)/FITC	19		