Highlight Products

FUJIFILM
Value from Innovation

Wako

FUJIFILM Wako Pure Chemical Corporation, Japan
January 2024

Overview

Life Science

Antibodies
- Antibodies
- ELISA Kits

Biochemistry reagents

Cell culture/Microbiology

Toxins

Quality Control

Nucleic acid extraction systems

Chemistry

Analytical Chemistry
- High-purity solvents
- Chromatography columns
- Certified reference materials

Synthetic Chemistry
- Retail chemicals
- Bulk materials

FUJIFILM
Value from Innovation
Wako

Life Science

Antibodies & Elisa Kits

Neuroscience Research
miRNA Research
Cancer Research
Metabolic Sciences
Biotechnology & Bioengineering

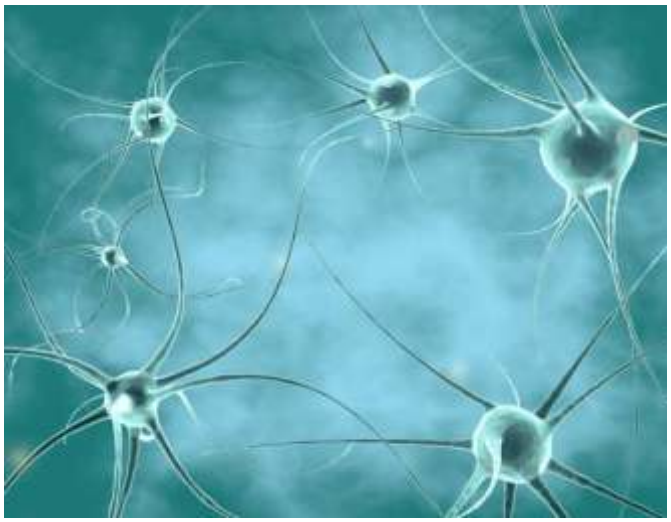
More than 400
different products
with numerous
unique items

FUJIFILM
Value from Innovation

Wako

Life Science

Antibodies & Elisa Kits



Neuroscience Research

Target/Epitope	Application field
Aβ (Amyloidβ)	
Amyloid β oligomer Tau Aβ precursor protein Apolipoprotein E4	**Alzheimer Disease**
a synuclein	**Parkinson Disease**
BDNF	**Mental Disease**
Iba1	
GFAP Nestin Pax 6 Phopholated GAP-43 Synaptophysin	**Glia and Neuronal Markers**

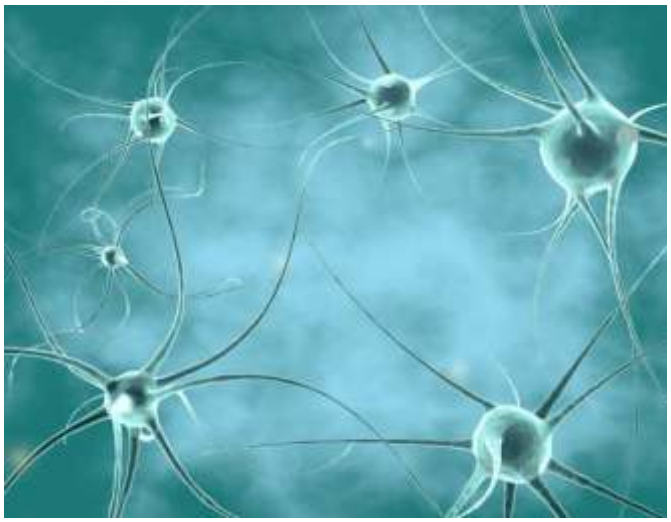
Main products

- More than 70 items with numerous unique products

FUJIFILM
Value from Innovation
Wako

Life Science

Antibodies & Elisa Kits



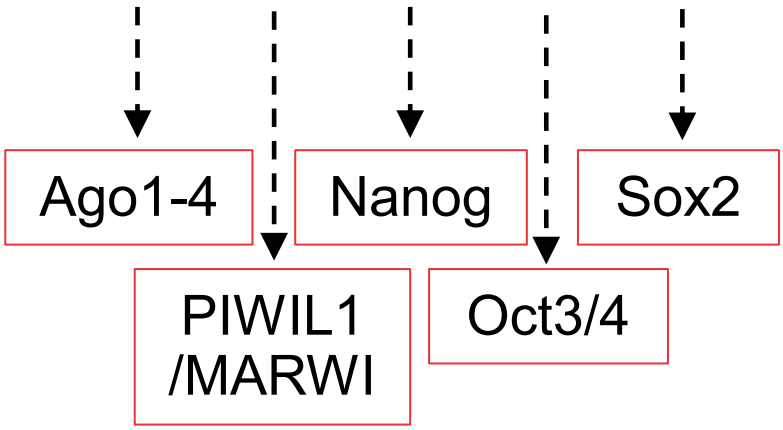
Neuroscience Research

Factor	Application field
Aβ(Amyloid β) 40 Aβ(Amyloid β) 42 New Amyloid β oligomer Tau New Tau pT181	**Alzheimer's disease**
New BDNF	**Mental disease**

- High Sensitivity
- Small Sample Volume
- Measure level of factor in biological sample

FUJIFILM
Value from Innovation
Wako

miRNA Research



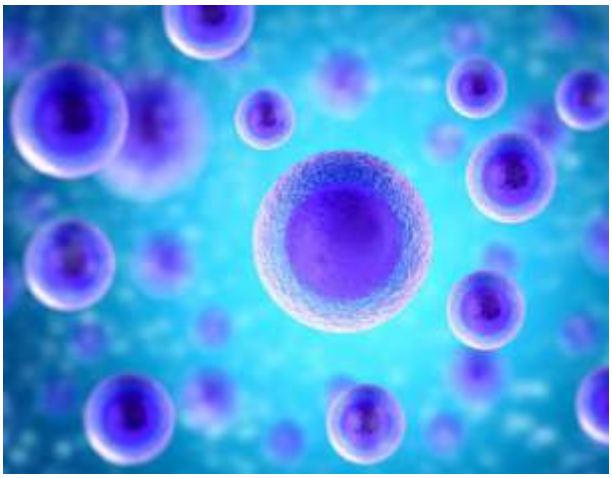
- More than 30 different products (AB's & isolation kit)
- Covering most of major target proteins
- Several unique products
- Target users: CROs/CMOs

FUJIFILM
Value from Innovation
Wako

Life Science

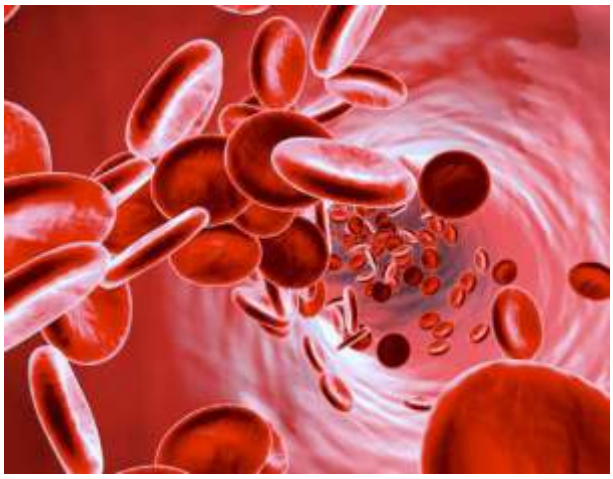
Antibodies & Elisa Kits

Cancer research



Target	Application field
ATRX IDH 1 IDH 2	**Glioma**
HB-EGF TERT Podocalyxin	**General Markers**
Podoplanin	**Cancer metastasis**

Metabolic Sciences



Target	Application field
CTGF	**Rheumatoid arthritis**
FGF9	**Embryo- & Morphogenesis**
Fibrin	**Blood Coagulation**
Galectin-9	**Immune Malfunction**
Mortalin	**Cell Proliferation**

- More than 20 different products
- Several unique antibodies
- Target users: CROs/CMOs

FUJIFILM Value from Innovation Wako

Life Science

Antibodies & Elisa Kits

Shibayagi™ Kits

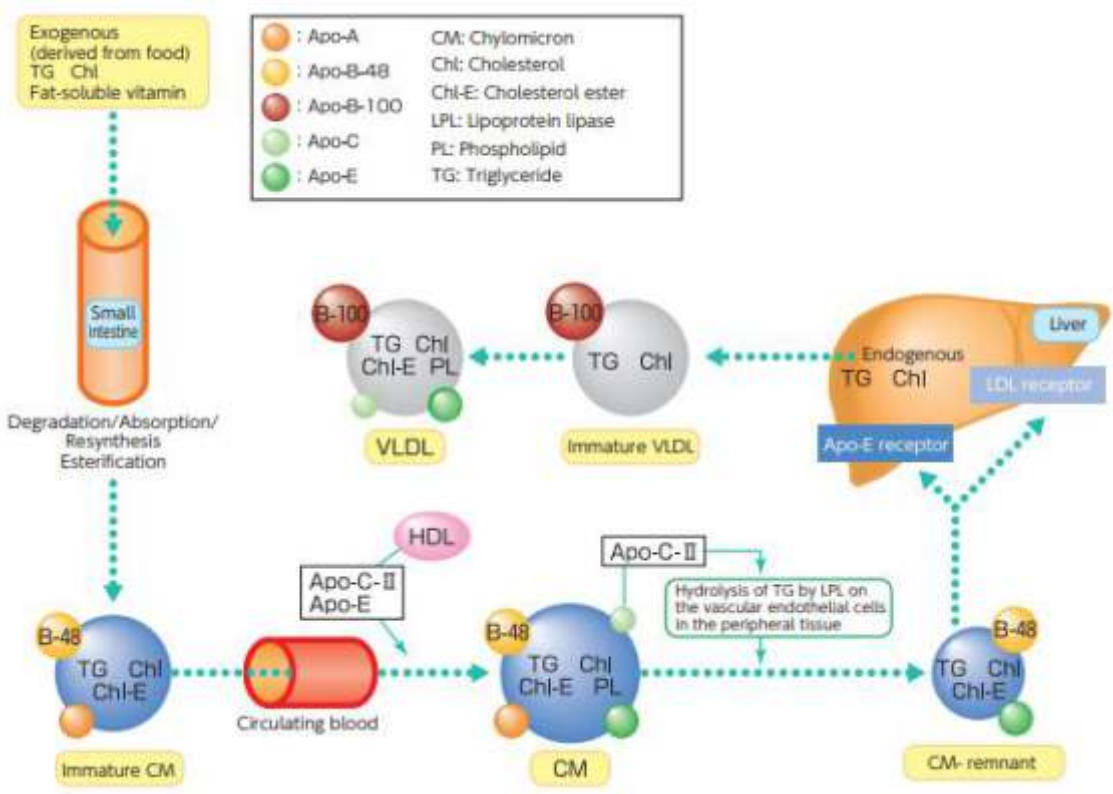
Application Field	Assay system	Kits
Clinical lipid-related research	ELISA	1
Non-clinical diabetes & obesity research	ELISA	14
Non-clinical allergy & immunity research	ELISA	9
Non-clinical nephrotoxicity	ELISA	2
	TIA	2
BSA (Bovine serum albumin)	ELISA	1

main sales driver

- Unique ELISA kits available for most model-organisms
- Target users: Pharma industry, CROs/CMOs

FUJIFILM Value from Innovation Wako

Apolipoprotein B-48 ELISA Kit



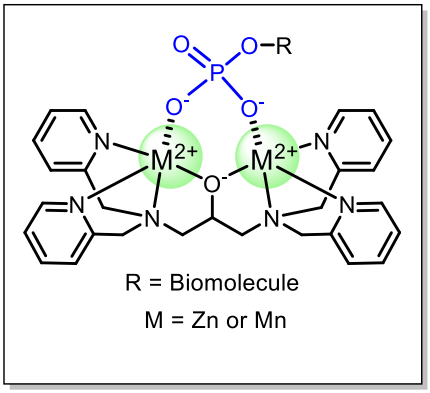
FUJIFILM Wako Shibayagi Corporation

- Apolipoprotein B-48
- best marker for observation of exogenous and endogenous lipid transportation after food intake
- evaluation of risks for developing atherosclerotic diseases

The Phos-tag™ Series

Electrophor. separation of phosphoproteins

Western Blot Detection of phosphoproteins



Purification of phosphorylated compounds

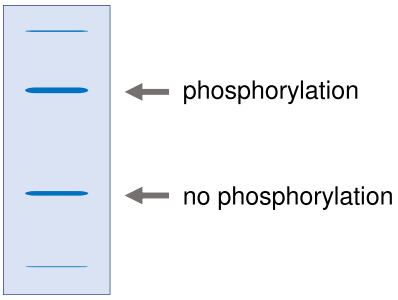
MS Detection of phosphorylated compounds

- Specific antibody-free trapping of Phosphate group
- No radioactive detection required
- Fluorescence labelled Phos-tag™ available
- Patented technology: Exclusive by FUJIFILM Wako

Life Science

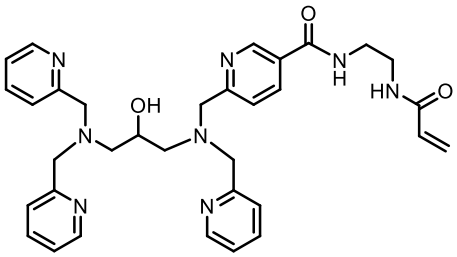
Biochemistry Reagents

SuperSep™ Phos-tag



- Ready-to-use precast polyacrylamide gels
- Compatibility with Bio-Rad™ and Life Technologies™ tanks
- Long-term stability (> 9 months)

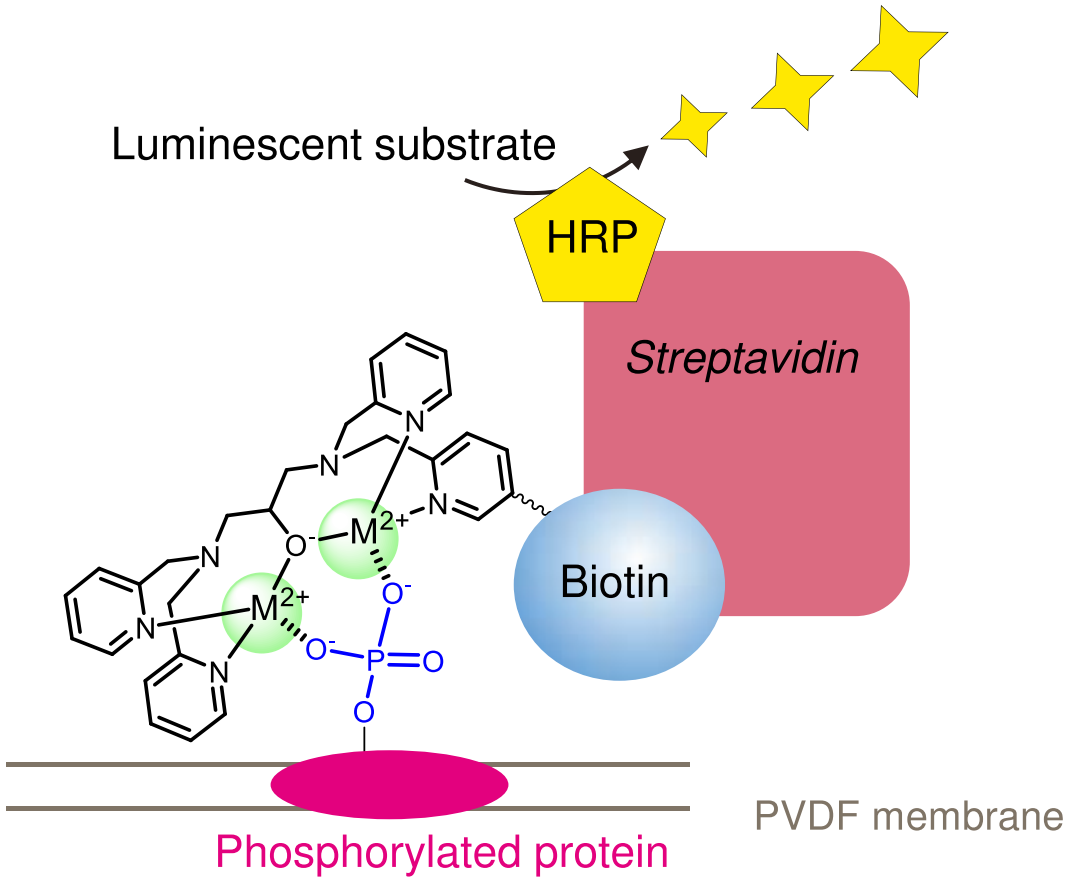
Phos-tag™ AAL-107



- High flexibility
- > Easy to use
- > Product doesn't exhibit any toxicity
- > Long-term stability (> 1 year)

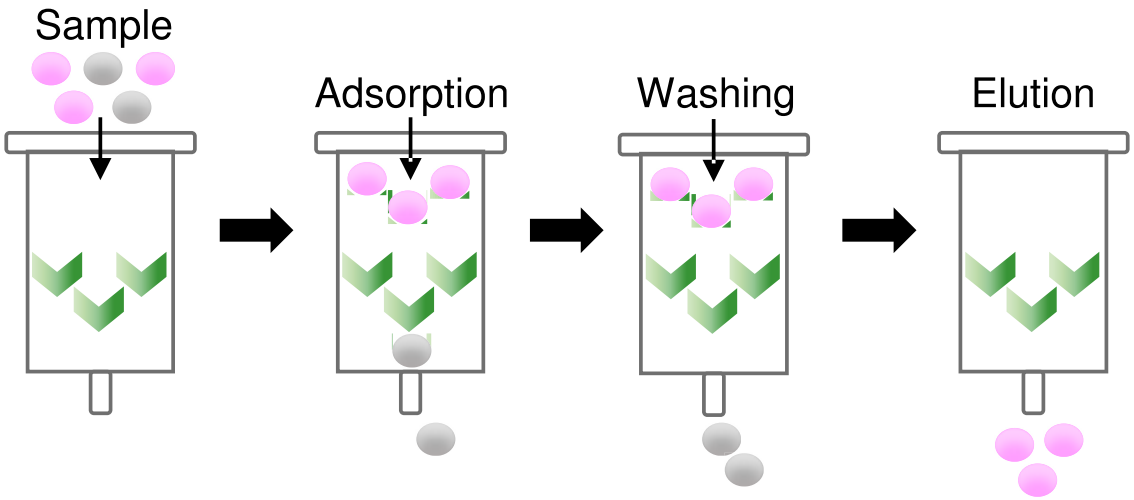
FUJIFILM
Value from Innovation
Wako

Phos-tag™ Biotin



- Suitable for Western Blot
- No special reagent required
- Sensitivity: < 1ng
- Long-term stability (> 1 year)

Phos-tag™ Agarose



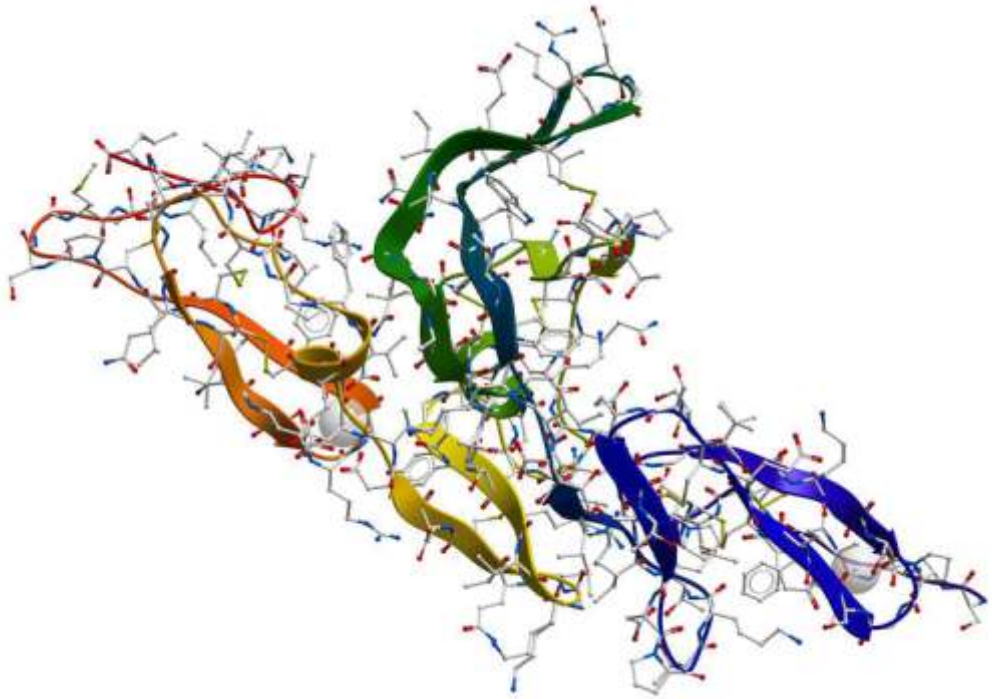
Phos-tag agarose

Phosphoproteins

Non- phosphorylated proteins

- Phosphorylated proteins can be purified within 1h
- Elution under physiological conditions (pH 7.5)
- No reducing agents or surfactant required

Lysyl Endopeptidase®



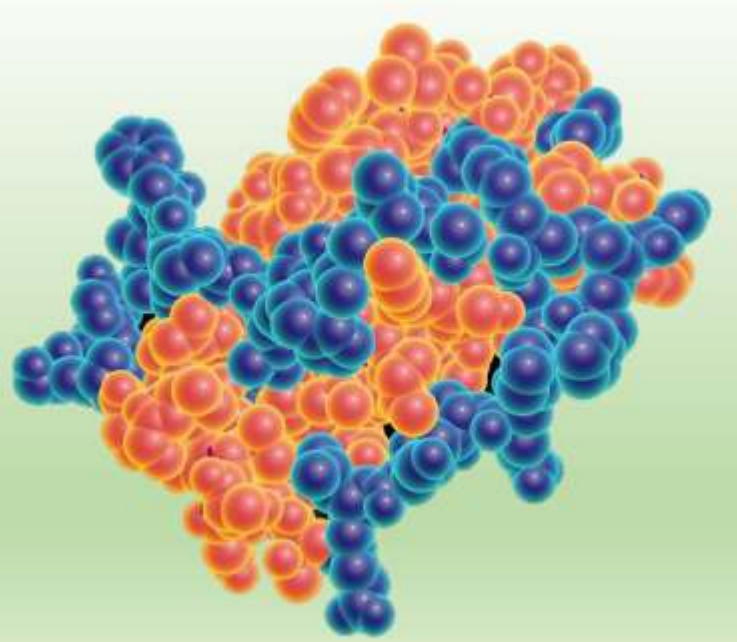
- Specific carboxyterminal cleavage of Lys-residues
- Isolated from native strain *A. lyticus* M497-1
- Activity: 8) 12 AU/mL
- Target users: Biopharma industry, proteomic platforms
- Recommended by **E**uropean **Me**dicines **A**gency (EMeA)

New launched: Lysyl Endopeptidase® RECOMBINANT, BIOPHARMACEUTICAL ANALYSIS GRADE (rLys-C)

- Expressed in E. coli
- Checked residual DNA / Host cell protein
- Missed cleavage rate is lower than competitor's Lys-C

FUJIFILM Value from Innovation Wako

Achromopeptidase®



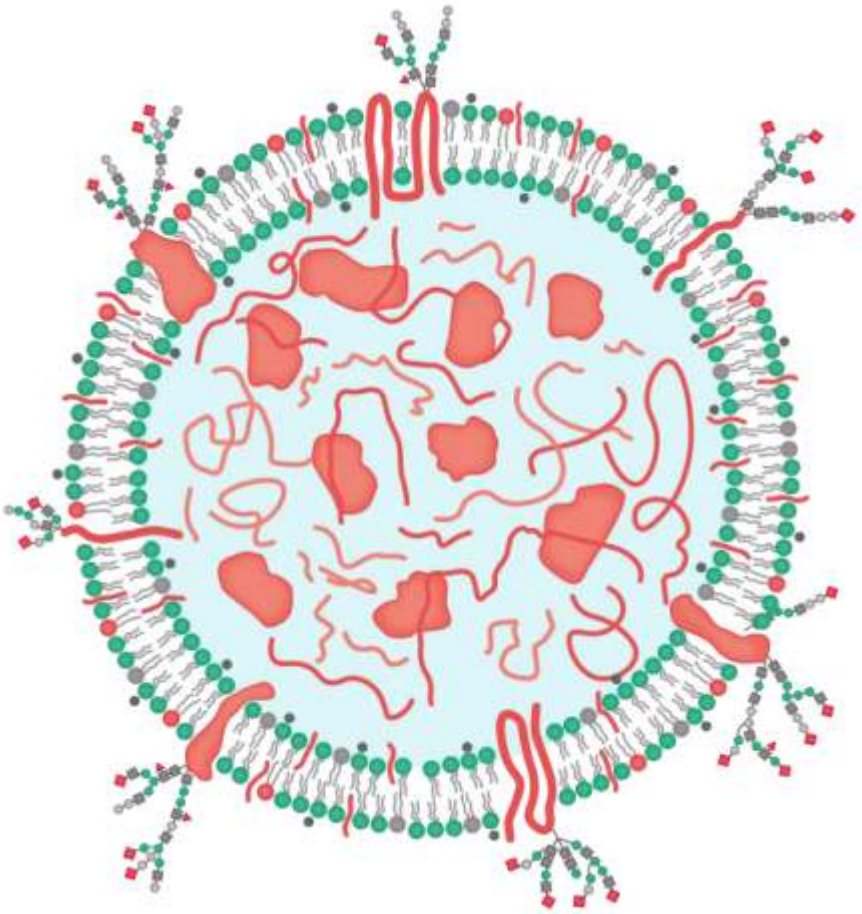
- Highly active bacteriolytic enzyme
- Isolated from the soil bacterium

  Lysobacter enzymogenes M497-1
- Broad specificity against Gram-positive bacteria
- Suitable for preparation of protoplasts from actinomycetes
- Target users: Protein production platforms

Life Science

Biochemistry Reagents

EV (extracellular vesicles) Isolation/ELISA Kits/Flow Cytometry Kit



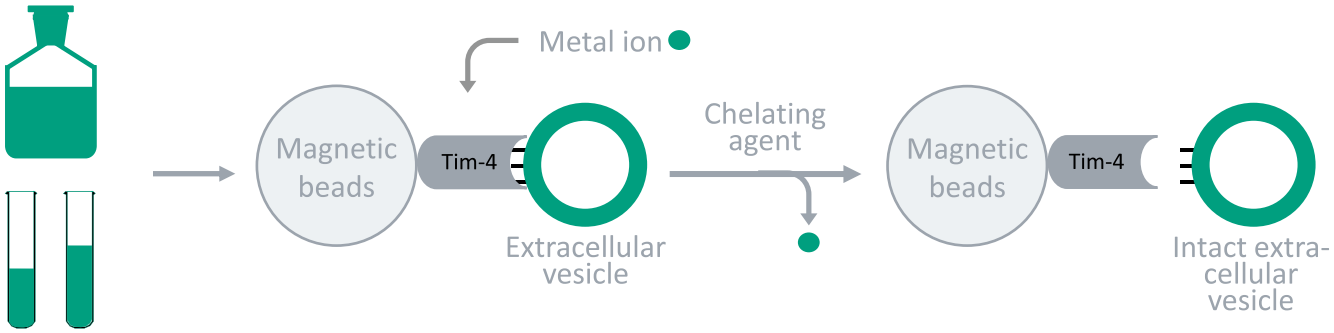
- EVs can be found in nearly all body fluids (e.g. blood, urine, saliva, amniotic fluid, etc.)
- Highly increased levels of EVs in cancer patients
- Implication in tumor genesis and growth, metastasis & immune escape
- Genetic content of EVs reflects “advanced state” of cancer
- High potential as “theragnostic”

FUJIFILM Value from Innovation Wako

Life Science

Biochemistry Reagents

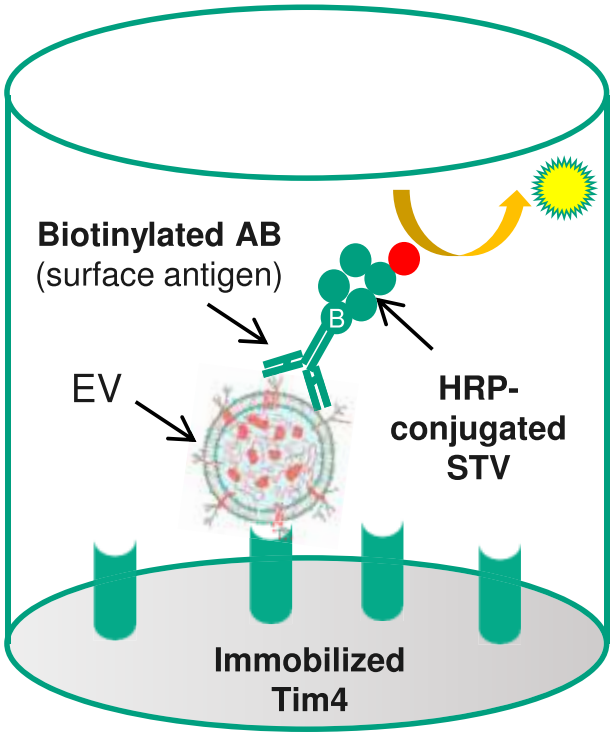
MagCapture™ Exosome Isolation Kit PS



- Affinity-based antibody-free purification method
- Unique patented technology enabling easy elution of bound EVs under neutral conditions
- Target users: (Bio)pharma- and Medtech industry, public research institutes

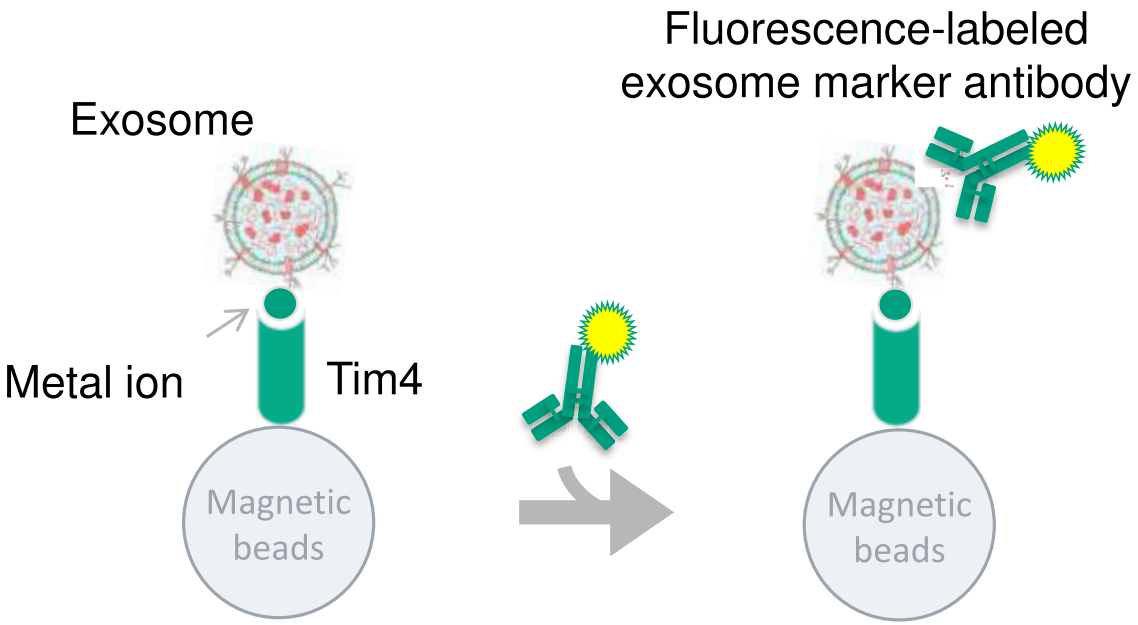
FUJIFILM Value from Innovation Wako

PS Capture™ Exosome ELISA Kit (Streptavidin HRP)



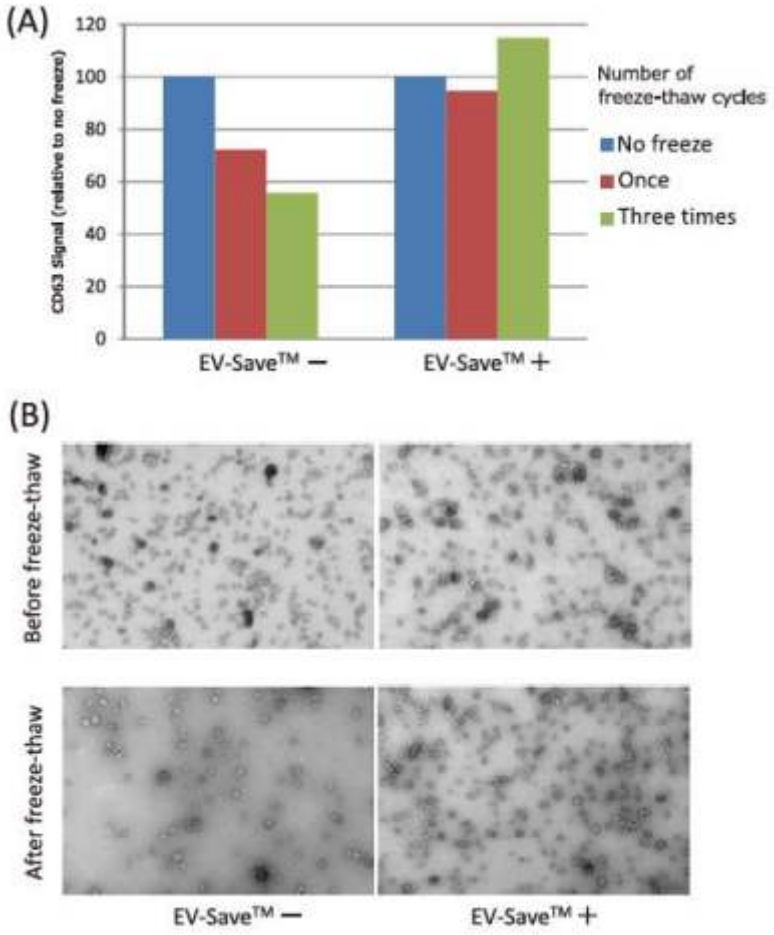
- Detection of EVs in 0.1µL of cell culture supernatant
- Quantitative analysis with up to 1.000x higher sensitivity than Western Blot
- Target users: (Bio)pharma- and Medtech industry, public research institutes
- 2nd assay with HRP- labeled anti-mouse sec AB available

PS Capture™ Exosome Flow Cytometry Kit



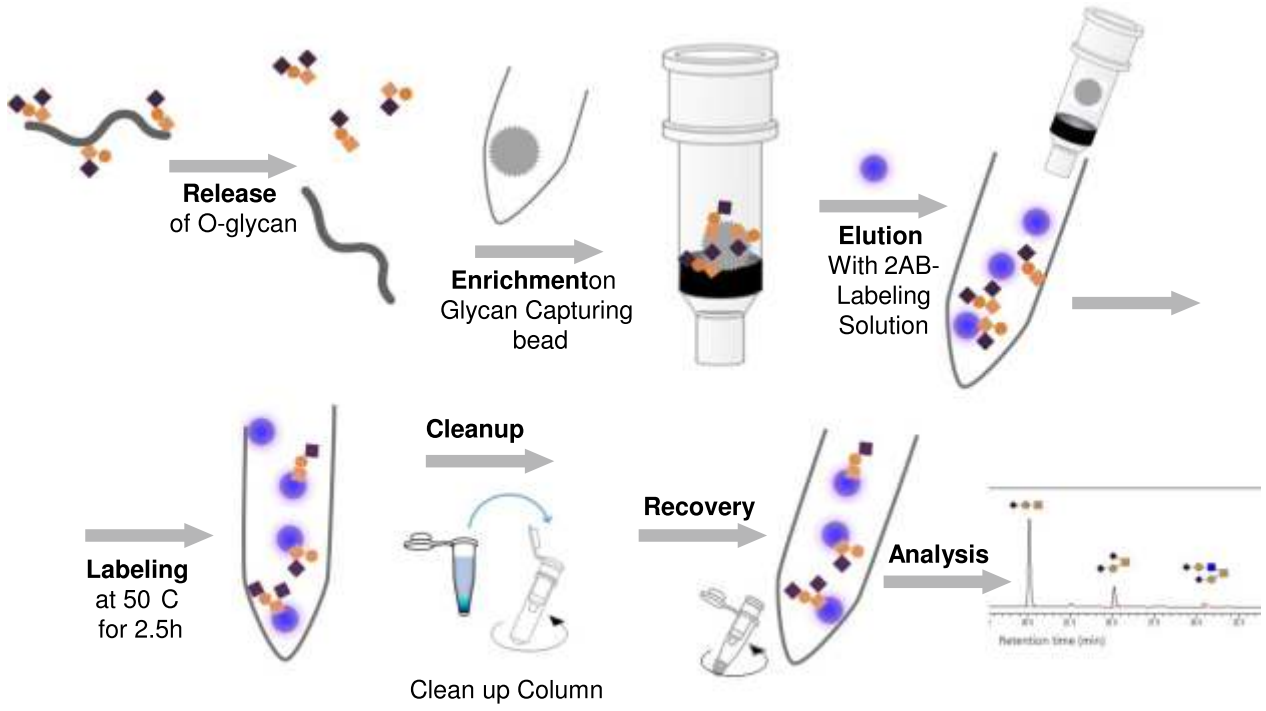
- Detection of EVs in 0.1µl of cell culture supernatant
- High sensitive qualitative analysis
- Easy operation
- No need of purification
- Target users: (Bio)pharma- and Medtech industry, public research institutes

EV-Save™ Extracellular Vesicle Blocking Reagent



- polymeric reagent suppressing the adsorption of extracellular vesicles to laboratory instruments/containers
- reduces the loss of extracellular vesicles during experiments and storage
- combination with MagCapture™ Exosome Isolation Kit PS

Biochemistry Reagents

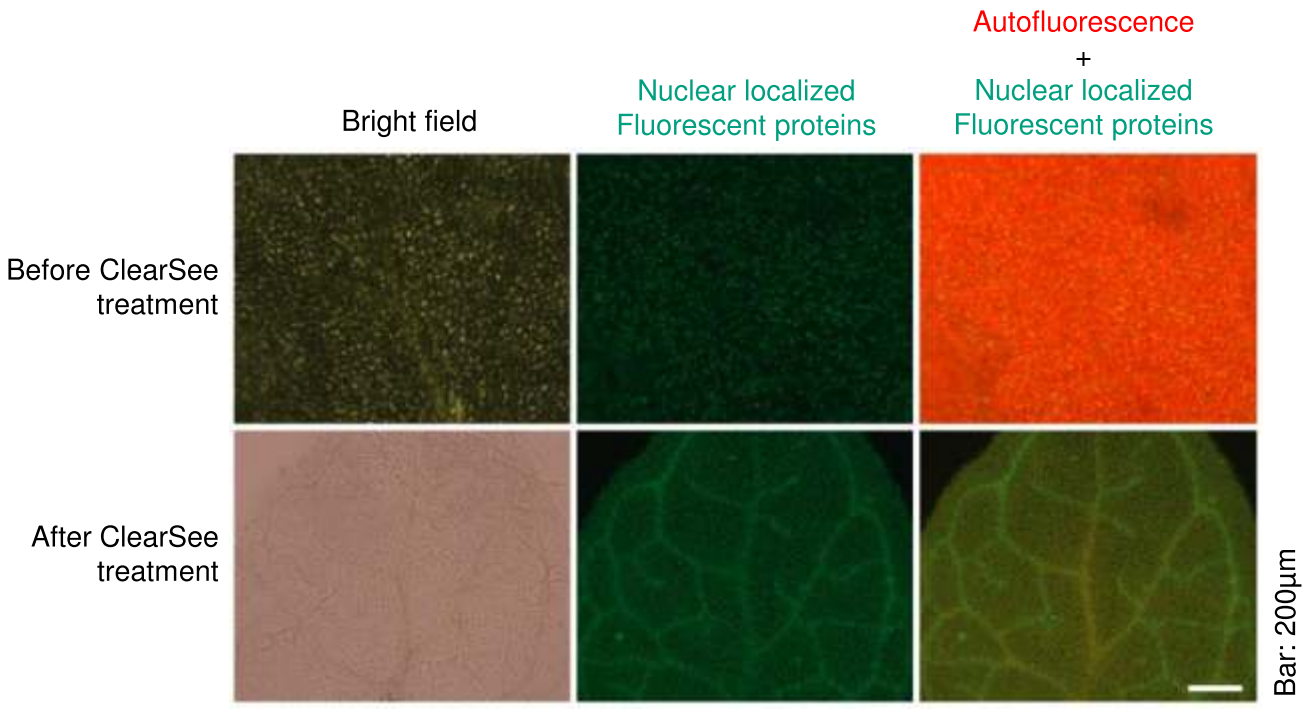


Sumitomo EZGlyco

- O-glycan Sample Prep in 5 hours
- High recovery of released O-glycans from various glycoproteins
- Glycan releasing reagents minimize decomposition of O-glycans (peeling), resulting in O-glycan characterization with higher accuracy
- With a simple protocol to follow, O-glycan sample preparation is completed without any special laboratory equipment

SUMITOMO BAKELITE CO.,LTD.

FUJIFILM Value from Innovation Wako



The ClearSee™ -treated samples are cleared under a bright field.
Autofluorescence of chlorophyll are diminished.
The fluorescent proteins are detected even in the vascular bundles.

Tissue Clearing Agents - ClearSee™

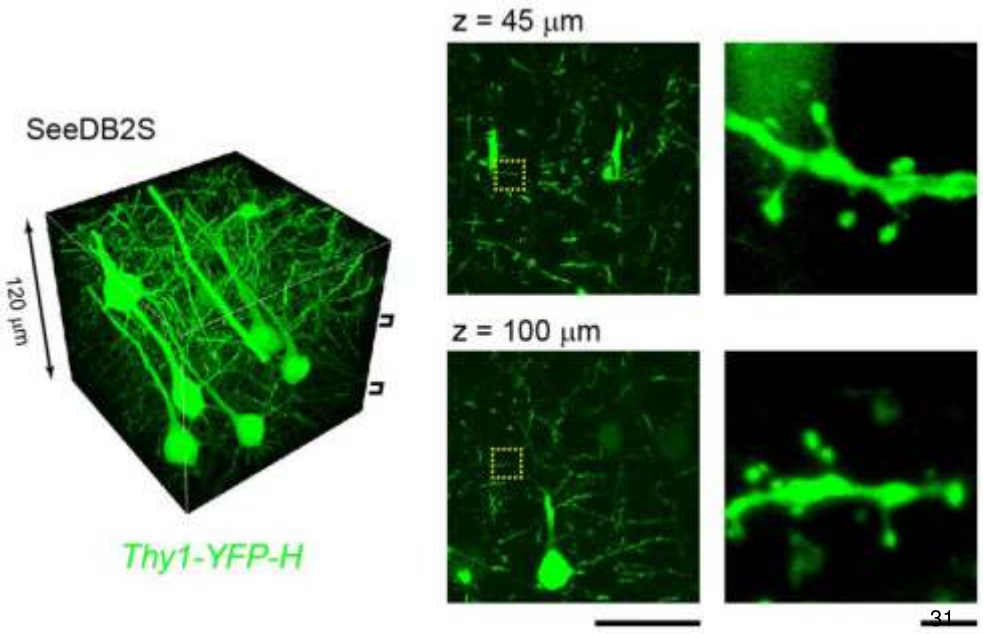
- Procedures are only 3 steps
- Every fluorescence microscopes can be used
- ClearSee™ -treated samples can be stored for long term (at least 6 months)
- The ClearSee™ -treated samples can be observed for many times

Tissue Clearing Agents – SeeDB2

- SeeDB2 can conserve fine structures
- Suitable for deep observation (ex. synaptic studies)
- Stable fluorescence*

  * fluorescent dyes (ex. Alexa, DAPI)

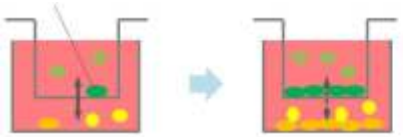
(↑) Mouse brain slice (adult, 1.5mm-thick) before and after clearing with SeeDB2.



(→)Confocal images of brain slices from a Thy1-YFP (line H) mouse. An oil-immersion objective lens (NA 1.4) was used. Note that fluorescence level did not decrease even though laser power was constant throughout depth. Scale bars are 2 μm.

Uniwells™

Conventional co-culture plate

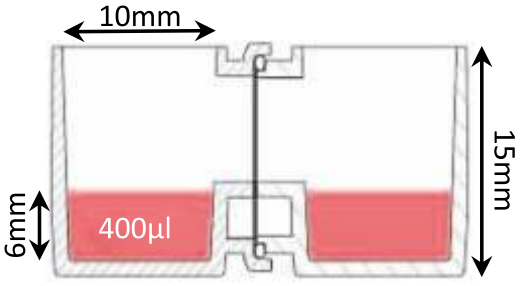


The filter is clogged by cells cultured in the upper well, which leads to interfere with migration of cell secreted factors between the upper and lower well.

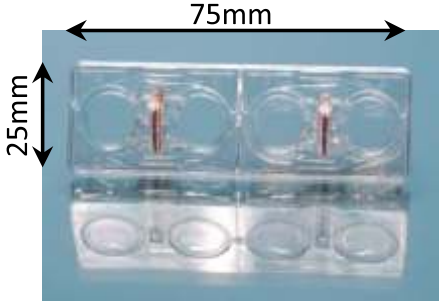
Uniwells

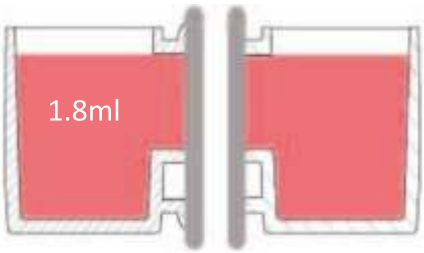
The filter is NOT clogged by cells.

- co-culture platform that connects two wells laterally
- Simultaneous observation using a time-lapse microscope
- No more filter clogging
- Culturing cells in two wells under the same medium volume and condition



Medium volume less than 400µl is not shared between the wells.





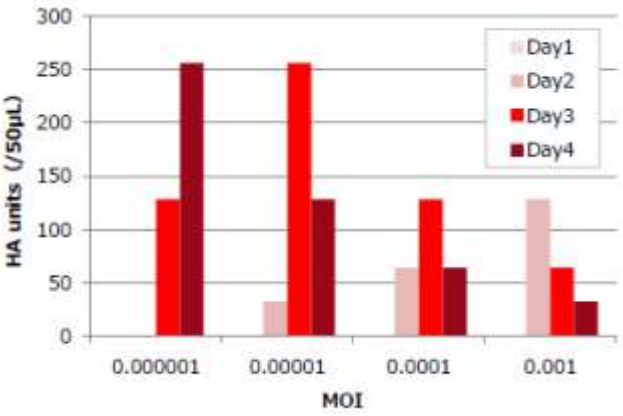
The maximum medium volume in each well is 1.8ml.

Cell Culture Medium for Vaccine development - WakoVAC MDCK

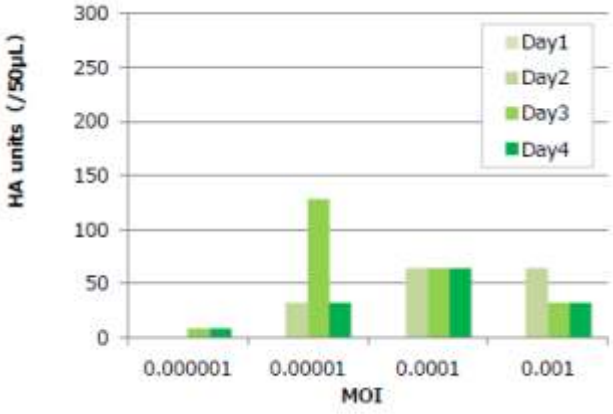
Equal to or higher yields of influenza virus than commercially available serum-containing option

Influenza A virus (H1N1)	
Static T flask 37 C, 5% CO_2	Number of viral inoculated cells: Wako: 25.8x10^{4}cells/cm^2 Medium A: 21.2x10^{4}cells/cm^2

WakoVAC MDCK
Serum-free Medium, Prototype



Competitor A



- Animal component-free
- Multiple prototypes are available for testing
- The latest prototype shows an improved virus yield approximately 1.5 times higher than from our competitors
- Designed and optimized for small- and large-scale vaccine production
- Compatible with microcarrier
- Adaptation not typically required

FUJIFILM Value from Innovation Wako

Cell Culture Medium for Vaccine development - PSFM-J1

- Supports wide range of insect cells (Sf9, Sf21, Tn-5)
- Yeast-derived hydrolysate contained
- CoA for Non-GMP and GMP available, Cell growth, cell viability, and protein expression data can be included on CoA upon request
- Wako provides regulatory support to ensure the compliance required by each country's pharmaceutical authority
- This platform has been used for the industrial purposes for a long time in worldwide.
- Customization for powder form possible

FUJIFILM
Value from Innovation
Wako

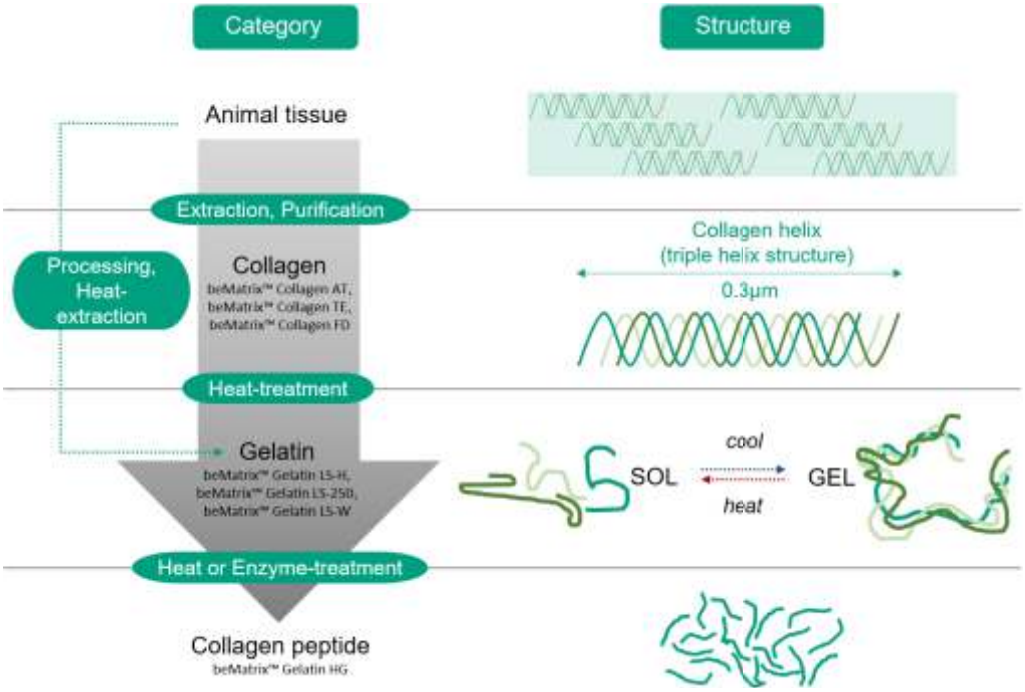
Bambanker

- Serum-free medium for long-term freezing at -80°C
- Suitable for cryopreservation of most cell lines
- Ready to use (no diluent required)
- Target users: Pharma- and Biopharma-industry

3D Cell Culturing

NittaGelatin - beMatrix™ series

Drug delivery system & Biological adhesive / haemostatic material



- Low endotoxin levels and improved purity are ensured to minimize pyrogenic reactions in the body
- Excellent biocompatibility and biodegradability
- Registered in the FDA device Master plan
- Production: ISO9001, IPEC, GMP, Cleanroom

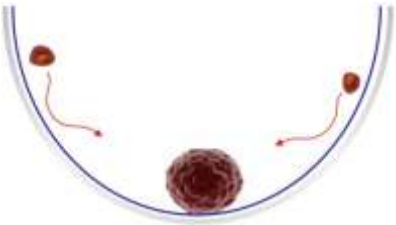
FUJIFILM Value from Innovation Wako

Life Science

3D Cell Culturing

Sumitomo PrimeSurface™

- An innovative technology for 3D cell culturing for reliable anticancer drug screening and regenerative medicine
- Multiple formats available, including the 384 well format, which promotes high throughput screens (HTS)
- The application of a hydrophilic, biocompatible polymer prevents cell adhesion at the side walls of the well

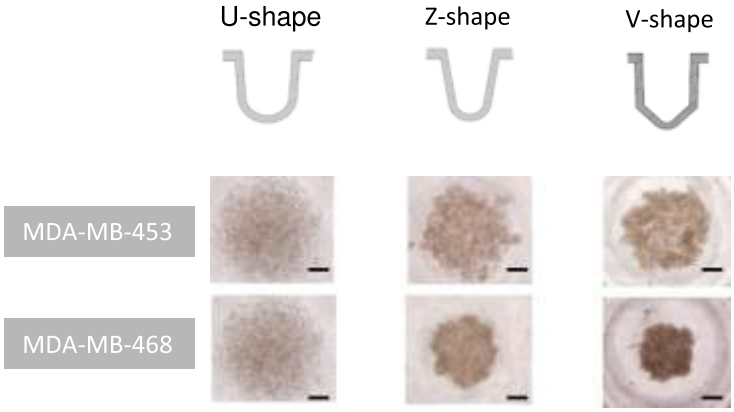


Single spheroid can be formed in each*well*

Spheroid formation can be observed easily

SUMITOMO BAKELITE CO.,LTD. Sbio

*Well*bottom shapes of 96 *well*microplates



Seeding Density: $2x10^3$ cells/*well*
Culture Medium: RPMI + 10% FBS
Incubation: 37°C, 5% CO_2, Culture
Period: 7 Days
Scale bar: 200 µm
MDA-MB-453, MDA-MB-468: human breast cancer

Data are provided by Nishio Lab.,
Dept. Of Genome Bio. Kinki Univ. Faculty of Medicine

FUJIFILM Value from Innovation Wako

3D Cell Culturing

Sumitomo Slitwell™

- new design of ultra-low attachment 3D plate to facilitate easy handling of media exchange without disturbing spheroid formation

Slit-*well*structure for simultaneous delivery of Cell culture medium to all 96 *wells*

Individual *Well*Type in conventional plate

Slit-*well*Type

SUMITOMO BAKELITE CO.,LTD. Sbio

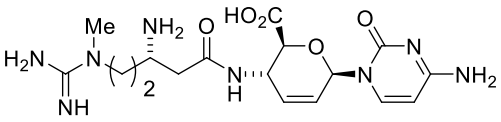
- decreasing the pipetting time by over 80% while minimizing the risk of spheroid damage

Minimize media exchange time without disturbing spheroid formation

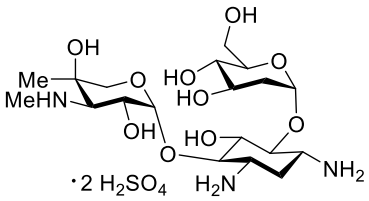
Conventional media exchange

Easy one step media exchange by tilting the plate and aspirating from the corner.

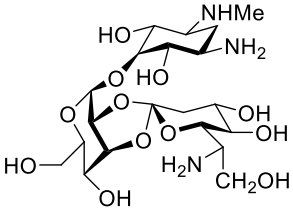
Unique small molecules



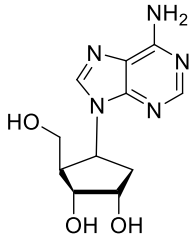
Blasticidin S



G-418 (Geneticin) Sulfate

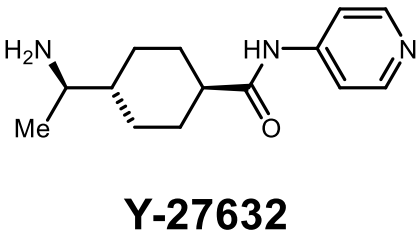


Hygromycin B



Aristeromycin

- Broad collection of unique inhibitors and antibiotics suitable for selection of transfected cells



Y-27632

- Highly potent, cell-permeable inhibitor of Rho-associated*coiled-coil*protein kinase
- Enhances the survival of ES-cells
- GMP grade available in 2021

Life Science

Cell Culture & Microbiology

Toxins at FUJIFILM Wako

- Broad collection of toxic and poisonous compounds
- Unique natural compounds endemic in Japan
- Available in retail and bulk quantities

Some of listed materials are subject to export control!

FUJIFILM Value from Innovation

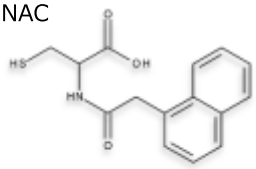
Wako

Amino acid Derivative Reactivity Assay (ADRA)

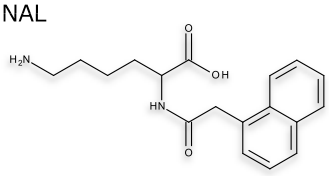
Innovative alternative method for skin sensitization test

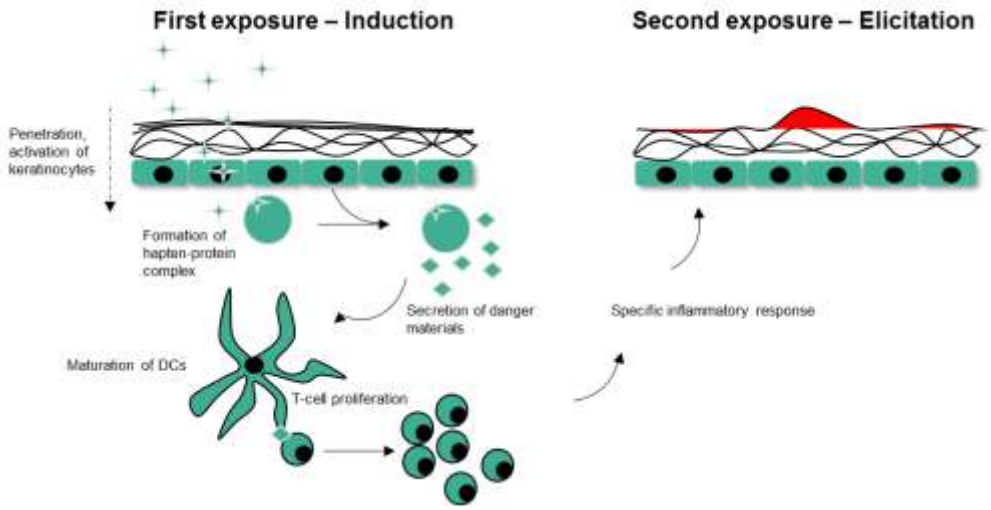
Kit composed of two amino acid derivates N-(2-(1-naphthyl)acetyl)-L-cysteine (**NAC**) and -N-(2-(1-naphthyl)acetyl)-L-lysine (**NAL**) highly reactive against skin irritating compounds, which can be evaluated by HPLC.

NAC



NAL





Quality Control

Nucleic acid Extraction

DNA Extractor Kit®

- Highly efficient extraction of DNA fragments in serum and biological products
- No use of hazardous chemicals (phenol/chloroform-free)
- Entire extraction is performed in a single tube (minimum contamination)
- Target users: (Bio)pharma industry, in particular for manufacture of vaccines

FUJIFILM Value from Innovation

Wako

Chemistry

Chemicals Portfolio

- Extensive product range comprising a large range of different molecules
- Offered in different purity grades including JP, EP and USP
- Available in retail and bulk quantities
- Customized and on-demand synthesis

FUJIFILM
Value from Innovation
Wako

Chemistry

Analytical Chemistry

Wakopak® HPLC-Columns

- More than 100 different items
- Suitable for most HPLC-systems and separation methods
- Available for analytical and preparative applications
- Recommended use for SHIMADZU systems

FUJIFILM
Value from Innovation

Wako

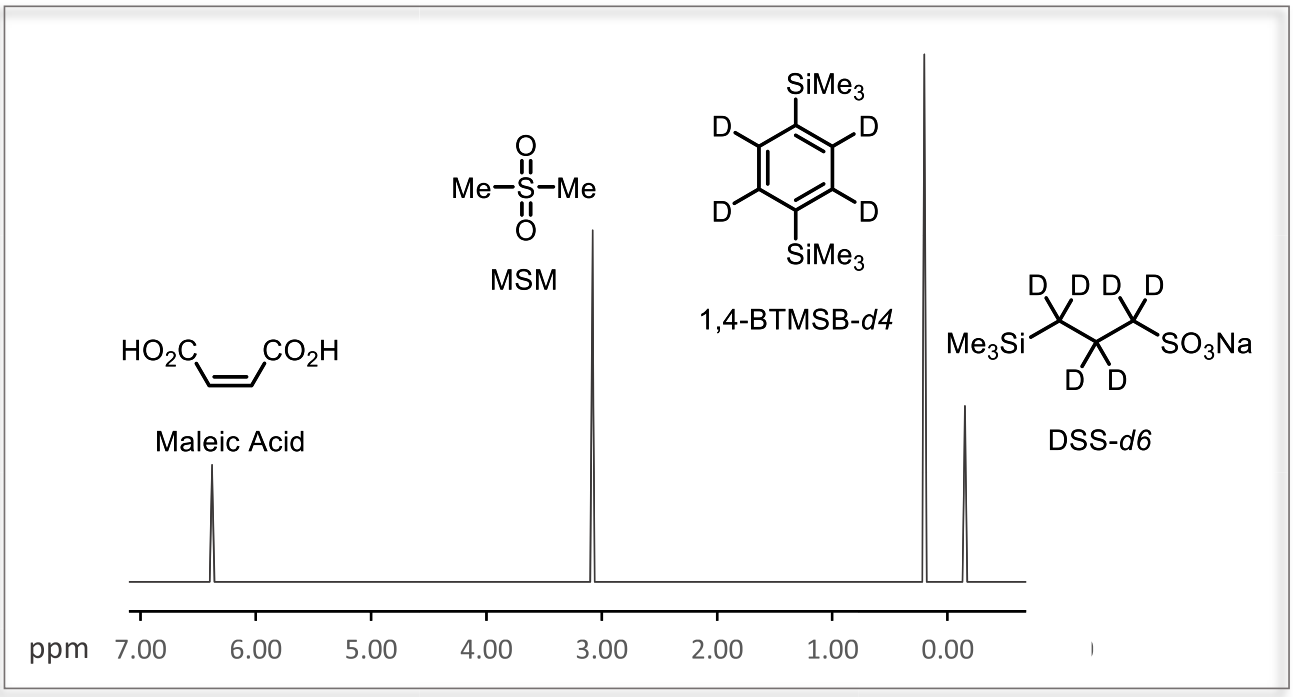
High-Purity Solvents

- Broad portfolio comprising more than 50 items suitable for HPLC, LC/MS, QTofMS and NMR
- Special surface coating of recipient-inner wall avoiding ion-contamination
- Highest purity grade applicable for use as drug-adjuvant
- Available in retail and bulk quantities

Certified Reference Material (CRM)

- Large variety of compounds, including antibiotics, pesticides and toxins
- Certified by qNMR by **N**ational **M**eteorology **I**nstitute of **J**apan (NMIJ)
- Available in retail and bulk quantities

Quantitative NMR Standards



- Certified by NMIJ as internal standard for qNMR
- Traceable to the International System (SI)
- BTMSB-*d4*available exclusively at FUJIFILM Wako

Raw Material for Pharmaceutical Production

All CertiPro series products are manufactured under Japanese GMP, and meet the specifications defined in the latest version of JP, USP and Ph. Eur., among other pharmacopeias.

- Endotoxin test
- Variously report (e.g.: Residual Solvents, Elemental Impurities, etc)
- Customizing the Specification for USP/EP and Bioburden depends on the requests
- Supporting program for Method Validation (MV*) for “Non-Compendial” Chemicals

*Method validation (MV) is the in-house process of analysis methods which complied to GMP guidelines as a reference, because of no existing guideline set by the authorities, such as8(32-%314.2-/+09Chemicals.

WFI Quality Water

- Water for Injection (WFI)* Quality Water is the most suitable water available for producing cell culture media, reconstitution of biochemical reagents, and for critical applications
- WFI Quality Water meets USP, PhEur, and JP grade specifications and is 0.1µm sterile filtered at time of fill
- Contains no added substances

WFI System Performance

Parameter	Specification
Bioburden	10 cfu/100mL
Endotoxin	≤ 0.25 EU/mL
TOC	< 500 ppb
Conductivity	≤ 2.1 µS/cm


FUJIFILM
Value from Innovation
Wako