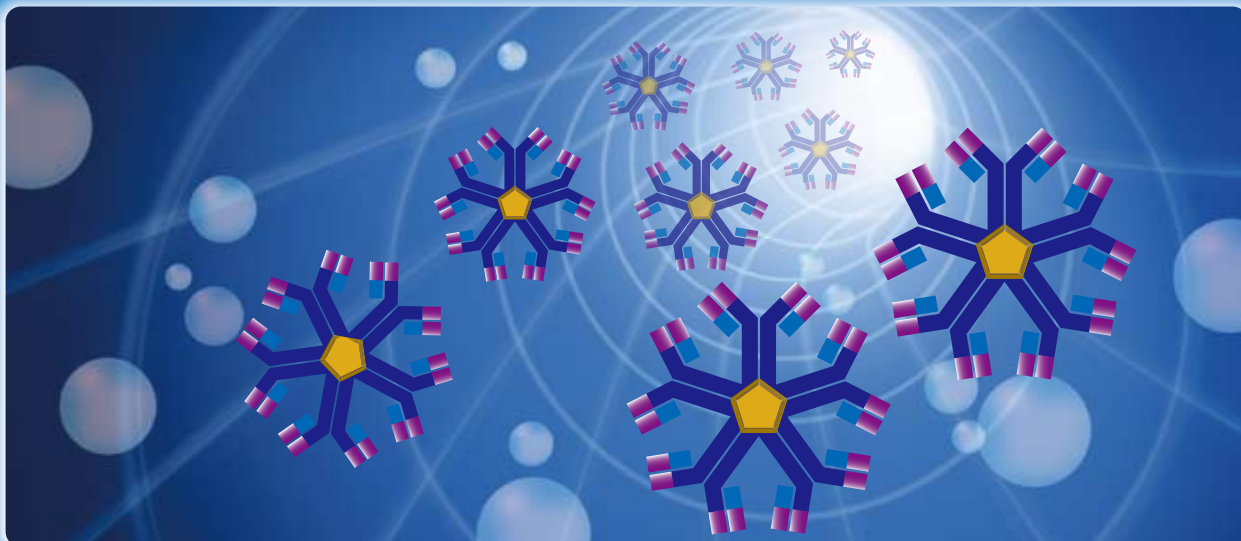


IgM / IgG Purification media

# ImmunoAssist MG-PP Re



Kanto Reagents



ImmunoAssist MG-PP Re is a ceramic chromatography media that consists chiefly of  $Mg_2P_2O_7$ . It is designed for easy purification of IgG and IgM from serum, ascites, and culture supernatant.

## Features

### Easy Separation

You can use samples containing contaminant proteins

### Wide Range

It is available basically regardless of animal species

※Depending on the antibody, retention may be weak

### Maintain Activity

Delicate antibodies can be purified under mild neutral conditions

### High Durability

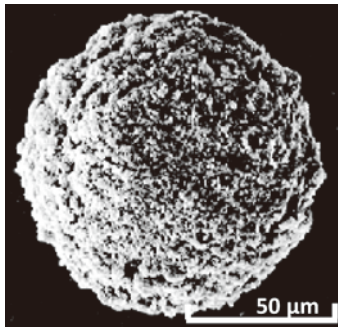
It is a ceramic type material and can be alkali cleaned or autoclave sterilized

### Good Recovery

There is no nonspecific adsorption, IgM and IgG can be recovered almost quantitatively



Kanto Kagaku



ImmunoAssist MG - PP Re is a ceramic type carrier of porous spherical particles whose main component is physicochemically stable magnesium pyrophosphate. There is no swelling/shrinkage found in organic polymer materials and handling is easy.

Kanto Kagaku found out that the physical properties of this product show excellent properties as a separating agent for IgM, IgG, and commercialized it as a separation and purification media.

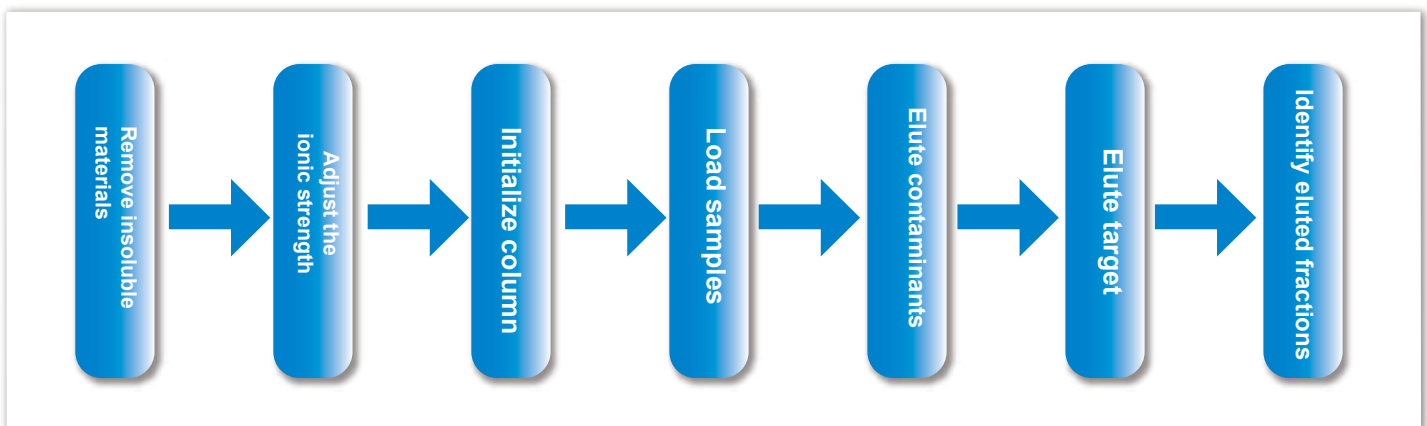
IgM and IgG are held in ImmunoAssist MG - PP Re due to electrostatic interaction. It is possible to easily recover the target substance by passing a buffer solution with different ionic strength.

◀ Magnesium pyrophosphate

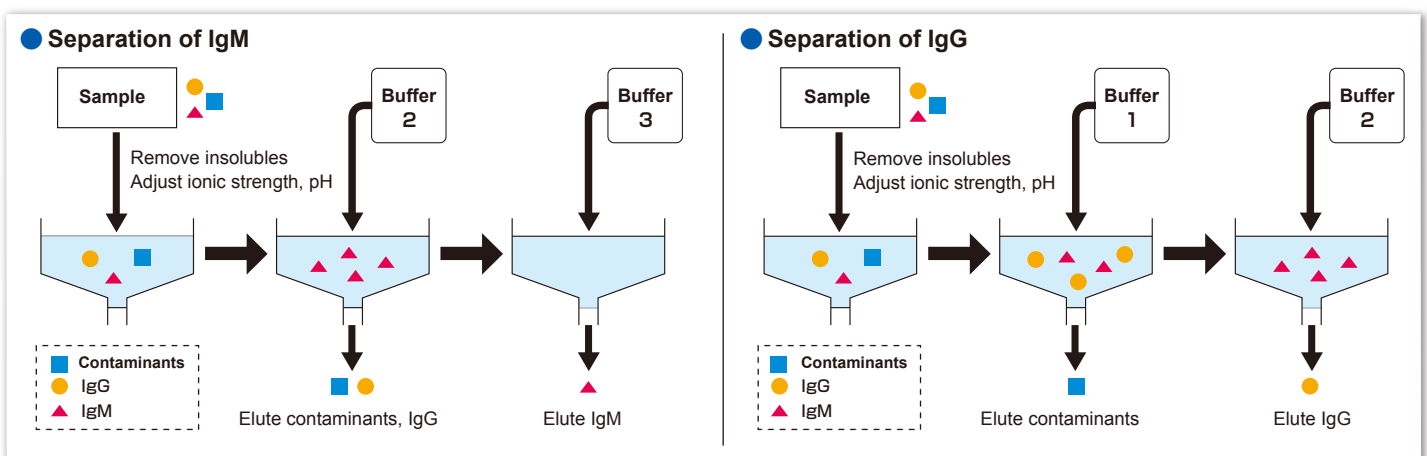
### Buffer composition

Buffer	Target	Preparation method
<b>Buffer 1</b> : 10 mM PB, pH 6.8	IgG	Mix 10 mM NaH <sub>2</sub> PO <sub>4</sub> and 10 mM K <sub>2</sub> HPO <sub>4</sub> solution, then adjust to pH 6.8.
<b>Buffer 2</b> : 300 mM NaCl, 10 mM PB, pH 6.8	IgM IgG	Mix 300 mM NaCl, 10 mM NaH <sub>2</sub> PO <sub>4</sub> and 300 mM NaCl, 10 mM K <sub>2</sub> HPO <sub>4</sub> , then adjust to pH 6.8
<b>Buffer 3</b> : 300 mM PB, pH 6.8	IgM IgG	Mix 300 mM NaH <sub>2</sub> PO <sub>4</sub> and 300 mM K <sub>2</sub> HPO <sub>4</sub> solution, then adjust to pH 6.8.

### Flowchart



### Outline of operation method (Open column)



## Application: Purification of mouse IgM from serum-free culture supernatant

● This protocol is provided by Dr. Hirabayashi and Dr. Nagatsuka of RIKEN Brain Science Institute

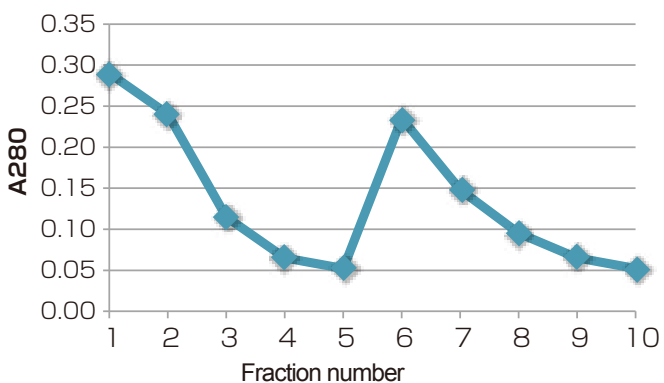
**1** Add 0.2 g of ImmunoAssist MG-PP Re to 50 mL of serum-free culture supernatant, adjust the pH to around 6.6 by adding 500 mM phosphate buffer (pH 6.6) if necessary, and mix overnight with a rotator

**2** Collect the ImmunoAssist MG-PP Re precipitate and fill ImmunoAssist MG-PP Re slurry suspended in 10 mM phosphate buffer (pH 6.6) into an empty spin column (eg, Bed Volume 1.2 ml).

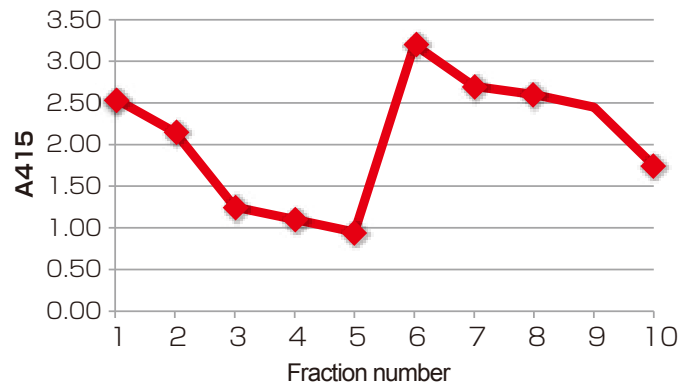
**3** Reconstitute the eluate by washing (flow through fraction, 1,200 rpm, 2 minutes) with 1 mL of 10 mM phosphate buffer (pH 6.6) 5 times (fraction number: 1 to 5).

**4** Recover the eluate by elute (IgM fraction, 1,200 rpm, 2 min.) With 1 mL of 300 mM phosphate buffer solution (pH 7.1) 5 times (fraction number: 6 to 10).

Determination of protein concentration by BCA assay



Determination of IgM activity by ELISA assay



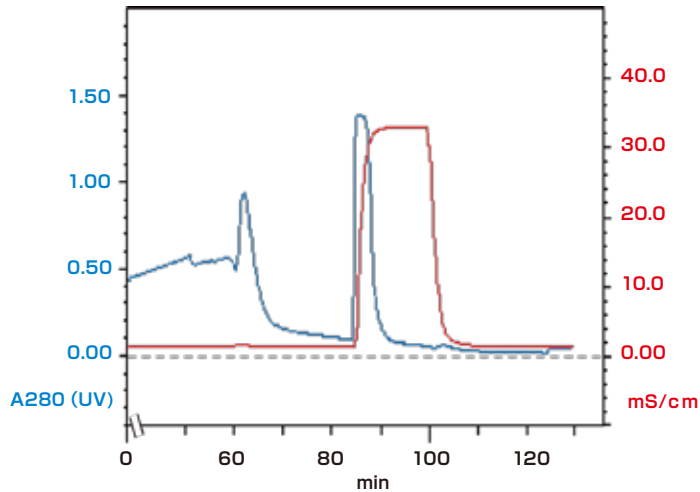
Average protein yield : 1.5 mg IgM/ 100 mL

IgM can be purified while retaining activity under neutral buffer conditions.

## Specification

Mean particle size	85 - 105 $\mu\text{m}$	
specific surface area	BET method	8 - 18 $\text{m}^2/\text{g}$
sedimentation volume	Dry method	2.0 - 2.5 mL/g
	Wet method	2.4 - 2.9 mL/g

### ● ImmunoAssist MG-PP Re: LC analysis chart of $\gamma$ globulin retention



Column : 0.2 g of this product in 10 mL Buffer 1  
 Size :  $\Phi 1\text{cm} \times 10\text{ cm}$   
 Buffer 1 : 10 mM PB, pH 6.8  
 Buffer 3 : 300 mM PB, pH 6.8  
 Flow rate : 1.0 mL/min  
 Detection : UV (280 nm)  
 Sample : Rabbit  $\gamma$  globulin

#### Time program

0-52 min : Sample  
 52-80 min : Buffer 1 100 %  
 80-95 min : Buffer 3 100 %  
 95-125 min : Buffer 1 100 %

Retention: 14.1 mg/g

### ● Comparison of retention of IgG of various animal species

Animal	Retention (mg/g)	Animal	Retention (mg/g)
Mouse	18.7	Bovine	27.1
Rat	17.1	Sheep	27.2
Rabbit	14.1	Horse	18.2
Human	39.2		

Retaining condition : 10 mM PB, pH 6.8

All IgG was recovered by Buffer 3 (300 mM PB, pH 6.8)

## Papers

1) S. Inoue and N. Ohtaki, J. Chromatogr., 645 (1993) 57.

## Product information

Product Code	Name	Volume	
20352-33	ImmunoAssist MG-PP Re	25 g	
20352-23	ImmunoAssist MG-PP Re	100 g	

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