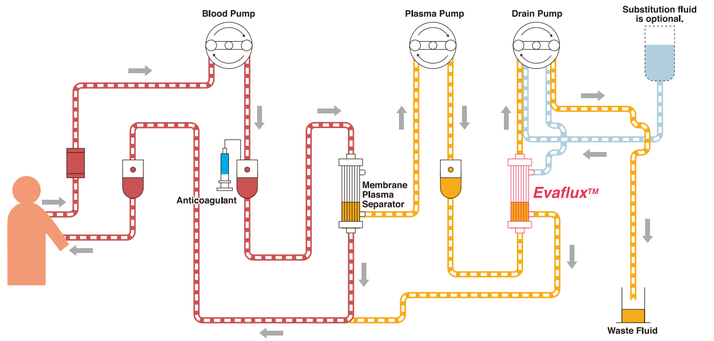
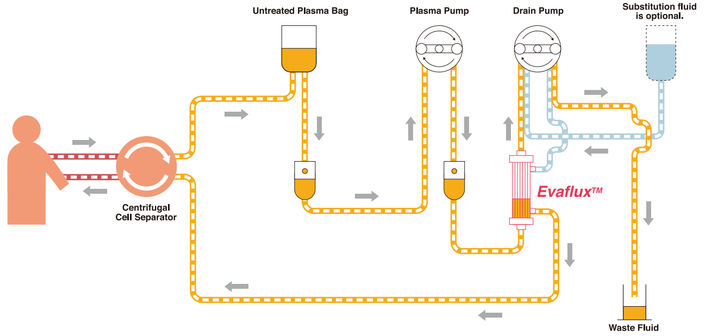
Flow Diagram of Double Filtration



Flow Diagram of Cascade Filtration (in combination with Centrifugal Cell Separator)



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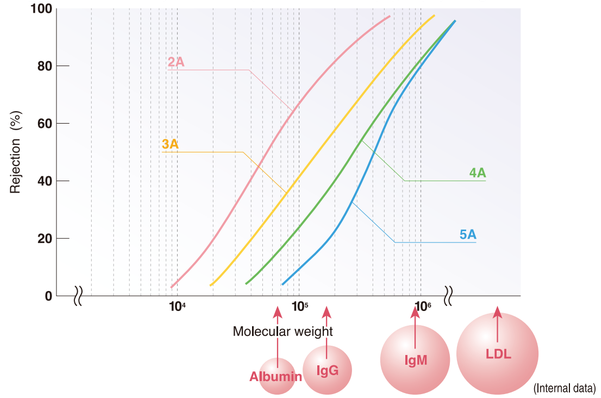
Plasma Fractionator
Evaflux™

* Evaflux™ is a trademark of SB-KAWASUMI LABORATORIES, INC.

Specifications

Model		2A10	4A10	5A10	2A20	3A20	4A20	5A20
Hollow Fiber	Material	Ethylene vinyl alcohol copolymer						
	Inner diameter	175 (μm)						
	Wall thickness	40 (μm)						
Housing	Surface area	1.0 (m^2)			2.0 (m^2)			
	Effective length	280 (mm)						
	Outer dimention	45 Ø x 280 L (mm)			57 Ø x 280 L (mm)			
	Material	Poly-carbonate resin						
Priming volume		Approx.82 (ml)			Approx.150 (ml)			
Filled liquid		Sterile water						
Sterilization method		Gamma-ray irradiation						

Protein rejection curve, in vitro (concentration:0.1(%), in physiological saline solution)



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Manufacturing facility
Kawasumi Laboratories (Thailand) Co., Ltd.

KLE-EF-2112-03-FF

Double/Cascade Filtration

with Plasma Fractionator

Evaflux™

Benefits

1. Selective depletion of plasma components based on their molecular size
2. Reduced or no requirement for substitution fluid
3. Wide range of applications

SB-KAWASUMI

Double/ Cascade Filtration
with Plasma Fractionator

Plasma Fractionator Evaflux™

Applications of Double/ Cascade Filtration

Double/ Cascade Filtration is applicable for a variety of diseases.

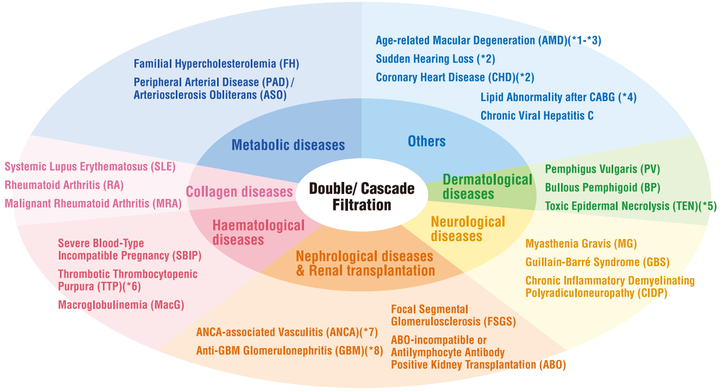
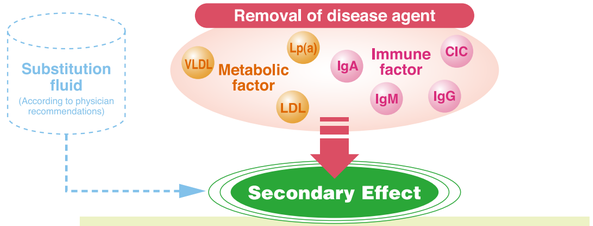


Fig 1 : Applications of Double/ Cascade Filtration (Based on Japanese Health Insurance coverage and Bibliography references 1 to 8)

Role of Double/ Cascade Filtration

Double/ Cascade Filtration, which is similar to other apheresis procedures, can significantly contribute to the improvement of the patients' quality of life, abbreviate the time required to obtain remission, support the dose reduction of medications, diminish the side effects of drugs and enable the treatment of otherwise untreatable diseases. (Excerpt from *9)



- **Restoration of blood rheology**
- **Restoration of medication responsiveness**
- **Recovery of cell function**

*Fig 2 : How Double/ Cascade Filtration works (Excerpt from *10)*

What is Double/ Cascade Filtration?

Principle

To selectively deplete a plasma fraction that contains disease associated high molecular weight substances and to reduce or eliminate the requirement for substitution fluid such as albumin.

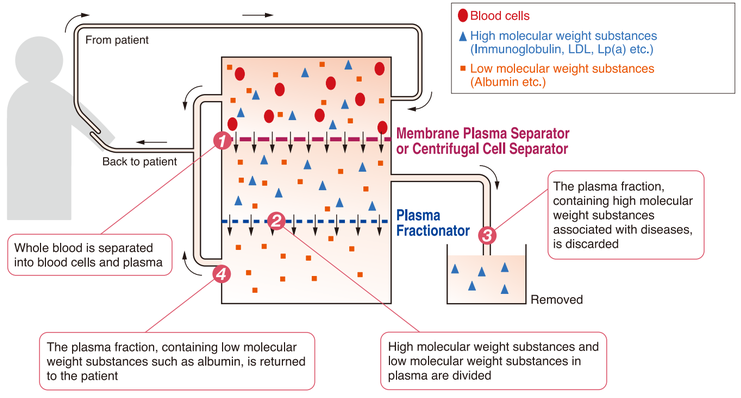


*Fig 3 : Principle of Double/ Cascade Filtration (Conceptual diagram was proposed by Prof. Agishi, *11)*

Benefits of Double/ Cascade Filtration

Benefit 1 *Selective depletion of plasma components based on their molecular size*

Benefit 2 *Reduced or no requirement for substitution fluid*

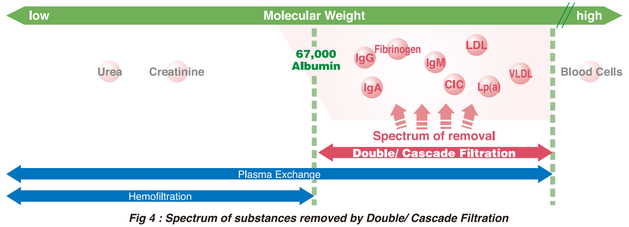


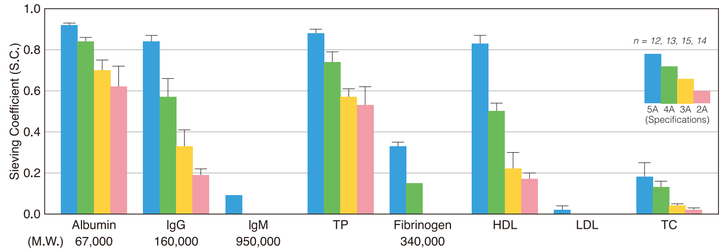
Fig 4 : Spectrum of substances removed by Double/ Cascade Filtration

Benefit 3 *Wide range of applications*

Double/ Cascade Filtration can remove the targeted high molecular weight substances efficiently by choosing the appropriate plasma fractionator with specific pore size.

Example of Plasma Fractionator Evaflux™

~ Selectable from 4 different pore size (2A, 3A, 4A, 5A) according to diseases ~ (*12,*13)

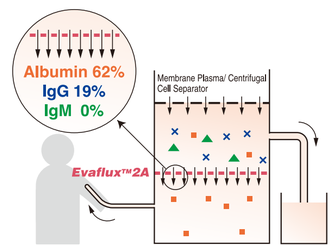


* S.C. is a parameter indicating the membrane permeability at a certain point.

Fig.5 Sieving Coefficient of "Evaflux ™" (When 1,000 ml of plasma was processed)

Evaflux™ 2A can remove Immunoglobulins while allowing Albumin to be returned.

Evaflux™ 2A	Alb. ■	IgG ✕	IgM ▲
S.C.	0.62	0.19	0.00



Evaflux™ 5A can remove LDL while allowing Albumin and HDL to be returned.

Evaflux™ 5A	Alb. ■	HDL ●	Fib. ⬬	LDL ⬟
S.C.	0.92	0.83	0.31	0.02

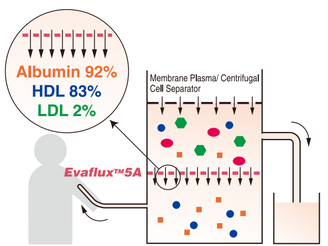


Table 1 : Example of reports about the Double/ Cascade Filtration with "Evaflux™"

Evaflux™ Model	Nephrological/ Renal transplantation				Metabolic		Dermatological		Collagen		Haematological		Neurological			Others
2A	ANCA (*7)	GBM (*8)		ABO (*15)			PV (*17)	BP (*18)	SLE (*19)			SBIP (*22)	MG (*23)	GBS (*24)	CIDP (*25)	
4A			FSGS (*14)							RA, MRA (*20)						AMD (*1-3)
5A					FH (*16)	PAD (*26)					MacG (*21)					

* Table 1 shows representative examples.
* Please note that the above table is for reference use only. The responsible physician will need to choose a specific membrane according to the patient's condition.