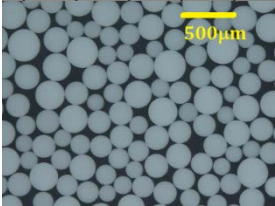


Separation of lactoferrin(LF) from whey

Mitsubishi Chemical Corporation
Separation Materials Department

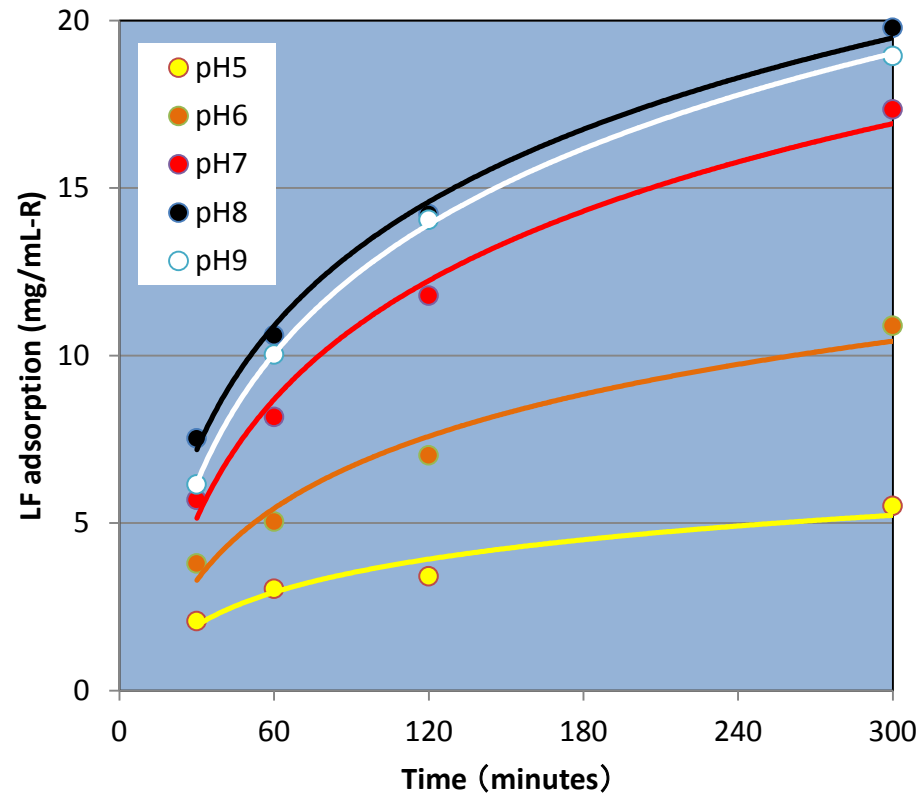
1. Cation exchange resin for LF separation

DIAION™ WK10S is a small particle methacrylic-type weakly acidic cation exchange resin. It has carboxylic acid functionalities with high regeneration efficiency. A wide range of applications, in particular for the purification of pharmaceuticals, foods, and organic chemicals, are recommended.

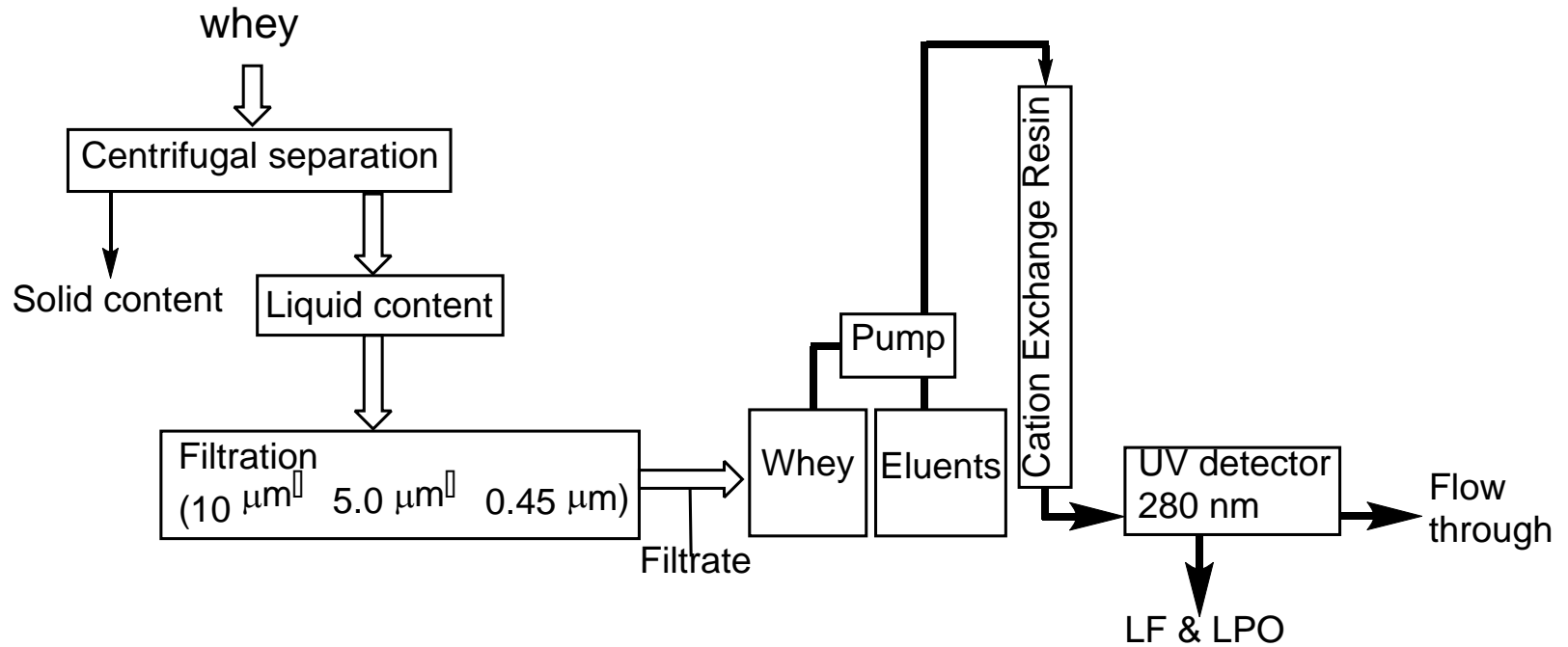
	DIAION™ WK10S
Appearance	
Structure	$\begin{array}{c} \text{CH}_3 \\ \\ -\text{CH}_2-\text{C}- \\ \\ \text{COOH} \end{array}$
Shipping density* (g/L)	720
Water content (%)	50–60
Effective size (mm)	0.15 min.
Total capacity (meq/mL)	2.5 min.
Uniformity coefficient	1.6 max.
Total swelling* (H ⁺ to Na ⁺) (%)	42

2.Batch adsorption of LF using WK10S

Time-LF adsorbed amount plots for LF solutions of different pH values.

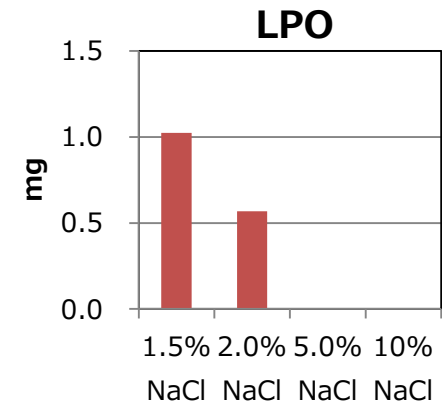
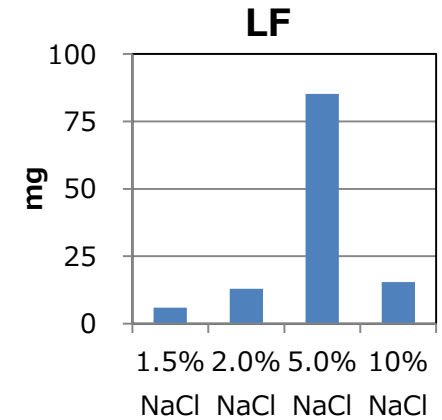
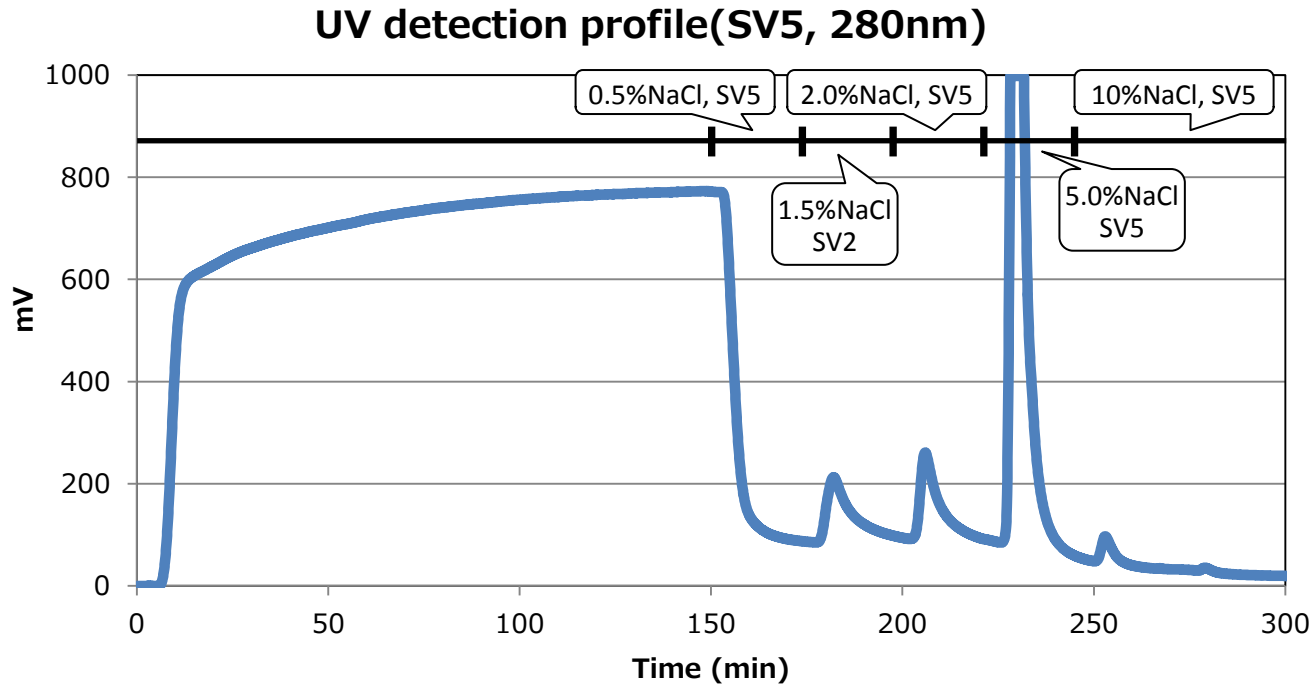


3. Flowchart of LF separation



Experimental setup for LF and LPO separation

4. Profile at loading and elution (280nm)



Process	LF		LPO	
	Purity	Amount	Purity	Amount
1.5, 2.0%NaCl	80.5%	18.8mg	4.2%	1.59mg
5.0, 10%NaCl	98.1%	100.5mg	-	-
LF Recovery		95.2%		