Cellufine GCL-2000 for gel filtration chromatography

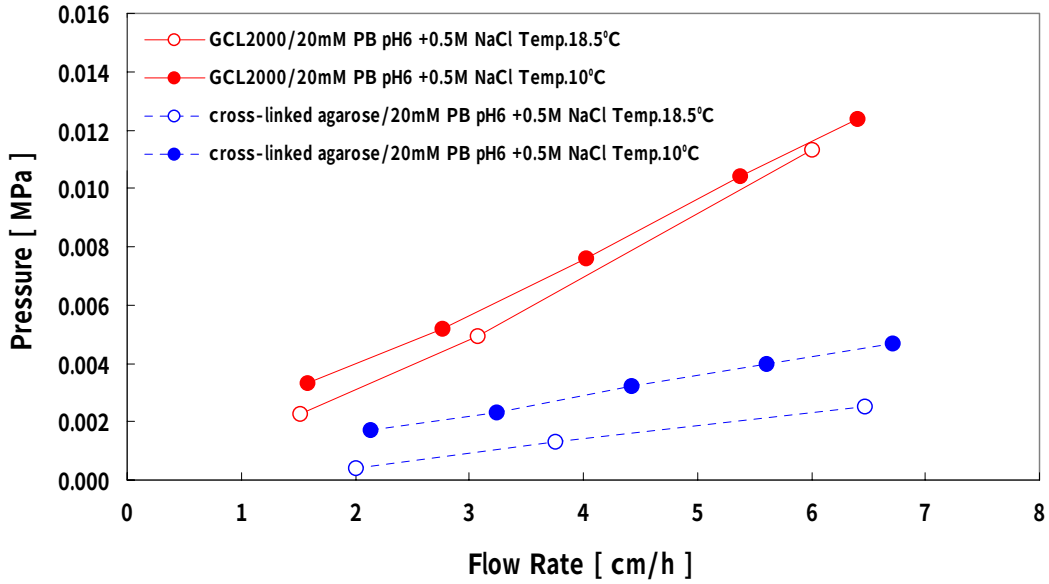


Fig1. Pressure-flow rate curve for Cellfine GCL-2000.

Column size : I.D. 44cm-20cm /bead size 25-53μm/ Mobile phase : indicated on the figure.

Cellufine GCL-2000 can be used at large scale column.

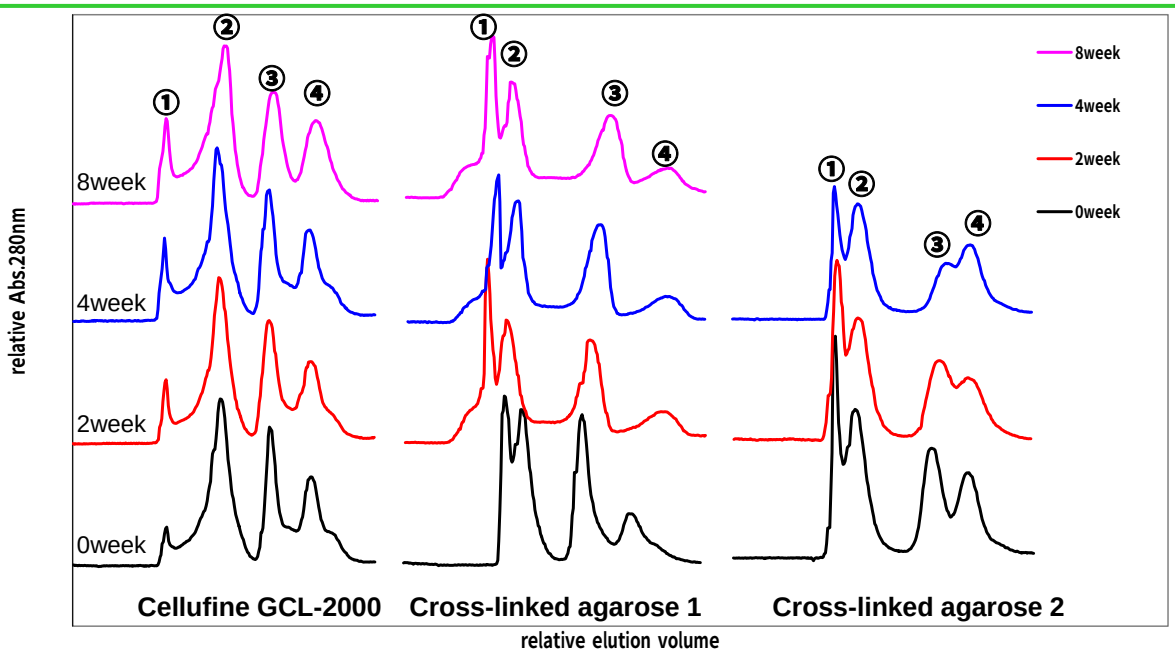


Fig2. Stability test of packed-column in alkali soaking at room temperature.
Cellufine GCL-2000 is alkali stable.

experimental method

The packed-column (I.D. 2.2cm-20cm) of gel was filled with 0.5M NaOH, and it was kept at room temperature as it is until measured. The column of gel soaked in alkali was equilibrate by the buffer.

Buffer : 50mM Tris-HCl,pH7.5+ 0.1 M KCl / Flow Rate : 9.9cm/h / Detection : A280nm

molecular weight standard (mixture) : [①Blue Dextran 1mg ②gamma-globulin 3mg ③cytochrome c 2mg ④bacitracin 3mg] in 1mL of buffer.

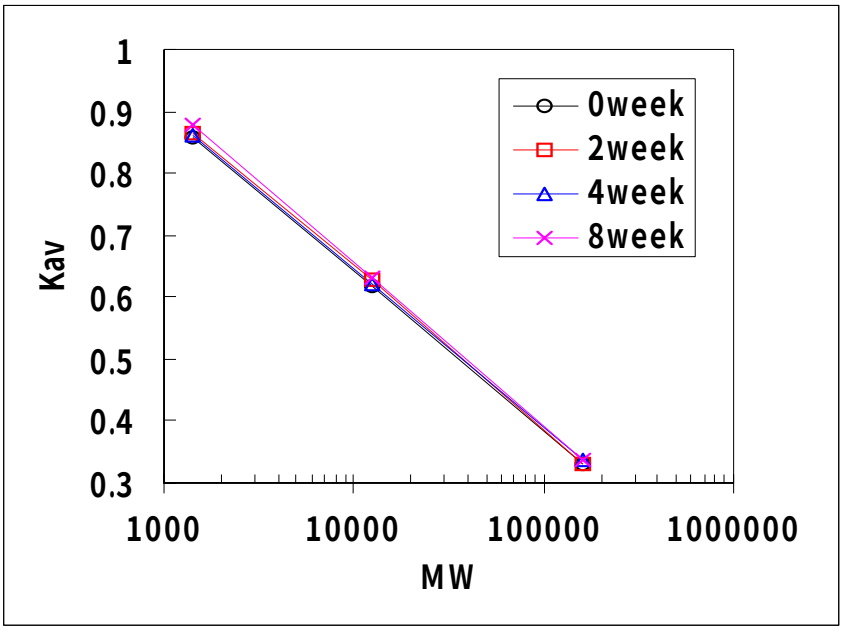


Fig3. Change selectivity curves for GCL-2000 at alkali soaking.

The Kav value was calculate from Fig.2 data. When packed column of gel soaking at 0.5M NaOH for 8week at room temperature , the selectivity curves remained stable.

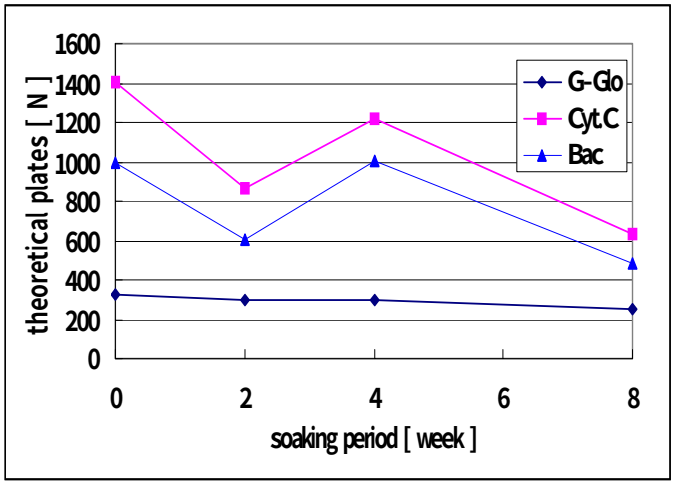


Fig4.Change theoretical plates for GCL-2000 at alkali soaking.

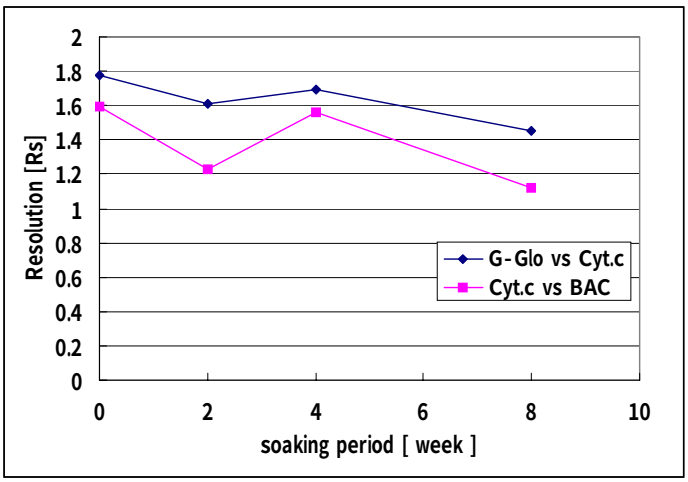


Fig5.Change resolution between gamma-globulin, cytochrome C and bacitracin at alkali soaking for GCL-2000.

Change of theoretical plates was shown in the figure of 4,and figure of 5 showed change resolution between proteins. When soaking at room temperature for 8 weeks, the theoretical plates for gamma-globulin was not changed, but cytochrome c and bacitracin were slightly decreased. When soaking at room temperature for 8 weeks, the resolution between gamma-globulin and cytochrome c , cytochrom c and bacitoracin were not change.
abbreviation : G-Glo (gamma-globulin) ; Cyt.C (cytochrom c) ; BAC (bacitracin)

Cellufine GCL-2000 performance remains constant over at least 100 operating cycles.

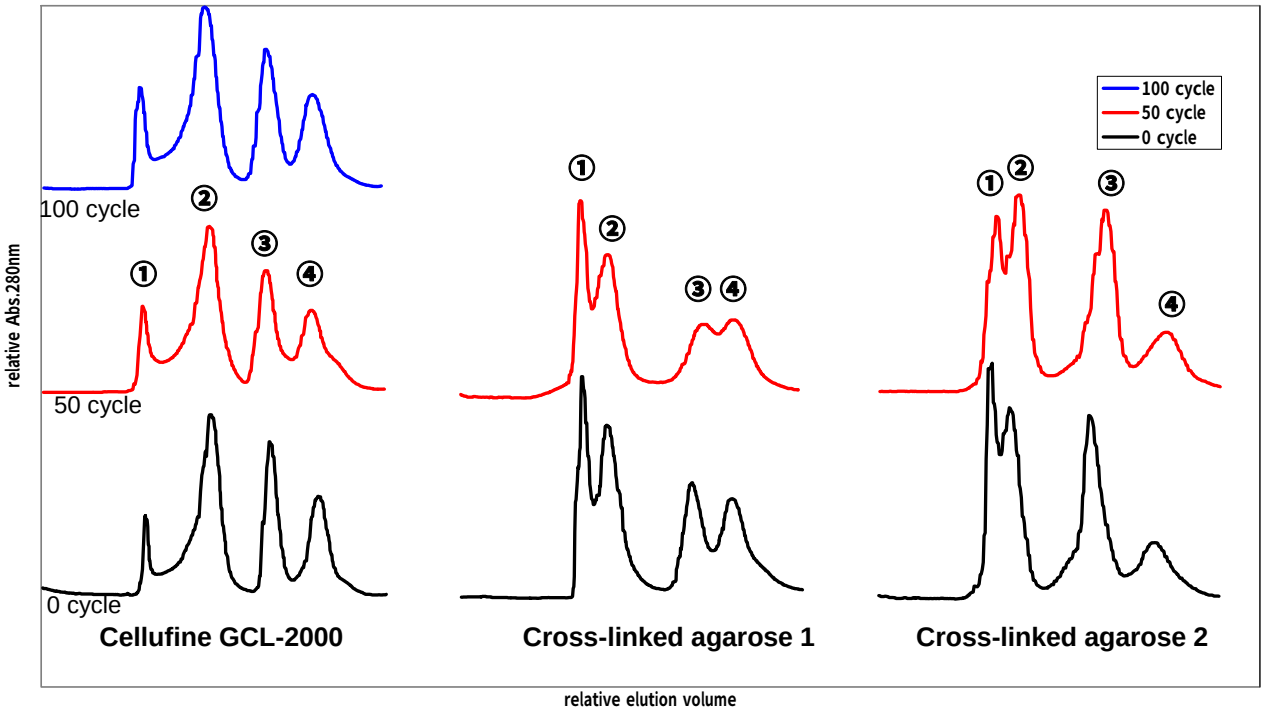


Fig6. Stability by repeat cleaning (CIP) of GCL-2000 at room temperature.

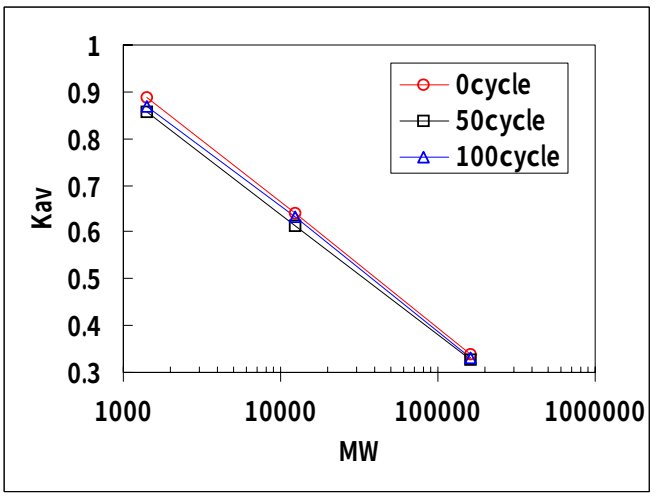
experimental method

Column (I.D. 2.2cm-20cm) / Flow Rate : 9.9cm/h

Buffer : 50mM Tris-HCl,pH7.5+ 0.1 M KCl / regeneration solution : 0.5M NaOH

CIP cycle 1)buffer 4.5cv ; 2) regeneration solution 1.5cv.

molecular weight standard (mixture) : [①Blue Dextran 1mg ②gamma-globulin 3mg ③cytochrome c 2mg ④bacitracin 3mg] in 1mL of buffer. / Detection : A280nm



Selectivity curves for Cellufine GCL-2000 not change over at least 100 operating cycles.

Fig7. Change selectivity curves for GCL-2000 at CIP cycles.

The Kav value was calculate from Fig.6 data.

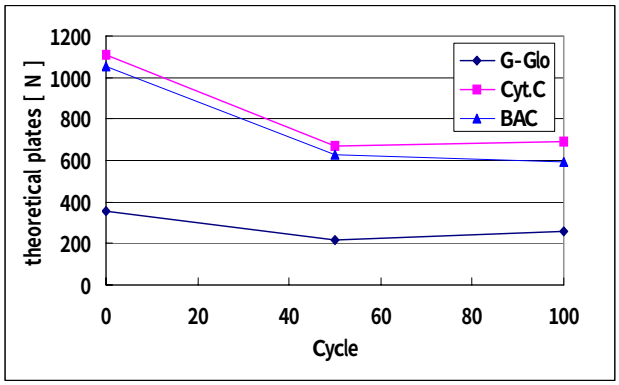


Fig 8.Change theoretical plates for GCL-2000 at CIP cycles.

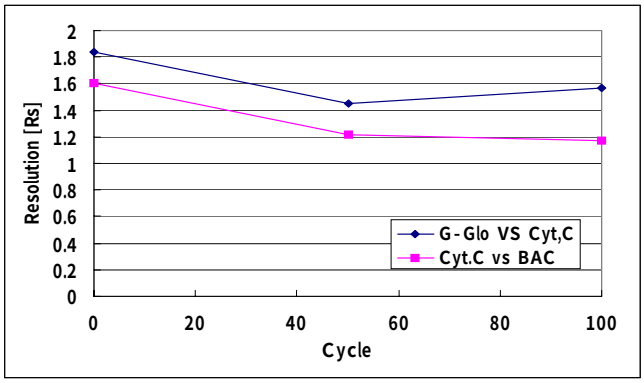
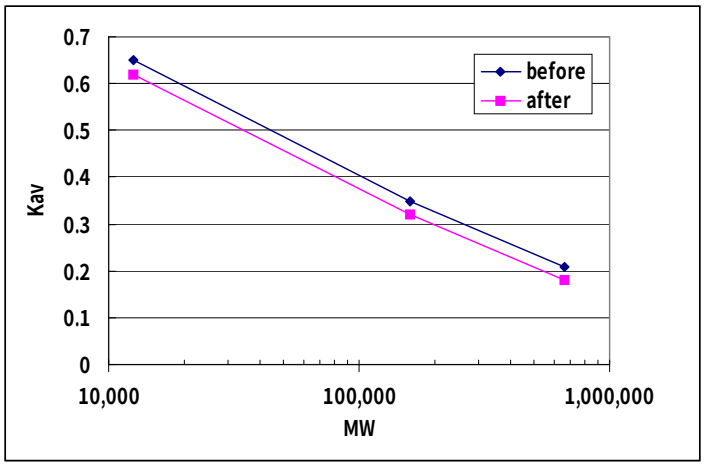


Fig 9.Change resolution between gamma-globulin, cytochrome C and bacitracin at CIP cycles for GCL-2000.

Change of theoretical plates was shown in the figure of 8, and figure of 9 showed change resolution between proteins. When CIP at room temperature for 50 and 100 cycles, the theoretical plates for gamma-globulin was not changed, but cytochrome c and bacitracin were slightly decreased. When CIP at room temperature for 50 and 100 cycles, the resolution between gamma-globulin and cytochrome c , cytochrom c and bacitoracin were not change.
abbreviation : G-Glo (gamma-globulin) ; Cyt.C (cytochrom c) ; BAC (bacitracin)



Cellufine GCL-2000 can be autoclaved.

When autoclaving at 121ºC / 20 minutes , the selectivity curves for GCL-2000 remained stable.

Fig10. Change selectivity curves for GCL-2000 during autoclaving.
conditions : 20minutes at 121ºC in water
molecular weight standard : Blue Dextran ;tyroglobuline ; gamma-globulin: cytochrome c

Cellufine GCL-2000 conforms to USP Plastic Class VI