

# NEWSLETTER

September 2021

Dear Friends,

Greetings from BioChromato – we hope you are safe and well!

Here in Fujisawa (a coastal city south of Tokyo), after scorching August temperatures reached over 30°C, September started unusual lows of only just over 20°C. Since mid-September, the climate is back to usual, pleasant autumn with gentle sunlight and fresh & dry breeze.

Though the COVID-19 situation is still uncertain, we are hoping that we can soon start visiting each other once again.



Below we have shared some of our latest new information and news with you.

## Publication update

Here is a new publication citing BioChromato technology that you may be interested in.

[Extraction Behavior of a Novel Functionalized Ionic Liquid for Separation of Platinum Group Metals from Aqueous Nitric Acid Solution](#)

Tatsuya ITO, Haruka Oosugi, Naoki Osawa, Tadayuki TAKAHASHI, Seong-Yun KIM, Ryuji NAGAISHI

Personal benchtop evaporator



Smart Evaporator C1

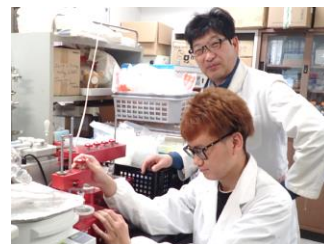
## Need to evaporate water? Try Smart Evaporator!

One of the key reasons for the researchers to choose the Smart Evaporator is its ability to remove high-boiling point solvents such as DMSO, DMF, and WATER.

Please find some of our Smart Evaporator users' voices as below:

### Dr. Takashi Watanabe, Professor, Department of Medicinal Botany, Kumamoto University Graduate School of Pharmaceutical Sciences

- We are elucidating the mechanism of immunosuppressive tumor environment induced by cancer-associated fibroblasts (CAFs), screening CAFs-derived chemokine suppression by using plant-derived components, and searching for natural compounds that lead the stroma to be normal.
- Our Smart Evaporator is used for the removal of water and organic solvents. The complete removal of water is very important for the long-term storage of plant extracts.
- We really appreciate being able to remove water directly from aqueous samples at atmospheric pressure rather than having to azeotrope with organic solvents and risk solvent bumping when we evaporate the solvent.
- Drying 15mL of aqueous plant extract, in a 20mL screw top vial, took less than an hour (by adjusting the temperature setting) to concentrate and then dry completely.  
(click [here](#) for the full text)



### Dr. T, Senior Researcher at a National Research Organization

- My research theme is to understand and control the dynamics of persistent organic compounds such as pesticides in the environment, especially in soil.
- For the elucidation of the dynamics of persistent organic pollutants, it is essential to determine the chemical structure of trace amounts of degraded metabolites. Our Smart Evaporator is used to dry down the microbial degradation culture medium as a pretreatment prior to the analysis by single crystal X-ray structure analysis system or LC/MS.
- Previously, we used a rotary evaporator to evaporate the culture medium while azeotroping it with acetonitrile. Using our old method, there was a risk of contaminating samples with steam from the warm rotary evaporator water bath. We don't have to worry about this problem with our Smart Evaporator as it does not need messy water baths for heating and removing solvents.



- Because microbial liquid culture media tends to become more viscous as it is concentrated, so it was necessary to keep a close eye on the rotary evaporator to prevent bumping. By comparison, using our Smart Evaporator, the water can be directly evaporated without azeotroping with organic solvents. Since now there is no risk of bumping at normal pressure, we can leave the evaporation of our microbial liquid culture media samples unattended.
- It took less than 55 minutes (using a Spiral Plug made of Viton) to concentrate and dry-solidify 10mL of cultivation solution in a 50mL vial. Not only did we save the time we used to spend, but we were able to do other work in the meantime since we didn't have to worry about the solvent bumping.

(click [here](#) for the full text)

## Datasheet : Verification of Enzyme Activity

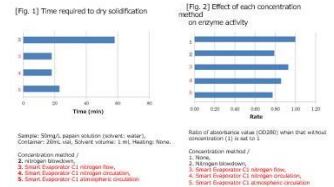
We have concentrated the papain solution on Smart Evaporator / nitrogen blowdown; redissolved the solution and measured its activity.

The results showed that the enzyme activity of the sample concentrated by Smart Evaporator C1 was as high as or higher than that concentrated by the nitrogen blowdown. It was also found that the concentration speed with Smart Evaporator C1 was about three times faster than that of the nitrogen blowdown.

(click [here](#) for the full datasheet)

	1	2	3	4	5
Concentration method	None	Nitrogen blowdown	Smart Evaporator C1 (with Spiral Plug "for Water")		
Conditions	-	-	Nitrogen flow	Nitrogen circulation	Atmosphere circulation
Flow rate	None	5L/min	10L/min	10L/min	10L/min

Table 1: Sample preparation conditions



## New accessory for faster drying of aqueous solutions

In above datasheet, and also in the interview with Dr. T., a BioChromato Spiral Plug made of Viton (fluoroelastomer) material is mentioned. These new Spiral plugs for Smart evaporators are made with fluorinated soft resin to improve the fit to the concentrating container which accelerates the evaporation speed. This new Viton Spiral Plug is recommended for use by labs drying aqueous solutions but should not be used for evaporation of organic solvents. Please contact us or your local distributor for detail.

Spiral Plugs



available in 5 sizes

## New 4-channel Smart Evaporator

We are happy to announce a new member of the Smart Evaporator family. Combining the ease of use and flexibility of our popular C1 evaporator with productive 4-channel operation the Model K4 is an affordable evaporator for labs where sample throughput is important.



**Smart Evaporator K4**

Evaporates 4 samples simultaneously  
Almost any container applicable  
Different solvent volume / type possible?!

\* Notes: Smart Evaporator K4 is not yet CE marked, but it is on the way!

(click [here](#) for our latest K4 introduction on YouTube)



**BC BioChromato**

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