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“We plan to enter India, Japan, Thailand, and Vietnam to improve the safety of researchers”

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As biotech research laboratories, in both industry and academic settings, engage in increasingly complex projects worldwide, ensuring the safety of personnel, equipment, and the surrounding environment becomes paramount. Beyond the immediate health impacts, accidents can disrupt the scientific process, leading to data loss, damage to expensive equipment, and significant delays in research progress. Focusing on these critical aspects, South Korea-based startup Connietec has developed innovative solutions that were launched during the recently held ICPI Week 2025 event in South Korea. BioSpectrum Asia spoke with Aden (Seong-Ho) Do, Chief Executive Officer of Connietec, to find out more about the startup’s new product line addressing lab safety.

Which are the new products launched by Connietec at the ICPI Week 2025?

ConnieTOP, which was released in ICPI Week 2025, is a safety cap system that prevents or purifies fume volatilisation of organic solvents and waste liquid when operating instrument by connecting with analysis instrument such as liquid chromatography that uses a lot of organic solvents such as methanol and acetonitrile, so that it can protect the environment of the laboratory and the health of the researchers and achieve reproducible experimental results.

First, the solvent bottle safety cap (CT-SSC, Solvent Safety Cap) uses a filter designed to prevent the solvent from volatilising out of the solvent bottle when the solvent flows into the analysis instrument, and this filter (CT-CVF12M, Check Valve for 12 Months) applies a PE-based Frit that is different from other companies' membrane filter types, increasing the recommended usage period to about one year compared to six months of other companies' products, which can be managed at a lower maintenance cost.

In addition, CT-SSC is designed to allow one to three solvent lines of various OD sizes to be inserted freely in one cap, and in particular, the body part and screw fitting material of the cap are unified with PTFE materials to seal well. The newly designed CT-SSC grip introduces a new design that increases the grip and stability of existing products, and a safety cap that reflects the colour accordingly. Liquid chromatography is designed to increase the grip when users frequently change the solvent of the solvent bottle and open and close the safety cap, reducing the burden on fingers and wrists, and slightly increasing the weight and volume so that they feel secure in their grasp.

The CT-WSC (Waste Safety Cap), a safety cap for waste liquid containers, is designed to effectively connect waste liquid lines from various analysis instrument brands and is equipped with a filter (CT-CF6M, Charcoal Filter for 6 Months) filled with granular-type small charcoal particles to catch fumes with a large surface area and emit only purified gas.

What are the key challenges being addressed through your new products?

I believe that laboratory environment and safety are the most important things in a laboratory these days. Although the structure of the laboratory varies widely, if the experimenter is exposed to organic solvents that are mainly used in the laboratory, the fumes are always inhaled, so they should not neglect even a small thing because it can interfere with their health and future work.

I think it is our task to inform the researchers and experimenters that they are not aware of the harmful fumes generated by touching the organic solvents used in the analysis instrument and preventing them using ConnieTOP safety cap system although they are only paying attention to fatal factors such as gas cylinders, strong organic solvents, or acid types, which are the most noticeable risk factors.

How do you plan to strengthen your presence in the Korean life sciences market?

Whenever I suggest and recommend products to researchers, I have emphasised their differences from other companies' products. So, as I explained about our products at the beginning, our products were planned and manufactured based on such differentiation. We plan to strengthen our position by systematically documenting whether the product can improve the environment of the laboratory and protect the safety of the researcher in the market by differentiating it from products that have only form, as low-cost materials.

Are you planning to develop more products this year or next?

Yes, we have plans to improve the shape of existing products and further develop them. We need to improve the filter size of the solvent bottle safety cap (CT-SSCM) for MPLC, which was released for the first time in the world last year, so we plan to increase the overall size of the check valve and filter within this year and change some designs of the filter for waste liquid (CT-CF6M). In addition, a safety cap suitable for other large-capacity square cans has been in design since last year, and we plan to release it as soon as the design is completed.

What are your views on strengthening academia-industry partnerships to enhance life sciences innovation in Korea and other Asian countries?

I think academia and industry are inseparable. Academia will need additional instruments, and instruments are necessary to focus on research and development. But if such parts are not commercialised, researchers will not be able to make or obtain them one by one, so there will be restrictions on research. Life sciences will develop further only when the industry moves

with a partnership to research and develop instruments and instruments that meet the needs of researchers.

I think it has a much more ripple effect than moving independently. In particular, overseas markets have limitations in terms of distance in business, so it would be effective to attend conferences and exhibitions related to academia and industry to introduce products.

Currently, Korea is participating in the largest Korea Lab in the industry every year, participating in the analysis science conference this year, and in the second half of the year, we will introduce our products by participating in two overseas exhibitions and the government-organised international research and industry convention.

Do you have any major expectations from the Korean government to support the growth of life sciences-based startups?

Korea supports startups through various life science R&D support projects, but it is not easy to receive support due to high competition and strict conditions compared to the opportunities. It is worth challenging whether it is a prerequisite for a startup. There is support for research projects by year, and the government, which was cut by the previous government, expects additional budgets to be supplemented, and systematic government policies and support are expected.

Are you planning to make new hires shortly? Are you planning to enter new markets besides Korea, within Asia or others?

Yes. Since we are about to start overseas sales in earnest, we hope that professional and competent employees will join us in hiring employees to support product promotion through social network service and participation in overseas exhibitions. We are planning to enter Asia, such as India, Japan, Thailand, and Vietnam.

What new opportunities and challenges do you foresee by launching your products in the Indian market?

India is the world's largest pharmaceutical supplier, and we expect that there will be a lot of demand for our products because there are many factories of each pharmaceutical company. I think they can accept ConnieTOP well and contribute to improving the laboratory environment and the safety of the researchers. However, I think it is a challenge to overcome the price priority with technical product performance because the prices of Indian and Chinese products are so low.

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