Company Name	Nakamura Choukou Co.
Representative	President &
Name	Chairman of Board Makoto Inoue
(Code No.: 6166 Toky	o Stock Exchange - Growth Market)

Notice of Progress on Joint Research with Chiba University

As disclosed on September 30, 2022, we have been conducting a joint research with the Laboratory of Medicinal Chemistry, Graduate School of Pharmaceutical Sciences, Chiba University (Prof. Tetsuhiro Nemoto) using our flow synthesis system on the synthesis method of PIP<sup>(%1)</sup>, an organic compound that is said to function effectively in the field of drug discovery research for cancer drugs with fewer side effects. At this time, we are pleased to announce that we have completed the synthesis of the main fragment <sup>(%2)</sup> to obtain the long-chain PIP structure, which was the initial objective of this joint research, and to inform you of the results of the research and our future plans, as follows;

- 1. Major Research Results
  - Reproducibility was confirmed in synthesis tests of multiple dimers, trimers, and tetramers.



[An example of a dimer]

[An example of a trimmer]



[An example of a tetramer]



(2) The short synthesis times and high yields observed in all cases indicate that PIP synthesis is feasible in a low-cost, high-volume production system.

## 2. Policy for Future Activities

The outcome of this joint research is the acquisition of a synthesis method that can stably provide PIP structures, organic compounds whose functions are expected in the field of drug discovery research, at a low cost.

We will continue to conduct joint research with the Laboratory of Medicinal Chemistry, Graduate School of Pharmaceutical Sciences, Chiba University, using our flow synthesizer, and also provide technical reports on the synthesis and samples of major fragments to companies and research institutions related to PIP in order to raise awareness of the excellent functions of PIP and stimulate demand.

3. Future Outlook

The impact of this joint research on our business results for the fiscal year ending March 31, 2023 is expected to be negligible.



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○ What is PIP (Pyrrole Imidazole Polyamide)?
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It is a generic term for compounds in which a pyrrole backbone and an imidazole backbone are linked by amide bonds in a specific order, and each of these pyrrole and imidazole backbones can hydrogen bond to a specific base structure portion in DNA.

Since PIP interacts with specific base sequences of DNA, it is possible to develop drugs that act on DNA by binding medicinal ingredients to PIP, and it is expected that drugs with fewer side effects, such as cancer drugs, can be developed. However, the existing synthesis of PIP is not efficient in terms of material yield, etc., and the price of PIP is very expensive due to the time and labor required for synthesis, which has hindered the development of research using PIP.



<u>•Pyrrole</u> Contains one nitrogen atom Organic compounds with fivemembered ring structure



## •Imidazole

Organic compound with a fivemembered ring structure containing two nitrogen atoms

(\*2) Fragment

A state in which originally continuous information (in this case, an organic compound linked by amide bonds) is broken up into small discontinuous blocks.