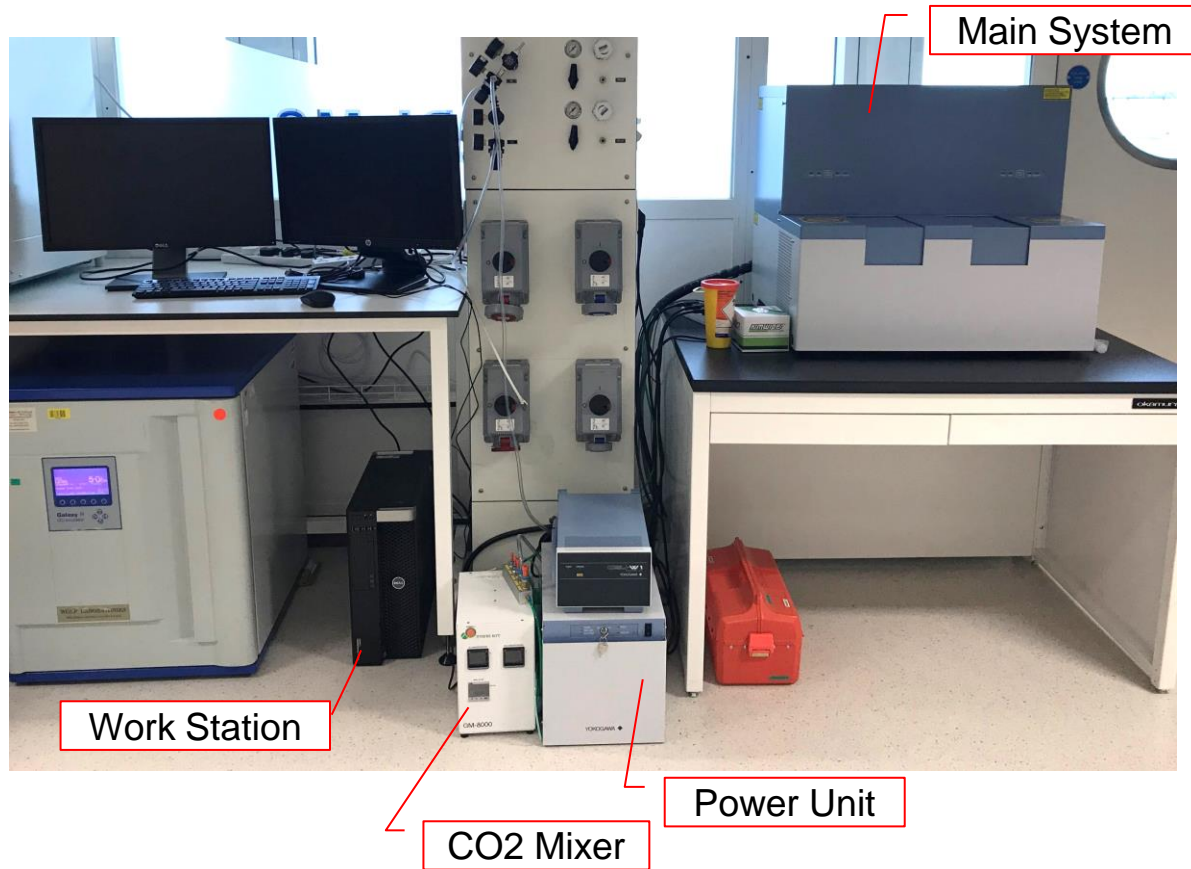


Automated *single-cell* and *sub-cellular* Sampling System

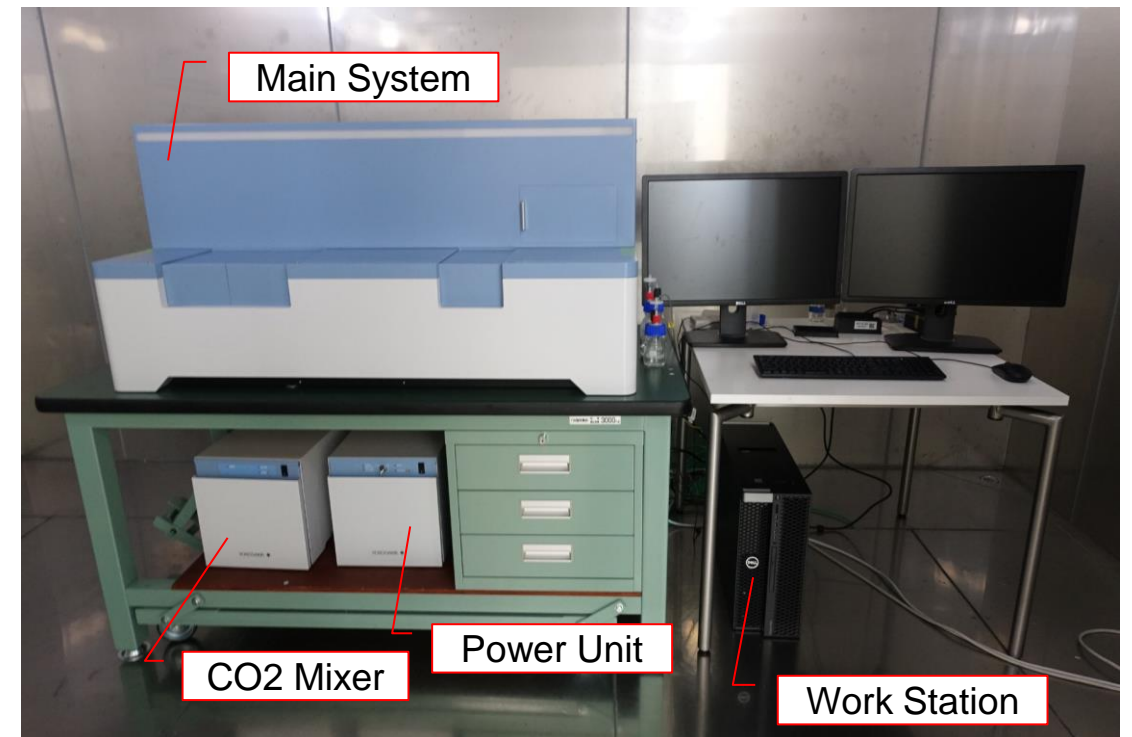
Yokogawa Electric Corporation
Life Business Europe

Appearance

Prototype System



Automated Sampling System

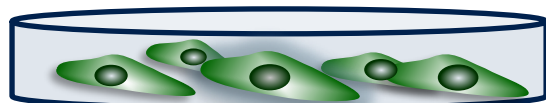


To be commercialized

Cell preparation

NEW system (Cell sampling)

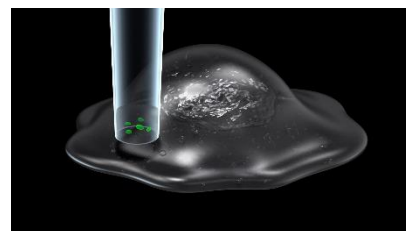
Analysis



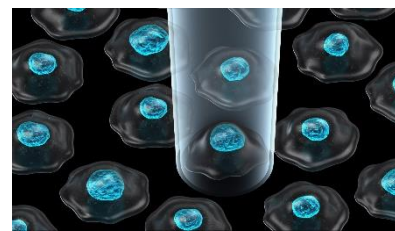
YOKOGAWA



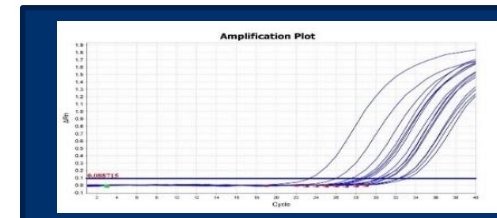
Intracellular
components



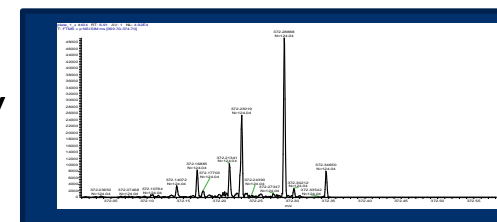
Whole cell



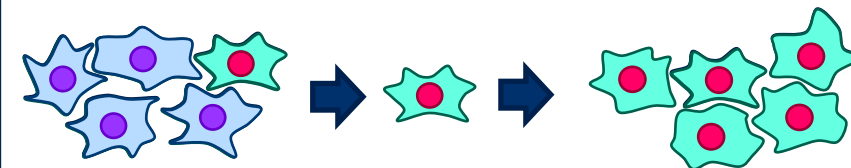
Genetic
analyses



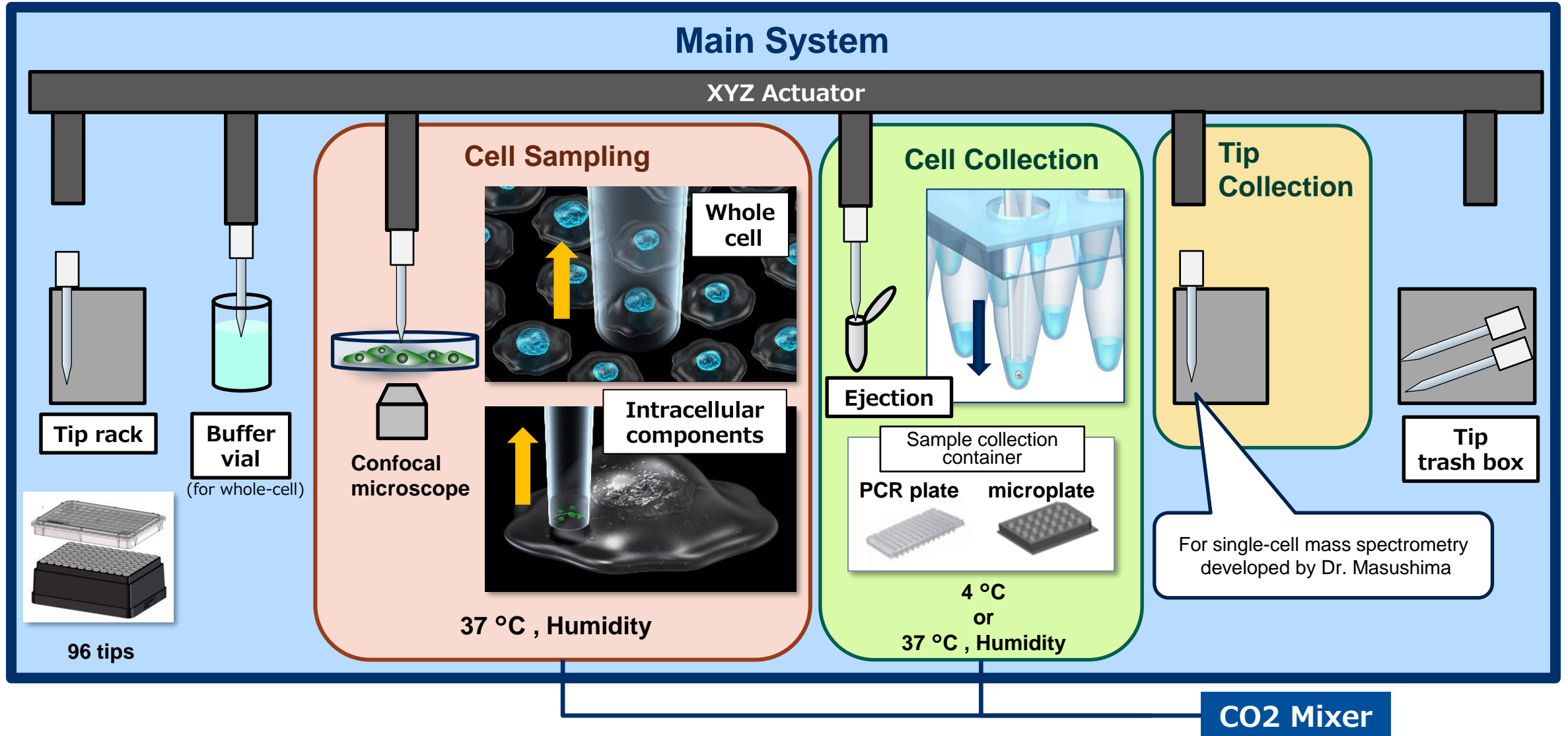
Mass
spectrometry



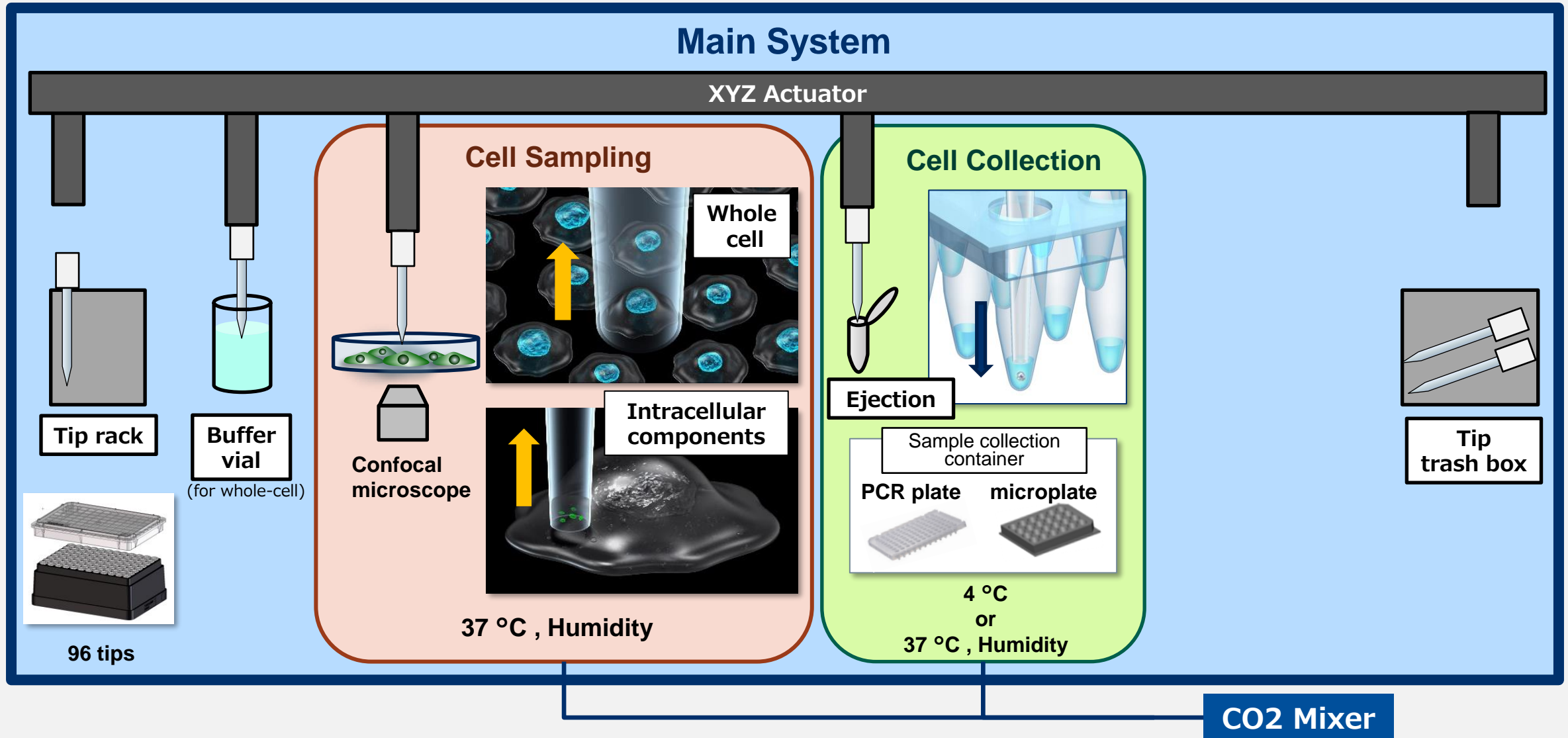
Single cell cloning



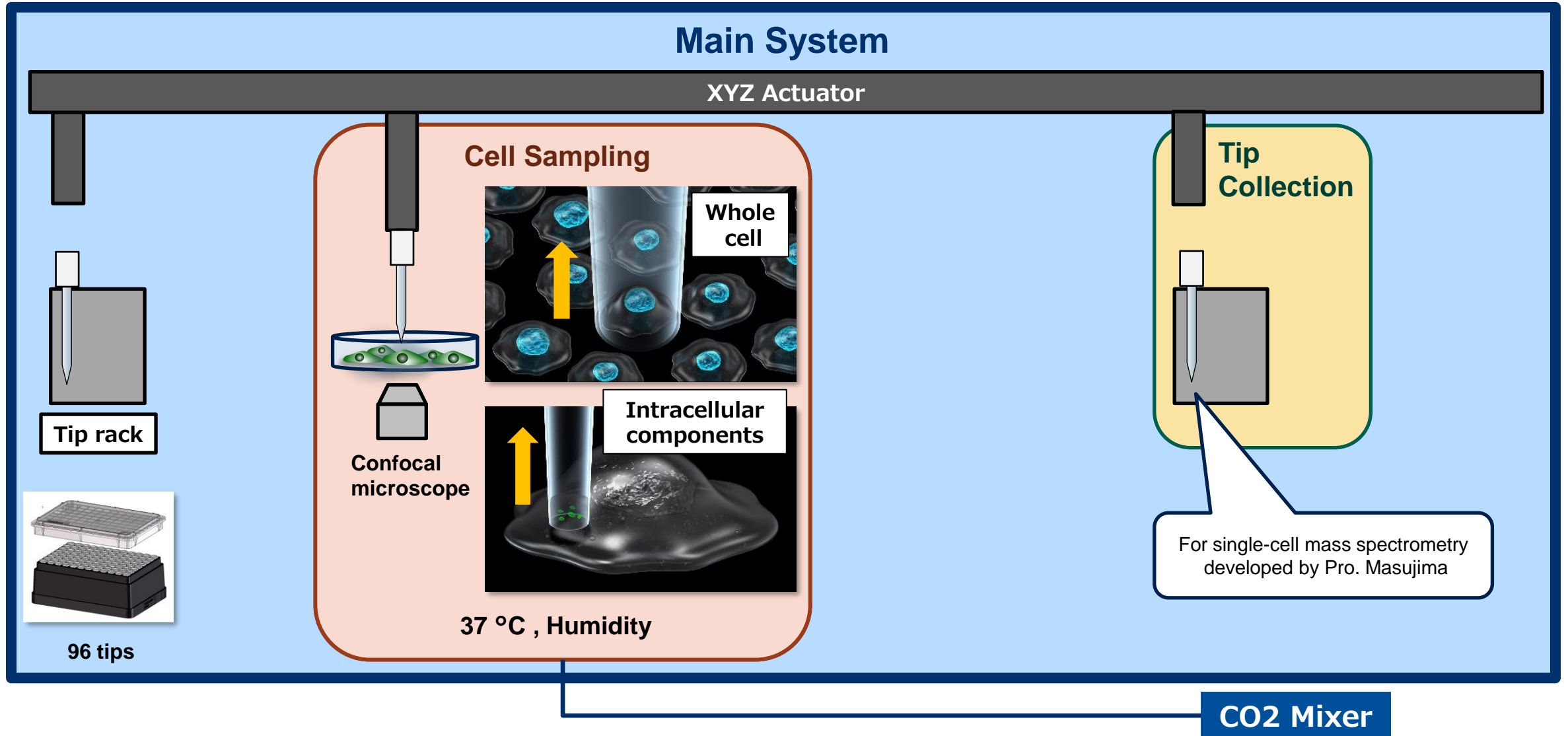
System configuration



System configuration (Cell Collection)



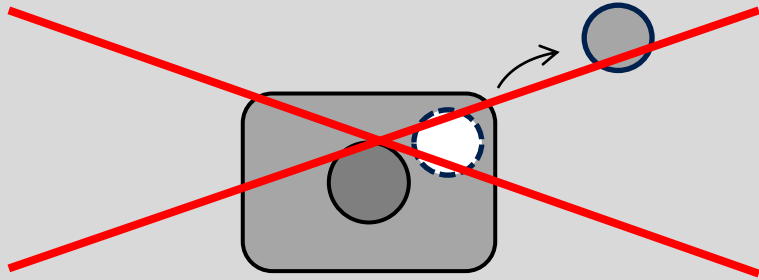
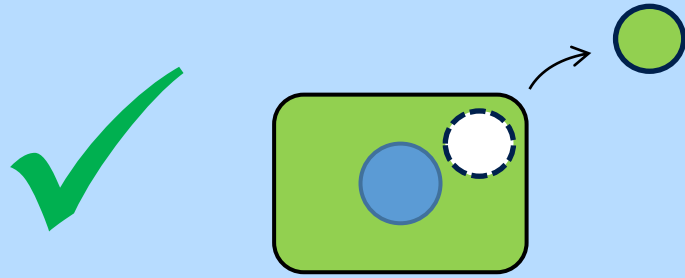
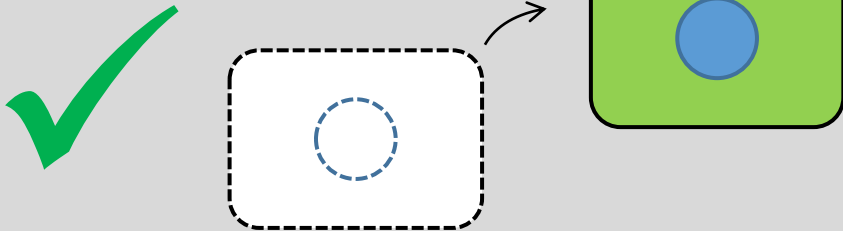
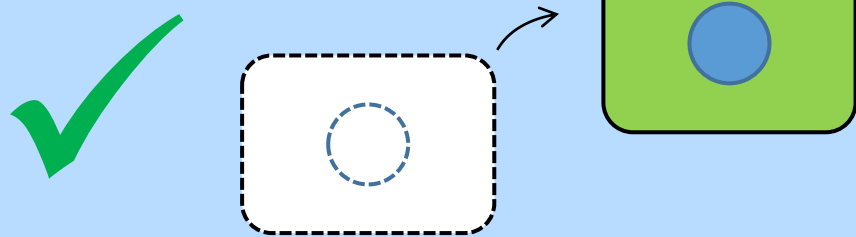
System configuration (Tip Collection)



1. Automated single-cell or intracellular components sampling
2. New system can sample while retaining location and morphology information
3. No need for proficient skills

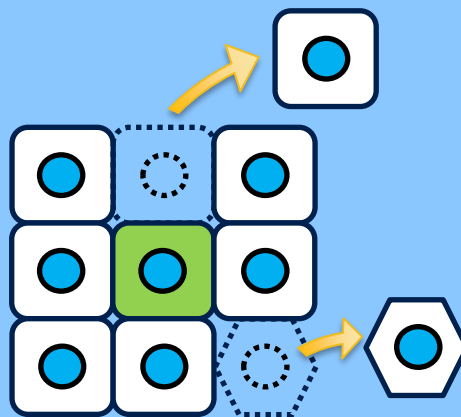
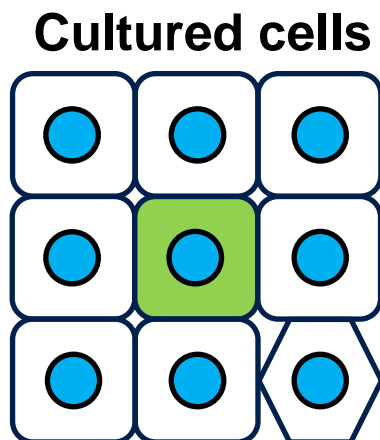
Advantage 1

Automated single-cell and **intracellular component sampling**

	Available systems today	New YOKOGAWA system
Intracellular components		
Whole cell		

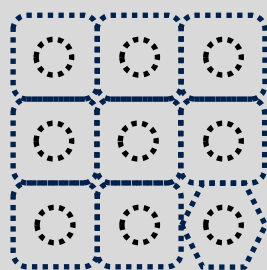
New system can sample while retaining **location and morphology information**

Yokogawa confocal microscope- based sampling system



- Small amount of sample
- **location information**
- **morphological information**

General sampling system



cell detachment



cell suspension



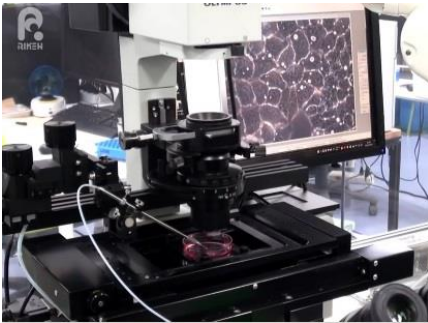
sorting



- Large amount of cells
- **No location information**
- **No morphological information**

- No need for special skills

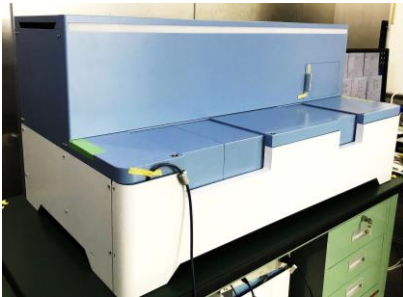
manual sampling



Requires special skills



Automated sampling



No special skills required

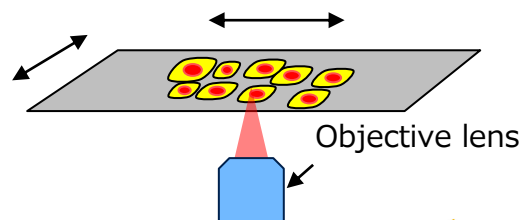
Sampling procedure

[In Development]

① Cell import



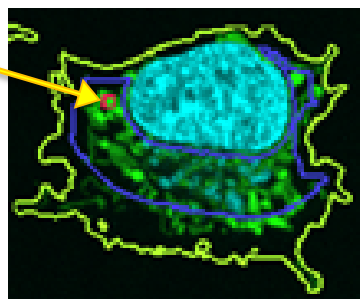
② Confocal or bright-field imaging



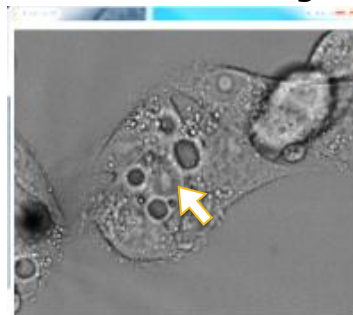
③ Cell selection

ii) Automatic setting by image analysis

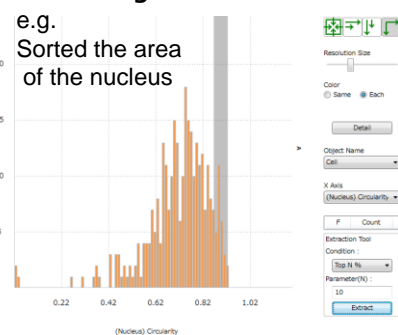
e.g.
A large amount of mitochondria
position is calculated
by image analysis



i) Manual setting



Histogram selection

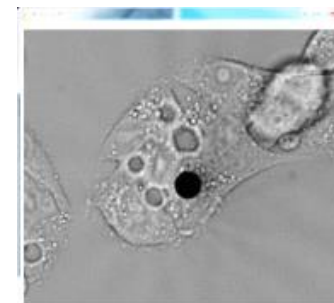


Sampling list

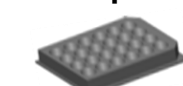
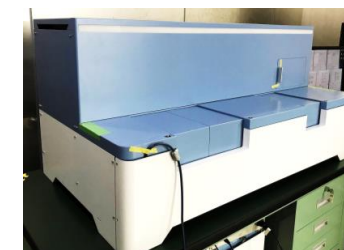
Target list:

Memo	Well	Field	ID	X	Y	Z
	1	1		-2725.5	-971.9	90.0
	1	1		-2466.3	-1107.7	90.0
	1	1		-2370.0	-933.7	115.0
	1	1		-2836.6	-1111.4	115.0
	1	1		-2845.2	-1049.7	65.0

④ Sampling start



⑤ Sample export



Tip

Co-innovating tomorrow™

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gerd.heimlich@de.yokogawa.com

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