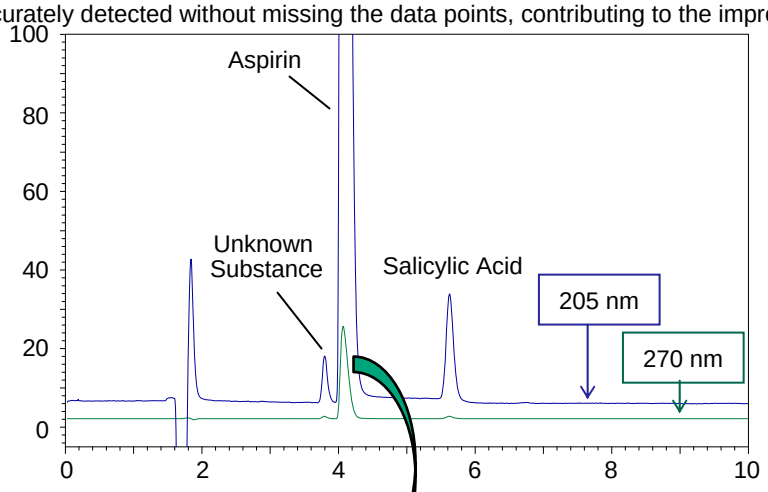
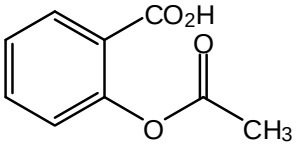
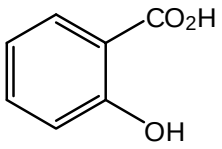
Analysis of Contaminants in Aspirin Tablet using 2-wavelength Measurement

The UV/UV-VIS detector of Chromaster allows the two-wavelength simultaneous analysis by real-time wavelength switching. An analysis example of the aspirin decomposition products is introduced here. In the US pharmacopoeia and Japanese pharmacopoeia (dissolution test), the analytical wavelength for aspirin is specified as 270 nm. However, by also including the measurement at the wavelength of 205 nm, the presence of decomposition product such as salicylic acid or additives can be confirmed.
Chromaster allows a short data loading time of 400 ms when switching the wavelength and thus, peaks can be accurately detected without missing the data points, contributing to the improved reliability of the analysis values.



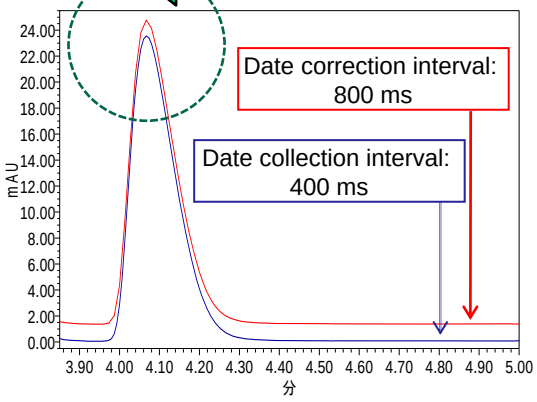


Aspirin
$C_9H_8O_4$ = 180.16



Salicylic Acid
$C_7H_6O_3$ = 138.12

Enlarged Chromatogram of Aspirin (270 nm)



[Sample Preparation *]

Sample 1 tablet
← Purified water 1000 mL
Sonication 3 min
Filtration Pore Size 0.45 μm
Sample for injection

SAMPLE 20 μL of Sample Soln. *	PRESSURE
PACKING MATERIAL HITACHI LaChrom C18 (5 μm)	TEMPERATURE 40 °C
COLUMN SIZE 4.6 mm I.D. × 150 mm (P/N : 891-5050)	SEPARATION METHOD Partition/Adsorption
ELUENT 20 mmol/L CH_3COONH_4 / CH_3OH = 80 / 20 (v/v)	DETECTOR UV 205, 270 nm
FLOW RATE 1.0 mL/min	INSTRUMENTS Chromaster 5110 (Pump), Chromaster 5210 (Autosampler), Chromaster 5310 (Column Oven), Chromaster 5410 (UV Detector)

KEY WORDS
Bio/Medical Science/Food/Pharmaceutical, Medicine/Pharmaceutical, Medical Science/Pharmaceutical Science, Aspirin, Salicylic Acid, 2-wavelength Detection, UV-VIS Spectrometry, Health, Aspirin, Acetyl Salicylic Acid, Salicylic Acid, 2-wavelength Measurement, Chromaster, LaChrom C18, Partition/Adsorption

High Performance Liquid Chromatograph (HPLC)

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