

# Analysis of Oxytocin in Serum Using the Chromaster HPLC System with Diode Array Detection

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Oxytocin is a peptide consisting of nine amino acids that acts as a neurotransmitter in biological systems. It is known for its roles during and after childbirth, however, it is also the focus of many research projects investigating treatment of disorders such as depression and autism. As such, the concentration of oxytocin found in patient serum is often of interest. Presented here is an HPLC-based method for analysis of oxytocin in serum samples. The Hitachi Chromaster HPLC with diode array detection is capable of measuring the serum level of oxytocin within 10 minutes.

## Experimental Conditions

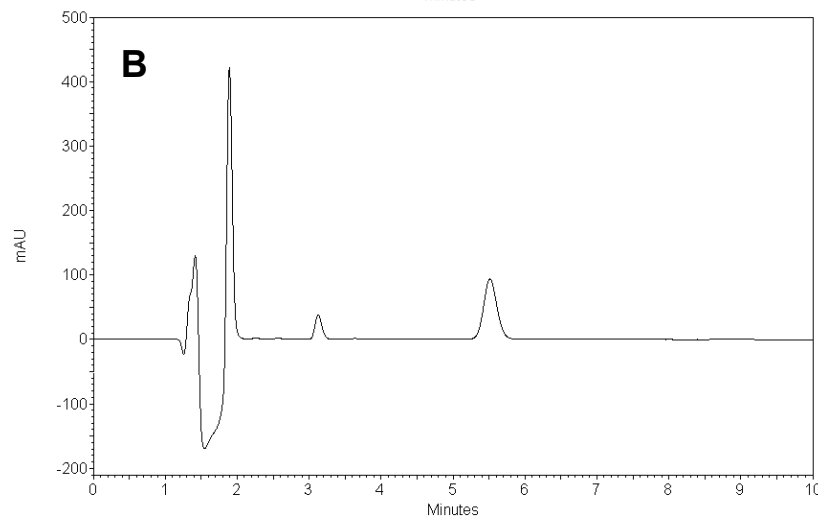
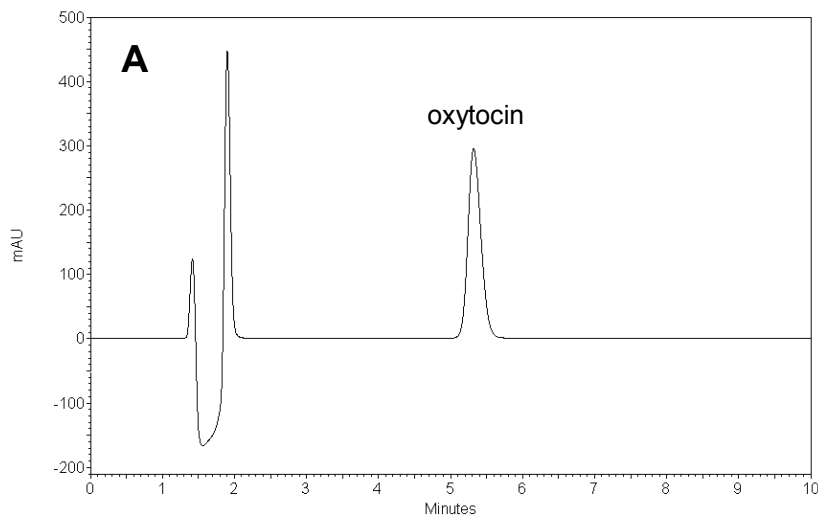
Module	Conditions
Pump (5110)	Mobile Phase: 20% CH <sub>3</sub> CN, 0.1% TFA Flow Rate: 1 mL/min
Autosampler (5210)	Injection Volume: 20 µL
Oven (5310)	Temperature: 25 °C
Detector (5430)	Diode Array Detector, Extracted wavelength = 220 nm
Column	C8, 5 µm, 4.6 x 150 mm

## Results: Reproducibility and Linearity

Linearity (1 – 600 pmol)	R <sup>2</sup> = 0.9903
Retention Time Reproducibility (200 pmol, N = 6)	RSD (%) = 0.07
Peak Area Reproducibility (200 pmol, N = 6)	RSD (%) = 0.02
Sensitivity (S/N) ≥ 10	0.5 pmol

## Results – Chromatographs

- Oxytocin Standard
- Serum Sample Spiked with Oxytocin



## Discussion and Conclusion

Hitachi's Chromaster liquid chromatography system with diode array detection effectively analyzes oxytocin in serum. This method is capable of analyzing oxytocin in serum within 10 minutes with good linearity, reproducibility, and sensitivity.

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