

The RheoSense **m-VROC® II** enables you to measure precious biological fluids using just 15 μL. With this small volume, you can accurately assess the viscosity of your sample at different temperatures with high repeatability (≤0.25% RSD) and resolution (0.02 cP). In this application brief, we demonstrate the viscosity measurement of two drug delivery systems: lipid nanoparticles (ALC0315,10 mg/mL) and TPGS Micelles, which were made in Dr. Bobbala’s lab at West Virginia University. There are no active drugs encapsulated within them.

The testing procedure was as follows:

1. 15 µL of sample was back loaded into the 100 µL test syringe.
2. An A05 chip was installed to perform five repeats at temperatures 4, 25, and 37 ˚C for each sample, retrieving the sample when required.
3. Chip Cleaning Station (CCS) performed self-cleaning at the end of the test with a preset buffer cleaning protocol.

We collected fifteen viscosity measurements (five at each temperature) using only 15 µL of each sample, showcasing m-VROC II capability to deliver highly repeatable and accurate data with a minimal sample volume. As expected, the viscosity decreased as the temperature increased from 4 to 37 ˚C. In addition, these results show that small differences in viscosity can be distinguished with **m-VROC® II**.

