# HEPATITIS C VIRUS RNA QUANTIFICATION ON DRY CAPILLARY BLOOD SPOT

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 **Background**: In Western countries new hepatitis C virus (HCV) infections mostly concern people-who-inject-drugs (PWID). Poor venous capital in these patients remains a key limitation for venopuncture and screening or monitoring of HCV infections. Recently, dried blood spots (DBS) collection in PWID has been successfully integrated to routine HCV screening strategies in different European settings for both antibody and semi-quantitative viral detection. This study evaluates the sensibility of an HCV RNA quantitative protocol on dry capillary blood spot collected in PWID followed for a chronic hepatitis C at the addiction medicine consultation from the CHUV.

**Patients and Methods**: During 2015 we established a laboratory protocol for DBS elution with PBS for HCV RNA quantification (COBAS® AmpliPrep/COBAS® TaqMan® HCV Quantitative Test, v2.0). DBS were obtained from PWID with a known hepatitis C infection during a medical visit for a routine control. All patients provided oral informed consent. Finger capillary puncture was spotted in saver proteinTM 903 whatman cards and dried according to manufacturer’s recommendations at room temperature before storing at -20°C until DBS downstream analysis.

**Results**: Overall, 12 DBS were collected and analyzed between November 2015 and March 2016. Paired EDTA plasma HCV RNA measurements were available and compared to DBS HCV RNA results by applying a correction factor on DBS “raw” RNA measurements accounting for smaller blood samples (~50ul whole blood). In this dataset EDTA plasma RNA average was 5.29 log (rang: 1.17-6.76) with a limit detection value of 1.17 log (≤15IU/mL). Intra-patient RNA paired EDTA/DBS “corrected” measurements exhibit a linear relationship with an average coefficient of 0.95. DBS RNA detection limit was 2.69 log (486 IU/mL).

**Discussion**: This data shows a reliable and sensitive quantitative protocol for HCV RNA screening of PWID with DBS and feasible within a routine diagnostic standard algorithm.

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