Cannabidiol (CBD) products are increasing in demand, sold as health supplements, vapes and cosmetics in health stores and over the internet. They are sold with the claim that they provide relief from pain and other health benefits however, many of these products have no, or limited scientific data to support this. It has been reported in scientific literature that both CBD, Δ9- tetrahydrocannabinol (Δ9-THC) and other phytocannabinoids have been identified in these products however no meaningful assessment has been published of how these products vary in dose. Since CBD products were, and continue to be, sold as supplements, they do not need to meet the same standards as pharmaceutical products: there is currently no worldwide legislation standardizing production, dosage, or medical claims with respect to CBD products which has the potential to cause problems to the criminal justice system particularly with respect to roadside drug testing. Tablets with a label stating dose of CBD were purchased to establish if labelling on the containers was correct and if any other phytocannabinoids were present that could have pharmacological implications.

A gas chromatography – mass spectrometry (GC-MS) method was created to detect eight cannabinoids, namely cannabidiol (CBD), Δ9-tetrhydrocannabinol (Δ9-THC), Δ8-tetrhydrocannabinol (Δ8-THC), cannabigerol (CBG), cannabinol (CBN), and cannabichromene (CBC), Cannabidivarin (CBDV), and Tetrahydrocannabivarin (THCV). This method was developed with the initial guidance of literature and validated using the ANSI/ASB standard 036 Standard Practices for Method Validation in Forensic Toxicology. There was an establishment of sample preparation including derivatization, the identification of cannabinoids utilizing their parent ions and their fragment ions, the determination of the quantifier ions for each cannabinoid and alterations of the method parameters used. The method was validated by assessing bias (accuracy), precision, calibration model, interference, limit of detection (LOD), limit of quantitation(LOQ), and robustness with no more than a 20% error allowance for the relevant validation parameter to be fulfilled. After validation, the method was utilized for the analysis of four di[erent CBD tablets purchased online. This analysis was to detect any cannabinoids that may have been advertised and to see if there are any additional cannabinoids that were present. With the detection of these cannabinoids, the concentrations were found and calculated to show the estimated milligrams (mg) in the tablets. The results were assessed, and it was evident that there is variation within the tablets of the cannabinoids present versus the advertised information.