



## Detection of Biogenic Amines from soil samples using Field Asymmetrical Ion Mobility Spectrometry

**Nishelle Dsouza**

*Medical University of Vienna, Austria*

### Abstract:

Complex compounds that are released during the active stage of decomposition such as Volatile Organic Compounds (VOC's) can aid in estimating the time of death, especially in cases of homicide, missing persons and mass disasters. In this paper, a new equipment, Field Asymmetrical Ion Mobility Spectrometry (FAIMS) was used to identify and study these biogenic compounds. Field Asymmetrical Ion Mobility Spectrometry, a variation of the ion mobility spectrometry, is used to detect compounds at sensitivity as low as 10 ppb and with different proton affinities. Over 96 soil samples from three pig carcasses were collected and weighed into vials. These were analysed using FAIMS and compared to blank samples. Due to competitive ionisations, it was difficult to differentiate between cadaverine and putrescine; however, the peaks of the biogenic amines were distinctly different from the blank samples. The results showed that the differences between blank samples and those with biogenic amines were highly distinguishable. The discussion covers the outcomes of the experiment and the various problems faced as this study has not been conducted before. This is a preliminary study in to the use of FAIMS in the detection of biogenic amines for the estimation of time of death and the future scope is vast, particularly in quantification of biogenic amines detected and understanding the effects of various soil types and conditions. The goal of this study was to prove that biogenic amines can be detected from soil samples using a unique equipment, the Owlstone Lonestar with the FAIMS chip. The purpose is to shed light on this field of death studies to estimate time since death and illustrate the importance of soil samples in such investigations. This can support Human Remain.



### Biography:

Nishelle Dsouza has completed her Masters of Science degree in Forensic toxicology in 2019 in the UK and is currently Pursuing her PHD in the Medical university of Vienna Austria. Her main research interest is toxicity of drugs and its metabolism in human system. Her current research is on Indole alkaloids that can be used for treatment of Alzheimers disease.

### Recent Publications:

- Holmium laser transurethral resection of bladder tumor: Our experience
- Mini percutaneous nephrolithotomy for renal calculi in paediatric patients: A review of twenty cases
- Holmium laser cystolithotripsy under local anaesthesia: Our experience
- Laparoscopic-assisted mini percutaneous nephrolithotomy in the ectopic pelvic kidney: Outcomes with the laser dusting technique

**Webinar on Forensic-Toxicology; September 17, 2020**

**Citation:** Nishelle Dsouza; Detection of Biogenic Amines from soil samples using Field Asymmetrical Ion Mobility Spectrometry; Webinar on Forensic-Toxicology; Forensic 2020; September 17, 2020