INTRODUCTION
- Quantitative spatial distributions of small molecules, such as metabolites and drugs, are vital for studying any spatial metabolic processes.
- Mass spectrometry (MS) imaging, such as matrix-assisted laser desorption ionization (MALDI) and desorption Electrospray Ionization (DESI), can map the spatial distribution of metabolites.
- DESI often provide a complementary metabonomic coverage, allowing for quantitative mapping of compounds typically inaccessible in MALDI imaging.
- Here, we describe a workflow of DESI-IMS imaging to obtain a quantitative information of endogenous metabolites and drug using mimetic models and in-line internal standard reference.
- In the workflow, tissue mimetic models are spiked with varying concentration range of metabolites or drugs of interest, an in-line internal standard reference was added to DESI sprayer solvent to normalize and measure the relative concentration of those molecules between two sets of tissue measurements.