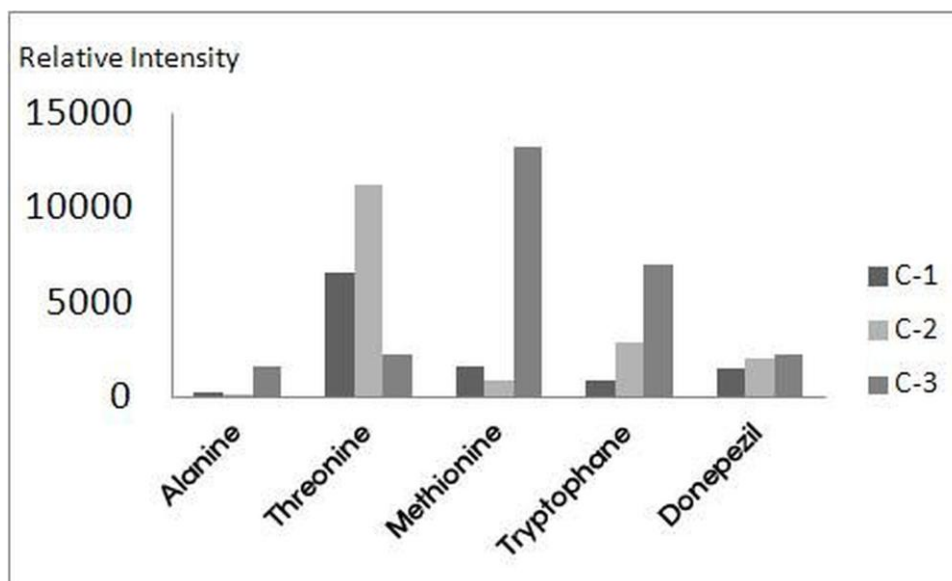


## Supplementary Information

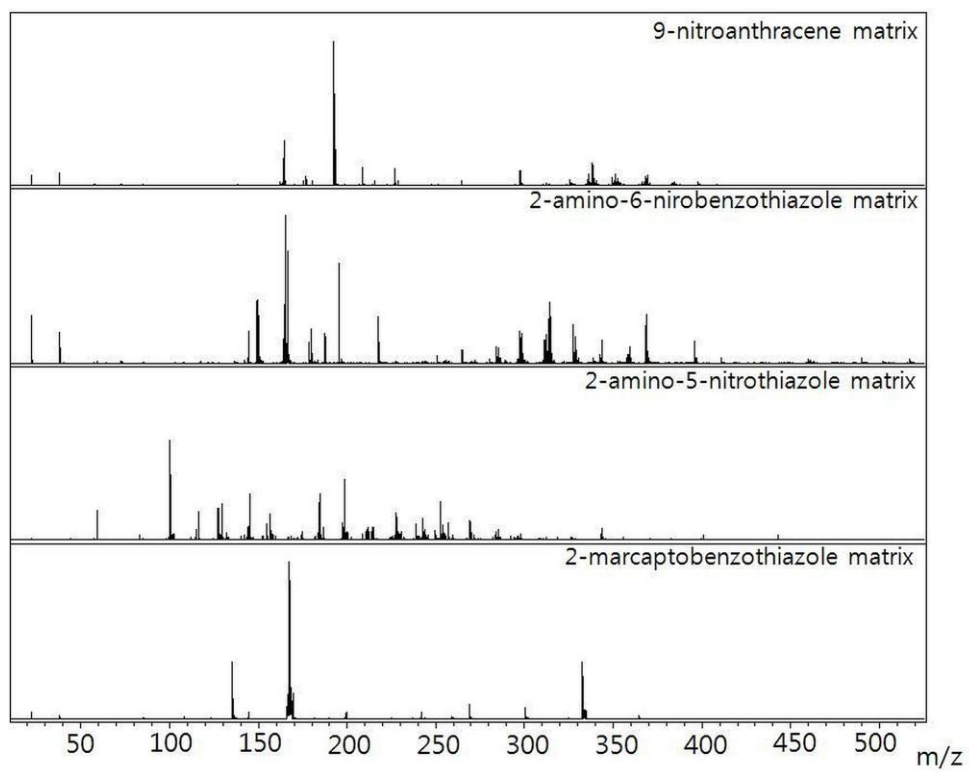
**Manuscript:** A new combination MALDI matrix for small molecule analysis: application to imaging mass spectrometry for drugs and metabolites

**Authors:** Selina Rahman Shanta, Tae Young Kim, Ji-Hye Hong, Jeong Hwa Lee, Chan Young Shin, Kyun-Hwan Kim, Young Hwan Kim, Sang Kyung Kim, Kwang Pyo Kim

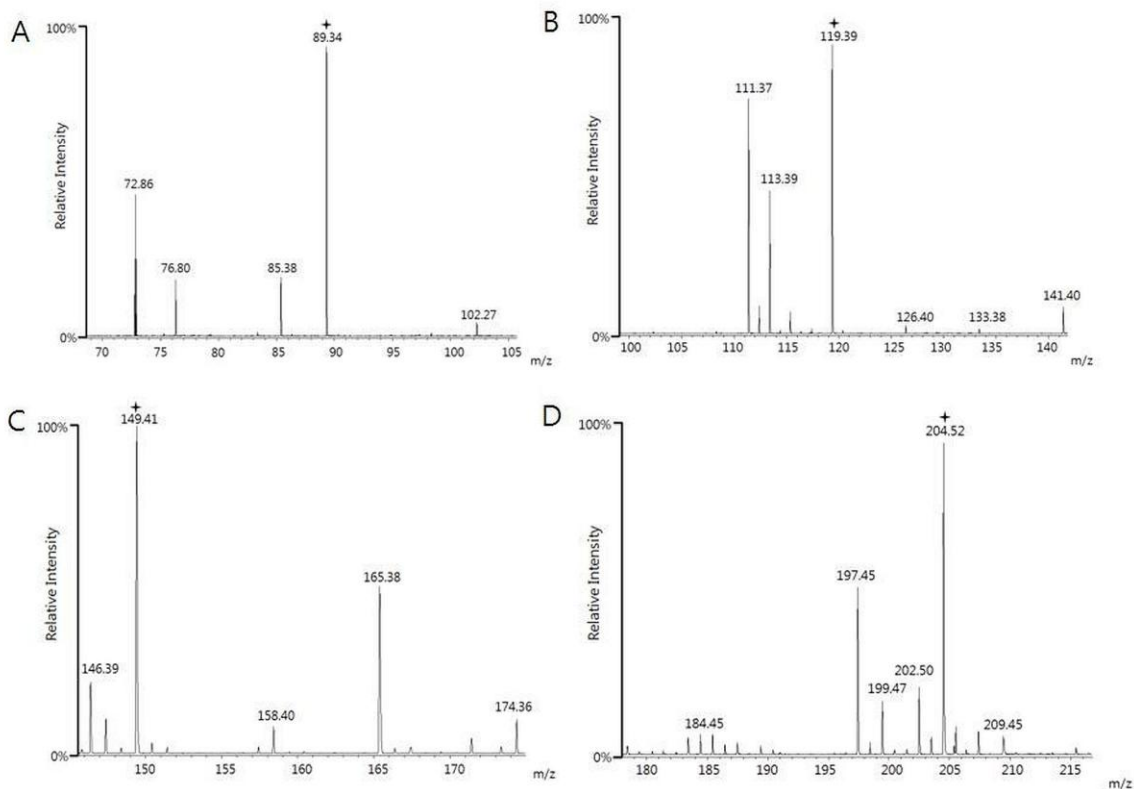
**Supplementary Figure 1:** Solvent condition optimization of combination matrix. C-1: 50% acetonitrile with 0.2% TFA and 1% piperidine, C-2: 50% acetonitrile with 0.1% TFA, C-3: 50% acetonitrile with 0.2% TFA.



**Supplementary Figure 2.** Different matrix peaks in lower mass region.



**Supplementary Figure 3.** Detection of single amino acids with combination matrix. A) Alanine at  $m/z$  89, B) Threonine at  $m/z$  119, C) Methionine at  $m/z$  149 and D) Tryptophan at  $m/z$  204. (\* indicates respective amino acid peaks).



**Supplementary Figure 4.** Total MS spectrum obtained by 2,5-DHB and combination matrices on donepezil treated mouse brain tissue sections. Combination matrix successfully identified donepezil peak at  $m/z$  380 with higher intensity, on the other hand no peak appeared with 2,5-DHB matrix.

