

Figure 1 shows the MALDI mass spectrum of **2**. Only positive ion and linear mode MALDI mass spectrum of this complex could be obtained using dithranol matrix. The other novel MALDI matrices were also tested but no peaks was observed even in linear mode. Only MALDI mass spectra of **2** and **3** were obtained in dithranol and also in linear mode. No molecular ion peak was observed when reflectron mode was used.

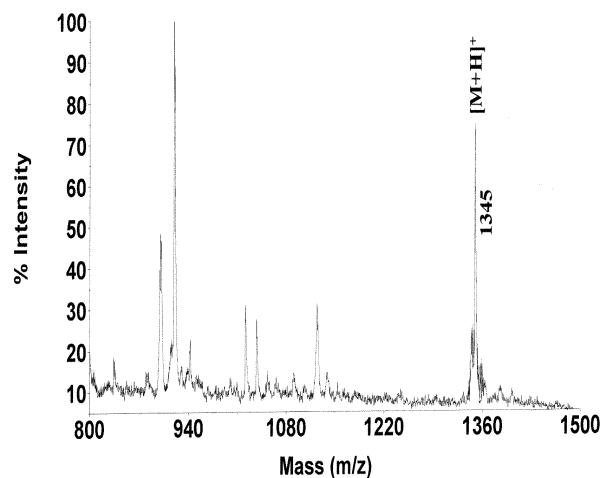


Figure 1. Positive ion and linear mode MALDI-MS spectrum of **2** (cobalt) complex was obtained in dithranol(1,8-dihydroxy-10H-anthracen-9-one) (20mg/mL in tetrahydrofuran) matrix MALDI matrix using nitrogen laser accumulating 50 laser shots.

However, molecular ion peaks of the two complexes which are cobalt and zinc complexes were obtained in linear mode. But the protonated molecular ion peak intensity of cobalt complex was found to be higher than zinc complex for the same ligand. This shows that the stability of cobalt complex is higher than the stability of the zinc complex for the same ligand under MALDI-MS conditions. The fragment ions in both spectra are due to the less stable side chain R functional groups. Positive ion linear mode MALDI mass spectra of the two complexes ([Fig.1](#) and [Fig.2](#)) showed that the complexes were synthesized successfully and the other peaks beside the protonated molecular ion peak were evaluated and found that all of them were resulted from the fragmentation of the main complex.

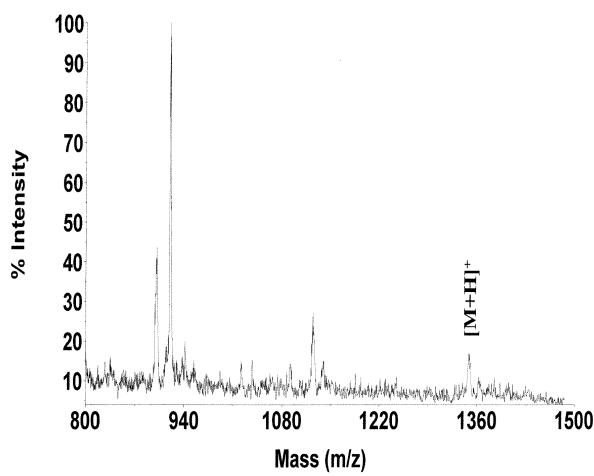


Figure 2. Positive ion and linear mode MALDI-MS spectrum of **3** (zinc) complex was obtained in dithranol(1,8-dihydroxy-10H-anthracen-9-one) (20mg/mL in tetrahydrofuran) matrix MALDI matrix using nitrogen laser accumulating 50 laser shots.

High resolved MALDI mass spectrum of Lu-Pc complex was obtained using positive ion reflectron mode in dithranol matrix only compared to the other novel MALDI matrices and the spectrum is given in Figure 3. Protonated molecular ion peak of the complex was observed at 2747.6821-2750.6872 Da

mass ranges. These peaks were followed each other with one Da mass difference because of the carbon and lutetium isotopic distribution. These isotopic peak distributions were exactly overlapped with the mass of the lutetium complex calculated theoretically from the elemental composition of the complex (Fig. 3). These experimental isotopic peak distributions of the protonated molecular ion are given as inset spectrum. Beside the protonated molecular ion peak of the complex, only one high intense peak was observed and characterized leaving one from the whole molecule by the fragmentation in the metal core and matrix adduct to the rest of the complex. However, the clean spectrum showed the high stability of this complex under the laser shots and mass spectrometric conditions and also high purity of the synthesized complex.

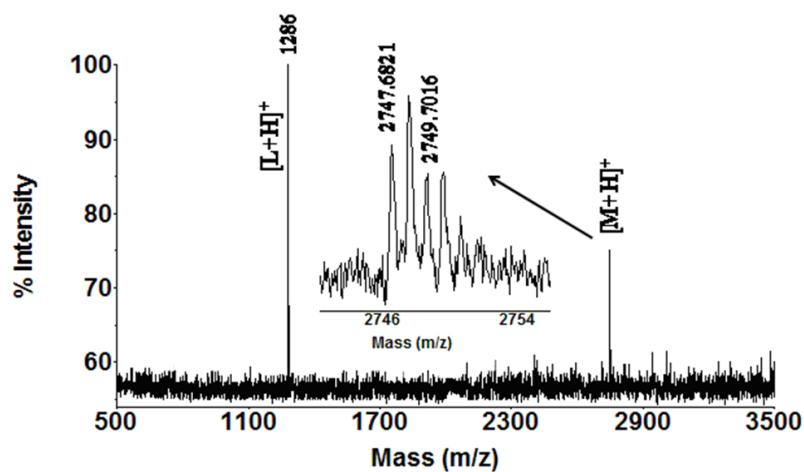


Figure 3. Positive ion and reflectron mode MALDI-MS spectrum of Lu-Pc (Lutetium) complex was obtained in 3-indoleacrylic acid MALDI matrix (20 mg/mL in acetonitrile) MALDI matrix using nitrogen laser accumulating 50 laser shots. Inset spectrum shows expanded molecular mass region of the complex.