

## SpiralTOF™

Measurement of synthetic polymers  
Polystyrene

Polystyrene (PS)1000 and 2400 were measured using the JMS-S3000 SpiralTOF. The  $[M+H]^+$  peaks of PS with the basic monomer units of 104u (Fig. 1) were observed for each sample. The mass spectrum of PS1000 and an expanded view around  $m/z$  1000 are shown in Fig. 2. The resolving power at  $m/z$  1101 was approximately 50,000 (FWHM). The mass difference between 8, 9 and 10-mers showed a very good match with the theoretical mass number (104.0626) calculated from the elemental composition of the repeating unit ( $C_8H_8$ ). The mass spectrum of PS2400 and the expanded view of the isotopic pattern of 23-mer are shown in Fig 3. The observed isotopic pattern of the 23-mer is in very good agreement with the simulated isotopic distribution (R 60,000).

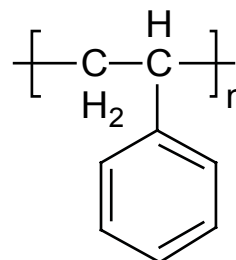
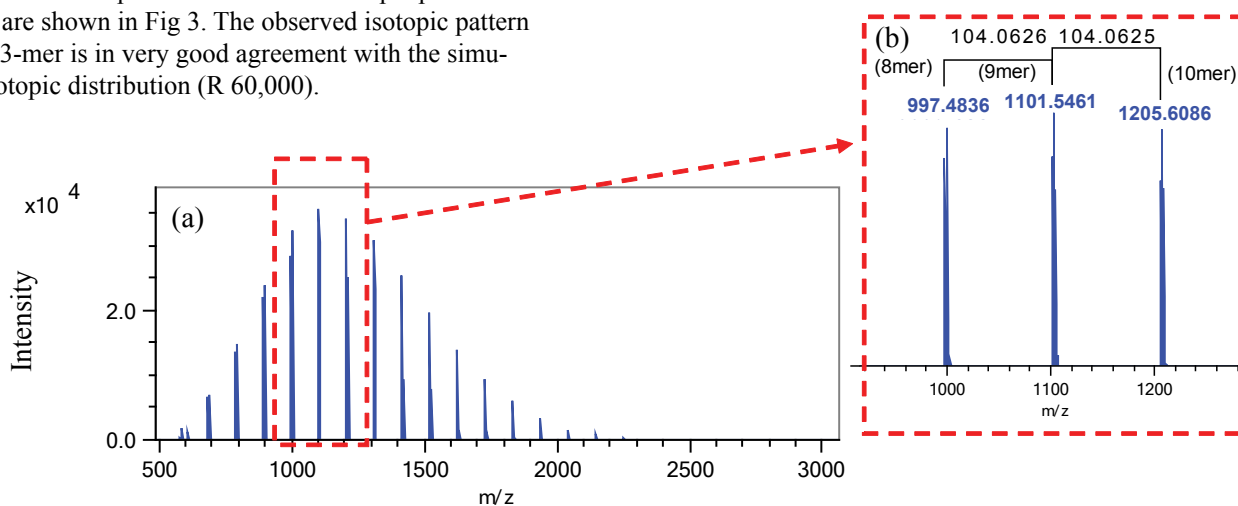
Figure 1. PS repeat unit ( $C_8H_8=104.0626$ ).

Figure 2. Mass spectrum of (a) PS1000 and (b) 8-10mer.

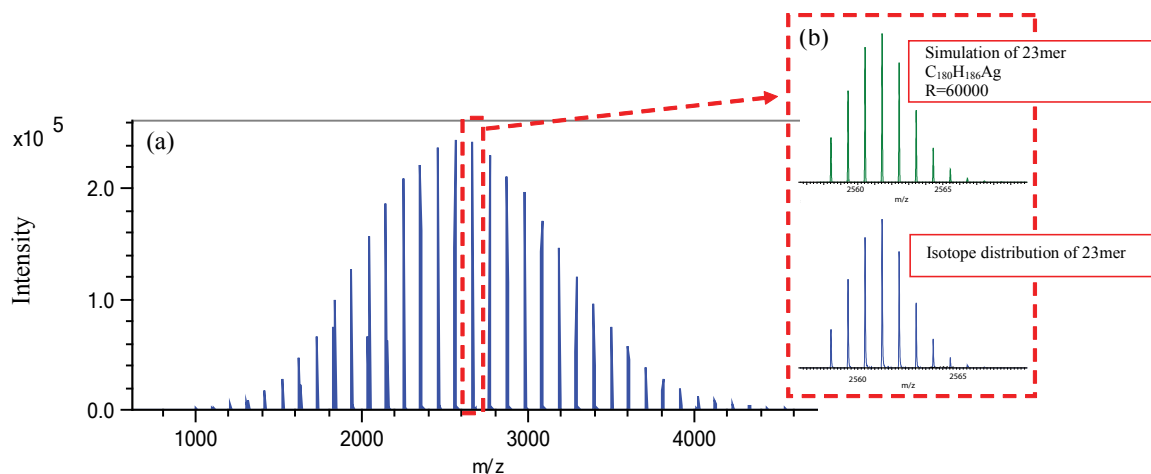


Figure 3. Mass spectrum of (a) PS2400 and (b) the 23mer with its corresponding isotopic simulation.