

# Site-Specific DNA Photocleavage by Rhodium Intercalators Analyzed by MALDI-TOF Mass Spectrometry

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## **Abstract:**

The DNA photocleavage reaction of mismatch-selective Rh complexes has been analyzed by MALDI-TOF mass spectrometry as well as gel electrophoresis analysis of radioactively tagged oligonucleotides. Analogous results are obtained with these two techniques showing site-specific cleavage neighboring the mismatch to yield primarily 5'- and 3'-phosphate termini. Additional intermediates and products are observed, however, using MALDI-TOF analysis. MALDI-TOF mass spectrometry is seen to be particularly powerful in the analysis of DNA cleavage by site-specific molecules. The method requires no radioactive labeling, only little material, and analysis can be accomplished within minutes. Moreover, this mass spectral analysis of DNA cleavage yields direct information regarding products rather than simply the base pair site of cleavage.