

Introduction

The analysis of protein complexes by mass spectrometry is typically labor intensive because of the tendency of these complexes to dissociate during analysis. CovalX has developed a method for the easy and fast analysis of protein complexes using High-Mass MALDI mass spectrometry. The first step of the analysis is to stabilize the non-covalent complexes of interest using dedicated cross-linking reagents and protocols. After stabilization, the samples are ready for direct analysis by High-Mass MALDI ToF mass spectrometry.

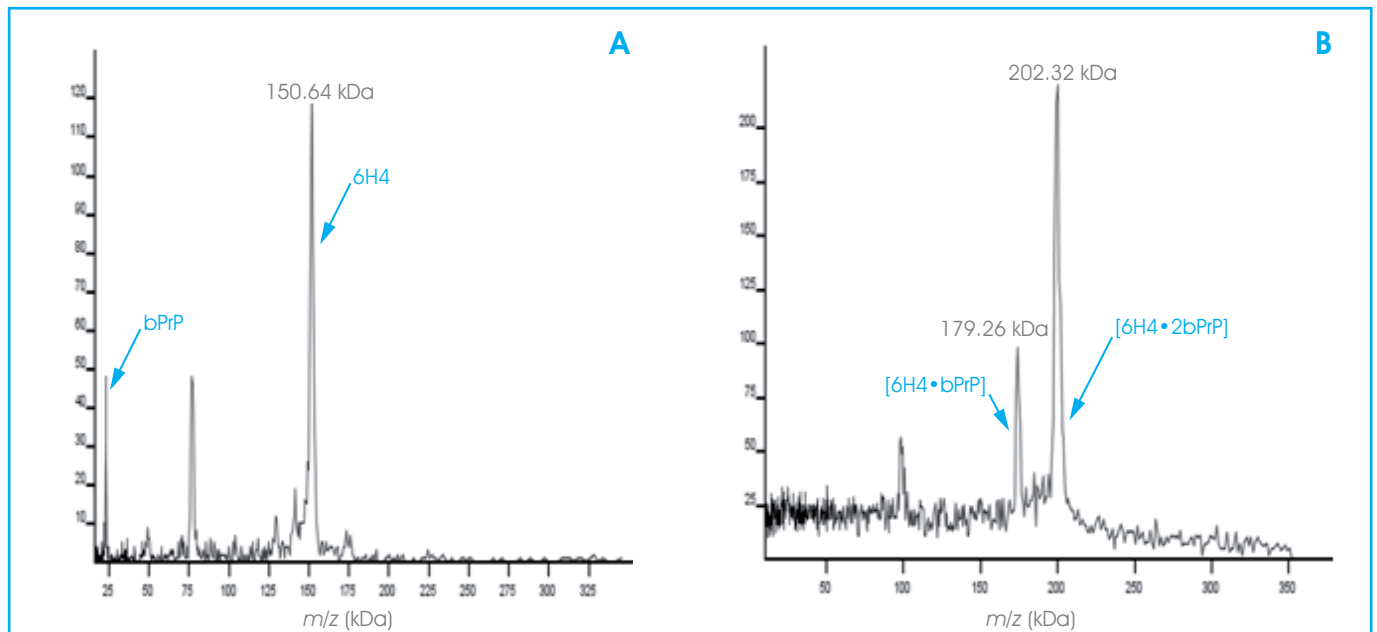
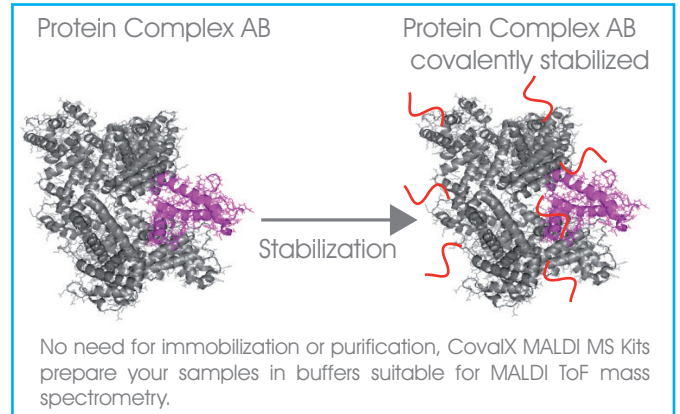


Figure 1. High-Mass MALDI ToF mass spectra of the protein complex formed between the bovine prion protein (bPrP, 2 μ M) and a monoclonal antibody anti-bPrP (6H4, 1 μ M).

A. High-Mass MALDI ToF mass spectra of the immuno-complex before cross-linking.

B. Same analysis after cross-linking with K200 MALDI MS Analysis Kit. After cross-linking, the immuno-complexes [6H4•bPrP] and [6H4•2bPrP] are detected with $m=179.26$ kDa and 202.32 kDa.



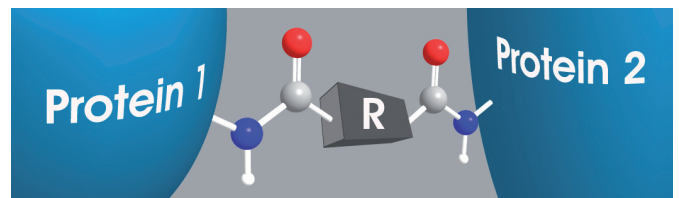
K200 MALDI MS Analysis Kit

MALDI MS Analysis Kits and Reagents for Protein Complex Analysis by High-Mass MALDI ToF MS:

- Dedicated cross-linking reagents for stabilizing specific non-covalent interactions.
- No need for protein complex purification.
- Fast: samples ready for High-Mass MALDI ToF analysis 30 minutes after stabilization.
- For all complexes in the 5-1000 kDa range.

Cross-linking cocktails to increase efficiency

To analyze intact protein complexes by High-Mass MALDI ToF mass spectrometry it is crucial to stabilize specifically the complexes with highly efficient cross-linking reagents. CovalX has developed dedicated reagents and buffers to prepare non-covalent complexes for High-Mass MALDI analysis. To increase cross-linking efficiency, CovalX reagents contain cocktails of cross-linkers offering different spacer lengths able to covalently bind specific protein complexes with the highest efficiency. The specificity of CovalX cross-linking reagents allows to stabilize covalently protein complex even in contaminated or unpurified samples.



R: Spacer ranging from 5.5 Å to 14 Å

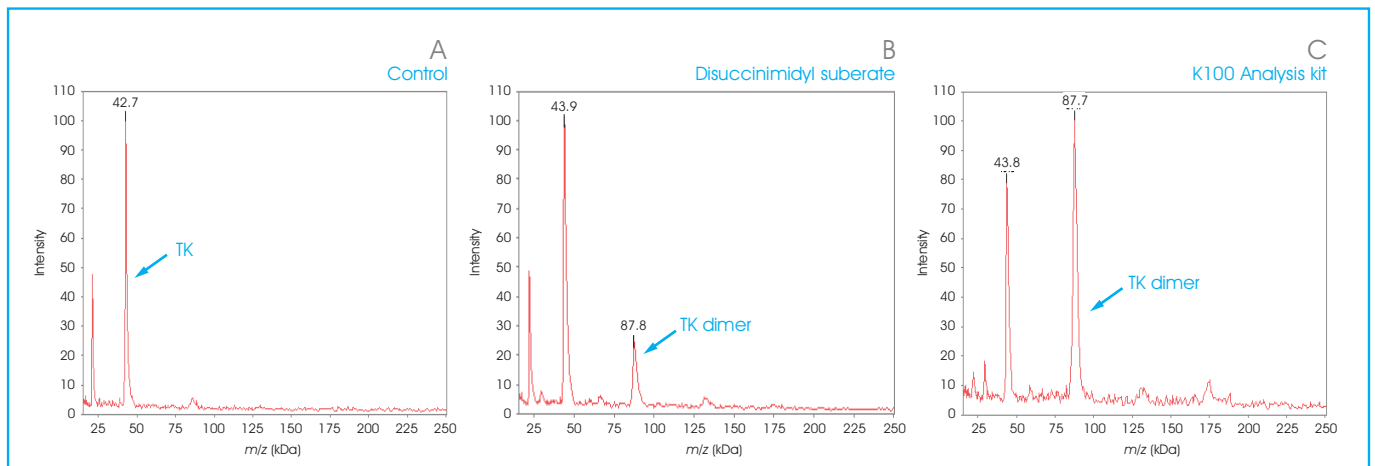


Figure 2. High-Mass MALDI ToF mass spectra of the protein complex Thymidine Kinase (TK).

A. TK (1 μ M) analysed without cross-linking. Only the monomer is detected.

B. TK analysed after cross-linking with disuccinimidyl suberate (0.1 mg/ml, 30 minutes incubation time). TK dimer is detected with $m=87.8$ kDa.

C. Same analysis with CovalX K100 analysis reagent (0.1 mg/ml, 30 minutes incubation time).

MALDI MS Analysis Kits and Reagents. Order online at www.covalx.com

MALDI MS Analysis Kit for Protein interactions	Mass Range	Part No
K50 MALDI MS Analysis Kit	0-50 kDa	W2007k50
K100 MALDI MS Analysis Kit	20-100 kDa	W2007k100
K200MALDI MS Analysis Kit	100-500 kDa	W2007k200
K300 MALDI MS Analysis Kit	Up to 1000 kDa	W2007k300
R50 Stabilizer Reagent	0-50 kDa	W2007R50
R100 Stabilizer Reagent	20-100 kDa	W2007R100
R200 Stabilizer Reagent	100-500 kDa	W2007R200
R300 Stabilizer Reagent	Up to 1000 kDa	W2007R300