Supporting Information

## Page S-1

Robust Analysis of the Yeast Proteome under 50 kDa by Molecular Weight-Based Fractionation and Top-Down Mass Spectrometry

John F. Kellie\*, Adam D. Catherman\*, Kenneth R. Durbin\*, John C. Tran\*, Jeremiah D.

Tipton\*, Jeremy L. Norris<sup>†</sup>, Charles E. Witkowski II<sup>‡</sup>, Paul M. Thomas<sup>\*</sup>, and Neil L. Kelleher<sup>\*a</sup>

\*Departments of Chemistry and Molecular Biosciences, the Proteomics Center of Excellence and the Chemistry of Life Processes Institute,

Northwestern University, 2145 N. Sheridan Road, Evanston, IL 60208

<sup>†</sup>Mass Spectrometry Research Center, Department of Biochemistry,

Vanderbilt University School of Medicine, 465 21st Avenue South, Nashville, TN 37232

<sup>‡</sup>Protein Discovery, Inc. 418 South Gay Street, Suite 203 Knoxville, TN 37902

<sup>a</sup>Corresponding author: n-kelleher@northwestern.edu



**Supplementary Figure 1**. Results from decoy searches against a scrambled database. Results are fit to a gamma distribution (an estimate of the distribution of scores under H<sub>0</sub> that the match was due to chance). P-score cutoffs of 2 x  $10^{-6}$  for "absolute mass" mode (**A**) and 9 x  $10^{-8}$  for "biomarker" mode (**B**) each give a cutoff for 5% FDR.

-log Poisson p