Resource Summary Report

Charge Czar: Peptide charge state determination for low-resolution tandem mass spectra

RRID:SCR_004315
Type: Tool

Proper Citation

Charge Czar: Peptide charge state determination for low-resolution tandem mass spectra (RRID:SCR_004315)

Resource Information

URL: http://noble.gs.washington.edu/proj/charge/

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Description: Charge Czar is a software tool that uses a support vector machine to discriminate between +2- and +3-charged tandem mass spectra, with the goal of reducing database search time by eliminating the need to search twice with each spectrum. Charge Czar is written in Python and ANSI C. Source code for the latest version, as well as some pre-compiled versions for popular platforms (Linux, Cygwin) can be downloaded after you have agreed to the license agreement. Mass spectrometry is a particularly useful technology for the rapid and robust identification of peptides and proteins in complex mixtures. Peptide sequences can be identified by correlating their observed tandem mass spectra (MS/MS) with theoretical spectra of peptides from a sequence database. Unfortunately, to perform this search the charge of the peptide must be known, and current charge-state-determination algorithms only discriminate singly- from multiply-charged spectra: distinguishing +2 from +3, for example, is unreliable. Thus, search software is forced to search multiply-charged spectra multiple times. To minimize this inefficiency, we present a support vector machine (SVM) that quickly and reliably classifies multiply-charged spectra as having either a +2 or +3 precursor peptide ion. By classifying multiply-charged spectra, we obtain a 40% reduction in search time while maintaining an average of 99% of peptide and 99% of protein identifications originally obtained from these spectra.

Synonyms: ChargeCzar, Charge Czar

Resource Type: source code, software resource

Defining Citation: PMID:16447975

Funding:

Resource Name: Charge Czar: Peptide charge state determination for low-resolution tandem mass spectra

Resource ID: SCR_004315

Alternate IDs: nlx_32529

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Ratings and Alerts

No rating or validation information has been found for Charge Czar: Peptide charge state determination for low-resolution tandem mass spectra.

No alerts have been found for Charge Czar: Peptide charge state determination for low-resolution tandem mass spectra.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We have not found any literature mentions for this resource.