908devices

Analysis at the Speed of Life

With chemical analysis technology that crosses industry boundaries, our devices provide answers at the point-of-need in forensics, biopharmaceuticals, life science research, and more.

HTTP://908DEVICES.COM/ZIPCHIP

908 Devices Innovates in Analytics at the Point-of-Need for In-Depth Process Knowledge and Control

Enzymatic

MAVEN

On-Line
- ✓ Glucose
- ✓ Lactate

RAMAN

MAVERICK

In-Line
- ✓ Glucose
- ✓ Lactate
- ✓ Biomass

CE-MS in one

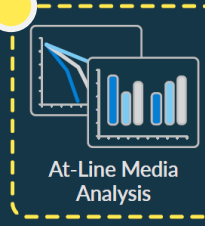
REBEL

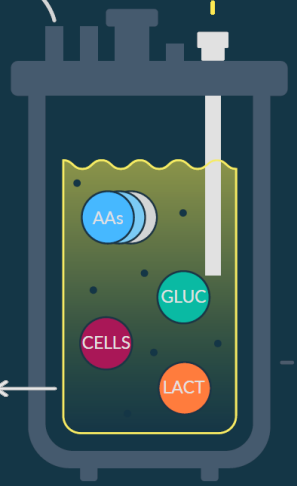
At-Line
- ✓ Amino Acids
- ✓ Vitamins
- ✓ Amines

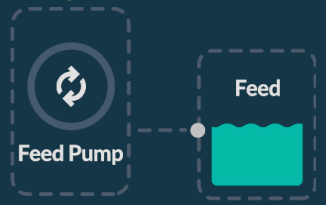
CE – HRMS Interface

ZipChip

Off-Line
- ✓ Charge Variants
- ✓ MW & Glycans
- ✓ Peptide Mapping
- ✓ Metabolites







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YOUR MASS SPEC'S SIDEKICK

WHAT IS ZIPCHIP?

- A Capillary Zone Electrophoresis (CZE) device.
- Couples to your mass spec, and mounts just like an ion source.
- Uses Microfluidic chip technology.
- Integrated direct ESI.

WHAT CAN ZIPCHIP DO?

- Protein Characterization
- Charge Variant Analysis (CVA) of mAbs
- Rapid Intact Mass Confirmation
- Subunit Analysis
- Peptide Mapping
- Small Molecule & Amino Acid Analysis
- Metabolomics
- Oligonucleotide Analysis

HERE'S WHAT YOU'LL NEED:

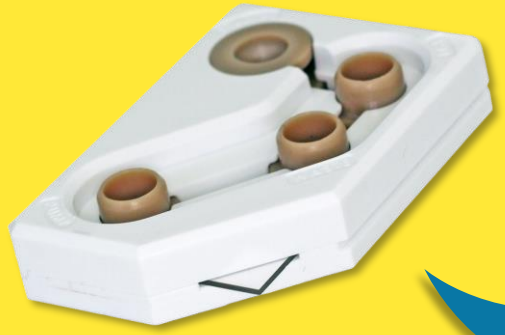
- A Mass Spectrometer
- A ZipChip device
- A reagent kit including:
  - Background Electrolyte (BGE)
  - Sample diluent
- A chip & a smile

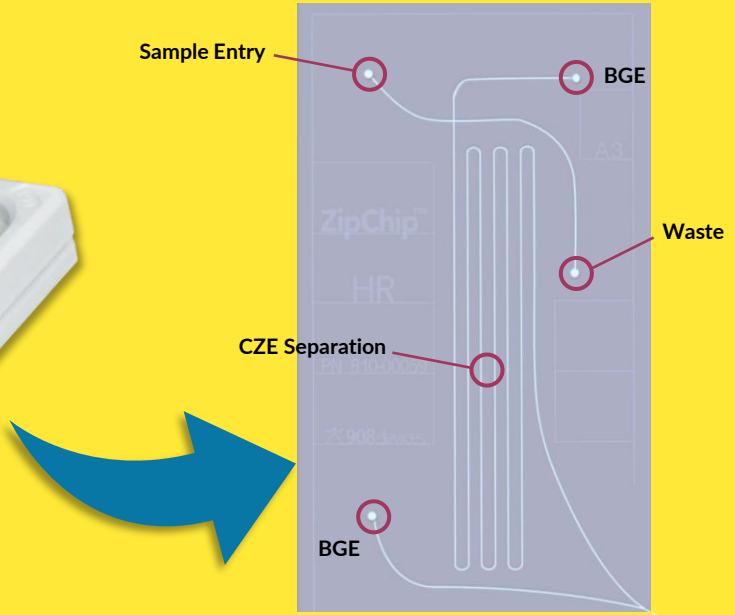
1 Pick your application, kit, and chip

2 Little-to-no sample prep

3 Load sample, reagents, and chip, then run!

HERE'S WHERE IT HAPPENS





Mass Spec Compatibility: ThermoFisher SCIENTIFIC · BRUKER · SCIEX

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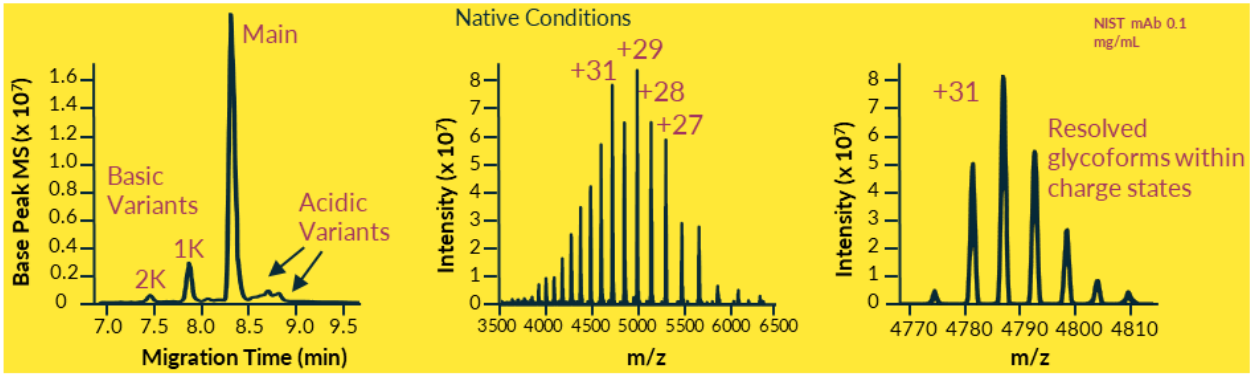
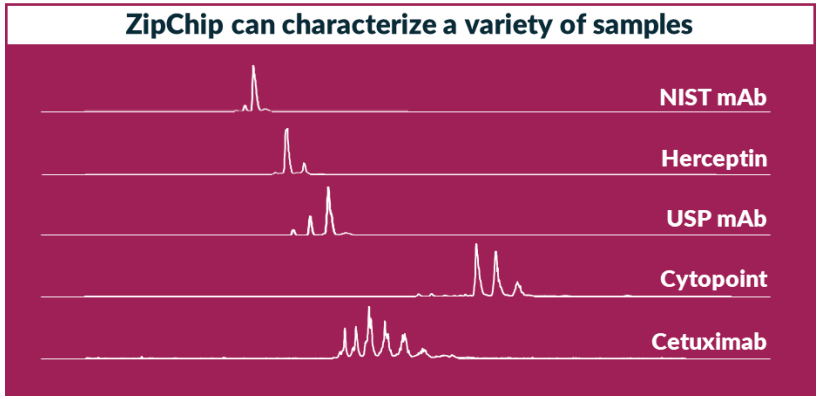
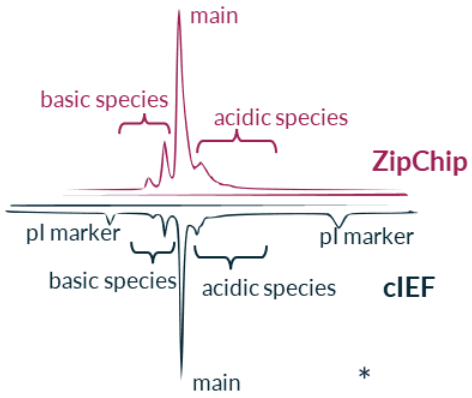
APPLICATION HIGHLIGHTS

Streamlined Charge Variant Analysis

Mass confirmation, post translational modification (PTM) assessment, glycoform characterization, and charge variant identification in one fast and thorough assay. Little-to-no sample prep or method development.

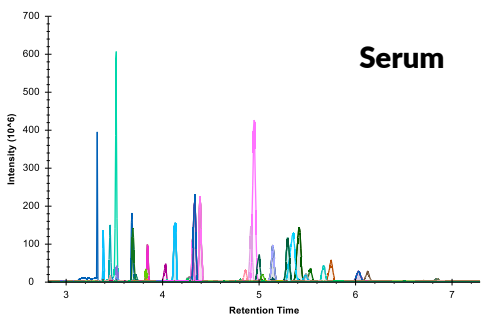


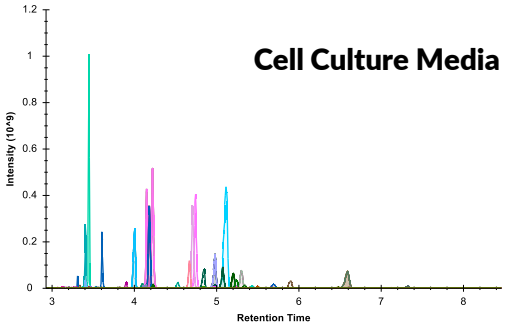


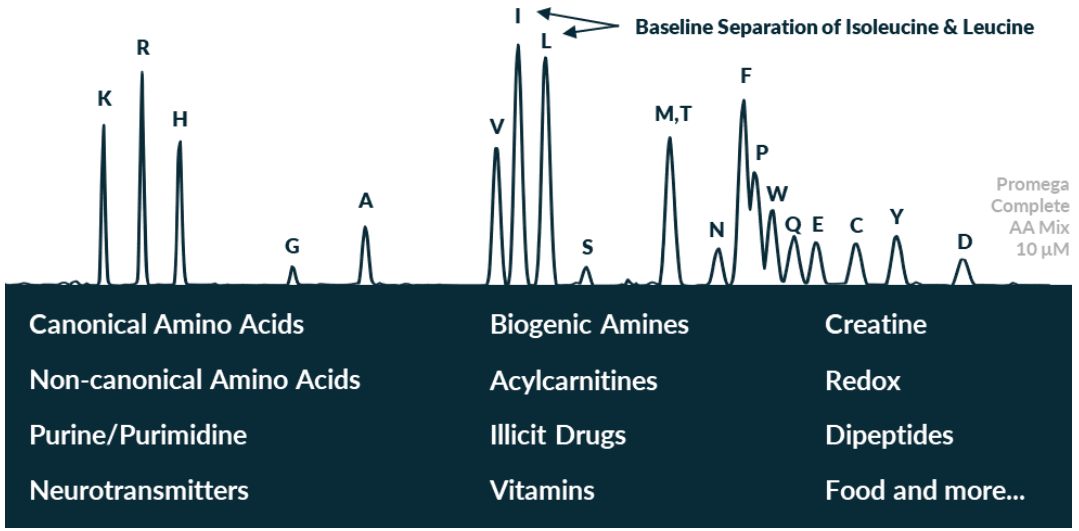


Fast and easy metabolomic, small molecule, and AA analysis

Rapidly analyze polar metabolites in biofluids, cell culture media, and beyond. No derivatization, easy sample prep, and straight forward data analysis.





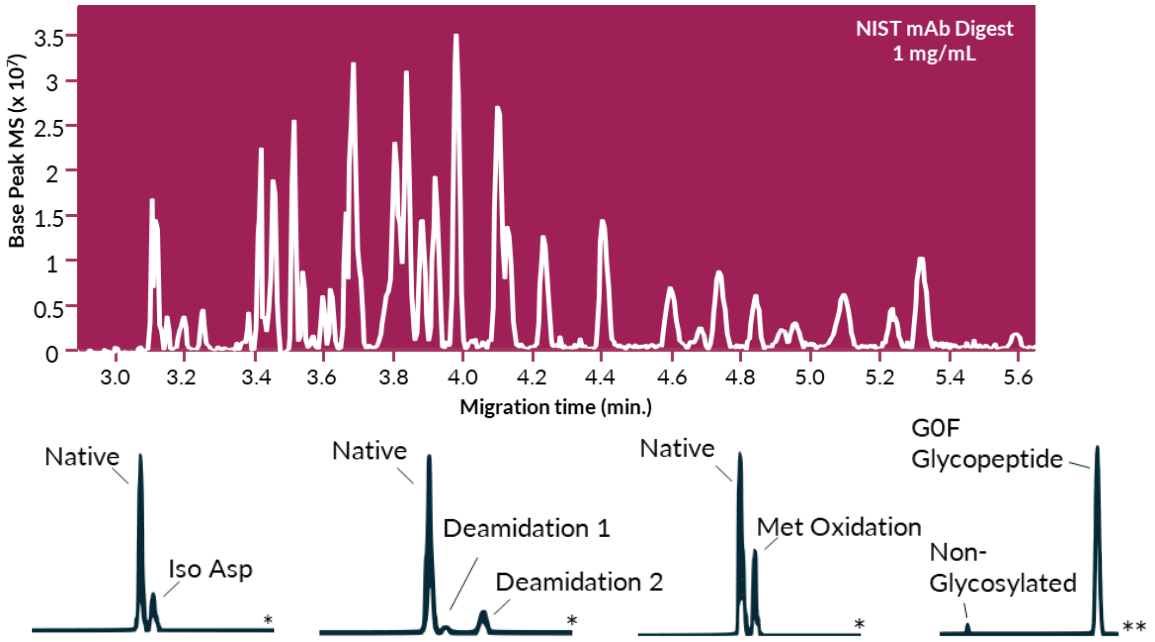


* *Adapted from: Cao et al. Journal of Pharmaceutical and Biomedical Analysis – July 2021*

APPLICATION HIGHLIGHTS

Fast and Thorough Peptide Mapping

With an analysis time of around 10 minutes resulting in near-complete sequence coverage, ZipChip is a great solution for Peptide Mapping and MAM. Characterize PTMs such as isomerization, deamidation, oxidation, glycosylation, etc.



Separation	mAb Chain 1 (%)	mAb Chain 2 (%)	Bis (%)
ZipChip	98.0	97.2	98.0
UHPLC-MS	93.3	93.3	93.6

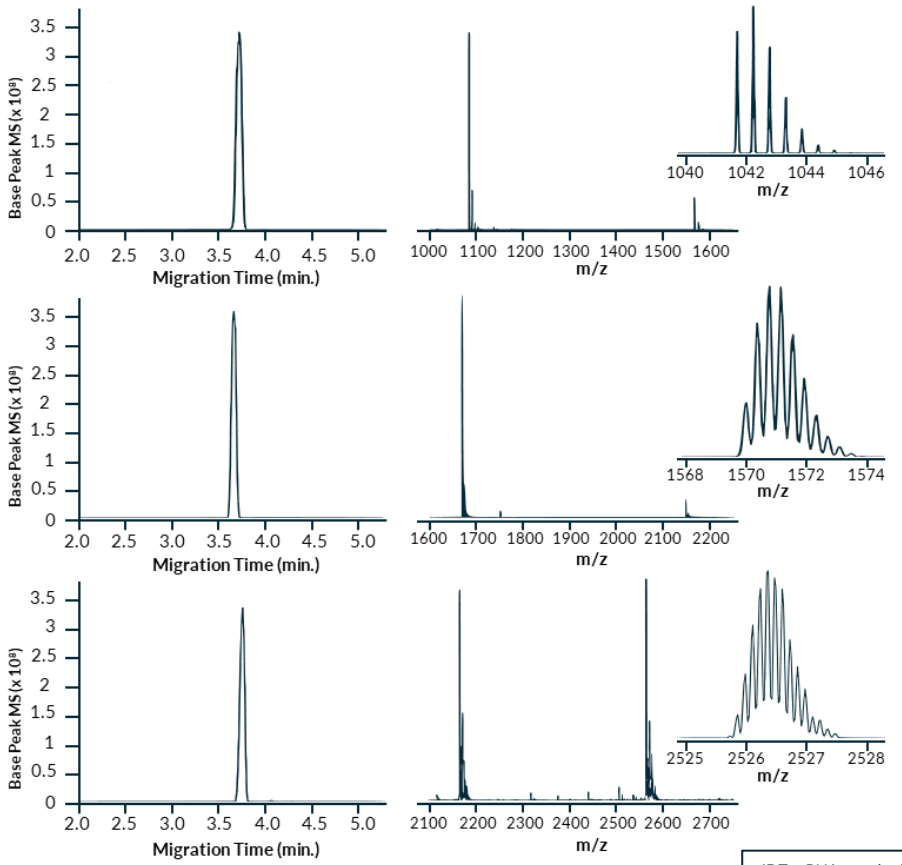
Oligonucleotide MS Analysis with no ion-pairing reagents!

Hassle-free molecular weight confirmation of oligos up to ~60-80 nucleotides long. No need for a dedicated MS system, or extensive cleaning post-oligo analysis since ion-pairing reagents are NOT needed.

10 mer

20 mer

40 mer



IDT ssRNA standards 1 µM

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* *Adapted from: Dykstra et al. Journal of the American Society for Mass Spectrometry – March 2021*

** *Adapted from: Cao et al. CASSS Poster– 2019*

VERSATILE PLATFORM FOR BIOPHARMA APPLICATIONS

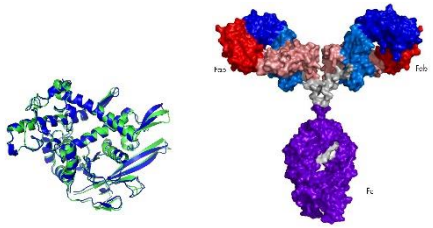
CDC — *Clin. Chem.* **2021**

Small molecules

AMGEN — *J. Am. Soc. Mass Spectrom.* **2021**

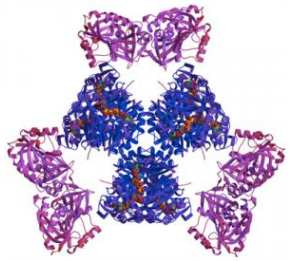
Peptides

REGENERON — *J. Pharm. Sciences* **2024**



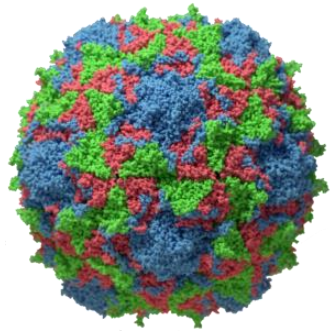
Intact Proteins & mAbs

Genentech — *Anal. Chem.* **2022**



Protein Complexes/Assemblies

nibrt — *ChemRxiv.* ***2023***

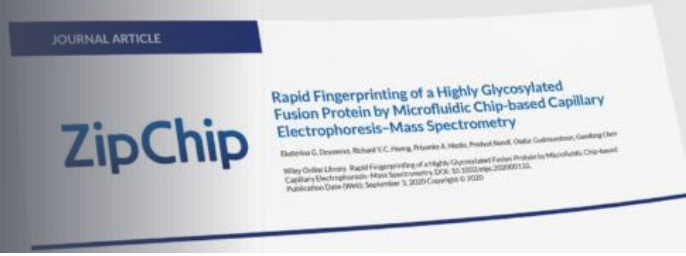


Virus

Increasing size/complexity

ZipChip's charge-based separation and free-in-solution migration are well suited to many different analytes.

CE PHARM 2024
POSTERS



Accurate measurement of glycation and glycoform distribution of mAbs using ZipChip Charge Variant Analysis

Hampus Engstroem[1], Scott Mellors[2], Erin Redman[2]
[1] 908 Devices Inc., Boston, MA, USA. [2] 908 Devices Inc., Morrisville, NC, USA

Characterization of spent growth media and intracellular metabolites of CHO cells using a turnkey microchip CE-HRMS based workflow

Erin Redman[1], Awab Nehela[2], Stephanie Klaubert[2], Milla Neffling[2], Will Thompson[1]
[1] 908 Devices Inc., Morrisville, NC, USA. [2] 908 Devices Inc., Boston, MA, USA.

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