



High estimation accuracy for a wide range of proteins including β -structure-rich -proteins such as antibodies.



Providing eight types of secondary structure information



We also offer CFR version that complies with the data management standards of 21 CFR Part 11.

Secondary structure

Helix 1 – regular α -helix

The middle part of α -helices

Helix 2 – distorted α -helix

2-2 residues at the ends of α -helices

Anti 1 – left-twisted β -strand

Left-hand twisted antiparallel β -sheet

Anti 2 – relaxed β -strand

Relaxed (slightly right-hand twisted) antiparallel β -sheet

Anti 3 – right-twisted β -strand

Right-hand twisted antiparallel β -sheet

Parallel β -strand

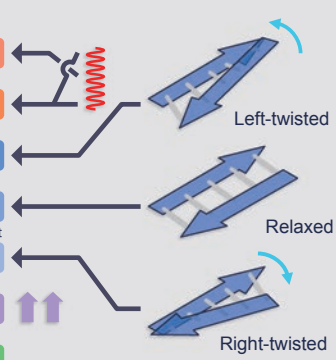
Parallel β -sheet

Turn

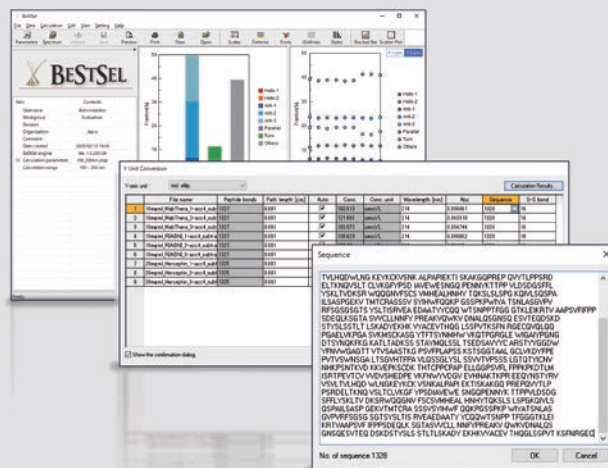
Turn, as defined by DSSP

Others

3₁₀-helix, π -helix, β -bridge, bend, loop/irregular and invisible regions of the structure



Secondary structure information obtained by BeStSel algorithm



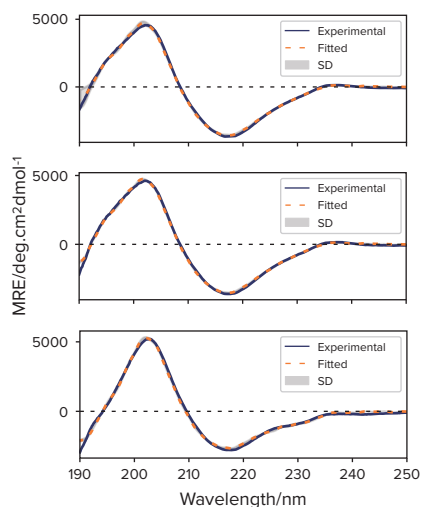
Automatic Y-axis conversion and concentration calculation by amino acid sequence and absorbance

APPLICATION

Secondary structure prediction of therapeutic antibodies

CD spectra of antibodies

Secondary structure prediction



MABTHRA

(F. Hoffmann-La Roche AG)

NRMSD = 0.02

RIABNI

(Amgen Inc.)

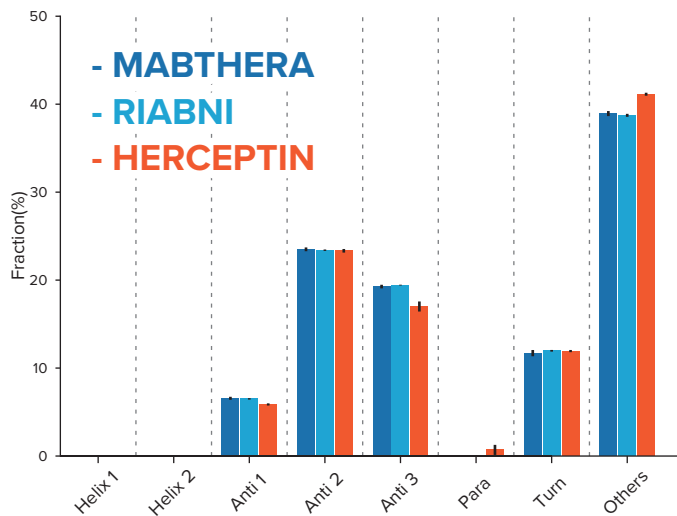
NRMSD = 0.01

HERCEPTIN*

NRMSD = 0.02



* HERCEPTIN is a trademark of Genentech, Inc.



This program utilizes 'BeStSel engine', which is an algorithm developed by Dr. József Kardos and Dr. András Micsonai, et. al. at ELTE (Eötvös Loránd University, Hungary).



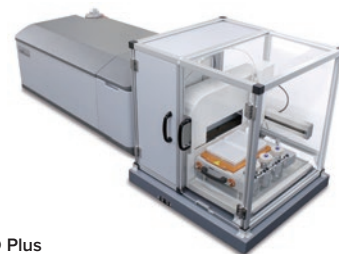
ELTE EÖTVÖS LORÁND UNIVERSITY

Evaluation of the Structural Stability of Antibody Drugs

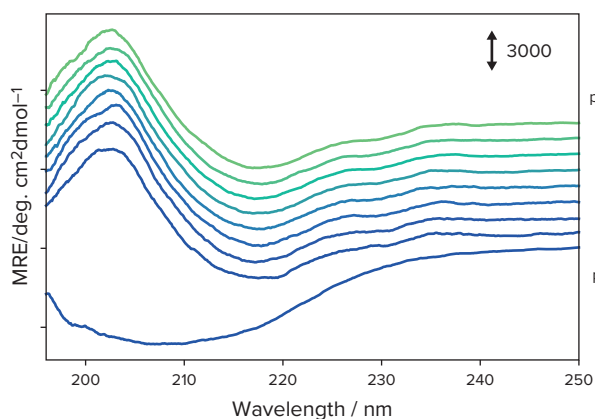
Here, we report the results of a comprehensive analysis of the secondary structure of antibody drugs under various pH conditions utilizing a seamless workflow that combines the automated CD/Absorbance(Abs)/Fluorescence(FL) measurement system HTCD Plus and Spectra Manager BeStSel.

Results of SSE showed that both Herceptin and RIABNI retained their secondary structure down to pH 3, but the ratio of Helix, β -strand, and Others changed significantly at pH 2.

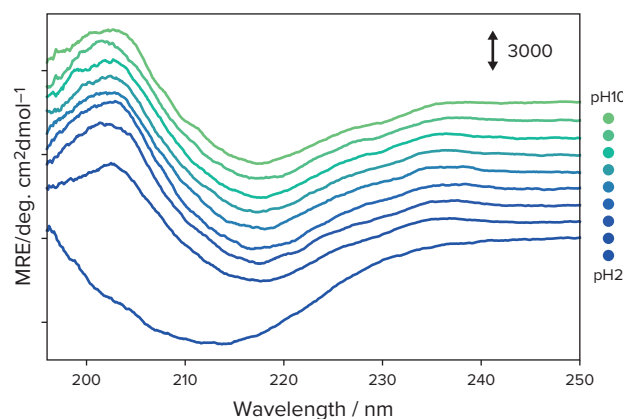
Spectra Manager BeStSel is a powerful tool for structural analysis of a wide range of proteins, including antibody drugs.



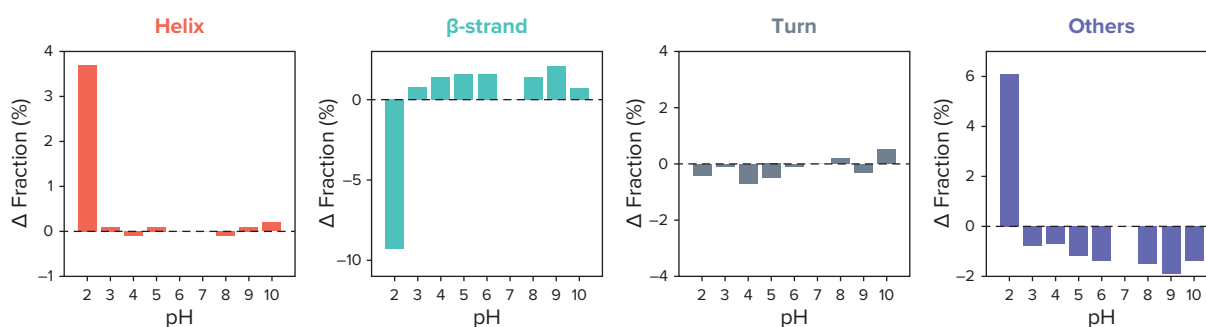
HTCD Plus
High-Throughput Circular Dichroism Measurement System



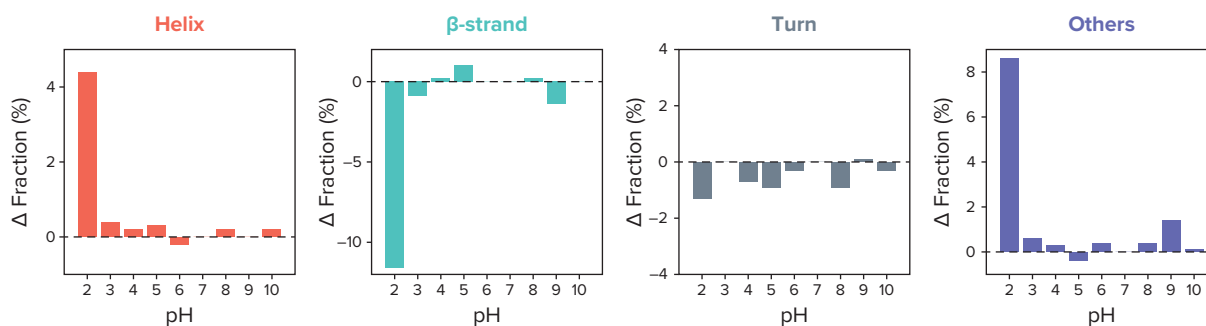
CD spectrum of Trastuzumab



CD spectrum of Rituximab



Secondary structure analysis results of Trastuzumab



Secondary structure analysis results of Rituximab

The contents of this material are for reference and illustrative purposes only. Information, descriptions, and specifications in this publication are subject to change without notice. JASCO assumes no responsibility and will not be liable for any errors or omissions contained herein or for incidental, consequential damages or losses in connection with the furnishing, performance or use of this material.



JASCO CORPORATION

2967-5, Ishikawa-machi, Hachioji-shi, Tokyo 192-8537 Japan

Tel: +81-42-649-5177 Fax: +81-42-646-4515

Web: www.jasco-global.com



Products described herein are designed and manufactured by ISO-9001 and ISO-14001 certified JASCO Corporation