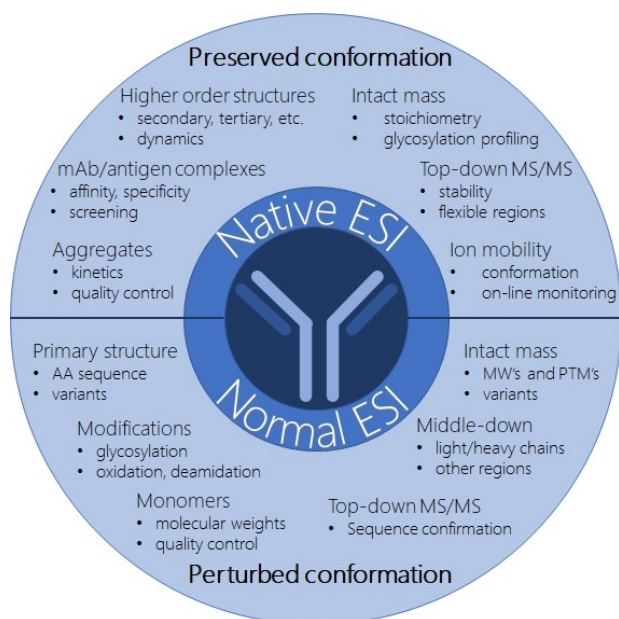


## NativeQE — Product Data Sheet

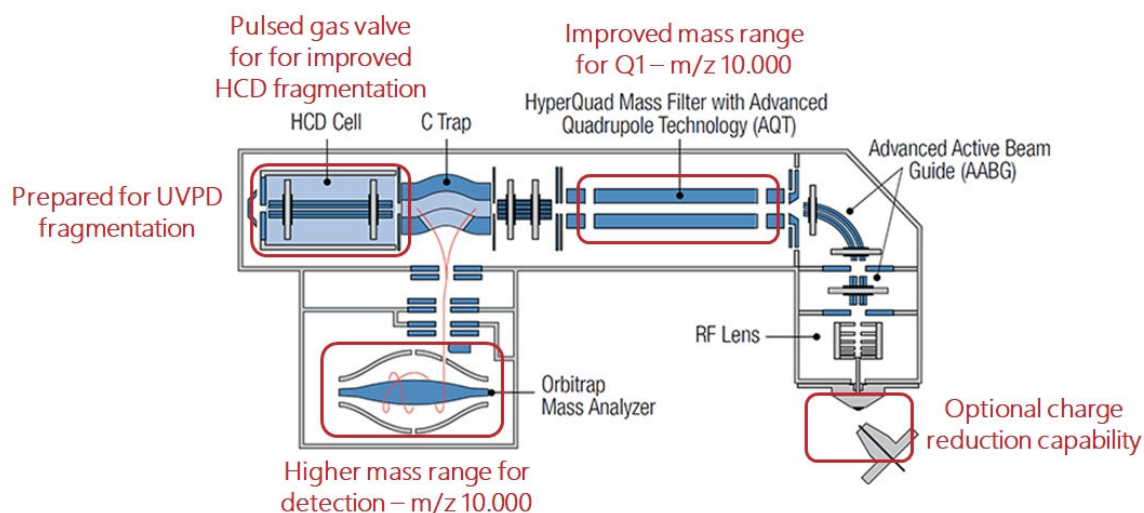


Since 20 years, MS Vision develops and markets technology for high mass and native mass spectrometry applications. The NativeQE has been developed and optimized to support all kinds of biopharmaceutical and biologic analyses on orbitrap detector based instruments.

Whether you need to look at peptides, denatured proteins or protein-complexes — the NativeQE will be your workhorse extending the proven performance of QExactive plus.

Being available as a complete instrument or as a cost-effective on-site upgrade for your existing system — NativeQE provides you with the capabilities you need for full characterization of your biologics significantly beyond the original performance.

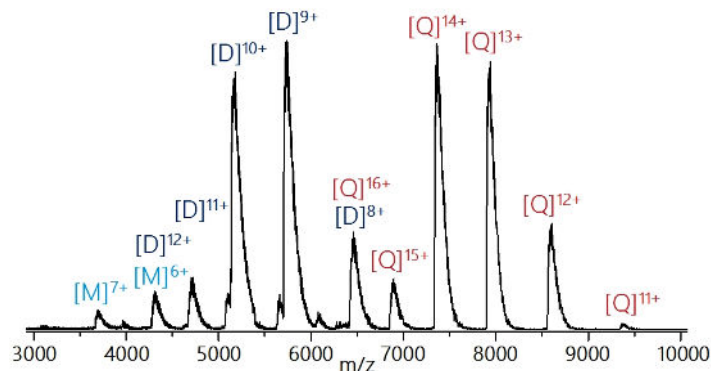
The NativeQE is based on ThermoFischers proven QExactive technology and can be upgraded from QExactive plus. The upgrade comprises modifications in the quadrupole for improved precursor ion selection up to 10.000 m/z, an increased detection mass range in the orbitrap detector up to 1X.000 m/z, improved gas control in the HCD cell for better fragmentation without compromising orbitrap detection as well as an optional charge reduction device to chemically control precursor charge states. These modification have been implemented with one goal in mind: to optimize the system for biologics analysis. Don't compromise!



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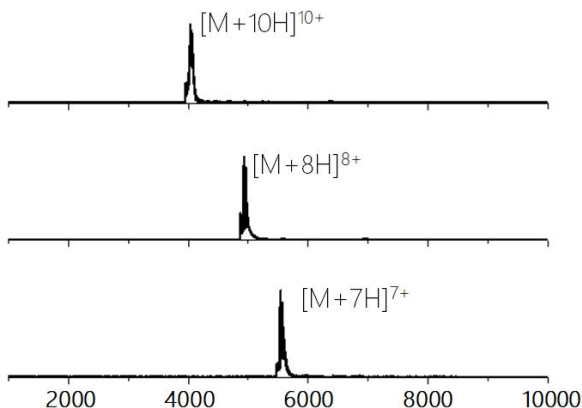
Getting the full picture in biologics characterization is critical. With a mass range of up to  $m/z$  10,000, the MS Vision NativeQE provides sufficient mass range for detection of monoclonal antibodies even under native conditions as well as of non-covalent complexes.

A MS Vision modified quadrupole allows for higher mass selection of precursor ions for fragmentation. This is critical for antibodies in denatured and native mass spectrometry as typically antibody signals appear beyond  $m/z$  2,500.



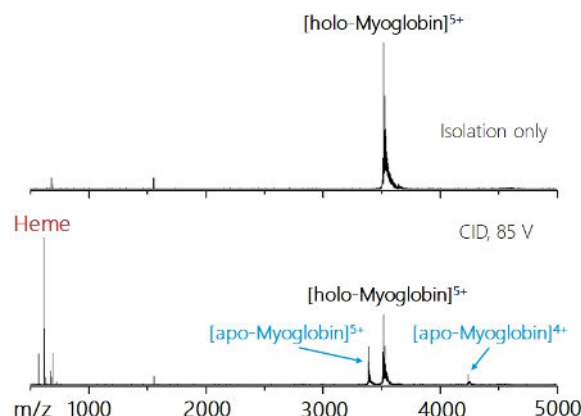
The higher mass quadrupole also improves transmission performance for higher masses in general. This provides you with sufficient sensitivity to detect also less abundant isoforms.

The optional charge reduction allows to move charge states from low  $m/z$  values to higher values. This increases the distance between charge states and simplifies deconvolution and also selection of specific isoforms or charge states.



The soft selection and transmission of the MS Vision quadrupole also ensures the preservation of non-covalent interactions for native mass spectrometry.

The example of Myoglobin shows the isolation of the 5+ charge state of the fragile holo-Myoglobin complex. Without additional activation, no fragmentation at all is observed, by switching on activation and providing higher energy the Myoglobin readily loses the heme group to form the apo-Myoglobin.



The MS Vision NativeQE is available as a complete instrument or as on-site upgrade on your existing QExactive plus system. MS Vision provides full, ISO-certified warranty and service for these upgraded systems.

	TMO QEx plus / HF	MS Vision NativeQE	TMO QEx UHRM	TMO Ascend
Resolution	240,000 @ $m/z$ 200	240,000 @ $m/z$ 200	200,000 @ $m/z$ 400	480,000 @ $m/z$ 200
Detection mass range	50-6,000	50-10,000	350-80,000	50-16,000
Q-selection mass range	2,500	10,000	25,000	8,000
Collision gases for HCD	N <sub>2</sub>	N <sub>2</sub> , Ar, Xe, SF <sub>6</sub>	N <sub>2</sub> , SF <sub>6</sub>	N <sub>2</sub>
Fragmentation options	HCD	HCD, UVPD	HCD	HCD, ETD, UVPD
Charge reduction available	No	Yes	No	Yes
Speed	12 Hz	12 Hz	12 Hz	45 Hz @ R=7.500
Pulsed gas valve for HCD	No	Yes	No	No

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