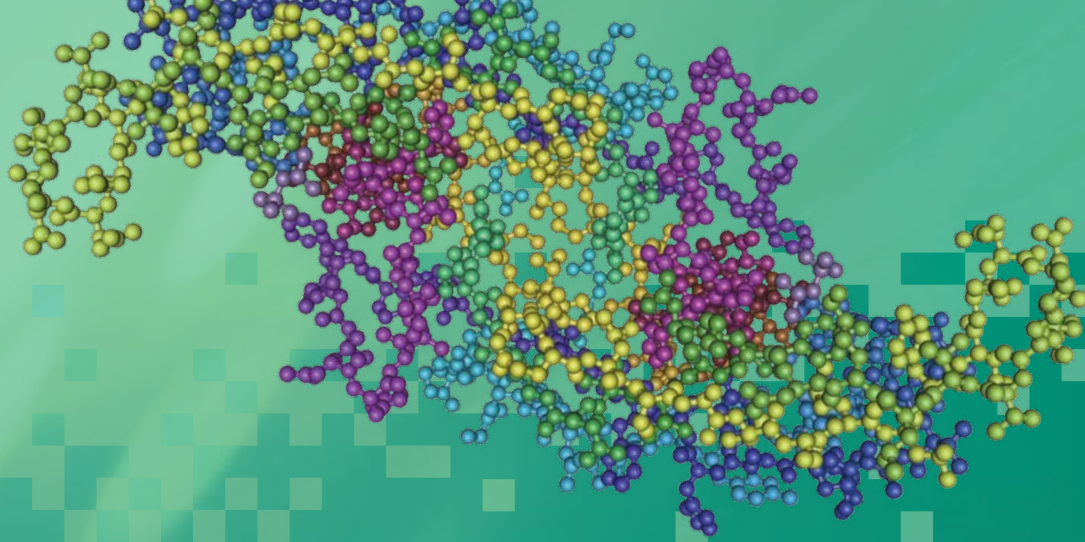


# ProteinWorks

TAKE THE COMPLEXITY OUT OF  
LARGE MOLECULE QUANTIFICATION

Waters

THE SCIENCE OF WHAT'S POSSIBLE.®



As the therapeutic and research landscape changes from small molecule to large molecule analysis, bioanalytical laboratories seek tools that equip them with a competitive advantage.

ProteinWorks™ Sample Preparation Kits, combined with robust and reliable LC-MS methods and instrumentation, allow Discovery and Early Development laboratories to achieve standardized, reproducible, and sensitive protein quantification via the surrogate peptide approach.

ProteinWorks, unmatched in performance and flexibility, includes eXpress Digest Kits for fast, reproducible protein digestion, a mAb system check and training standard, and a  $\mu$ Elution SPE kit for post-digestion clean up.

ProteinWorks pre-measured, lot-traceable reagents and standardized protocols provide the bioanalyst with a streamlined approach for the accurate, precise, and sensitive LC-MS quantification of proteins in plasma and serum.



■ SENSITIVE

REPRODUCIBLE ■



STANDARDIZED ■

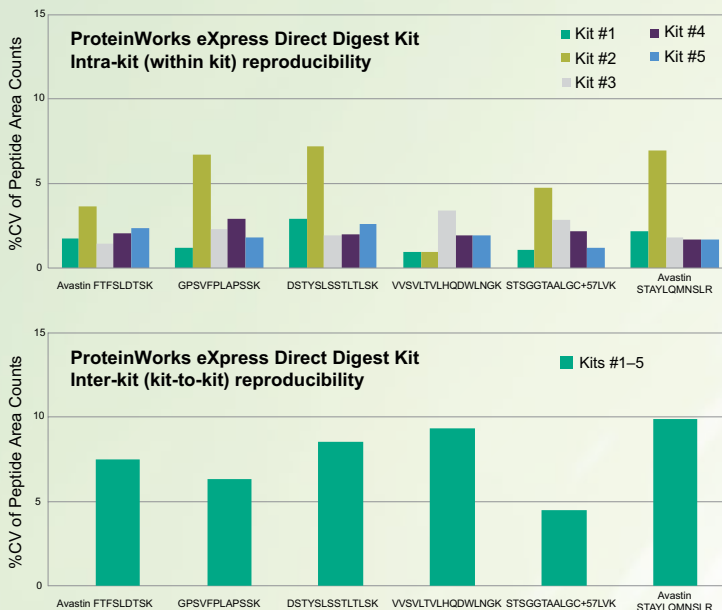
■ FLEXIBLE

## REPRODUCIBLE

Protein quantification workflows are prone to high variability due to their complex, multi-segment nature. Assays are expected to meet acceptable accuracy and precision guidelines while providing reliable, reproducible results to make critical research decisions.

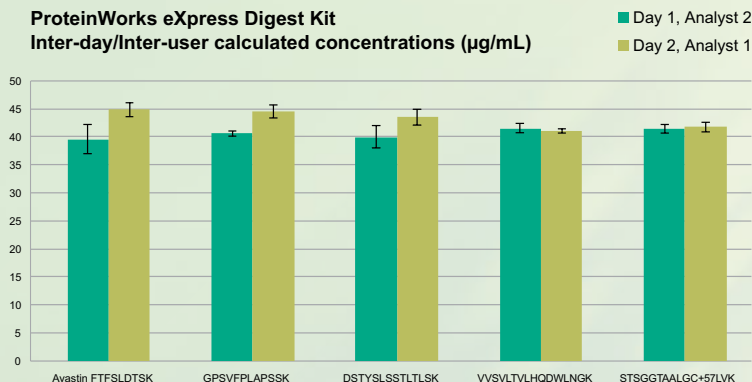
ProteinWorks eXpress Digest Kits offer a streamlined, kit-based approach capable of achieving single digit intra-kit and inter-kit reproducibility across several monoclonal antibodies.

*For more information, reference technology brief 720005570EN.*



*Intra and Inter-kit %CVs of raw area counts for unique and generic peptides from bevacizumab. Single digit reproducibility is achieved using the ProteinWorks Direct Digest Kit.*

### ProteinWorks eXpress Digest Kit Inter-day/Inter-user calculated concentrations ( $\mu\text{g/mL}$ )



*Inter-day/inter-user calculated concentrations using the Proteinworks eXpress Digest Kit for unique and generic signature peptides from a 40  $\mu\text{g/mL}$  bevacizumab plasma sample. This data suggests that a high degree of standardization can be achieved across analysts and sites using the ProteinWorks Kit.*

## STANDARDIZED

Bioanalysts face many decisions in the LC-MS quantification workflow. Along with multiple workflow options, sample preparation is one of the greatest sources of variability. This lack of standardization and inherent variability makes reproducible method transfer between analysts and labs challenging.

ProteinWorks kits facilitate laboratory and data consistency with a proven, standardized, kit-based approach that is easily deployable from analyst to analyst, lab to lab, and sponsor to CRO.

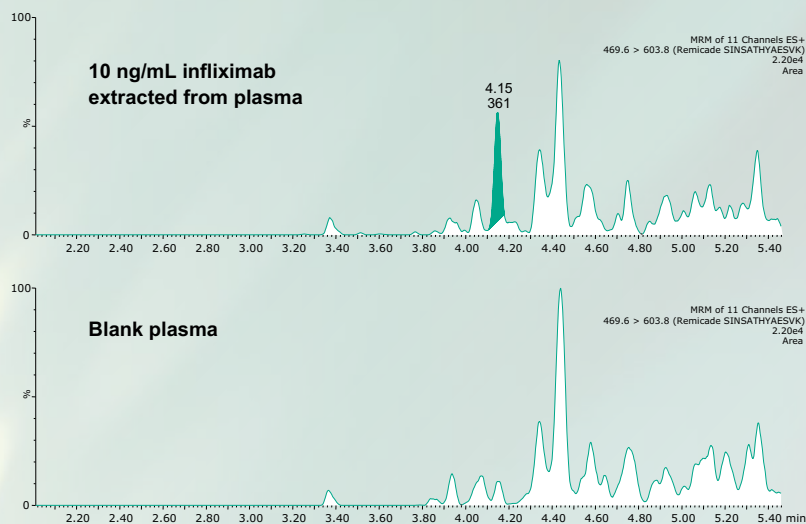
*For more information, reference technology brief 720005570EN.*

## SENSITIVE

Decisions regarding the choice of reagents, their concentrations, as well as time, temperature, and the number of steps, all affect assay sensitivity. Achieving desired detection limits can be challenging.

ProteinWorks offers a universal, kit-based sample preparation method with pre-weighed, lot-traceable reagents, and simple, step-wise instructions allowing rapid quantification of infliximab down to 10 ng/mL.

For more information, reference application note 720005535EN.



Chromatogram showing 10 ng/mL of infliximab in rat plasma, as compared to blank rat plasma. Infliximab is quantified using the unique peptide SINSATHYAESVK.

Protein	Peptide	Linear fit ( $r^2$ ) with 1/x weighting			Mean % accuracy of standard curve points		
		15 $\mu$ L plasma	35 $\mu$ L plasma	70 $\mu$ L plasma	15 $\mu$ L plasma	35 $\mu$ L plasma	70 $\mu$ L plasma
<b>Standard curve range 5.0–50.0 (<math>\mu</math>g/mL)</b>							
Infliximab	SINSATHYAESVK	0.999	0.999	0.997	100.00	99.99	99.99
	DILLTQSPAILSVSPGER	0.999	0.998	0.994	99.99	100.00	100.01
Trastuzumab	FTISADTSK	0.997	0.993	0.998	100.00	100.01	99.99
	DTYIHWVR	0.995	0.995	0.996	100.00	100.02	100.02
	IYPTNGYTR	0.998	0.996	0.991	99.98	99.98	98.79
Bevacizumab	STAYLQMNSLR	0.999	0.998	0.995	100.00	100.01	99.99
	FTFSLDTSK	0.999	0.999	0.993	100.02	100.00	100.00
Adalimumab	APYTFQGQTK	0.994	0.997	0.995	99.99	99.99	99.99
	NYLAWYQQKPGK	0.997	0.998	0.999	99.99	100.02	100.01

Linear dynamic range and standard curve statistics for various plasma digestion volumes, for infliximab, trastuzumab, bevacizumab, and adalimumab. ProteinWorks Direct Digest Kit accommodates a range of sample volumes, delivering accurate results across four different monoclonal antibodies.

## FLEXIBLE

Achieving sensitivity, reproducibility, standardization, and accuracy with enough flexibility to accommodate different LC-MS protein quantification workflows can be challenging.

Without the constraints of competitive kit-based approaches, ProteinWorks is optimized for a variety of different workflows, allowing enough flexibility to deliver optimal results for your assay requirements and analyte of interest.

For more information, reference technology brief 720005575EN.

## Ordering Information

Description	Part No.
<b>ProteinWorks eXpress Digest Kit</b> (for the digestion of immunopurified plasma and serum samples)	176003689
<b>ProteinWorks eXpress Digest Start-Up Kit</b> (eXpress Digest Kit with $\mu$ Elution SPE Clean-Up Kit and Intact mAb Check Standard)	176003696
<b>ProteinWorks eXpress Direct Digest Kit</b> (for the direct digestion of whole, non-immunopurified plasma and serum samples)	176003688
<b>ProteinWorks eXpress Direct Digest Start-Up Kit</b> (eXpress Direct Digest Kit with $\mu$ Elution SPE Clean-Up Kit and Intact mAb Check Standard)	176003695
<b>ProteinWorks <math>\mu</math>Elution SPE Clean-Up Kit</b> (for post-digestion clean-up and sample concentration at the peptide level)	186008304
<b>Intact mAb Check Standard</b>	186006552
<b>Modular Heat Block for 1 mL Tubes</b>	186007985
<b>ACQUITY UPLC<sup>®</sup> Peptide BEH C<sub>18</sub>, 300Å, 1.7 <math>\mu</math>m, 2.1 x 150 mm</b>	186003687
<b>96-well Sample Collection Plate, 700 <math>\mu</math>L Round Well</b>	186005837
<b>Polypropylene Cap Mat, Round Well</b>	186002483
<b>96-well Extraction Plate Vacuum Manifold</b>	186001831
<b>Positive Pressure 96-Processor</b>	186006961

[www.waters.com/proteinworks](http://www.waters.com/proteinworks)

For your local sales office, please visit [www.waters.com/contact](http://www.waters.com/contact)

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