Product information   PolyQuant Cov-MS

Introduction

PolyQuant's **PQ-Cov-MS** peptide standard facilitates diagnosis of SARS-CoV-2 infection in gargle solution or nasopharyngeal swabs with high accuracy and sensitivity through mass spectrometry (*Cov-MS: a community-based template assay for clinical MS-based protein detection in SARS-CoV-2 patients*, Van Puyvelde et al., 2020).

The **PQ-Cov-MS** peptide standard is based on PolyQuant's proprietary QconCAT technology, providing 17 validated peptides as unlabelled or as heavy isotope labelled artificial protein to be released by protease treatment with trypsin during sample preparation.

PQ-Cov-MS protein information

The 79.41 kDa synthetic protein comprises peptides for the spike protein and the highly expressed nuclear capsid protein (NCAP) that are unique for SARS-CoV-2 and peptides that are also present in SARS-CoV, coronaviridae and their lowest common ancestor (LCA). Additionally, the synthetic protein comprises control peptides for histone H2A, H2B, H3 and H4 to determine sample quality and synthetic peptides for workflow calibration and standardisation (complementing product: RePLiCal, PQ-CS-1561).

PolyQuant's **PQ-CoV-MS** peptide standard is available as unlabelled and as ^{15}N heavy isotope labelled purified protein.

Recommendations for use

Optimal amount of QconCAT per patient sample is depending on instrumentation and workflow setup. For initial analysis we suggest to use 10 ng of QconCAT per sample. Please make sure to detect more than one transition with a sufficient signal-to-noise ratio to enable automated peak picking.

A Skyline-file comprising the peptides that are included in PQ-Cov-MS is available for download.

Technical details

Peptide list

Sequence	Protein	Information	Category
GSMGTK		Start peptide	
GAIETEPAVK		RePLiCal (workflow calibration/standardisation)	Control
GWIFGTTLDSK	Spike	Reference peptide/quantitative	SARS-CoV-2
AMGIMNSFVNDIFER	H2B	Reference peptide/sample quality	Control
AGLQFPVGR	H2A	Reference peptide/sample quality	Control
RSFIEDLLFNK	Spike	Reference peptide/qualitative analysis	Coronaviridae
EDLKFPR	NCAP	Reference peptide/qualitative analysis	SARS-CoV-2
GQGVPINTNSSPDDQIGYYR	NCAP	Reference peptide/qualitative analysis	SARS-CoV-2
DGIIWVATEGALNTPK	NCAP	Reference peptide/quantitative	SARS-CoV-2
NPANNAAIVLQLPQGTTLPK	NCAP	Reference peptide/quantitative	SARS-CoV
MAGNGGDAALALLLLDR	NCAP	Reference peptide/qualitative analysis	SARS-CoV-2
LNQLESK	NCAP	Reference peptide/quantitative	LCA
GQQQQGQTVTK	NCAP	Reference peptide/qualitative analysis	Coronaviridae
AYNVTQAFGR	NCAP	Reference peptide/qualitative analysis	Coronaviridae
RGPEQTQGNFGDQELIR	NCAP	Reference peptide/qualitative analysis	Coronaviridae
HWPQIAQFAPSASAFFGMSR	NCAP	Reference peptide/qualitative analysis	Coronaviridae
IGMEVTPSGTWLTYTGAIK	NCAP	Reference peptide/qualitative analysis	SARS-CoV-2
DQVILLNK	NCAP	Reference peptide/qualitative analysis	LCA
ADETQALPQR	NCAP	Reference peptide/qualitative analysis	SARS-CoV-2
KQQTVTLLPAADLDDFSK	NCAP	Reference peptide/qualitative analysis	SARS-CoV-2
TVTAMDVVYALK	H4	Reference peptide/sample quality	Control
SSYVGDEASSK		RePLiCal (workflow calibration/standardisation)	Control
STELLIR	H3	Reference peptide/sample quality	Control
IVPEPQPK		RePLiCal (workflow calibration/standardisation)	Control
LAAALEHHHHHH		Purification tag	