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Product Information

SILu™Mab K4 - Stable Isotope Labeled Universal Monoclonal Antibody Standard
recombinant, expressed in CHO cells

Catalog Number **MSQC7**
Storage Temperature –20 °C

Product Description

SILu™Mab K4 is a recombinant, stable isotope-labeled, human monoclonal antibody which incorporates [$^{13}C_6$, $^{15}N_4$]-Arginine and [$^{13}C_6$, $^{15}N_2$]-Lysine. Expressed in CHO cells, SILuMab K4 is designed to be used as a universal internal standard for bioanalysis of monoclonal antibodies as well as Fc-fusion therapeutics in animal pharmacokinetics (PK) studies.[1,2] Because of overlap with common sequences in the Fc region with candidate antibodies, SILuMab K4 provides universal utility, and thus, eliminates the need to produce candidate-specific internal standards.

SILuMab K4 is an IgG4 antibody with a kappa light chain, but contains peptide sequences common to other IgG isotypes. The heavy chain of SILuMab K4 contains a structure-stabilizing serine-to-proline substitution at residue 229.[3] Recommended surrogate peptide sequences are indicated in Table 1. Suggested MRM parameters are available for download in several formats on the product display page at www.sigmaaldrich.com.

The peptide sequences have been evaluated by *In silico* comparison to protein sequences of commonly used preclinical animal species, including rat, mouse, dog, and cynomolgus and rhesus monkeys. The resulting sequence matches are annotated in Table 1.

Each vial of SILuMab K4 contains the labeled antibody lyophilized from a solution of phosphate buffered saline. Vial content was determined by measuring A_{280} and using an extinction coefficient ($E^{0.1\%}$) of 1.4.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Sequence Information

SILuMab K4 Heavy Chain:

EVQLVESGGGLVQPGGSLRLSCVASGFTLNNYDMHWVRQGI
GKGLEWVSKIGTAGDRYYAGSVKGRFTISRENAKDSLYLQM
NSLRVGDAAVYYCARGAGRWAPLGAFDIWGQGTMVTVSSAS
TKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNS
GALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTKTYTCN
VDHKPSNTKVDKRVESK**YGPPCPPCPAPEFLGGPSVFLFPP**
KPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHN
AKTKPREEQFNSTYR**VVSVLTVLHQDWLNGK**EYKCKVSNKG
LPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCL
VK**GFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSR**
LTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLSLG

SILuMab K4 Light Chain:

QSALTQPRSVSGSPGQSVTISCTGTSSDIGGYNFVSWYQQH
PGKAPKLMIYDATKRPSGVPDRFSGSKSGNTASLTISGLQA
EDEADYYCCSYAGDYTPGVVFGGGTKLTVLTVAAPSVFIFP
PSDEQLK**SGTASVVCLLNNFYPR**EAKVQWK**VDNALQSGNSQ**
ESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGL
SSPVTKSFNRGEC

Preparation Instructions

SILuMab K4 recovery is maximized when 0.1% formic acid is used for reconstitution of the lyophilized product. Reconstitution with other solvents may reduce recovery. Do not freeze after reconstitution.

1. Briefly centrifuge the vial at ~10,000 × *g* to collect the product at the bottom of the vial.
2. Add 500 µL of ultrapure water containing 0.1% formic acid to the vial.
3. Mix the contents by gently inverting the vial a minimum of 5 times.
4. Allow the vial to stand at room temperature for at least 15 minutes and repeat mixing by inversion.

Storage/Stability

Store the lyophilized product at –20 °C.

References

1. Furlong, M.T. *et al*., Biomed. Chromatogr., **26**(8), 1024-1032 (2012).
2. Furlong, M.T., and Xu, W., Bioanalysis, **6**, 1747–1758 (2014).
3. Angal, S. *et al*., Mol. Immunol., **30**(1), 105-108 (1993).

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Table 1.
Recommended Universal Peptide Sequences Liberated from SILuMab K4 Tryptic Digest

Universal Peptide Sequence	Location	Isotype Overlap	Species Homology
YGPPCP**P**CPAPEFLGGPSVFLFPPKPK	Heavy Chain	IgG4 Stabilized	NA
TTPPVLDSDGSFFLYSR	Heavy Chain	IgG4	NA
VVSVLTVLHQDWLNGK	Heavy Chain	IgG1, IgG3, IgG4	NA
GFYPSDIAVEWESNGQPENNYK	Heavy Chain	IgG1, IgG4	NA
SGTASVVCLLNNFYPR	Light Chain	Kappa	NA
VDNALQSGNSQESVTEQDSK	Light Chain	Kappa	NA
DSTYSLSSTLTLSK	Light Chain	Kappa	NA