

PD-1 recAb (RMP1-14), mIgG2a κ , LALA-PG, InVivoPure+

Endotoxin level ≤ 1 EU/mg

Description:

PD-1 is expressed on the surface of activated T cells, B cells and myeloid cells. Blocking PD-1/PD-L1 interaction promotes immune response against tumor cells [1]. RMP1-14 is a monoclonal antibody that targets the murine PD-1 protein [2] and has been used extensively to probe the effects of PD-1 inhibition in preclinical murine models [3].

The present PD-1 recAb (RMP1-14) LALA-PG variant is based on the rat anti mouse PD-1 monoclonal antibody, clone RMP1-14 [PD-1 mAb (RMP1-14), InVivo Pure/+ ([AK3615P/AK3615P+](#))]. This initial antibody is of rat IgG2a isotype. The present PD-1 recAb (RMP1-14) LALA-PG antibody is designed as a chimeric antibody with modified mouse IgG2a kappa isotype. The antibody backbone (Fc) is modified to minimize unwanted immune responses and off-target effects *in vivo*. The antibody backbone is engineered with three point mutations in the Fc-region of the heavy chain: L234A / L235A / P329G = LALA-PG, according to Eu numbering convention). These mutations significantly reduce the binding of the antibody's Fc region to Fc gamma receptors (Fc γ Rs) and reduces Fc-mediated toxicity in therapeutic / *in vivo* application [4][5].

The recombinant antibody is produced exclusively under serum-free (chemically defined, animal component free) conditions in human embryonic kidney (HEK) cells and purified with Protein-A or Protein-G affinity chromatography.

Product-ID:	RP_SZ_1013P+
Clone:	RMP1-14 mIgG2a κ LALA-PG
Immunogen:	Mouse PD-1 transfected BHK cells
Expression:	Mammalian; HEK
Isotype:	Mouse IgG2a κ
Formulation:	Clear Liquid, PBS, pH 7.4, 0.2 μ m sterile filtered
Concentration:	≥ 1.00 mg/mL
Purity:	≥ 95 % (CGE, reducing conditions) ≤ 5 % aggregates (analytical SEC)
Endotoxin:	≤ 1 EU/mg (LAL test)
Storage:	2 - 8 °C
Recommended Isotype Control:	Mouse IgG2a κ Isotype Control (AK3399P+)
Reported Application:	<i>in vivo</i> ; WB; Flow Cytometry; Fn

The product is for research use only and not for use in diagnostic or therapeutic procedures.

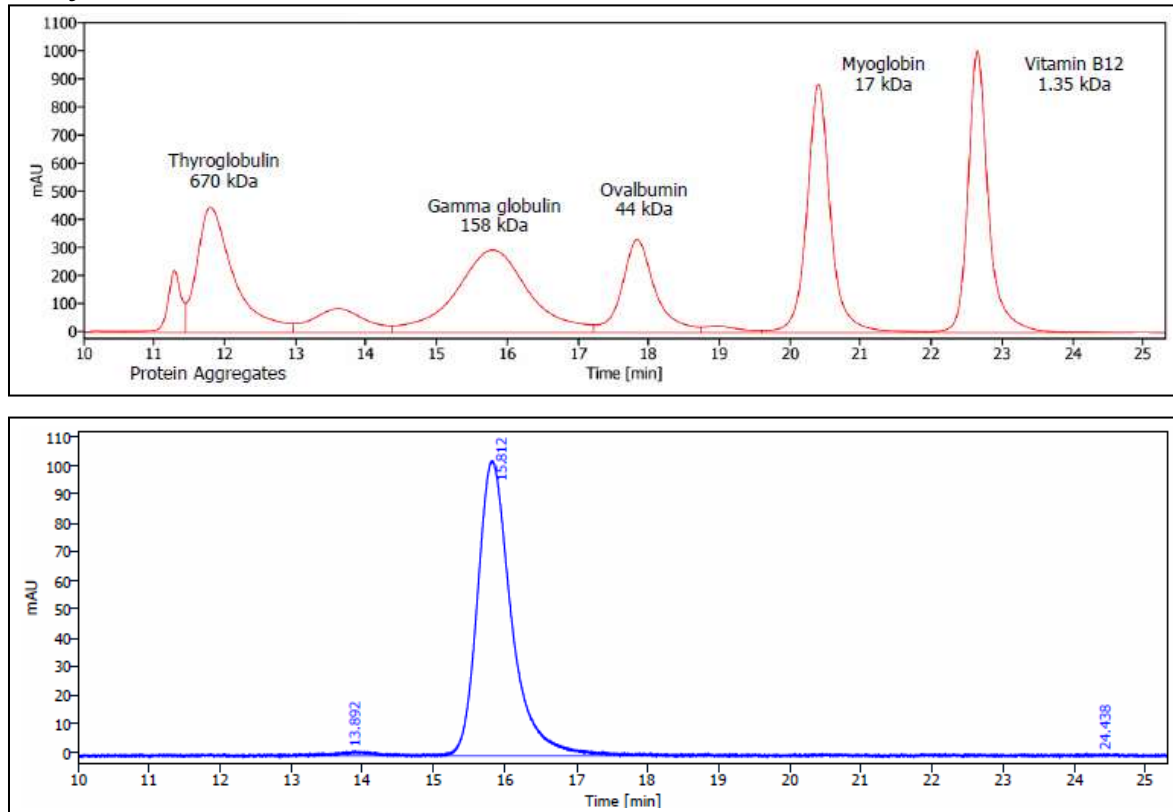
InVivo BioTech Services GmbH is certified to [ISO 9001](#) and [ISO 13485](#).

Literature:

- [1] Timilsina HP, Arya SP, Tan X. Biotechnological Advances Utilizing Aptamers and Peptides Refining PD-L1 Targeting. *Front Biosci (Elite Ed)*. 2024 Sep 19;16(3):28. doi: 10.31083/j.fbe1603028. PMID: 39344385.
- [2] Seo SK, Jeong HY, Park SG, Lee SW, Choi IW, Chen L, Choi I. Blockade of endogenous B7-H1 suppresses antibacterial protection after primary *Listeria monocytogenes* infection. *Immunology*. 2008 Jan;123(1):90-9. doi: 10.1111/j.1365-2567.2007.02708.x. Epub 2007 Oct 25. PMID: 17971153; PMCID: PMC2433284.
- [3] Agrawal K, Hill RC, Wilkinson BL, Allison PB, Thomas CE. Quantification of the anti-murine PD-1 monoclonal antibody RMP1-14 in BALB/c mouse plasma by liquid chromatography-tandem mass spectrometry and application to a pharmacokinetic study. *Anal Bioanal Chem*. 2020 Jan;412(3):739-752. doi: 10.1007/s00216019-02292-1. Epub 2019 Dec 12. PMID: 31832706.
- [4] Wilkinson I, Anderson S, Fry J, Julien LA, Neville D, Qureshi O, Watts G, Hale G. Fc-engineered antibodies with immune effector functions completely abolished. *PLoS One*. 2021 Dec 21;16(12):e0260954. doi: 10.1371/journal.pone.0260954. PMID: 34932587; PMCID: PMC8691596.
- [5] Schlothauer T, Herter S, Koller CF, Grau-Richards S, Steinhart V, Spick C, Kubbies M, Klein C, Umaña P, Mössner E. Novel human IgG1 and IgG4 Fc-engineered antibodies with completely abolished immune effector functions. *Protein Eng Des Sel*. 2016 Oct;29(10):457-466. doi: 10.1093/protein/gzw040. Epub 2016 Aug 29. PMID: 27578889.

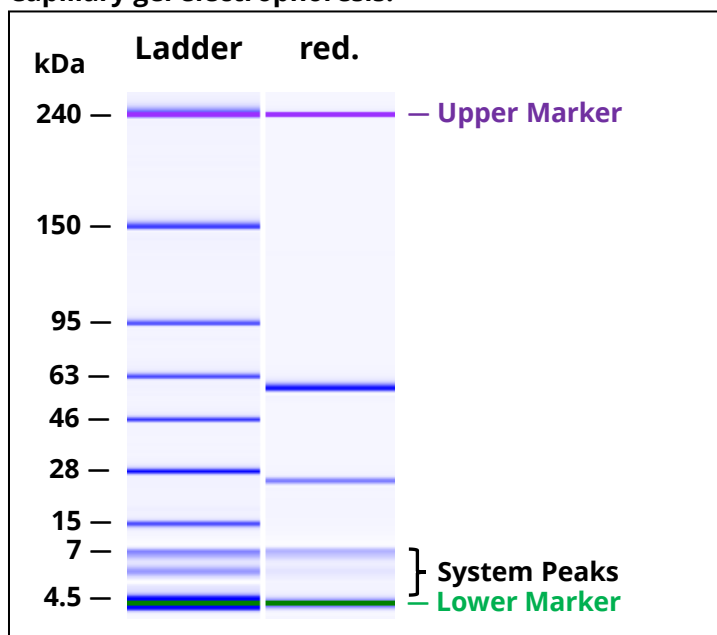
PD-1 recAb (RMP1-14), mIgG2a κ , LALA-PG, InVivoPure+ — Supplementary Data

Analytical SEC:



Analytical SEC of purified protein (blue) in comparison with gel filtration standard (red).

Capillary gel electrophoresis:



CGE of the purified protein under reducing (red.) conditions.