

# Purified *in vivo* Grade Antibodies

Meeting your *in vivo* and *in vitro* low endotoxin needs

## ***In vivo* GOLD™ and PLATINUM™ functional-grade antibodies and isotype controls**

*In vivo* grade antibodies have a variety of uses in biological research, from discovery of cell signaling pathways to manipulation of biological systems in animal models for pre-clinical studies. *In vivo* functional grade antibodies from Leinco Technologies have the highest purity standards in the industry, with low endotoxin levels, and screening to ensure low aggregates. These antibodies are produced in our cGMP and ISO 9001:2015 / ISO 13485:2016 certified facility and are available in custom concentrations and package sizes. *In vivo* PLATINUM antibodies are also suitable for animal injection as they are pathogen free as determined by the IDEXX Impact I PCR mouse pathogen profile (see table below).

Specifications	<i>in vivo</i> GOLD™ Mabs	<i>in vivo</i> PLATINUM™ Mabs
Binding validation determined by WB, FC or ELISA	Yes	Yes
Endotoxin level determined by the LAL method	≤ 1.0 EU/mg	≤ 0.5 EU/mg
Antibody aggregation screening by analytical SEC	≥ 95% monomer	≥ 98% monomer
Purity by SDS Page	≥ 95%	≥ 98%
Formulation for <i>in vivo</i> use	No preservatives No stabilizers No carrier proteins Sterile PBS pH 7.2 - No K <sup>+</sup> or CA <sup>2+</sup> Concentration: > 5mg/mL	No preservatives No stabilizers No carrier proteins Sterile PBS pH 7.2 - No K <sup>+</sup> or CA <sup>2+</sup> Concentration: > 5mg/mL
Murine pathogen screening	Not applicable, see PLATINUM functional grade antibodies	Pathogen tested (IMPACT1) (see table)
Applications	<i>In vivo</i> functional studies and may be used for studies, as well as WB, FC, IF or IHC	
Product preparation	Functional grade preclinical antibodies are manufactured in an animal free facility using only <i>in vitro</i> protein free cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.	
Storage and handling	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 1 month, 2 to 8 °C under sterile conditions, as supplied.</li> <li>• 12 months, -70 °C under sterile conditions.</li> </ul>	

### IDEXX IMPACT I (PCR-based) Mouse Pathogen Profile

Mycoplasma sp.	Mouse adenovirus 1 (MAV1)	Lactate dehydrogenase-elevating virus (LDEV)
Mycoplasma pulmonis	Mouse adenovirus 2 (MAV2)	Lymphocytic choriomeningitis virus (LCMV)
Sendai virus	Murine norovirus (MNV)	Hantaan Virus
Mouse hepatitis virus (MHV)	Reovirus 3 (REO3)	Mouse cytomegalovirus (mCMV)
Pneumonia virus of mice (PVM)	Mouse rotavirus (EDIM)	K virus
Minute virus of mice (MVM)	Ectromelia virus	Mouse thymic virus (MTV)
Mouse parvovirus (MPV)	Polyomavirus	Corynebacterium bovis
Theiler's murine encephalomyelitis (TMEV)	Mouse kidney parvovirus (MKPV)	Corynebacterium sp.

# Lot-to-lot reproducibility of *in vivo* antibodies: RMP1-14

Figure A: Non-reducing

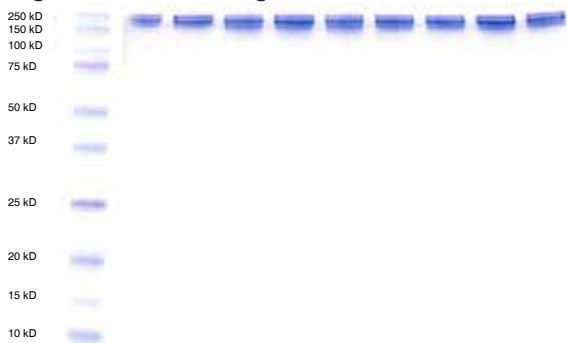


Figure B: Reducing

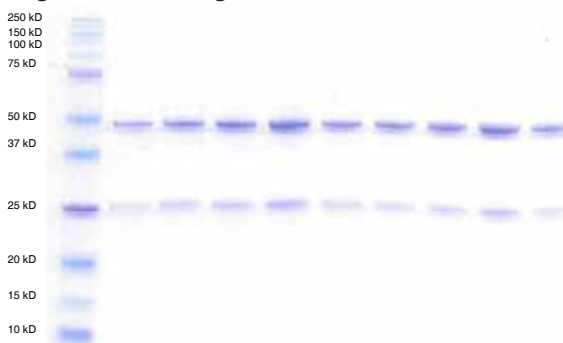
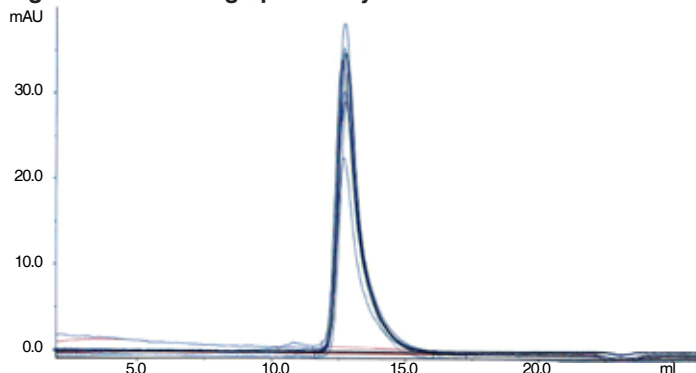


Figure C: Endotoxin analysis

Lot	EU/mg
03211205	<0.24
04211225	<0.24
04211255	<0.24
05211275	<0.06
01221245	<0.24
03221250	<0.24
04221285	<0.12
06221340	<0.3

Figure D: Chromatographic analysis



*In vivo* antibodies from Leinco Technologies are subjected to extensive QC to ensure high reproducibility between lots. These examples show the results for different lots of RMP1-14 antibody, directed against PD-1. The lots have consistently high purity as indicated by non-reducing and reducing SDS-PAGE (Fig. A and B, resp.). Endotoxin data for eight lots indicated that all lots were below the specification of  $\leq 0.5$  EU/mg as determined by the limulus amoebocyte lysate (LAL) method (Fig. C). Analysis by size exclusion chromatography gave superimposing chromatograms for all nine lots, with overlapping retention times and minimal baseline noise (Fig. D).

## Purified Bulk *in vivo* Grade Antibodies

### Isotype Controls

Mouse IgG1	Human IgG1 k	Rat IgG1	Armenian Hamster IgG
Mouse IgG2a k	Human IgG2 k	Rat IgG2a	Syrian Hamster IgG1
Mouse IgG2b	Human IgG3 k	Rat IgG2b	
Mouse IgG3	Human IgG4 k		
Mouse IgM			

Antigen	Reactivity	Clone	Applications
4-1BB (CD137)	Mouse	3H3	Costim
<b>New!</b> 4-1BBL	Mouse	TKS-1	FC
B220 (CD45R)	Mouse	RA3-6B2	Depletion
CD11a	Human	38	FC, IF, IHC-F, IP
CD11a (LFA-1a)	Mouse	FD441.8	N
CD11a (LFA-1a)	Mouse	I21/7	FC, FA
CD11b	Mouse/Human	M1/70	FC, N
CD11b	Human	ICRF44	FC, B, IHC, IF, CyTOF
CD11c	Human	3.9	FC, B, IHC, CyTOF
CD11c	Mouse	N418	FC, IP, IHC, CyTOF
CD1d	Mouse	D5	IP, WB
CD120a (TNFR1)	Mouse	55R-170	FC, B, ELISA, IP
CD120a (TNFR1)	Mouse	55R-593	FC, B, IP
CD122	Mouse	TM-B1	B, Depletion, FC, IP, WB
CD126	Mouse	D7715A7(15A7)	FA, FC, N, WB
CD127	Mouse	A7R34	B, CyTOF, FA, FC, IF Staining, IHC FF, IP, WB
<b>New!</b> CD134	Mouse	OX-86	Act, FC, IHC, WB
CD14	Human	UCHM-1	FC, WB
<b>New!</b> CD151	Human	50-6	B, CyTOF, FC, ICC, WB
CD155 (PVR)	Mouse	4.24	FC
CD16	Human	3G8	B, CyTOF, FC, IHC FF, IP
<b>New!</b> CD16.2 / Fc $\gamma$ RIV	Mouse	9E9	B, FC
CD16/32	Mouse	2.4G2	B
CD172a	Mouse	P84	FC, B IHC FF, IP
CD178 (FasL)	Mouse	MFL3	FC, B IHC FFPE, FA
CD18	Mouse	C71/16	FC
CD19	Mouse	1D3	FC, Depletion, N
CD195	Human	HEK/1/85a/7a	FC, ICC
CD2	Human	G11	FC, Costim, IHC FFPE, WB
CD20	Human/Monkey	2H7	FC, Depletion, IHC FF, IP
<b>New!</b> CD200	Mouse	OX-90	FC, IHC
CD209b (SIGN-R1)	Mouse	22D1	FC, B, IHC FF, WB
CD22	Mouse	Cy34.1	FC, IP
<b>New!</b> CD226 (DNAM-1)	Mouse	480.1	FC

Antigen	Reactivity	Clone	Applications
CD24	Mouse	R7129.7	FC
CD25 (IL-2Ra)	Mouse	PC-61.5.3	FC, Depletion
CD25 (IL-2Ra)	Human	7G7B6	IP, IF
CD252	Mouse	RM134L	B, FC, IHC FF, IP
<b>New!</b> CD27	Mouse	RM27-3E5	FA, FC, IP
<b>New!</b> CD275	Mouse	HK5.3	B, FC
<b>New!</b> CD276	Mouse	MJ18	B, FC
CD28	Mouse	37.51	FC, B, IP, Costim, IHC FF
CD28	Human/Monkey	CD28.2	FC, IHC FF
CD3	Mouse	17A2	Costim, FC, IHC FF, PhenoCycler®
CD3	Human	UCHT-1 (Leu-4) (T3)	FC, Depletion
CD307e	Human	509F6	B, FC, IP
<b>New!</b> CD317	Mouse	927	Depletion, FA, FC, ICC, IF Microscopy
CD325	Human	8C11	FC, ICC, WB
CD38	Human	OKT-10	FC
CD3e	Mouse	145-2C11	FC, WB, IF, Depletion
CD3e	Mouse	500A2	FC, B, IHC FF
CD4	Mouse	GK1.5	FC, WB, Depletion
CD4	Human	OKT-4	FC, IP, Depletion
CD4	Mouse	YTS 191	FC, WB, Depletion
CD4	Human	RPA-T4	FC, IHC FF, IF, Act
CD40	Mouse	FGK4.5/FGK45	Act
CD40	Human	G28.5	FC, FA
CD44	Mouse/Human	IM7	FC, ELISA, IHC, IP, CyTOF
CD45	Human	BC8	FA
CD45	Mouse	I3/2.3	FC, IHC FFPE, IHC FF
CD45R	Mouse/Human	RA3-6B2	Depletion
CD45RO	Human	UCHT-1	FC, IHC FF, IHC FFPE, IP, PhenoCycler®, WB
CD47	Human	B6H12	FC, N
<b>New!</b> CD49d	Mouse/Human	PS/2	FA, FC, IHC, IP
CD5	Human	UCHT-2	FA, FC, IHC FF, PhenoCycler®
CD54 (ICAM-1)	Mouse	YN1/1.7.4	N
CD54 (ICAM-1)	Mouse	BE29G1	B, IP, WB
CD54 (ICAM-1)	Human	15.2	FC, IHC FFPE, IP, WB
CD62L	Mouse	Mel-14	N
CD62L	Human	DREG56	FC, B, WB
CD64	Human	10.1	FC, IHC FF, B
CD7	Human	T3-3A1	FC, IF Staining
<b>New!</b> CD70	Mouse	FR70	FA, FC, WB
CD70	Mouse	TAN 1-7	FC, B, ELISA, FA, IF
<b>New!</b> CD71	Mouse/Rat	OX-26	FC, IHC
CD71	Human	T56/14	FF, WB
CD71 (TfR1)	Mouse	R17217.1.4	FC, Depletion
CD8	Human	UCHT-4	FC, WB, FA
CD80 (B7-1)	Mouse	16-10A1	FC, B
CD86 (B7-2)	Mouse	GL-1	FC, B
CD8a	Mouse	53-6.7	FC, WB, IF, Depletion
CD8a	Mouse	2.43	WB, Depletion
CD8a	Mouse	YTS-169	WB, Depletion
CD8b (Lyt 3.2)	Mouse	53-5.8	IF, Depletion
<b>New!</b> CD96	Mouse	3.3.1 or 3.3	B, FC
CDCP1 (CD318)	Human/Mouse	9A2	FC
<b>New!</b> CHIKV E1	Mouse	CHK-166	ELISA, FC, N
<b>New!</b> CHIKV E2	Mouse	CHK152	ELISA, IHC, N
CLEC9A (CD370)	Mouse	1F6	FC
CSF1R (CD115)	Mouse	AFS98	FC, Depletion
CTLA-4 (CD152)	Mouse	UC10-4F10-11	FC, WB, N
CTLA-4 (CD152)	Mouse	9H10	WB, N
CTLA-4 (CD152)	Mouse	9D9	WB, N
<b>New!</b> CXCL9	Mouse	MIG-2F5-5	FC, IF, N
<b>New!</b> CXCR3 (CD183)	Mouse	CXCR3-173	FC, N
<b>New!</b> CXCR4 (CD184) (sino target)	Human	12G5	B, FC, ICC, IF Microscopy, IHC, N, WB
Dendritic Cells	Mouse	33D1	FC, ICC, IHC FF
EGFR	Human	EGFR.1	FC, IFC, N, IP
<b>New!</b> Fibulin-4	Human	5G11	IF Microscopy, IF Staining, IFC FFPE, WB
<b>New!</b> Galectin-9	Mouse	RG9-1	B
GM-CSF	Mouse	MP1-22E9	FC, N
H-2b	Mouse	B8-24-3	FA
HD5 (Alpha Defensin-5)	Human	8C8	IHC, WB
Hepsin	Human	3H10.1	FC, ELISA
Hepsin	Human	2D5	FC, WB, ELISA
HLA-DP	Human	B7/21	FC, WB, B, IF
HLA-DQ	Human	1a3	FC, WB, B
HLA, A2	Human	BB7.6	FC
ICOS	Mouse	7E.17G9	FC, B
IFNa	Mouse	TIF-3C5	B, WB, FA
IFNAR-1	Mouse	MAR1-5A3	WB, B

Antigen	Reactivity	Clone	Applications
IFNb	Mouse	HDb-4A7	B, WB, FA
IFNb	Mouse	MIB-5E9.1	WB, N, IP
IFNy	Mouse	H22	WB, N, IP
IFNy	Mouse	XMG1.2	FC, WB, N, ELISPOT
IFNyRa Chain (CD119)	Human	GIR-208	B, IPP, IHC
IgG Fc Specific	Human	HP6043	FC, ELISA
IgM u-Chain Specific	Human	HB57	FC, ELISA
IL-10	Mouse	JES5-2A5	CytoTOF, N, WB
IL-12	Mouse	C17.8	ELISA, ICFC, IP, N, WB
IL-1a	Mouse	ALF-161	N
IL-1b	Mouse	B122	ELISA, N
IL-1R (CD121a)	Mouse	JAMA-147	FC, B, IP
IL-2	Mouse	JES6-1A12	IP, N, WB
<b>New!</b> IL-21R	Mouse	4A9	B, FC, IP
IL-4	Mouse	11B11	CytoTOF, ELISA Cap, ELISPOT, FA, ICC, IHC, IP, N
IL-4	Human	MP4-25D2	CytoTOF, IHC, N, WB
IL-4	Mouse	BVD6-24G2	WB
IL-5	Mouse	TRFK5	CytoTOF, Depletion, ELISA Cap, FA, FC, N, IHC FFPE, WB
<b>New!</b> Integrin $\beta$ 7	Human/Mouse	FIB21	B, FC
Integrin $\beta$ 7	Human/Mouse	FIB504	FC, WB, B, IP, CyTOF
<b>New!</b> Kappa Light Chain	Rat	MAR 18.5	ELISA, FA, WB
LAG-3 (CD223)	Mouse	C9B7W	FC, WB, N
LPAM-1 (Integrin $\alpha$ 4 $\beta$ 7)	Mouse	DATK32	FC, N
<b>New!</b> Ly49C	Mouse	4LO3311	Depletion, FC, IP
Ly6C	Mouse	7B10	WB
Ly6C	Mouse	HK1.4	FC, IHC FF, CyTOF
Ly6G	Mouse	1A8	FC, IHC FF, IHC FFPE, IF, Depletion
Ly6G/Ly6C (Gr-1)	Mouse	RB6-8C5	FC, Depletion
<b>New!</b> MHC Class I (H-2Kb)	Mouse	AF6-88.5	FA, FC, IHC, FF, IP
MHC Class I (H-2Kb)	Mouse	Y-3	FC, FA
MHC Class I (HLA-A, HLA-B, HLA-C)	Human	W6/32	FA
MHC Class I H2-Kd	Mouse	A4C8.1-Do9	FC, B
MHC Class II (HLA-DR)	Human/Monkey	L243	FC
MHC Class II (I-A/I-E)	Mouse	M5/114.15.2	B, FC, IHC FF, IP, PhenoCycler <sup>®</sup>
MHC Class II (I-Ek/RT1-D)	Mouse/Rat	14-4-45 (HB32)	FC, B
NK1.1	Mouse	PK136	FC, Depletion
NKG2A/C/E	Mouse	20D5	B, FC, IHC
<b>New!</b> PD-1	Mouse	RMP1-30	FC
PD-1 (CD279)	Mouse	RMP1-14	WB, B
PD-1 (CD279)	Mouse	29F.1A12	FC, WB, B, IHC FF
PD-L1 (B7-H1)	Mouse	10F.9G2	FC, WB, IF, B, IHC FF
PD-L2 (B7-DC, CD273)	Human	3.2	WB, FA
PD-L2 (B7-DC)	Mouse	TY25	FC, B, IHC FF
RANKL (CD254)	Mouse	IK22/5	B
RNase L	Mouse	2e9	ELISA, IHC FFPE, IP, WB
TCR Va24-J $\alpha$ 18 (iNKT cell)	Human	6B11	FC, WB, CyTOF
TCR $\gamma$ /d	Mouse	UC7-13D5	FC, N, IP, FA
TGF-b	Mouse/Human/Rat/Monkey/ Hamster/Canine/Bovine	1D11.16.8	WB, N
Thy1 (CD90)	Mouse	HK2.1	WB, FA
Thy1 (CD90)	Mouse	T24/31	Depletion
<b>New!</b> Thy-1.1 (CD90.1)	Mouse/Rat	OX-7	Depletion, FC, IF, IHC
Thy1.2 (CD90.2)	Mouse	30H12	WB, Depletion
<b>New!</b> TIGIT	Human	4E1.2	B, FC
TIM-3 (CD366)	Mouse	RMT3-23	FC, N
TNF $\alpha$	Mouse/Rat/Rabbit	TN3-19.12	FC, N
TNFR2 (CD120b)	Mouse	TR75-54.7	B
Vy2 TCR	Mouse	UC3-10A6	FC, Depletion
<b>New!</b> ZIKV E	Mouse	ZV67	ELISA, N, WB

Leinco Technologies offers a broad range of purified *in vivo* functional-grade antibodies that can be utilized in flow cytometry, immunohistochemistry, spatial biology studies, and more.

Antibodies are available in 1 mg, 5 mg, 25 mg, 50 mg and 100 mg sizes. Bulk sizes, custom concentrations, custom packaging and custom conjugation services are available on request.

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