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Supplementary information

Effective high-throughput isolation of fully human antibodies targeting infectious pathogens

In the format provided by the authors and unedited

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Supplementary Tables

Supplementary Table 1: Composition of primer mixes used for multiplex single cell PCR

Name of mix	oPR-IGHV	oPR-IGKV	oPR-IGLV	oPR_1st_fwd	oPR_1st_IgG_rev	oPR_1st_IgM_rev
Composition	oPR-IGHV-1_fw	oPR-IGKV-1_fw	oPR-IGLV-1_fw	oPR-IGHV	Cg RT	Cm-RT
	oPR-IGHV-2_fw	oPR-IGKV-2_fw	oPR-IGLV-2_fw	oPR-IGKV	3' Cκ 543	3' Cκ 543
	oPR-IGHV-3_fw	oPR-IGKV-3_fw	oPR-IGLV-3_fw	oPR-IGLV	3' Cλ	3' Cλ
	oPR-IGHV-4_fw	oPR-IGKV-4_fw	oPR-IGLV-4_fw			
	oPR-IGHV-5_fw	oPR-IGKV-5_fw	oPR-IGLV-5_fw			
	oPR-IGHV-6_fw	oPR-IGKV-6_fw	oPR-IGLV-6_fw			
	oPR-IGHV-7_fw	oPR-IGKV-7_fw	oPR-IGLV-7_fw			
	oPR-IGHV-8_fw	oPR-IGKV-8_fw	oPR-IGLV-8_fw			
	oPR-IGHV-9_fw		oPR-IGLV-9_fw			
	oPR-IGHV-10_fw		oPR-IGLV-10_fw			
	oPR-IGHV-11_fw		oPR-IGLV-11_fw			
	oPR-IGHV-12_fw		oPR-IGLV-12_fw			
	oPR-IGHV-13_fw		oPR-IGLV-13_fw			
	oPR-IGHV-14_fw		oPR-IGLV-14_fw			
	oPR-IGHV-15_fw		oPR-IGLV-15_fw			

Supplementary Table 2: Composition of primer mixes used for multiplex cloning PCR

Name of mix	SLIC_oPR_IGHV	SLIC_oPR_IGKV	SLIC_oPR_IGLV	SLIC_oPR_IgM_HC_rev
Composition	SLIC_oPR_IGHV_1_fw	SLIC_oPR_IGKV_1_fw	SLIC_oPR_IGLV_1_fw	SLIC_oPR_IGMH_1_rev
	SLIC_oPR_IGHV_2_fw	SLIC_oPR_IGKV_2_fw	SLIC_oPR_IGLV_2_fw	SLIC_oPR_IGMH_2_rev
	SLIC_oPR_IGHV_3_fw	SLIC_oPR_IGKV_3_fw	SLIC_oPR_IGLV_3_fw	SLIC_oPR_IGMH_3_rev
	SLIC_oPR_IGHV_4_fw	SLIC_oPR_IGKV_4_fw	SLIC_oPR_IGLV_4_fw	
	SLIC_oPR_IGHV_5_fw	SLIC_oPR_IGKV_5_fw	SLIC_oPR_IGLV_5_fw	
	SLIC_oPR_IGHV_6_fw	SLIC_oPR_IGKV_6_fw	SLIC_oPR_IGLV_6_fw	
	SLIC_oPR_IGHV_7_fw	SLIC_oPR_IGKV_7_fw	SLIC_oPR_IGLV_7_fw	
	SLIC_oPR_IGHV_8_fw	SLIC_oPR_IGKV_8_fw	SLIC_oPR_IGLV_8_fw	
	SLIC_oPR_IGHV_9_fw		SLIC_oPR_IGLV_9_fw	
	SLIC_oPR_IGHV_10_fw		SLIC_oPR_IGLV_10_fw	
	SLIC_oPR_IGHV_11_fw		SLIC_oPR_IGLV_11_fw	
	SLIC_oPR_IGHV_12_fw		SLIC_oPR_IGLV_12_fw	
	SLIC_oPR_IGHV_13_fw		SLIC_oPR_IGLV_13_fw	
	SLIC_oPR_IGHV_14_fw		SLIC_oPR_IGLV_14_fw	
	SLIC_oPR_IGHV_15_fw		SLIC_oPR_IGLV_15_fw	

Supplementary Table 3: Overview of primers and primer mixes used for single cell PCR

PCR Step	**1st single cell PCR**		**2nd single cell PCR**			
Amplified Chain	**IgG heavy/kappa/lambda chain**	**IgM heavy/kappa/lambda chain**	**IgG heavy chain**	**IgM heavy chain**	**Kappa chain**	**Lambda chain**
Forward primer(s)	oPR_1st_fwd	oPR_1st_fwd	oPR-IGHV	oPR-IGHV	oPR-IGKV	oPR-IGLV
Reverse primer(s)	oPR_1st_IgG_rev	oPR_1st_IgM_rev	3' IgG (internal)	Cm-1st	3' Cκ 494	3' XhoI Cλ

Supplementary Table 4: Overview of primers and primer mixes used for cloning PCR

PCR	**Cloning PCR**			
Amplified Chain	**IgG Heavy chain**	**IgM Heavy chain**	**Kappa chain**	**Lambda chain**
Forward primer(s)	SLIC_oPR_IGHV	SLIC_oPR_IGHV	SLIC_oPR_IGKV	SLIC_oPR_IGLV
Reverse primer(s)	SLIC_oPR_IgG_HC_rev	SLIC_oPR_IgM_HC_rev	SLIC_oPR_IGKV_rev	SLIC_oPR_IGLV_rev

Supplementary Table 5: Overview of primers used for colony PCR

PCR	**Colony PCR**		
Amplified Chain	**Heavy chain**	**Kappa chain**	**Lambda chain**
Forward primer	5‘ Ab-sense		
Reverse primer(s)	3‘ IgG (internal)	3' Cκ 543	3' Cλ

Supplementary Table 6: Sequences of optimized forward primers (openPrimeR) for multiplex single cell PCR

openPrimeR SLIC IGHV set (oPR-IGHV)		
Name	**Sequence**	**Reference**
oPR-IGHV-1_fw	ATGGACTGGACCTGGAGCATCC	openPrimeR[47]
oPR-IGHV-2_fw	ATGGACTGGACCTGGAGGATCCTC	openPrimeR[47]
oPR-IGHV-3_fw	ATGGACTGGACCTGGAGGGTCTTC	openPrimeR[47]
oPR-IGHV-4_fw	ATGGACTGGATTTGGAGGGTCCTCTTC	openPrimeR[47]
oPR-IGHV-5_fw	ATGGACACACTTTGCTACACACTCCTGC	openPrimeR[47]
oPR-IGHV-6_fw	ACTTTGCTCCACGCTCCTGC	openPrimeR[47]
oPR-IGHV-7_fw	GGCTGAGCTGGGTTTTCCTTGTTG	openPrimeR[47]
oPR-IGHV-8_fw	GGCTCCGCTGGGTTTTCCTTGTTG	openPrimeR[47]
oPR-IGHV-9_fw	CACCTGTGGTTCTTCCTCCTGCTG	openPrimeR[47]
oPR-IGHV-10_fw	ATGAAACACCTGTGGTTCTTCCTCCTCC	openPrimeR[47]
oPR-IGHV-11_fw	ACATCTGTGGTTCTTCCTTCTCCTGGTG	openPrimeR[47]
oPR-IGHV-12_fw	GCCTCTCCACTTAAACCCAGGCTC	openPrimeR[47]
oPR-IGHV-13_fw	ATGTCTGTCTCCTTCCTCATCTTCCTGC	openPrimeR[47]
oPR-IGHV-14_fw	ATGGAGTTGGGGCTGAGCTGG	openPrimeR[47]
oPR-IGHV-15_fw	ATGGGGTCAACCGCCATCCTC	openPrimeR[47]
openPrimeR IGKV set (oPR-IGKV)		
Name	**Sequence**	**Reference**
oPR-IGKV-1_fw	ATGAGGCTCCTTGCTCAGCTTCTGG	openPrimeR[47]
oPR-IGKV-2_fw	ATGGAAGCCCCAGCTCAGCTTC	openPrimeR[47]
oPR-IGKV-3_fw	CCCAGCTCAGCTTCTCTTCCTCCTG	openPrimeR[47]
oPR-IGKV-4_fw	TGGTGTTGCAGACCCAGGTCTTCATTTC	openPrimeR[47]
oPR-IGKV-5_fw	GTCCCAGGTTCACCTCCTCAGCTTC	openPrimeR[47]
oPR-IGKV-6_fw	GCCATCACAACTCATTGGGTTTCTGCTG	openPrimeR[47]
oPR-IGKV-7_fw	TCCCTGCTCAGCTCCTGGG	openPrimeR[47]
oPR-IGKV-8_fw	CCTGGGACTCCTGCTGCTCTG	openPrimeR[47]
openPrimeR IGHV set (oPR-IGLV)		
Name	**Sequence**	**Reference**
oPR-IGLV-1_fw	CCCTGGGTCATGCTCCTCCTGAAATC	openPrimeR[47]
oPR-IGLV-2_fw	CTCTGCTGCTCCTCACTCTCCTCAC	openPrimeR[47]
oPR-IGLV-3_fw	ATGGCATGGATCCCTCTCTTCCTCG	openPrimeR[47]
oPR-IGLV-4_fw	CCTCTCTGGCTCACTCTCCTCACTC	openPrimeR[47]
oPR-IGLV-5_fw	ACACTCCTGCTCCCACTCCTCAAC	openPrimeR[47]
oPR-IGLV-6_fw	ATGGCCTGGATCCCTCTACTTCTCC	openPrimeR[47]
oPR-IGLV-7_fw	ATGGCCTGGGTCTCCTTCTACC	openPrimeR[47]
oPR-IGLV-8_fw	ATGGCCTGGACTCCTCTCTTTCTGTTC	openPrimeR[47]
oPR-IGLV-9_fw	ATGGCCTGGATGATGCTTCTCCTC	openPrimeR[47]
oPR-IGLV-10_fw	GTCCCCTCTCTTCCTCACCCTCATC	openPrimeR[47]
oPR-IGLV-11_fw	CTCCTCGCTCACTGCACAGG	openPrimeR[47]
oPR-IGLV-12_fw	CCTCTCCTCCTCACCCTCCTC	openPrimeR[47]
oPR-IGLV-13_fw	CTCCTCCTCACCCTCCTCACTC	openPrimeR[47]
oPR-IGLV-14_fw	ATGGCCTGGACCCCTCTCC	openPrimeR[47]
oPR-IGLV-15_fw	ATGGCCTGGACCCCACTCC	openPrimeR[47]

Supplementary Table 7: Sequences of primers used for heavy and light chain amplification in single cell and colony PCRs

Primers for Single Cell and Colony PCRs		
Name	**Sequence**	**Reference**
5‘ Ab-sense	GCTTCGTTAGAACGCGGCTAC	Tiller[42]
Cm-RT	ATGGAGTCGGGAAGGAAGTC	Ozawa[80]
Cm-1st	CCGACGGGGAATTCTCACAG	Ozawa[80]
Cg-RT	AGGTGTGCACGCCGCTGGTC	Ozawa[80]
3' IgG (internal)	GTTCGGGGAAGTAGTCCTTGAC	Tiller[42]
3' Cκ 543	GTTTCTCGTAGTCTGCTTTGCTCA	Tiller[42]
3' Cκ 494	GTGCTGTCCTTGCTGTCCTGCT	Tiller[42]
3' Cλ	CACCAGTGTGGCCTTGTTGGCTTG	Tiller[42]
3' XhoI Cλ	CTCCTCACTCGAGGGYGGGAACAGAGTG	Tiller[42]

[42]Tiller, T. et al. Efficient generation of monoclonal antibodies from single human B cells by single cell RT-PCR and expression vector cloning. J. Immunol. Methods 329, 112–124 (2008).

[80]Ozawa, T., Kishi, H. & Muraguchi, A. Amplification and analysis of cDNA generated from a single cell by 5′-RACE: application to isolation of antibody heavy and light chain variable gene sequences from single B cells. Biotechniques 40, 469–470, 472, 474 passim (2006).

Supplementary Table 8: Sequences of optimized forward primers for multiplex cloning PCR

openPrimeR SLIC IGHV set (SLIC_oPR_IGHV)	
Name	**Sequence**
SLIC_oPR_IGHV_1_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGACTGGACCTGGAGCATCC
SLIC_oPR_IGHV_2_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGACTGGACCTGGAGGATCCTC
SLIC_oPR_IGHV_3_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGACTGGACCTGGAGGGTCTTC
SLIC_oPR_IGHV_4_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGACTGGATTTGGAGGGTCCTCTTC
SLIC_oPR_IGHV_5_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGACACACTTTGCTACACACTCCTGC
SLIC_oPR_IGHV_6_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGACACACTTTGCTCCACGCTCCTGC
SLIC_oPR_IGHV_7_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGAGTTTGGGCTGAGCTGGGTTTTCCTTGTTG
SLIC_oPR_IGHV_8_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGAACTGGGGCTCCGCTGGGTTTTCCTTGTTG
SLIC_oPR_IGHV_9_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGAAACACCTGTGGTTCTTCCTCCTGCTG
SLIC_oPR_IGHV_10_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGAAACACCTGTGGTTCTTCCTCCTCC
SLIC_oPR_IGHV_11_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGAAACATCTGTGGTTCTTCCTTCTCCTGGTG
SLIC_oPR_IGHV_12_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGCAAGTGGGGGCCTCTCCACTTAAACCCAGGCTC
SLIC_oPR_IGHV_13_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGTCTGTCTCCTTCCTCATCTTCCTGC
SLIC_oPR_IGHV_14_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGAGTTGGGGCTGAGCTGG
SLIC_oPR_IGHV_15_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGGGTCAACCGCCATCCTC
openPrimeR SLIC IGKV set (SLIC_oPR_IGKV)	
Name	**Sequence**
SLIC_oPR_IGKV_1_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGAGGCTCCTTGCTCAGCTTCTGG
SLIC_oPR_IGKV_2_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGAAGCCCCAGCTCAGCTTC
SLIC_oPR_IGKV_3_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGAAACCCCAGCTCAGCTTCTCTTCCTCCTG
SLIC_oPR_IGKV_4_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGTGTTGCAGACCCAGGTCTTCATTTC
SLIC_oPR_IGKV_5_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGGGTCCCAGGTTCACCTCCTCAGCTTC
SLIC_oPR_IGKV_6_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGTTGCCATCACAACTCATTGGGTTTCTGCTG
SLIC_oPR_IGKV_7_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGAGGCTCCCTGCTCAGCTCCTGGG
SLIC_oPR_IGKV_8_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGAGGGTCCCCGCTCAGCTCCTGGGACTCCTGCTGCTCTG
openPrimeR SLIC IGLV set (SLIC_oPR_IGLV)	
Name	**Sequence**
SLIC_oPR_IGLV_1_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGCCCTGGGTCATGCTCCTCCTGAAATC
SLIC_oPR_IGLV_2_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGGCTCTGCTGCTCCTCACTCTCCTCAC
SLIC_oPR_IGLV_3_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCATGGATCCCTCTCTTCCTCG
SLIC_oPR_IGLV_4_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGACCCCTCTCTGGCTCACTCTCCTCACTC
SLIC_oPR_IGLV_5_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCATGGGCCACACTCCTGCTCCCACTCCTCAAC
SLIC_oPR_IGLV_6_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGATCCCTCTACTTCTCC
SLIC_oPR_IGLV_7_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGGTCTCCTTCTACC
SLIC_oPR_IGLV_8_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGACTCCTCTCTTTCTGTTC
SLIC_oPR_IGLV_9_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGATGATGCTTCTCCTC
SLIC_oPR_IGLV_10_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGTCCCCTCTCTTCCTCACCCTCATC
SLIC_oPR_IGLV_11_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGTCTCCTCTCCTCCTCACTCTCCTCGCTCACTGCACAGG
SLIC_oPR_IGLV_12_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCGGCTTCCCTCTCCTCCTCACCCTCCTC
SLIC_oPR_IGLV_13_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCAGCTTCCCTCTCCTCCTCACCCTCCTCACTC
SLIC_oPR_IGLV_14_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGACCCCTCTCC
SLIC_oPR_IGLV_15_fw	AACTGCACCTCGGTTCTATCGATTGAATTCATGGCCTGGACCCCACTCC

Supplementary Table 9: Sequences of reverse primers for multiplex cloning PCR

openPrimeR SLIC reverse primers	
Name	**Sequence**
SLIC_oPR_IGGH_rev	GGGTGCCAGGGGGAAGACCGATGGGCCCTTGGTCGAGGC
SLIC_oPR_IGMH_1_rev	GGGGAAGACCGATGGGCCCTTGGTCGAGGCTGAGGAGACGGTGACCAGGGT
SLIC_oPR_IGMH_2_rev	GGGGAAGACCGATGGGCCCTTGGTCGAGGCTGAAGAGACGGTGACCATTGT
SLIC_oPR_IGMH_3_rev	GGGGAAGACCGATGGGCCCTTGGTCGAGGCTGAGGAGACGGTGACCGTGGT
SLIC_oPR_IGKV_rev	CTCATCAGATGGCGGGAAGATGAAGACAGATGGTGCAGCCACCGTACG
SLIC_oPR_IGLV_rev	GAAGCTCCTCACTCGAGGGYGGGAACAGAGTG