Supplemental Table I. Amino-acid sequences and positions of putative OSCAR-binding motifs within different collagens.

Collagen type	Uniprot	Sequence	Position
Collagen alpha 1 (I)	P02452	GPPGPAGFA	806
		GPPGATGFP	869
Collagen alpha 1 (II)	P02458	GAPGPAGE	480
		GAPGPSGFQ	657
		GPPGPAGSA	807
		GPPGPAGFA	828
		GPPGATGFP	891
		GAPGASGDR	1008
		GPPGPSGDQ	1143
Collagen alpha-1(III) chain	P02461	GAPGPAGSR	1074
		GPPGPAGFP	804
		GGPGAAGFP	867
		GPPGPSGSP	891
Collagen alpha-1(IV) chain	P02462	GPPGASGYP	94
Collagen alpha-1(V) chain	P20908	GPPGPAGSP	1081
Collagen alpha-1(VII) chain	Q02388	GPPGPAGSR	1498
Collagen alpha-1(XI) chain	P20849	GPPGPAGEP	302
Collagen alpha-1(XVI) chain	Q07092	GPPGPAGER	1401
		GAPGPSGSP	1412
Collagen alpha-1(XVII) chain	Q9UMD9	GPPGPSGDP	767
Collagen alpha-1(XXVII) chain	Q8IZC6	GPPGPPGDR	1340
Collagen alpha-1(XVIII) chain	P39060	GAPGPAGAR	986
Collagen alpha-2(I) chain	P08123	GPPGPAGSR	769
Collagen alpha-2(V) chain	P05997	GPPGPTGFQ	669
Collagen alpha-2(XI) chain	P13942	GPPGPAGSP	1009
Collagen alpha-3(V) chain	P25940	GPPGASGEP	1295
Collagen alpha-5(IV) chain	P29400	GAPGAPGFP	533

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A

```
SP-D  mllfllsalvlltqplgyleAEMKTYSHRTMPSACTLVMCSSVESGLPGR
OSCAR ---------------------------------------------------

SP-D  DGRDGREGPRGEKGDPGLPGAAGQAGMPGQAGPVGPKGDNGSVGEPGPKG
OSCAR ---------------------------------------------------

SP-D  DTGPSGPPGPPGVPGPAGREGPLGKQGNIGPQGKPGPKGEAGPKGEVGAP
OSCAR -----GPPGPAGFP--------------------------------------
           *****.*.*
SP-D  GMQGSAGARGLAGPKGERGVPGERGVPGNTGAAGSAGAMGPQGSPGARGP
OSCAR ---------------------------------------------------

SP-D  PGLKGDKGIPGDKGAKGESGLPDVASLRQQVEALQGQVQHLQAAFSQYKK
OSCAR ---------------------------------------------------

SP-D  VELFPNGQSVGEKIFKTAGFVKPFTEAQLLCTQAGGQLASPRSAAENAAL
OSCAR ---------------------------------------------------

SP-D  QQLVVAKNEAAFLSMTDSKTEGKFTYPTGESLVYSNWAPGEPNDDGGSED
OSCAR ---------------------------------------------------

SP-D  CVEIFTNGKWNDRACGEKRLVVCEF
OSCAR -------------------------
```

B

```
SP-D 106 (12 res) - GPPGPPGVPGPA
Srch seq (12 res) - GXPGPXGFXGXP
                    *******.***.
```

Supplemental Figure 1. Molecular characteristics and predicted OSCAR-binding sites of SP-D. (**A**) Amino acid alignment of human SP-D (SP-D) with the minimum OSCAR-binding motif (OSCAR) (31). Direct amino acid sequence identify (*); signal peptide, lower case; Cys 15 and 20 involved in the formation of the disulphide bonds required for the stable assembly of SP-D dodecamers and higher order multimers, underlined; alternating exons, black/blue; exon boundaries, red. (**B**) Alignment of the 12 amino acid residue (res) OSCAR-binding search (Srch) sequence (seq) reveals an extended putative OSCAR-binding motif.

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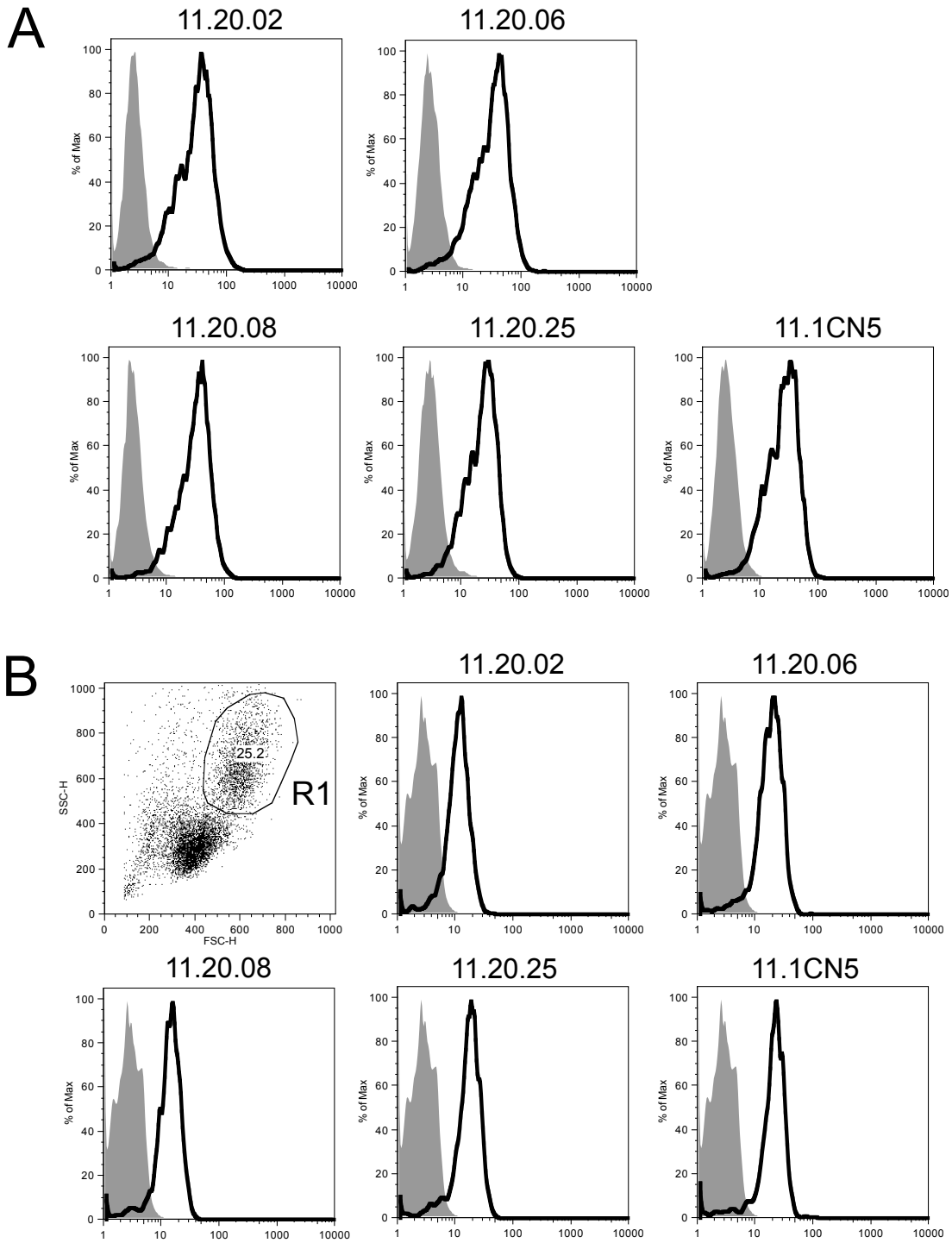

Supplemental Figure 2. Generation of novel anti-human OSCAR mAbs. Histogram plots for immunostainings with anti-human OSCAR mAb clones: 11.20.02, 11.20.06, 11.20.08, 11.20.25 or 11.1CN5 (32) for either: (**A**) OSCAR-CD3ζ NFAT-GFP reporter cells (open histograms) compared to parental 2B4 NFAT-GFP reporters cells (gray histograms) or (**B**) human blood monocytes (Gate R1, open histograms) compared to IgG1 (gray histograms). Representative immunostaining from one of two donors is shown. All blood monocytes in gate R1 expressed CD14 and all other cells outside gate R1 (e.g. low FSC/SSC lymphocytes) did not express OSCAR (Data not shown).

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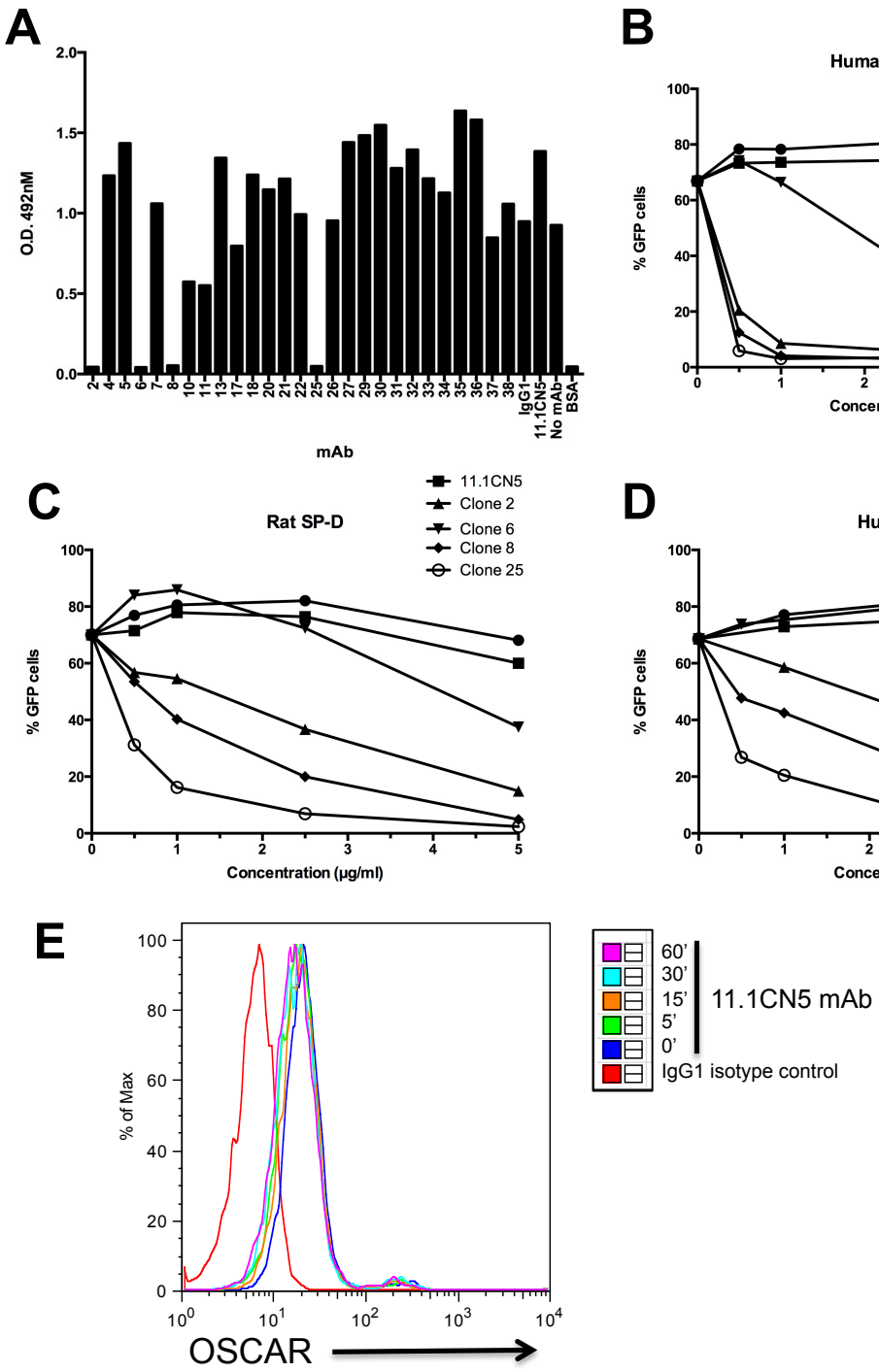

Supplemental Figure 3. Screening for OSCAR blocking mAbs. (**A**) OSCAR-Fc binding to collagen I in the presence of tissue culture supernatants from different anti-human OSCAR hybridomas. Percentage (%) GFP expression from OSCAR-CD3ζ NFAT-GFP reporter cells cultured on tissue culture plates coated with: (**B**) collagen I; recombinant (**C**) rat or (**D**) human SP-D in the presence of different concentrations of purified mAbs: 11.20.02, 11.20.06, 11.20.08, 11.20.25, 11.1CN5 or IgG1 (0-5µg/ml, *x*-axis), respectively. (**E**) OSCAR cell surface expression on monocytes left untreated (blue, 0') or treated with 2.5µg/ml human SP-D for 5 (green), 15 (orange), 30 (cyan) and 60 (pink) mins, respectively compared to IgG1 isotype control (red).

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