

Supplemental Data for:

Biophysical and biochemical characterization of avian secretory component provides structural insights into the evolution of the polymeric Ig receptor

Running title: Biophysical characterization of avian secretory component

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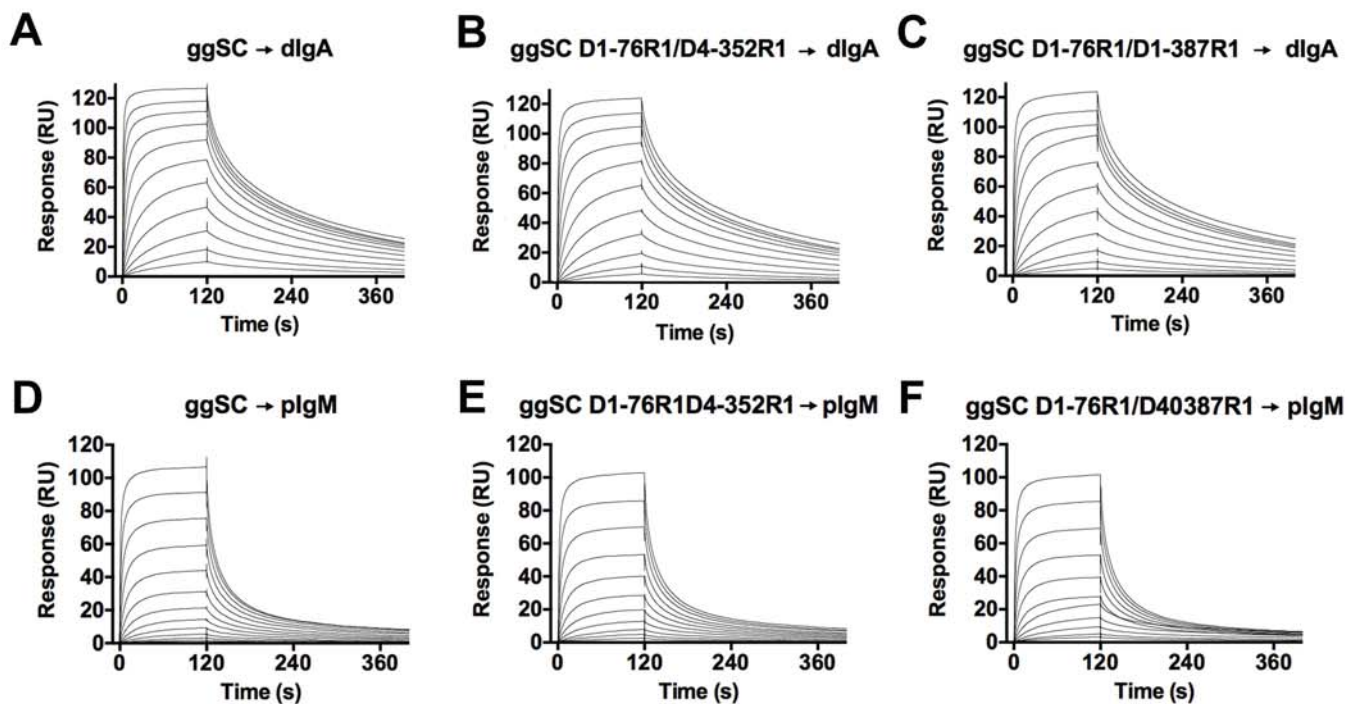


Figure S1. Spin-labeled ggSC binding to human dIgA and pIgM. Sensorgrams showing ggSC and nitroxide-labeled ggSC binding to dIgA (A-C) and pIgM (D-F). High concentrations shown are 1024uM and 512uM for dIgA and pIgM, respectively.

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ggIgA  SASASRPTLYQLLPSPDCPDPNVTIGCLVTSFHP.PVTVTWTGCAADATAVTSLPVATGGTYSLTTALTVPREO.LQNEFVCRAQHAAATG
hIgA1  ..SPTSPKVEFP.LSLCSTQPDGNVVIACLVOGFPPQEP LSVTWSSEGGQVVIARNFPPSQDASCDLYTTSQ LTLPLATQCLAGKSVTCHVKHYT..
hIgA2  ..SPTSPKVEFP.LSLDSTPQDGNVVVA CLVQGFPPQEP LSVTWSSEGGQNVITARNFPPSQDASCDLYTTSQ LTLPLATQCPDGKSVTCHVKHYT..

ggIgA  ADVKETIGGDGVCPIFTSKVILLSDPTQEDPERRVLLVCLVEGLPSAGAAIQWLQDNEEMTPAPESDES GCSDCTESGVTQWSRVNVTRKSWEGG
hIgA1  .....NPSQDVTVPCEVPSTPP.....TPSP.....
hIgA2  .....NPSQDVTVPCEVPSTPP.....TPSP.....

ggIgA  AQFGCRVTHGALKEPVTATVSTDCDATPQLQVSTLPTLEELLVSHNATVTCVSNAAAADGVSVSWSRSSGGGLDVSQTEDRQADCR YTVRSFL
hIgA1  .....STPPTPSPSCCHPRLSLHRPALEDLLLGSEANLTC LTLGLRDASGVTFTWTPSSGKS.AVQGPPE RDLCGCYSVSVL
hIgA2  .....PPPCHPRLSLHRPALEDLLLGSEANLTC LTLGLRDASGATFTWTPSSGKS.AVQGPPE RDLCGCYSVSVL

ggIgA  RVC AEEWNGEFTFGCSVREEGVVVAEESIRKETDTPHAPSVYVFP PPAEELSLQETATLTCMASSFLPSSILLTWTQONQPI SPQNYLIFGPEK
hIgA1  PGC AEPWNHGEFTFTCTAAHPESKTP LTA.TLSKSGNTFRREVHLL PPS EELALNELVTLTCLARGFS PKDVLVRLWLGSELPREK YLTWASRQ
hIgA2  PGC AQPWNHGEFTFTCTAAHPELKTPLTA.NITKSGNTFRREVHLL PPS EELALNELVTLTCLARGFS PKDVLVRLWLGSELPREK YLTWASRQ

ggIgA  ...DGDFYSLYSKPKVSVEDWQRGDVFGCVVGHGIPLNFIHKRFDKNACKASHVNVSVVLSADAVTCY
hIgA1  EPSQGTTFEAVTSILRVAAEDWKKGDTFSCMVGHEALPLAFIQKTI DR LAGKPTHVNVSVVMAEVDGTCY
hIgA2  EPSQGTTFEAVTSILRVAAEDWKKGDTFSCMVGHEALPLAFIQKTI DR LAGKPTHVNVSVVMAEVDGTCY

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Figure S2. Human and avian IgA sequences. Sequence alignment of the IgA heavy chain constant regions from birds (ggIgA) and humans (hIgA1 and hIgA2). Residues implicated in mammalian SC binding to pIgA (1) are indicated by black ovals.

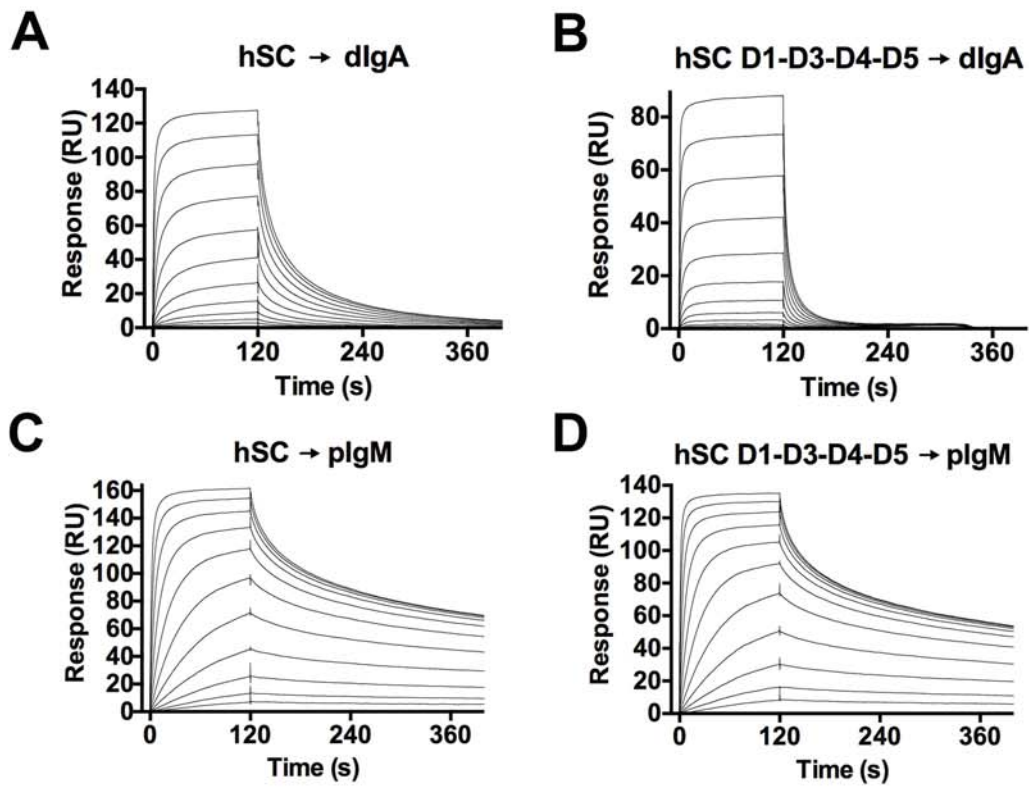


Figure S3. hSC and hSC D1-D3-D4-D5 binding to human dIgA and pIgM. (A-D) Sensorgrams showing the response (RU) of hSC and hSC D1-D3-D4-D5 binding to human dIgA and pIgM. High concentrations shown are 1024uM and 512uM for dIgA and pIgM, respectively.

SUPPLEMENTAL REFERENCES

1. Woof, J. M., and Russell, M. W. (2011) Structure and function relationships in IgA. *Mucosal Immunol* **4**, 590-597.