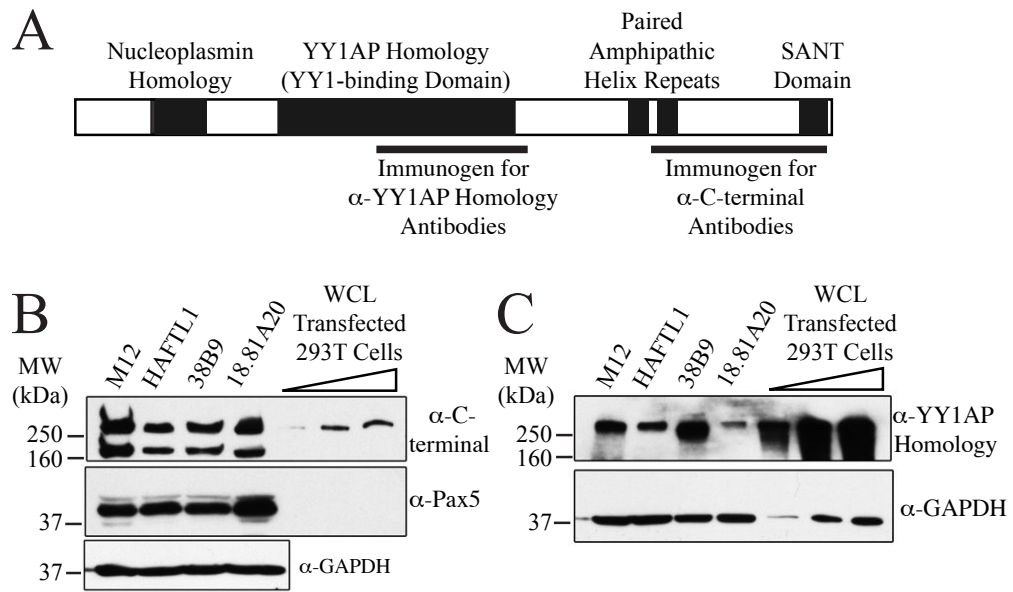


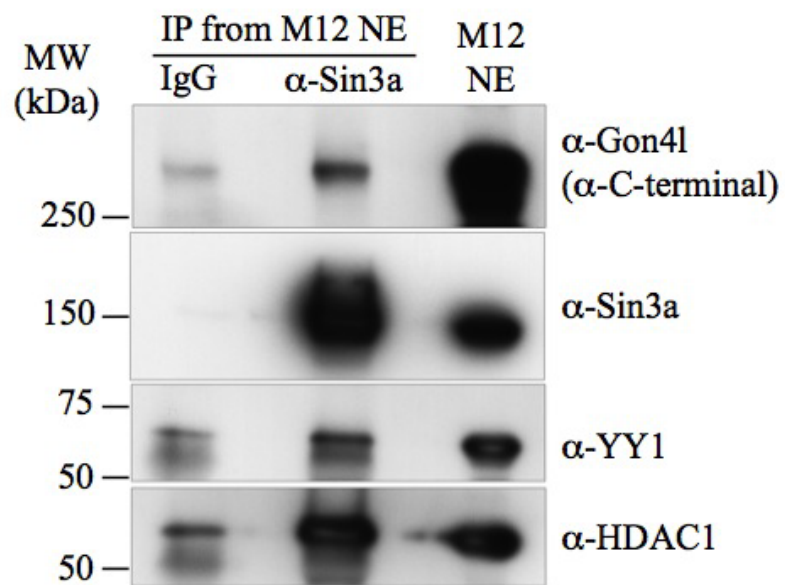
Supplemental Figure 1

YY1AP (Human)	(77)	EMGFSNMEDDGP EEEEE VVA E --- P P N F N T P Q A L R F E E L A N L L N E H D I A K E L F E Q L K M K K P S - A K Q E V E K V K P Q K E V H Q T L L I D P A Q R R L Q Q Q M
GON4L (Human)	(600)	EMGFSNMEDDGP EEEEE VVA E --- P P N F N T P Q A L R F E E P L A N L L N E H R T V K E L F E Q L K M K K S - A K Q E V E K V K P Q K E V H Q T L L I D P A Q R R L Q Q Q M
Gon4l (mouse)	(610)	EMGFSNMEDDGP EEEEE VVA E --- S P P F N T P Q A L R F E E P L A N L L N E H R T V K E L E Q L K M K K P S V R Q E V E K L K P Q E A A H Q T L L V D P A Q R R L Q Q Q M
Udu (Zebra Fish)	(498)	ELA N E F D D E G D E D E R R E E A N D T P Q F N P Q A I R F E E P L A M L A C R R T V R E L D L D C R R N G V R T Q H S S G P G M V F V Q P S C P L V V P A Q R C L Q Q Q I
Gon4 (C-elegans)	(330)	E I P L N A F T E E A N G E E I R K S Q V K D A E V Y E I N T S I S S S S S L L D L L A T F R E D E L C L N Q L
Cdpl (Drosophila)	(472)	-----S---LH F E M E P P V V A A S N G D Y K P D T N E W E Y I S V R K H I Y E Y E E F E L R V F E L L N H L A R S R G ----- F T C S O R L Q Q Q L
Consensus	(630)	EMGFSNMEDDGP EEEEE E P N F N T P Q A L R F E E P L A N L L N E H R T V K E L F E Q L K M K K P S V K Q E V E K V K P Q H Q T L L I D P A Q R R L Q Q Q M
		730 829
YY1AP (Human)	(173)	Q Q H V Q L L T Q I H L L T N P N L N P E A S T R I L K E L G T F A Q S I A L H Q Y P K F Q T L F Q P C N L M G A M Q L I E D F T V S I D C S P H K T K K T A E F F C L P K Q V
GON4L (Human)	(696)	Q Q H V Q L L T Q I H L L T N P N L N P E A T T R I P L K E L G T F A Q S I A L H Q Y N P K F Q T L F Q P C N L M G A M Q L I E D F T V S I D C S P H K T K K T A E F F C L P K Q V
Gon4l (mouse)	(706)	Q Q H V Q L L T Q I Y L L T N P N L S E A S T T R V P L K E L G T F A S I A L H Q Y N P R F Q T L F Q P C N M G A M L I E D F T V S I D C S P H K T K K T A E F F C L P K Q V
Udu (Zebra Fish)	(598)	Q Q H V Q L L T Q V M L D H V G A L Q E A T T K F L E L S F A R A D E R S A V N G E S V F V C N L L S I N L L E E K Q S E S L C P K P N R H S S H S Y L P L A G L
Gon4 (C-elegans)	(395)	A H L V Q L L T Q L V T C H H D V N L S H V R S S L M E L E D D I Q D R I P T V F V R N L D A A I E S C H D I A P D A V D E F L K Y A N T E Y L G ----- I - L R F E A
Cdpl (Drosophila)	(549)	R I H Q L L S Q Y L D T Y S H P L P A K R L E L K W A K D P S F N C W N L Q E A V O L R K W E H D L S D E F K E N E K M D F I N K E T D L D T G H T R O V P L A P R I
Consensus	(730)	Q Q H V L L T Q I H L L T N P N L N P E A S T T R I P L K E L G T F A Q S I A L H Q Y N P K F Q T L F Q P C N L M G A M Q L I E D F T V S I D C S P H K T K K T A E F F C L P K Q V
		30 929
YY1AP (Human)	(272)	A W L I A T S K V F M Y P E L L P V C S L K A K N P Q D K I L F T K A E D ----- N ----- K - Y L L T C K T A Q L T V R I K N L M N M R A P
GON4L (Human)	(795)	A W L I A T S K V F M Y P E L L P V C S L K A K N P Q D K I V F T K A E D N L L A L G L K H E G T E F F P ----- L I S K Y L T C K T A Q L T V R I K N L M N M R A P
Gon4l (mouse)	(804)	A W I L A T K V F M Y P E L L P I C S L K A N P R D K L F T K A E D N L L A L G L K H E G T E F F P ----- L I S K Y L V T C K T A Q L T V R I K N L M N M R A P
Udu (Zebra Fish)	(698)	A W L A T S V F L Y P E L L P C S L D P A L H S R S K Y S K G E D L L L G L K H E G T E F F P ----- L I S R Y L T K R O E Q L M R V K M V S K P P
Gon4 (C-elegans)	(486)	A V L S S N A I Y P L L E R O P F F I E T T F L S E E D M L A V A L Q P H L P R R G E ----- K E M I D R Y A T A Q C I L P A R S Y K R H
Cdpl (Drosophila)	(649)	N M L M L S R V F M Y P D Y L R A P Q K T T ----- O T T A Y A S E Q L I A I G L K H L A M V K A K R Q L R K G A D P I R A C K M K T L K T A R I L K I E L N M K D
Consensus	(830)	A W L I A T S K V F M Y P E L L P V C S L K A K N P D K I I F T K A E D N L L A L G L K H E G T E F F L I S K Y L T C K T A Q L T V R I K N L M N M R A P
		930 1029
YY1AP (Human)	(335)	D N I I K F Y K K T Q L P V L K C C E E I Q P H Q W K P P I E R E E H R L P F W L K A S L P S I Q E E L R M A D G A E G M T T E I S D L E K N S E L G E T R Y P L L L P K G V
GON4L (Human)	(878)	D N I I K F Y K K T Q L P V L K C C E E I Q P H Q W K P P I E R E E H R L P F W L K A S L P S I Q E E L R M A D G A E G M T T E I S D L E K N L E L G E S R Y P L L L P K G V
Gon4l (mouse)	(887)	N N I I K F Y K K T Q L P V L R C C E E I Q P H Q W K P P E K E E H R L P F W L K A S L P I Q E L R N I S E G A T E G V T T E S T D S D L K S P A L G E Y O Y P L L L P K G V
Udu (Zebra Fish)	(783)	N I I K Y Y Q N H V P L V V C K V V H G E E R P P V E R E L E V M P W L K S L P I Q S I Q S D L M T ----- T T K S A S L P P F ----- K E T R Y P L L P K G L
Gon4 (C-elegans)	(565)	L K M R S K P I H C I M A A E K V K L V L P L K S W E E D T P I C O W P P A Q P G W Y R R E Q E T F N V T E
Cdpl (Drosophila)	(745)	Y N V K Y F E H R A P A N A I L W G F A G G L N R P E R H M E L P S W Y Y I E K T I D O K R T R N F A S I A S S ----- V S A S Y L E V R E A V G D L I E F F G C A
Consensus	(930)	N I I K F Y K K T Q L P V L K C C E E I Q P H Q W K P P I E R E E H R L P F W L K A S L P S I Q E E L R M A D G A T E G M T T E I S D L E K L G E T R Y P L L L P K G V
		1030 1129
YY1AP (Human)	(435)	V L K L K P A R --- F P K K A W R Q K R S V L K P L L I Q P S P S L Q P F N P G K P A C S T S E A P P S M V L I P H P I Q P A V L Q T V P G P L G V G E F E S P A A L
GON4L (Human)	(978)	V L K L K P A R --- F P K K A W R Q K R S V L K P L L I Q P S P S L Q P F N P G K P A C S T S E A P P S M V L I P H P I Q P A V L Q T V P G P L G V G E F E S P A A L
Gon4l (mouse)	(987)	V L K L K P S R --- F R K A W R Q K R V K P L L I Q P S P S V Q P F N P G K A T P T S E P P S M V V I P H I Q P A V L Q T V P G P V G V G D F E S P S L
Udu (Zebra Fish)	(869)	S L R L P Q V A S R P S Q P K S R L R F T N R T L E L K A P S P T C T G H L L T N S T V L L L A Q A P S F I N G V P L V P S P F A H C V P L N A S Y P I N F H Y S P L G
Gon4 (C-elegans)	(628)	----- E R K I L R ----- K I V S --- M V L P / K N K D R Q O A S A T S E S E G L D D E F V N M G T A P G R K I M R E H I E D L V H Q L I K Q N E I S P S R
Cdpl (Drosophila)	(839)	V P N G S A A G S E ----- P K S P K K R A R R P R A E N P E L I N N V F G G N T S A G N I P G V S V V L V A G N A V N I N R S L Y A E C S S L L A P A
Consensus	(1030)	V L K L K P A R F P K K A W R Q K R S V L K P L L I Q P S P S L Q P F N P G K A T S T S E A P P S M V L I P H P I Q P A V L Q T V P G P L G V G E F E S P A A L
		1130 1229
YY1AP (Human)	(530)	P A M P --- E A R T S F P L S E S Q --- T L L S S A V P K V M M P S A S F R K P Y V R R R P S K R R G A R A F C I K P A P V I H ----- S V I F T V P A T T V K I V S L G G C N M
GON4L (Human)	(1073)	P A V P --- E A R T S F P L S E S Q --- T L L S S A V P K V M L P S L A P S K F R K P Y V R R R P S K R R G K A S F C M K P A P V I H P ----- S V I F T V P A T T V K I V S L G G C N M
Gon4l (mouse)	(1082)	P A M P G S E A R T T F P L S E T O --- S A P C S P K L M L P S L A P S K F R K P Y V R R K P T R R R K G A K S P C V K P A P I I H P T ----- F V I F T V P A T T V K V V S I G G C N M
Udu (Zebra Fish)	(969)	A S P A H L A L P P S V Q K P Q C I V S L L T G T V K T R V D O O T S D K K K M R K A P L R A P O L P L P S S G S I G N I S S I I I D Q Q I S L V P H N L Q S I N V
Gon4 (C-elegans)	(708)	R K N P T M K L S T I O L E A E K R I A D S Q K N S G G O T I A L S N V G S D N V D N N G T H E K E L M E S T S I S L E S I N Q ----- E T S K F P R P L P --
Cdpl (Drosophila)	(934)	E L E N A P P A I N F V K F T N T L I L E L E S S K V P L P A D T P S V P G R I A R R Q I F V E V S A K S R K G ----- S ----- T R R Y H I L R E R L
Consensus	(1130)	P A M P E A R T S F P L S E S Q I S L L S A S V P K V M L P S L A P S K F R K P Y V R R R P S K R R G A K A S P C I K P A P V I H S V I F T V P A T T V K I V S L G G C N M
		1230 1329
YY1AP (Human)	(620)	I Q P V A A V A Q S P Q T I P I T L L V N P T S F P C L N Q L V A S S V S P L I V S N V L P I P S T P E D K A M V D I A C A V A D E A C G L E P K L E P Q E L S P L S T V
GON4L (Human)	(1164)	I Q P V A A V A Q S P Q T I P I T L L V N P T S F P C L N Q L V A S S V S P L I V S N V L P I P S T P E D K A V V D I A C A V A D E A C G L E P K L E P Q E L S P L S T V
Gon4l (mouse)	(1174)	I Q P V S A A V A S P Q T I P I T L L V N P T T F P C L N Q L V A S S I S P L I V S N L T L P V S P E D K A V L D V A ----- E K N A P Q N P S K L P O E L T P L T V
Udu (Zebra Fish)	(1069)	I L K A H E N V N T H R T V P L S D L V Q L P P Q V A E N T S S L P R K T T S V S V T A K D P V O S S G E N G O R T V F S Q A A P A V D S S Q V L V Q V S P G P P
Gon4 (C-elegans)	(791)	M D Q P L N T S C H I T T T C S V Y E D V D G T L K K S Y V I T A R Y E T N S I S C F S P I P T E P R S D D F D Y F M D E N S M W P Q T P A V T D N C T P G S I
Cdpl (Drosophila)	(1022)	R H R L S R C H S L I T T E S Y L R H H I E K Y K C L Q V N R F F A L L T L I L V L M C S T W S K T A A Q P K R S S D E A K I R R A N Q E E M R Q L P L T E
Consensus	(1230)	I Q P V S A A V A Q S P Q T I P I T L L V N P T S F P C L N Q L V A S S V S P L I V S N V L P I P S T P E D K A V V D I A C A V A D E A A G L E P K L E P Q E L S P L S T V
		1330 1429
YY1AP (Human)	(718)	F K V E H S ----- P G P P P D K O C Q E G L S E N S A R W I V V K T E E G Q A L E P L P Q I Q E S L N S S G D L E V V K M E P E D
GON4L (Human)	(1262)	F K V E H S ----- P G P P L A D A E Q E G L S E N S A R W I V V K T E E G Q A L E P L P Q I Q E S L N H P T L E V V K M E P E D
Gon4l (mouse)	(1268)	F K E P K S W ----- H S S A D T G S Q E A F E S S A C S W A V K T E Q E G S E S A C W T V V K T E D G H A V E P L P Q I Q D S L S P S G L D M V K M E E D
Udu (Zebra Fish)	(1169)	F L L P Q D S L V L N Q P A S L P S E G T L Q N L S Q S T S H L D I S T S T A L N S E T E H L N N T T S L P V R E D G E R Q E V D E M V G D R W E E M A S A F G S L A L S E P
Gon4 (C-elegans)	(891)	S ----- E S E I D F S C K T L T E E V F Q S T S C Q R P M Y C S D F G E F S N S S L P E E P P
Cdpl (Drosophila)	(1121)	----- E R N R K D A I F A M N F Y E K V E A L L S A N L D C K R F N S I L C N F D P R Q C V S L L K V E E
Consensus	(1330)	F K V E L E Q E G L S E N S A R W I V V K T E E G Q A L E P L P Q I Q E S L N S G D L S I V K M E P E D
		1430
YY1AP (Human)	(788)	A F E I S - - F
GON4L (Human)	(1332)	A R E I S - - S
Gon4l (mouse)	(1356)	C M V E I S N L
Udu (Zebra Fish)	(1269)	S S P S P D
Gon4 (C-elegans)	(947)	S H O R T P Q - -
Cdpl (Drosophila)	(1177)	I L L P H P E L
Consensus	(1430)	A E I S

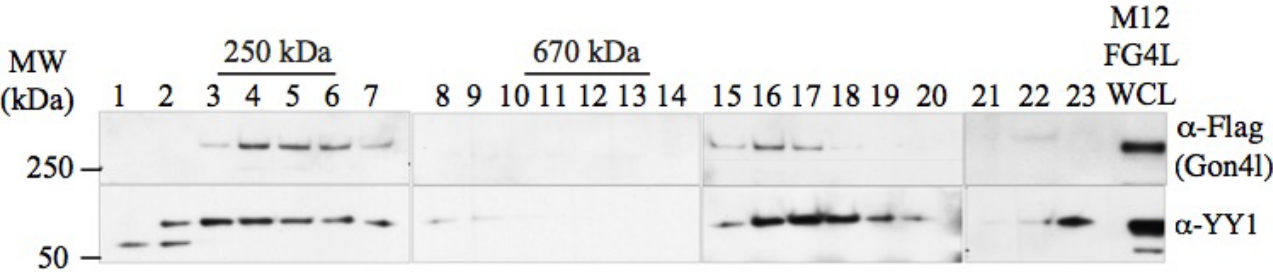
Supplemental Figure 2



Supplemental Figure 3



Supplemental Figure 4



SUPPLEMENTAL FIGURE LEGENDS

SUPPLEMENTAL FIGURE 1. Sequence alignment of the YY1AP homology regions in Gon4l proteins from different species. Human YY1AP and the YY1AP homology regions encoded by Gon4l proteins from the indicated species were aligned using Vector-NTI. Residues that are identical or similar are shaded. Conserved amino acids are shown in black. The bottom rows show the consensus sequence. The red boxes mark the two stretches of amino acids that are most highly conserved between the sequences analyzed.

SUPPLEMENTAL FIGURE 2. Gon4l is expressed in B cell lines. *A*, Schematic showing the regions of mouse Gon4l used as immunogens to generate rabbit polyclonal antibodies. *B,C*, Immunoblot analysis of Gon4l expression in B cell lines. Whole cell lysates (WCLs) from the indicated lines were probed with the indicated Gon4l antibodies. Increasing amounts (signified by the wedges) of WCL from 293T cells expressing FLAG-Gon4l were used as a positive control. WCLs were probed with GAPDH antibodies to confirm equal loading. *B*, Analysis of Gon4l expression using Gon4l C-terminal antibodies (top panel). WCLs were also probed with antibodies specific for the B cell transcription factor Pax5 (center panel). *C*, Analysis of Gon4l expression using YY1AP homology antibodies (top panel).

SUPPLEMENTAL FIGURE 3. Co-immunoprecipitation of endogenous Gon4l together with YY1, Sin3a and HDAC1. Nuclear extracts (NE) were prepared from M12 B cells and used to perform immunoprecipitations with Sin3a antibodies or nonspecific IgG. Buffer lacking detergent was used to wash the immunoprecipitates. After washing, material was immunoblotted with antibodies indicated to the right of the panel. Data shown are representative of at least 2 independent experiments.

SUPPLEMENTAL FIGURE 4. FLAG-Gon4l expressed in M12 cells from a stable transgene co-sediments with high molecular weight complexes and YY1 in sucrose density gradients. M12FG4L cells express FLAG-Gon4l from a stably integrated transgene (see Figure 4). Whole cell lysates (WCL) prepared from M12FG4L cells were loaded onto the top of a 20-50% sucrose gradient. After centrifugation, the fractions indicated across the top of the panel were collected and analyzed by immunoblot using the antibodies listed on the right side of the panel. M12FG4L WCL was used as a positive control for immunoblots (right side). Protein standards were separated in parallel gradients; fractions containing the protein standards are indicated at the top of the panel. Data shown are representative of 2 independent experiments.