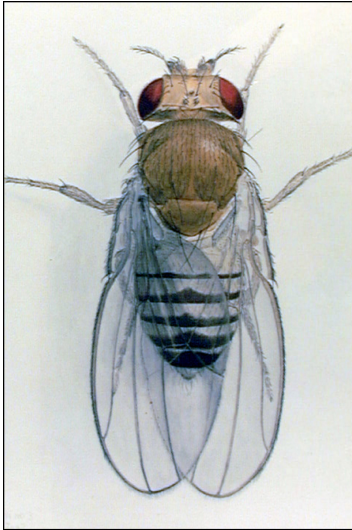


Comprehensive Identification of Worm and Fly Transcription Factor Binding Sites

Fly Transgenic Production and RNAi
Sue Celniker



1. Summary of BAC DNA Preparation
2. Summary of Transgenics Production
3. Transgenic Plan
4. RNAi production
5. Plans for GFP imaging
6. Ongoing discussion of The Paper

The Transcription Factor Group Call
May 4, 2017

Injection Status as of 5/4/2017

Stabs sent	385 (301 < 35kb and 84 > 60kb)
Transformed BACs	313
Small BACs	275
Large BACs	38 (33 by BDGP, 4 by Genetivision)
17 new lines since last call:	16 small BACs 1 large BACs
TOTAL TFs in list	<u>708</u>
Completed prior effort	106
Completed this grant	313
TFs still to do	289

ModEncode Lines shipped to Chicago

2012	3
2013	36
2014	48
2015	96
2016	127
2017	24

New small BACs (16)

fd64A

Pzg

Spps

Tap

CG17359

CG31365

Dek

fd102C

MESR4

Su(var)2-

HP2

CG1621

CG7745

CG12391

CG13424

CG34367

New Large BACs into 2nd chromosome (1)

scrt

Possible plan for 2017/2018 injections

69 small BACs suggested by White Lab

Ada2b	HLH3B	CG1024	CG10949
Adf1	HLH4C	CG2712	CG10959
Aef1	lid	CG3032	CG11294
amos	lin-28	CG4360	CG11970
Bgb	MTA1-	CG4404	CG13287
bin	like	CG4730	CG14050
chm	mxc	CG6272	CG14667
CkIIalph	Nf-YA	CG6689	CG14860
a-i1	Nf-YC	CG7357	CG15436
D19A	onecut	CG7386	CG16813
Deaf1	Opbp	CG7963	CG17361
disco	ranshi	CG8119	CG17829
Doc3	Ravus	CG8924	CG18262
dwg	Row	CG9418	CG30020
Ets96B	Side	CG10321	CG31441
FoxK	sisA	CG10366	CG32121
grau	sug		
H	Unr		
H2.0	wdn		
hang			

47 small BACs suggested by Celniker Lab

bbx	Optix	CG2129
Bsg25A	p53	CG3847
byn	pfk	CG4496
Cenp-C	Poxm	CG5591
Cf2	Pph13	CG6163
ci	prd	CG7372
crol	ro	CG8765
dan	seq	CG11085
dati	slbo	CG11456
fd19B	slp1	CG15336
GATAe	sob	CG17612
gl	Sox21a	CG17806
Gsc	stc	CG32767
Jarid2	term	
jumu	tgo	
ken	vis	
nerfin-2	vnd	

Add some prioritized large BACs, and the number of genes with inserted BACs would be about 580 of the 708 total TFs.

Possible plan for 2017/2018 injections

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Gsc	stc	CG32767
Jarid2	term	
jumu	tgo	
ken	vis	
nerfin-2	vnd	

Some genes on Sue's list are on the ModEncode list as large BACs

RNAi knockdown of fly TFs

17 sequenced as of 5/03/17

Fly TF	Worm ortholog	RNAi line	Fly sequencing status	Peak expression	Organ System	TAG Status	ChIP	Worm knockdown status
twi	hlh-8	HMS01317	sequenced	2-4h	Meso_Muscle	Small BAC to recomineer		
nau	hlh-1	HMC02974	sequenced	12-14h	Meso_Muscle	GFP tagged	pending	previously studied
E5	ceh-2	HMJ21631	sequenced	10-12h	CNS,Ect_Ep and Trachea	no GFP		sequenced
sens-2	(pag-3)*	HMS01394	sequenced	14-16h	Endo_MidGut	In progress: DRSC		sequenced
Blimp-1	blmp-1	HMC04792	Sequenced (redo 3/01/17)	10-12h	Ect early; multiple OS late	GFP tagged	pending	sequenced
CG9876		HMC03056	sequenced	12-14h	Ect (oeoncyte specific), Trachea	GFP tagged	CHiP data	
Hr51	fax-1	HMS01951	sequenced	14-16 h	CNS	GFP tagged	CHiP data	RNA sample sent
scrt	ces-1	HMC03996	sequenced	10-12h	CNS, PNS	GFP tagged	pending	RNA sample sent
AP-2	aptf-1	HMS02159	sequenced	10-12h	CNS, PNS, Epi/Ect	Large BAC		Not in pipeline
CG33557	hlh-16	HMC03056	sequenced	6-8h	CNS specific	GFP tagged	pending	Not in pipeline
dmrt99B	dmd-5	HMC03088	sequenced	6-8h	CNS,SNS,foregut, visual system	GFP tagged	pending	Not in pipeline
onecut	ceh-48	HMS01438	sequenced	12-14h	CNS,PNS,SNS	Small BAC		2x backcrossed
ss	ahr-1	HMS00296	sequenced	12-14h	PNS specific	GFP tagged	pending	No mutant
scro	ceh-24	HMS00828	sequenced	12-14h	CNS, foregut	In progress: DRSC		RNA sample sent
caup	irx-1*	HMS02716	sequenced	10-12h	FoGut ,Ect/Epi, ImagPr,Trachea	GFP tagged	line at UC	Not in pipeline
fd59A	unc-130	HMC03155	sequenced (preliminary)	10-12h	CNS, restricted expression	GFP tagged	pending	Not in pipeline
pb		HMC03065	sequenced	8-10h	SNS, Meso_Muscle	GFP tagged	ChIP data	

RNAi knockdown of fly TFs

13 with sequencing in progress as of 5/03/17

Fly TF	Worm ortholog	RNAi line	Fly sequencing status	Peak expression	Organ System	TAG Status	ChIP	Worm knockdown status
esn	prkl-1	HMS01360	RNA sent 1-05-17	14-16h	Ect/Epi FoGut HiGut,CNS	GFP tagged	ChIP data	Not in pipeline
repo		HMS0297	RNA sent 1-05-17	14-16h	CNS specific	GFP tagged	ChIP data	
CG17181	scrt-1	HMS03165	RNAs sent 2-21-17	8-10h	Meso_Muscle	GFP tagged	line at UC	Not in pipeline
HLH54F	hlh-10	HMC06030	RNAs sent 2-21-17	8-10h	Meso_Muscle	GFP tagged	ChIP data	Not in pipeline
CG32006		HMC05800	RNAs sent 2-21-17	12-14h	PNS	GFP tagged	ChIP data	
Ets65A	ast-1	HMS02246	RNAs sent 2-21-17	12-14h	CNS	GFP tagged	ChIP data	No mutant
sens	pag-3	HMC03997	RNAs sent 2-21-17	6-8h	CNS, SalGI	GFP tagged	ChIP data	4X backcrossed
Sox14	sem-2	HMS00103	RNAs sent 2-21-17	6-8h	Midgut	GFP tagged	ChIP data	Not in pipeline
trh	hlh-34	HMS00002	RNAs sent 2-21-17	6-8h	Trachea, SalGL	GFP tagged	ChIP data	Not in pipeline
kay	fos-1	HMS00254	RNA sent 3/01/17	10-12h	Endo_Midgut, HiGut,	GFP tagged	ChIP data	Mutant?
bsh	tab-1	HMS02708	RNA sent 4/04/17	10-12h	CNS	GFP tagged	ChIP data	
ERR		HMC03087	RNA sent 4/04/17	10-12h	Mat, Midgut chamber	GFP tagged	ChIP data	
Xbp1	xbp-1	HMS03015	RNA sent 4/04/17	10-12h	Mat; Mesoderm, Endo_MidGut, Ubiq	GFP tagged	ChIP data	

RNAi knockdown of fly TFs

17 with stock expansion, embryo collections or RNA preps in progress 5/03/17

Fly TF	Worm ortholog	RNAi line	Fly sequencing status	Peak expression	Organ System	TAG Status	ChIP	Worm knockdown status
Sox102F	egl-13	HMC05985	Embryos collected	12-14h	CNS	GFP tagged	ChIP data	
Hr46	nhr-23	HMC03156	Embryos collected	12-14h	Trachea, Midgut, Hindgut, Foregut	GFP tagged	ChIP data	
zfh2	zfh-2	HMC03043	Embryos collected	12-14h	Hindgut, CNS, Epidermis	GFP tagged	ChIP data	
dac	dac-1	HMS01435	Expanding stock	6-8h	CNS, PNS, HiGut	GFP tagged	ChIP data	4x backcrossed
toe		HMC03061	Expanding stock	6-8h	Epidermis, Foregut, Hindgut	GFP tagged	ChIP data	
CG9305	B0261.1	HMC05092	Expanding stock	6-8h	Mat; Ubiq, MidGut, visceral muscle	GFP tagged	ChIP data	
CG2120		HMC05567	Redo collections	14-16h	Endo_Midgut	GFP tagged	ChIP data	
CG11617		HMJ02091	Making homozygous stock	14-16h	Meso_Muscle	GFP tagged		
Eip75B	nhr-85	HMS01530	Homozygous stock not viable	12-14h	Endo_Midgut	MIMIC	ChIP data	Not in pipeline
Sox15		HMC04657	Expanding stock	10-12h	PNS	GFP tagged	CjIP data	
HHEX	pha-2	HMC05113	Homozygous stock not viable	10-12h	Endo_Midgut	GFP tagged	line at UC	No mutant
HLH4C	hlh-15	HMJ23320	Expanding stock	10-12h	CNS	small BAC		sequenced
slou	ceh-1	HMJ22924	Expanding stock	10-12h	Meso_muscle	GFP tagged	ChIP data *	
foxo	daf-16	HMS00422	Expanding stock	10-12h	Mat; Endo_midgut	MiMIC	ChIP data	
CG7556	F54F2.9	HMS00515	Expanding stock	10-12h	SalGI	GFP tagged	ChIP data	
Su(hw)		HMS00848	Expanding stock	2-4 & 6-8h	Mat, CNS, Foregut, SalGI	GFP tagged	ChIP data	
org-1	mls-1	HMJ30030	Expanding stock	6-8 & 12-14h	Meso_Muscle	GFP tagged	ChIP data	
Hmx	mls-2	HMJ22710	Expanding stock	4-6 & 14-16h	CNS	GFP tagged	ChIP data	
Mio	F39C12.1	HMC04938	Expanding stock	4-6h	Mat; broad	GFP tagged	ChIP data	

GFP imaging for Aim 3 of grant

Will focus on genes that

- have CHip data
- have RNAi data
- have good patterns

CG9876

Hr51

repo

sens

Su(HW)

trh

Also want to look at genes that
integrated outside the AttP site

ATbp

peb

ro

CG13424