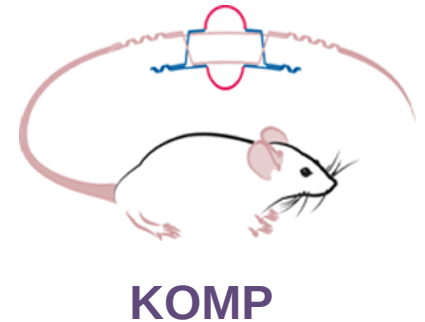


KOMP-CSD Project Report

Overview

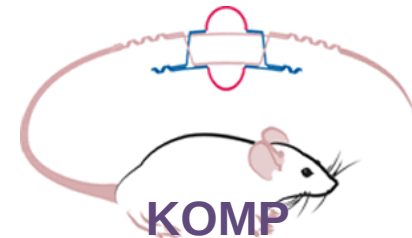
- Goals
- KOMP-CSD Alleles
- Production summary
- Pipeline statistics
- Recovery activities
- Results: distribution, publications, applications



KOMP_CSD Progress Report

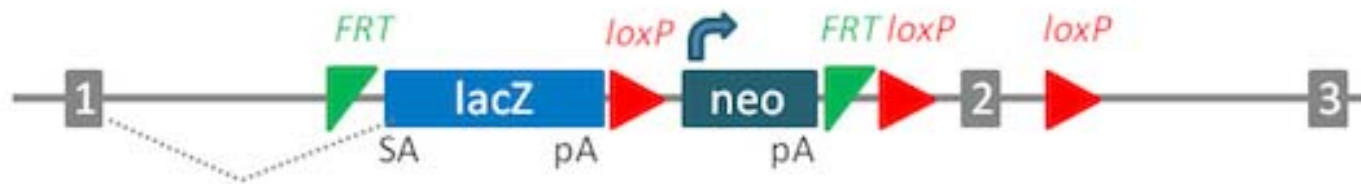
Goals:

- 5,000 genes knocked-out with 3 confirmed alleles
- Targeting Vectors and ES cells available to the community and follow-up projects
- Quality Assessment of Resources at two sites, including germ-line transmission for a subset of KO-ES cells.



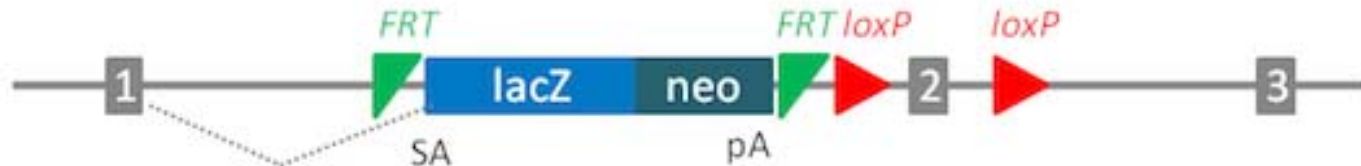
KOMP-CSD alleles

Knockout-first (promoter)



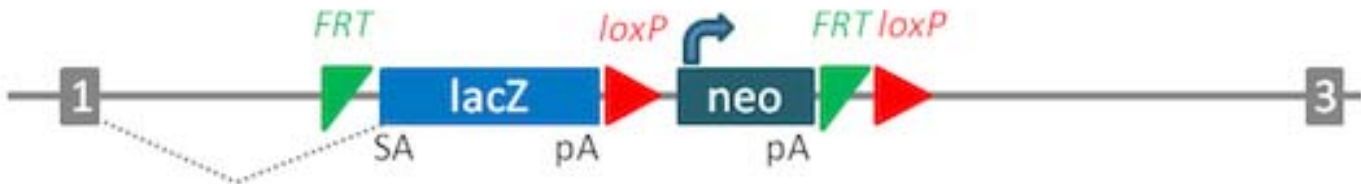
KOMP-CSD

Knockout-first (promoterless)



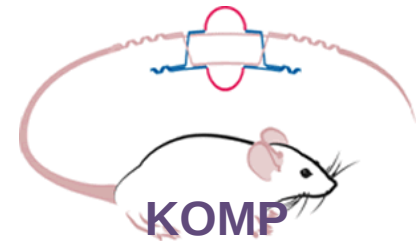
KOMP-CSD

Deletion (lacZ-tagged)



KOMP-CSD

Pipeline summary



Cumulative totals of pipeline products

Total Generated Products	KOMP_CSD
Mice ¹	327
ES Cells ²	4964
Vectors ³	6881
Designs ⁴	7415

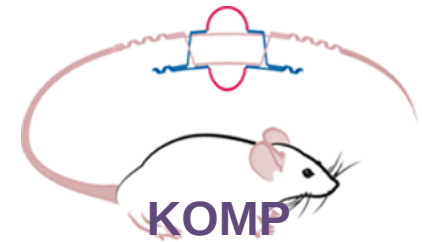
¹ Sanger (189 strains), UCD (138 strains)

² Sanger (4125 genes), UCD (839 genes), average 10 clones/gene

³ promoter –driven (6827 genes), promoterless (794 genes)

⁴ knockout-first allele (5879 genes), deletion allele (1536 genes)

Pipeline summary



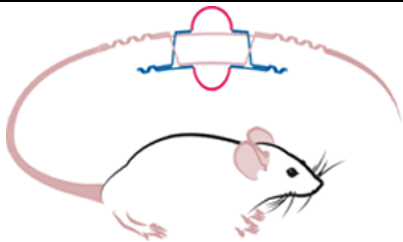
Period	ES Cell Electroporations	Genes Electroporated	Colonies screened	Correctly Targeted Clones	Unique Gene Count				
					Genes Electroporated	Correctly Targeted Genes	Success Rate (%)	Genes with >2 KO-first	Genes with >2 targeted
2006 to 2007	838	656	10168	1969	243	156	64%	138	149
2008	1910	1507	51136	5296	981	816	83%	624	740
2009	2321	2077	72459	14870	1604	1485	93%	1332	1430
2010	2140	1916	65361	18380	1684	1553	92%	1385	1497
Feb-11	178	176	5344	1006	135	103	76%		
Mar-11	180	179	5344	899	146	112	77%		
Apr-11	196	190	5456	1310	154	138	90%		
May-11	173	173	5663	908	118	95	81%		
Jun-11	171	169	4640	729	142	95	67%		
Jul-11	210	208	6571	1346	198	154	78%		
Aug-11	213	209	6710	841	180	119	66%		
Sep-11	293	292	8688	1281	186	138	74%		
Oct-11	287	283	4552						
2011	1901	1879	52968	8320	1259	954	76%	774	800
Total	9110	8035	252092	48835	5771	4964	86%	4253	4616

UCD-CSD Production

UCD's production has to date accounted for ~20% of a conditional knockout resource for the genome-wide study of mouse gene function

CENTER	Period	A l l e s s e s	G e n e s	F i n a l v e r i f i c a t i o n	ES Cell Electroporations	Genes Electroporated (unique)	Colonies screened	Correctly Targeted Clones	Number of Genes Screened	Correctly Targeted Genes	QC Pass Rate (%)	Success Rate (%)	EP gene count (unique)	Targeted gene count (unique)	New genes this month
UCD	2009				415	410	17232	7765	389	366	94%	89%	410	366	364
UCD	2010				512	512	16371	5725	510	457	90%	90%	370	333	332
UCD	2011				413	346	10439	2147	325	216	66%	67%	347	232	211
Total	To date				1340	1268	44042	15637	1224	1039	85%	84%	1281	1072	1048

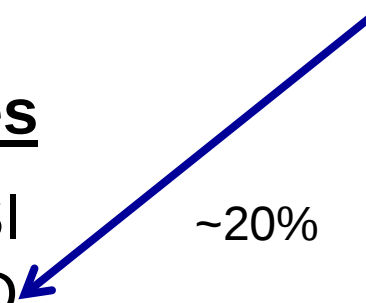
CSD production to date: 4988 unique genes

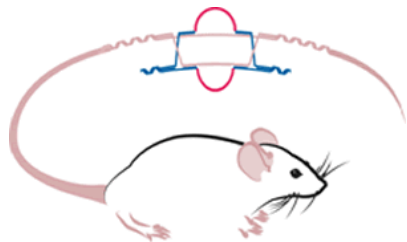


4177 WTSI

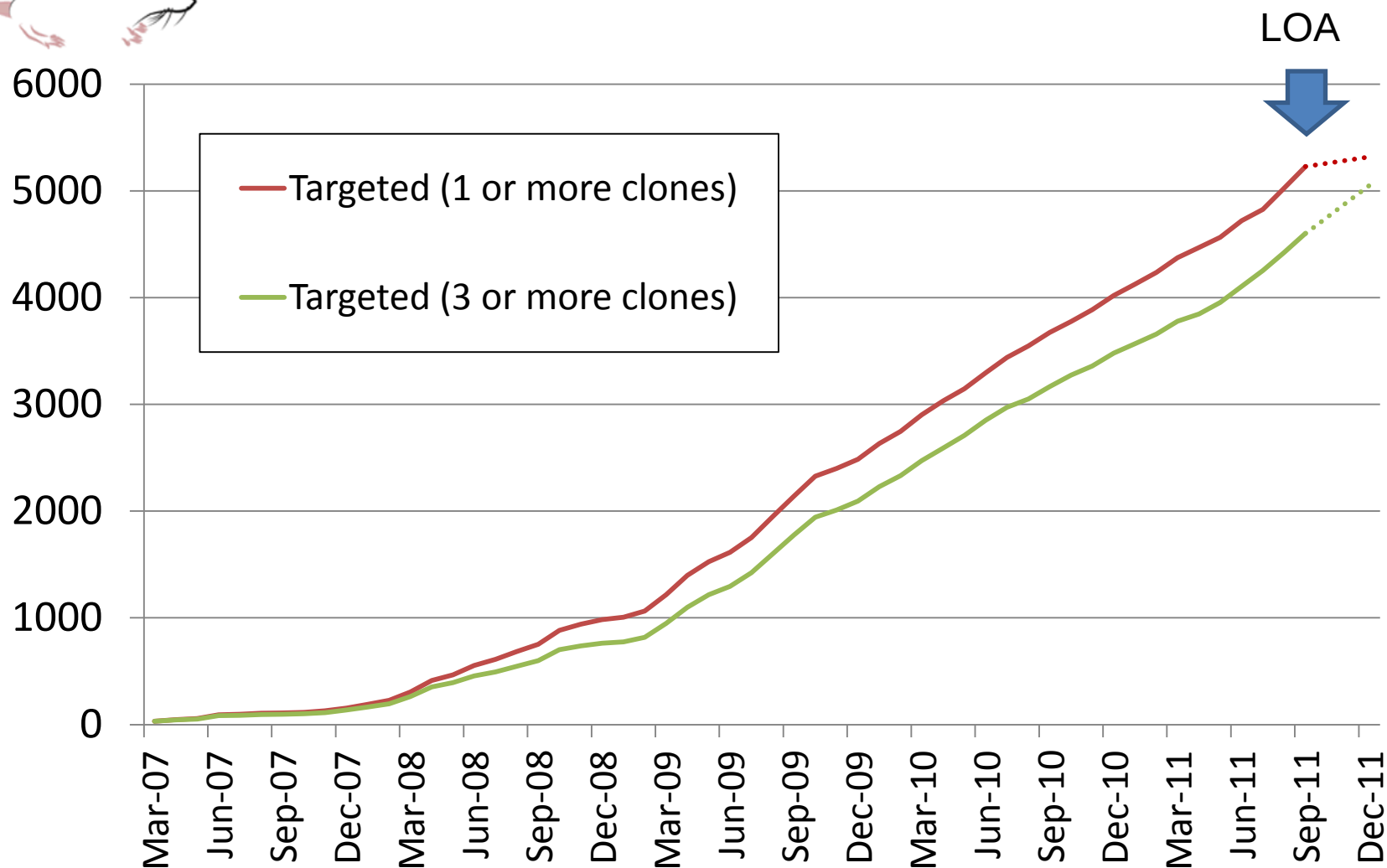
1041 UCD

~20%





Pipeline summary



KOMP-CSD targeting statistics

8,728 electroporations

5,771 genes electroporated

244,993 colonies screened

5,119 genes targeted (90% success rate)

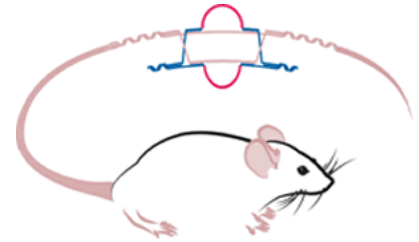
Average targeting efficiency:	40%
-------------------------------	-----

Average # clones screened:	32
----------------------------	----

Average # targeted clones:	14
----------------------------	----

Average # KO-first clones:	10
----------------------------	----

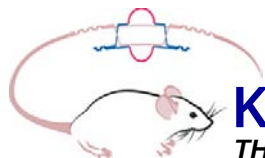
Median # KO-first clones:	8
---------------------------	---



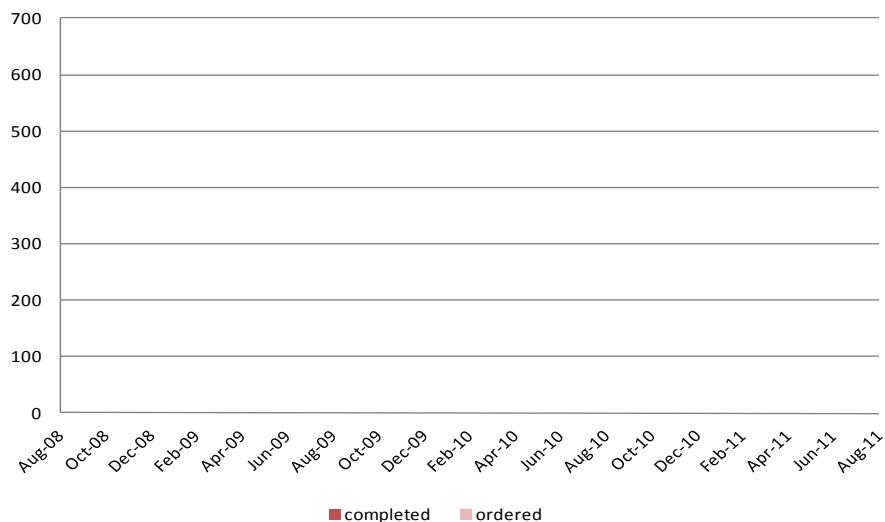
CSD vs. REGN targeting success (798 genes)

# genes	CSD	REGN
454	✓	✓
276	✓	✗
49	✗	✓
19	✗	✗

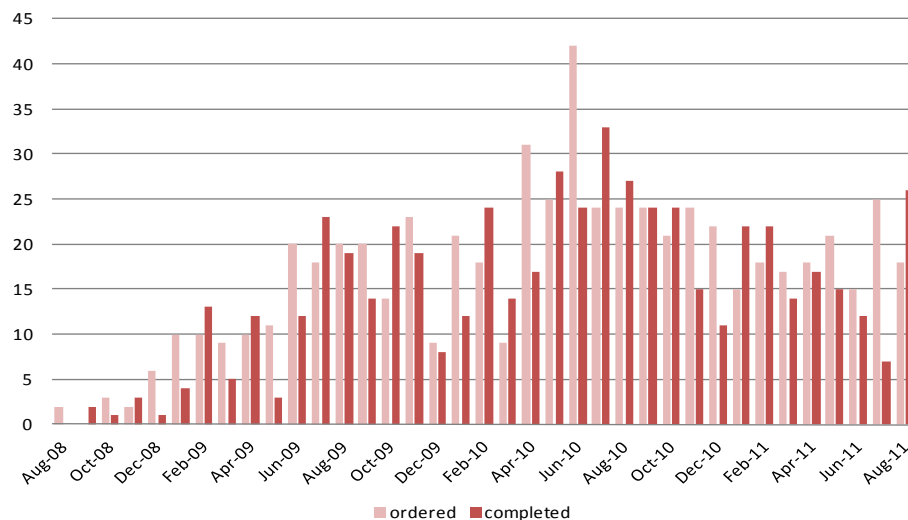
98% of genes targeted by CSD and/or REGN!



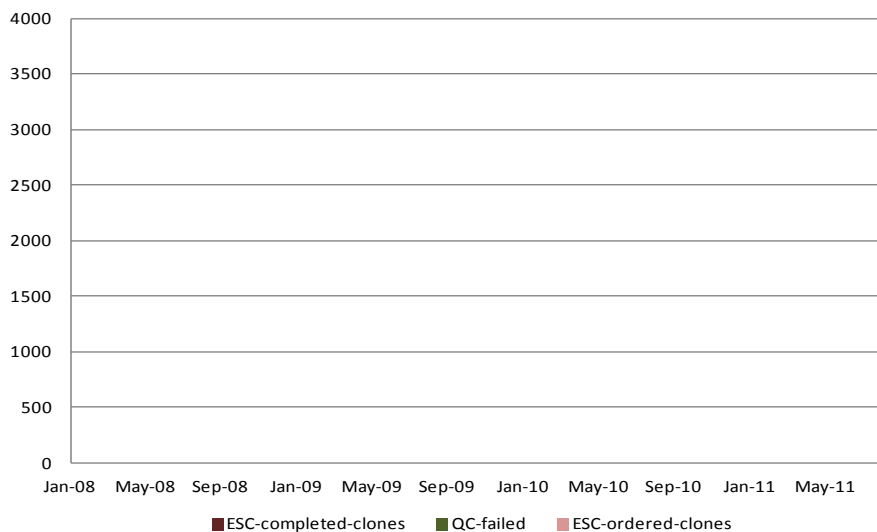
Vector order fulfillment



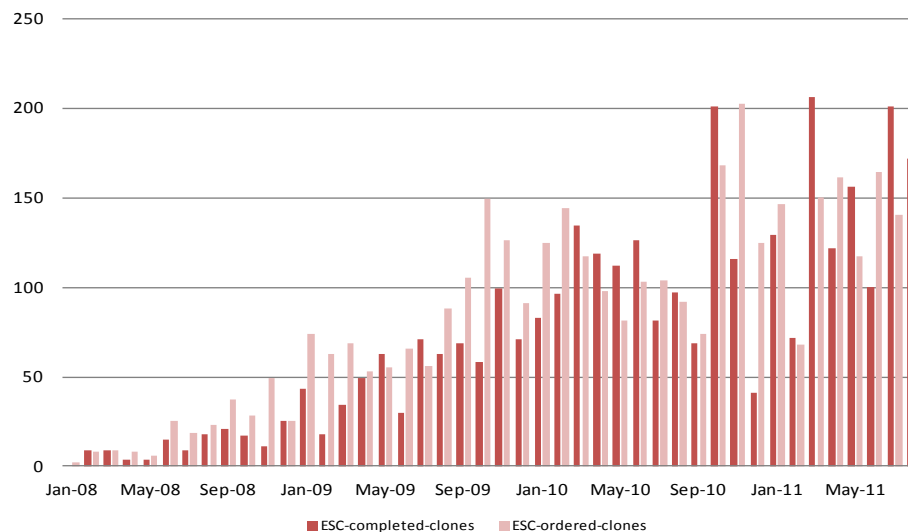
Vector order fulfillment



ESC order fulfillment [clones]



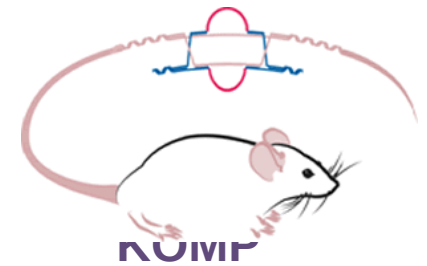
ESC order fulfillment [clones]



Recovery activities (Oct '11 to Mar '12)

- **Vector recovery (CHORI)**
 - 500 projects that failed recombineering
 - Oligo resynthesis
 - Re-design oligos
- **EP recovery (Sanger)**
 - 750 projects with 1-2 conditional clones
 - 700 projects no targeted clones recovered
 - Repeat electroporations
 - Loss-of-allele assay

Publications



How do I acknowledge use of a KOMP product or service used for a publication?

- By obtaining a KOMP product (vector, ES cell, mice, germplasm) or service (e.g., microinjection) from the KOMP Repository, you agree to acknowledge the NIH KOMP program.
- For your convenience you may use the following information in your publications:

The vector, ES cell(s), and/or mouse strain used for this research project was generated by the trans-NIH Knock-Out Mouse Project (KOMP) and obtained from the KOMP Repository (www.komp.org). NIH grants to Velocigene at Regeneron Inc (U01HG004085) and the CSD Consortium (U01HG004080) funded the generation of gene-targeted ES cells for 8500 genes in the KOMP Program and archived and distributed by the KOMP Repository at UC Davis and CHORI (U42RR024244).

<http://www.komp.org/faq.php#faq11>

Acknowledgements: KOMP-CSD Project

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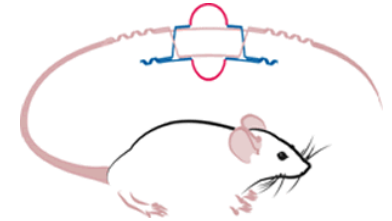
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