

## Putative H3K9me3 target genes in the early 2<sup>nd</sup> instar downregulated

<b>Downregulated H3K9me3 target</b>	<b>Function</b>	<b>Loss-of-function phenotype, or knockdown related to developmental lethality</b>	<b>Reference</b>
<i>Calmodulin (Cam)</i>	Calcium sensor	1 <sup>st</sup> instar larval stage lethality	Wang et al., 2003
<i>Glycoprotein 93 (Gp93)</i>	Heat shock protein chaperones	severe growth defect and mid-gut phenotype at each larval stage, with complete death at the 3 <sup>rd</sup> instar stage	Maynard et al., 2010
KCNQ potassium channel (KCNQ)	Potassium channel subunit	One to two days prolonged development, fewer eclose	Ocorr et al., 2007
<i>Eukaryotic initiation factor 4B (eIF-4B)</i>	Translation initiation factor, protein synthesis	S2 cell culture RNAi knockdown showed its requirement for cell survival	Hernández et al., 2004
<i>Minichromosome maintenance 6 (Mcm6)</i>	Mini-Chromosome Maintenance (MCM) Complex subunit, eukaryotic replicative DNA helicase, DNA replication	Partial lethality, reduced pupal size of escapees.	Apger et al., 2010
<i>Minichromosome maintenance 10 (Mcm10)</i>	Zinc finger domain, DNA replication	Lethality prior to adulthood	Schwed et al., 2001
Muscle-specific protein 300 kDa ( <i>Msp-300</i> )	Nesprin-like protein	Larval lethality, embryonic muscle morphogenesis	Technau and Roth, 2008
<i>Neurotrophin 1 (NT1)</i>	Cytokine, Toll pathway	Larval partial lethality, with <i>NT2</i> , nervous system development	Zhu B et al., 2008
<i>Phospholipase D (Pld)</i>	Phospholipase enzyme, vesicle trafficking	Embryonic lethality at cellularization	LaLonde et al., 2006
SET-domain containing 2 ( <i>SET2</i> )	H3K36me2,3 methyltransferase, dosage compensation	Larval lethality	Laschan et al., 2007
Spc105-related ( <i>Spc105</i> )	Kinetochore component, assembly and function	Embryonic lethality	Schittenhelm et al., 2009
<i>bicoid-interacting protein 3 (bin3)</i>	RNA methyltransferase	Embryonic lethality in maternal null offspring, severe head involution defects	Cosgrove et al., 2012

<i>apterous (ap)</i>	Homeodomain transcription factor	Polyphasic lethality, primarily at the larval and pupal stages, juvenile hormone synthesis, dorsal-ventral pattern formation	Shtorch et al., 1995
<i>furrowed (fw)</i>	Suggested carbohydrate-binding protein	Allelic differences, lethality of one allele in females in pupal stage	Leshko-Lindsay and Corces, 1997
<i>scully (scu)</i>	$\beta$ -oxidation pathway enzyme, germline formation	Allelic differences, lethality in embryonic, third instar and late pupal phases	Torroja et al., 1998
<i>spookier (spok)</i>	Cytochrome P450 enzyme, ecdysone steroid hormone biosynthesis pathway	RNAi knockdown in prothoracic cells result in lethality in the 1 <sup>st</sup> instar stage in most larvae	Ono et al., 2006
<i>uninflatable (uif)</i>	transmembrane protein with extracellular domain with carbohydrate binding and cell signaling motifs	Embryonic and 1 <sup>st</sup> instar larval lethality, tracheal inflation and molting defect	Zhang and Ward, 2010.
<i>waterproof (wat)</i>	Fatty acyl-CoA reductase	Embryonic lethal, tracheal tube liquid clearance defect	Jaspers et al., 2014.