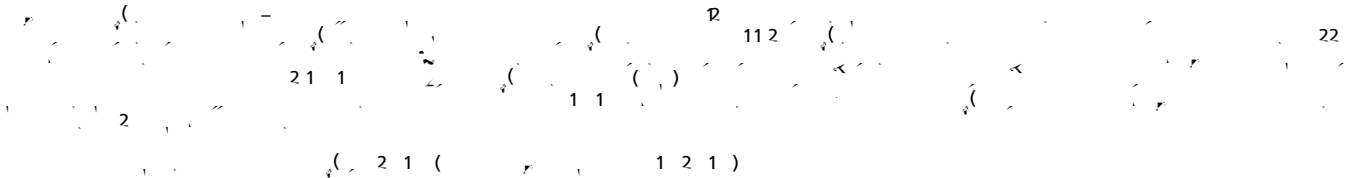


DNA methylation

Genetics: Rada, Pa, M. G., N. O., Mac, R. a, Fa, Ma, Sc, W, R, G, J. Ha, a, Fa, L



Site-specific DNA methyltransferase 2 (Dnmt2) activity. The diagram shows a DNA double helix with various methylation sites indicated by arrows and labels. The diagram includes a scale bar with '112' and '22' markings, and a legend for methylation levels: '2 1 1' and '1 1 1'.

t \at att r t ga a t c r a -
td r c b tw D t1/3- t a D t2- t
t \ .

Results

Whole-Genome Bisulfite Sequencing of Three Independent Dnmt2-Only Models.

W t gat D t2- tDNA t \at
t r t \ : (i) *S. mansoni*, (ii) *D. melanogaster*, a
(iii) a tr \ c t (TKO) br c t c \ , w c
fic t r D t1, D t3a, a D t3b b t a r t a a
tact Dnmt2 g (28). A \ a \ w r b t a r t a
tra a \ t a tag t at w r r r t
(Tab 1). F r t r r , D t2 act t wa c fir b t \ a
t a d tRNA^A , w c w g \ \ t \ at r
t tab C38 tag t t d \ t r a \ (Fig. S1).
W t w \ g b \ fit c g t c r -
 \ a d g cDNA t \ at att r d \ t r
 \ . A t r b \ fit a at , DNA \ brar w r r -
ar a b ct t ar - \ a c g . R a
ar w r b \ a t t c r r g r r c
g fic g BSMAP 2.0 (29). T r \ t a rag tra -
c fic g c rag 13x r *Schistosoma*, 32x r *Dro-*
sophila, a 1x r TKO c \ (Tab 1). T c r rat
a ct r wa >98.0% d \ ca (Tab 1), w c
g t t at b \ fit a at a b fic t a t at
t c r at c \ b r t \ at a d .

Methylome of *S. mansoni*

... r ... H a ... r DNA ... w t b g ! t ! -
at (32) a t ... - DNA a ! t ... r a a -
rta t t r d c tr !.

A ta ! a d ... t Drosophila ata w t at t
a t a r t (99.7%) c t r ... a ar c ! t !
t ! at (rat <0.1), w r a ! 0.003% w a -
c ... r rat >0.5 (Fg. 2A). T ... tr b t wa b -
ta t d ! r t r t ... - a r DNA, w c
w c ! t t ! at (rat >0.9) r 4.3% t c -
t ... r t at w r a d (Fg. 2A). Pr c -
r c b t w t Drosophila a t c tr ! a ! w r
d t ct ab r t d t ... c c t t -
c ... r t c t r ... I t Drosophila ata t, ! 11%
t ... c ... r t c t r ... w r ... C G
d t (Fg. 2B). T ... tr b t tr g ! c tra t t
c tr ! a ! , w c w a g g r (98%) C G
c fict (Fg. 2B). F d ! , w d ... r ata ra ta !
a d Drosophila Invader4

a r l a t DNA t l at att r r a d , w w l
 t r r t t r t l at ar a b l g ca art act .
 T c r r at r w l g b l fit -
 c g ata t d w a t d a t c tr l t r g
 ata a d a r t t t ficat a t w t
 g r t t (25). A , w l g b l fit c g
 r t c l b ta t d l w r PCR a l ficat c d t a
 l c - c fic b l fi

a c ta a g l c r t c t r (Fg. 4B).
 N tab l , a b ta t d ract w w wt r t a tw
 c r t c t r w l - t br d w
 fic t c r Dnmt2 ta t br (Fg. 4C). T
 r g w r t c aract r b a g CGc t ta a l w
 ba c l t , w c w l r r t r l at l r ta t t
 at rat r g t b l fit c r t . T r l t
 r t r a g a g a t g DNA t l at Drosophila
 br a r a t d r t r t t t at
 D t2- l g a l ac DNA t l at .

Discussion

T DNA t l at tat Dnmt2- l g a a b
 a c tr r d t e r a l g t . T a b r l at t t
 act t at t r r t t l at l l w r t d t t
 t ct l t t ar t t at w r r DNA
 t l at a d (22). T r l t r c r at g r a c
 a d (23, 36, 37) a d a b a ct b c ta -
 at wt t l at DNA r t r g a , d g
 bact r a . S l at , l g ca t ct a r ac
 5- t l ct Drosophila br (38) c l a b a -
 ct b l w a t b c fict . A , a r . b l fit
 c g a d w r l t t l at g c l c (23, 24),
 w c a t r c t b t d t r l t . F a l ,
 t d b t att c r cata t c ca D t2
 (11) r t a l t " tar act . t , " . . a l w . at c act . t
 wt r l a b trat c fict , DNA b trat . T tar
 act . t c l b r b r r d a t g DNA
 t l at a g t b c c r a r c r ta r -
 t d c t (8, 38). H w . r , b ca w c l t t ct

Accession Numbers.

(D. melanogaster
(S. mansoni) 21
1 2 1 2 1 2

ACKNOWLEDGMENTS.

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1-1
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