

Lezione XV-XVI

giovedì 10-XI-2011

corso di genomica

Laurea Magistrale Biotecnologia Industriale

aula 8

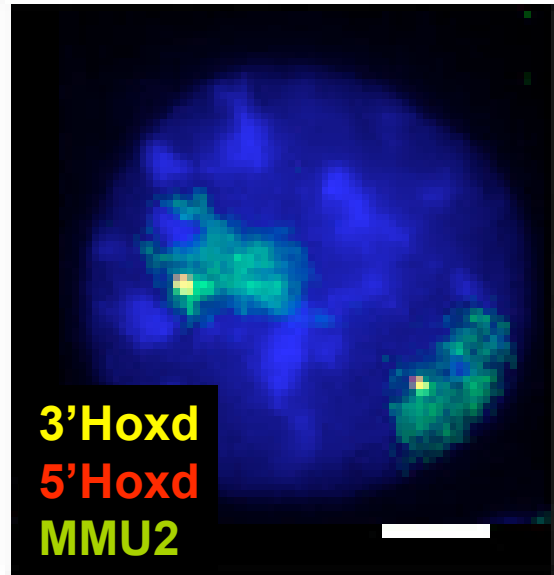
orario : Martedì ore 14.00 - 16.00

Giovedì ore 13.00 - 15.00

libro consigliato Zanichelli “Introduz. Alla genomica” di
Arthur M.Lesk

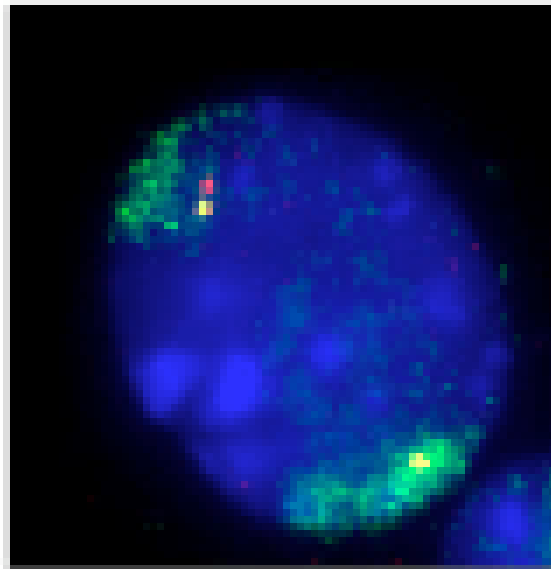
D. Frezza

DAPI FISH a 4 colori

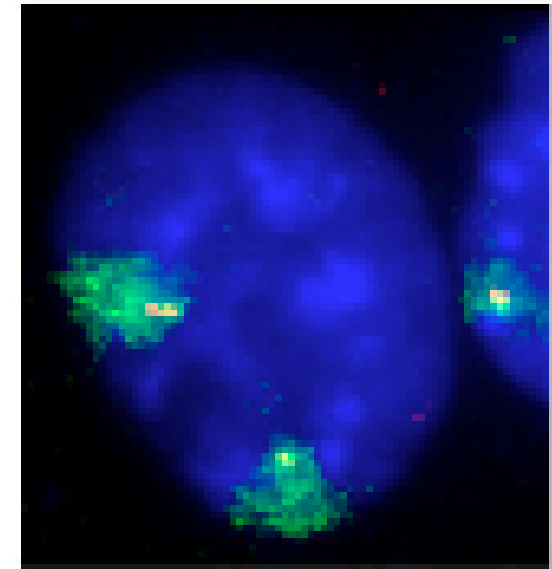


undifferentiated

white bar 5 μ m



day 4



day 14

four color DNA FISH using fosmid probes 3'Hoxd(yellow), 5'Hoxd(red), MMU2 paint(green) on DAPI blue counterstained nuclei of ES cells

Istogrammi della distribuzione fig. 5

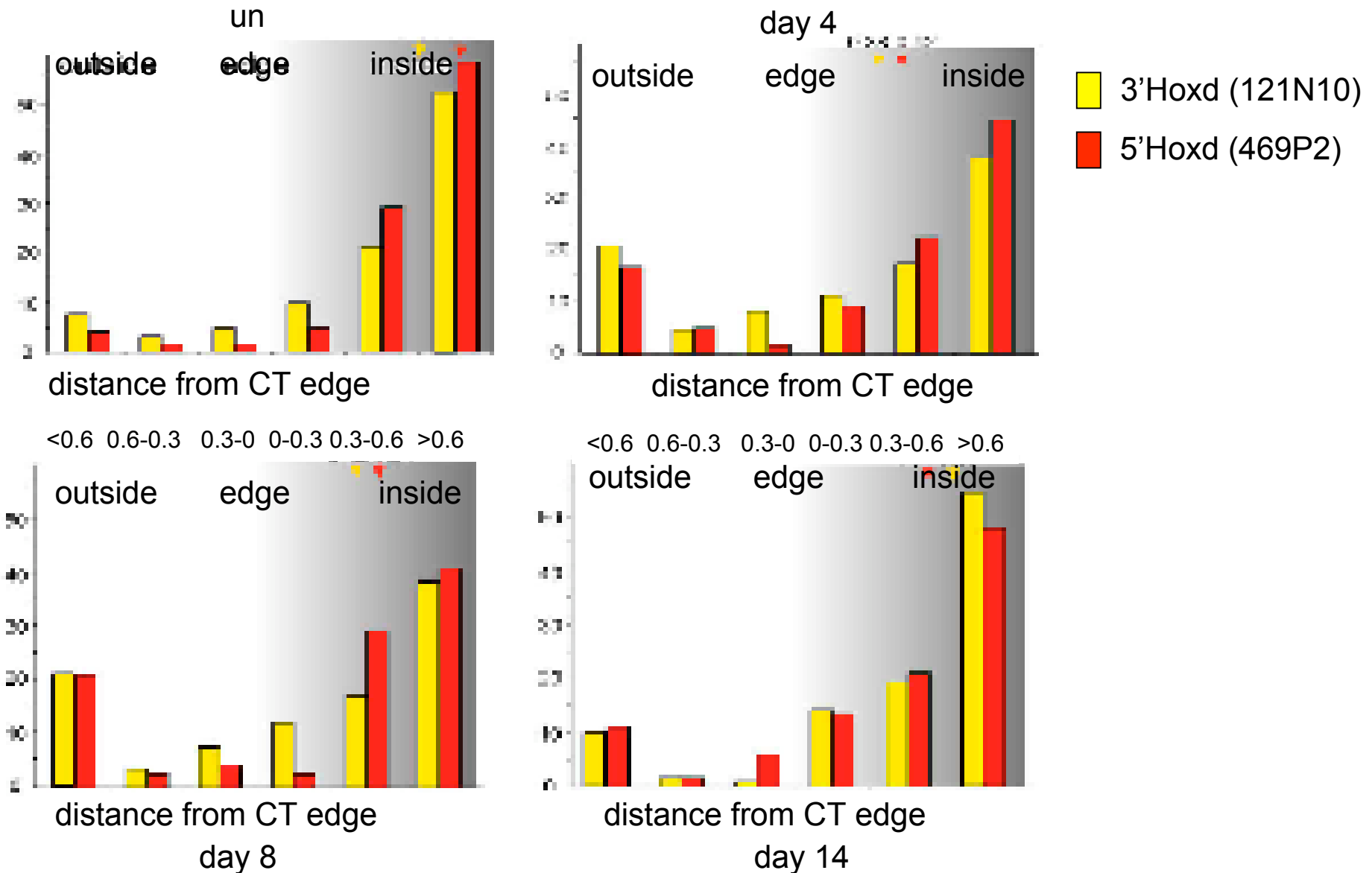
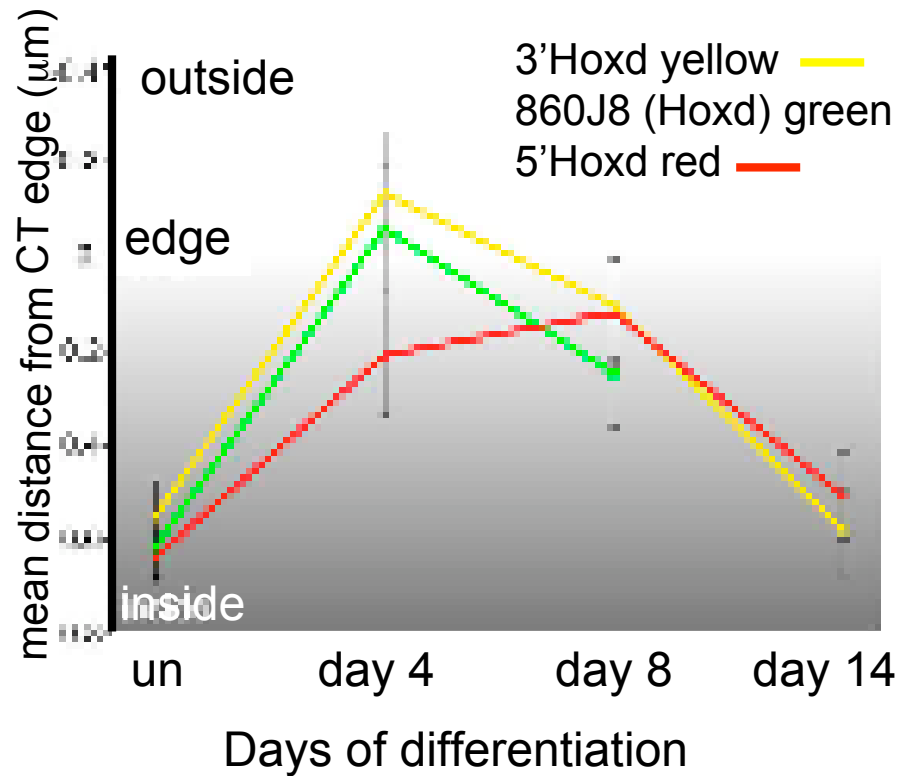
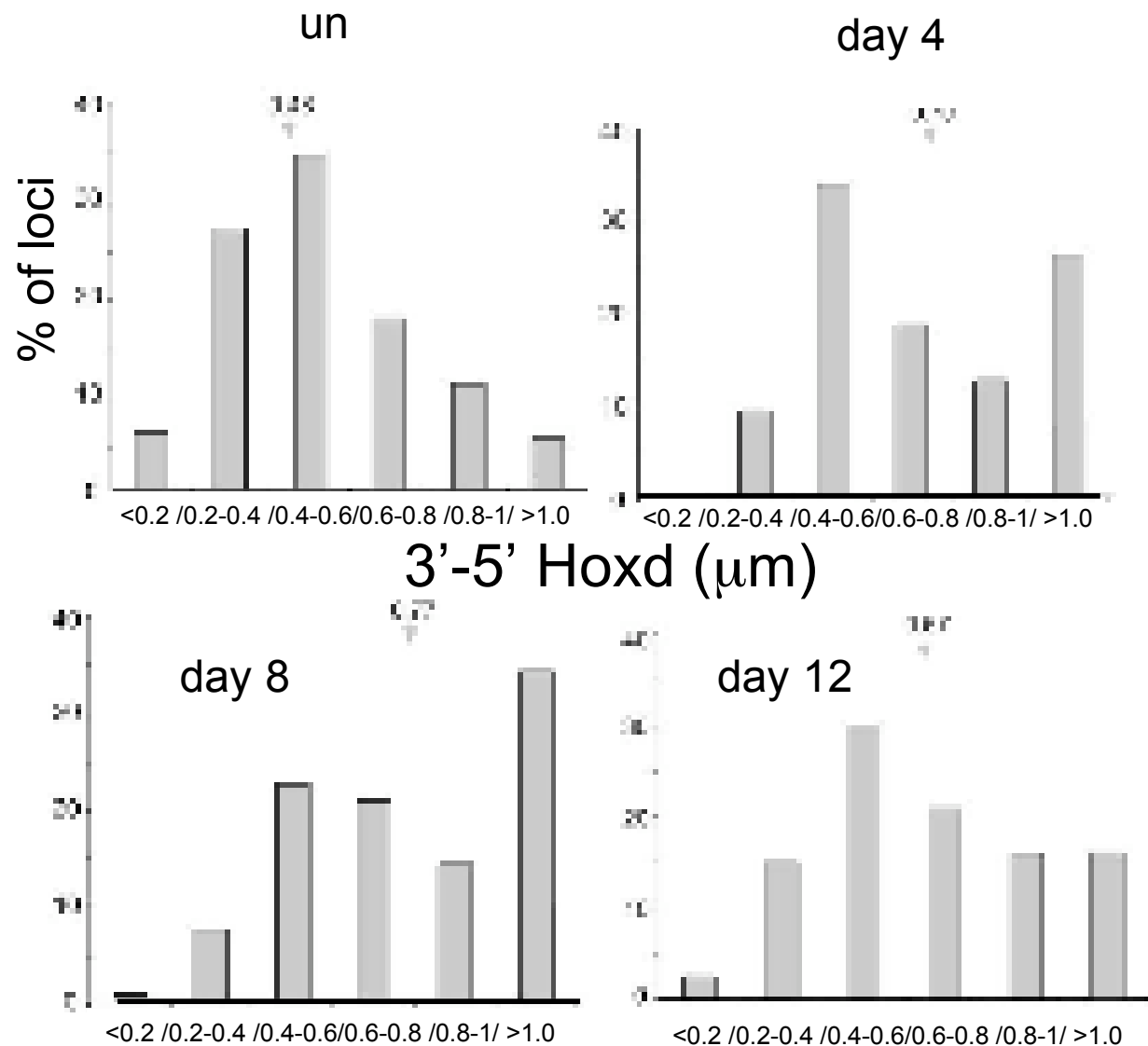


grafico della distribuzione



ES cells RA stimulated

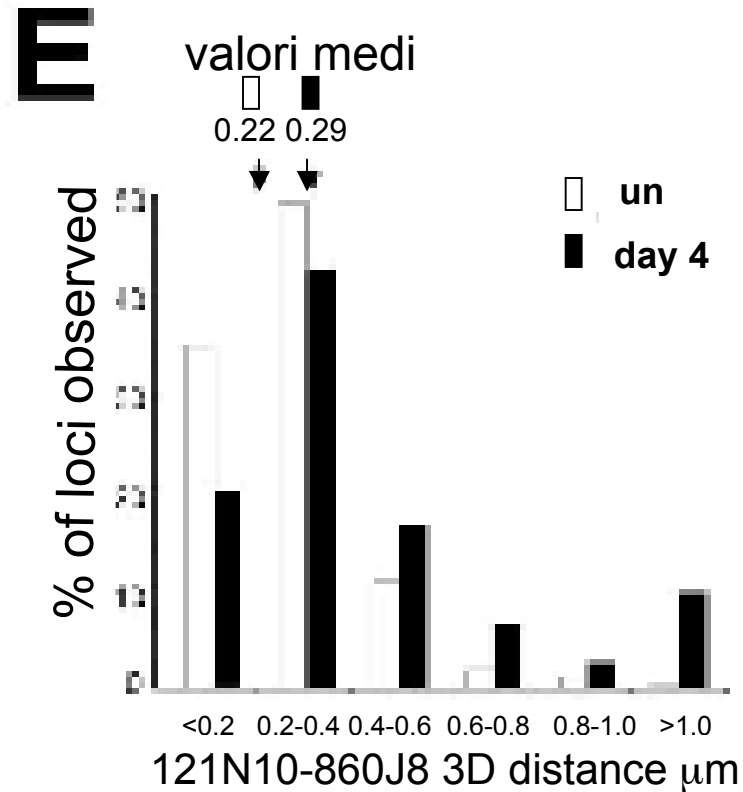
distanza tra 5' e 3' di Hoxd



frequenze delle
 distanze osservate in
 ES cells stimulate
 con RA a tempi
 diversi;
 distanze relative tra il
 5' ed il 3' della
 regione Hoxd
 Fosmids 121N10; 469P2

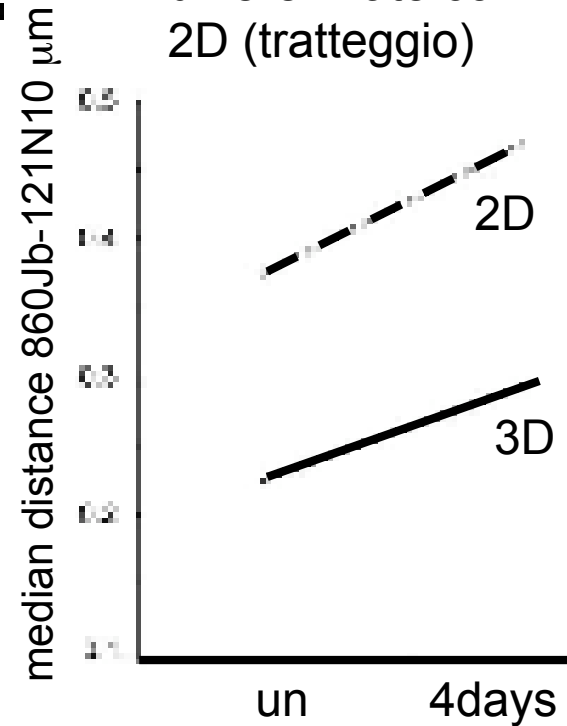
A cosa serve misurare la
 distanza tra il 5' ed il 3' del
 cluster Hoxd propriamente
 detto? È la conseguenza di
 quale esperimento?

distanza tra 3'e centro Hoxd fig.5

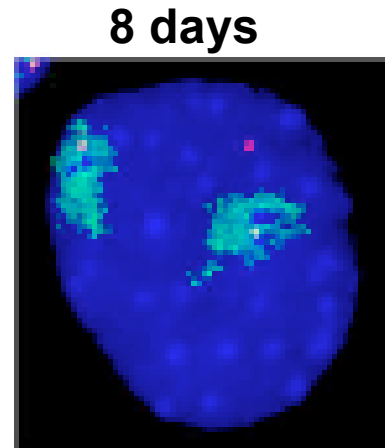
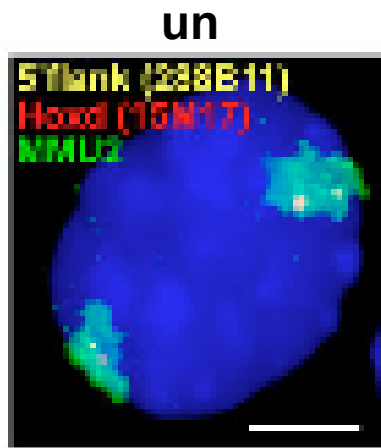


F

media della distanza dei segnali
dei probes 860J8(centro)-121N10(3')
in cellule non differenziate e
differenziate con FISH 3D (solid) e
2D (tratteggiato)

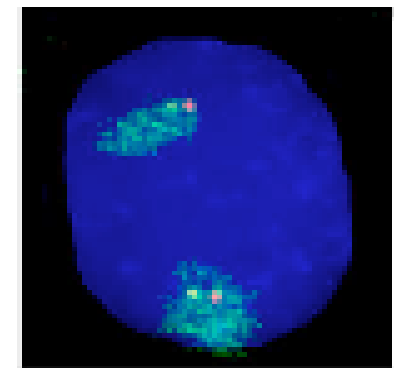
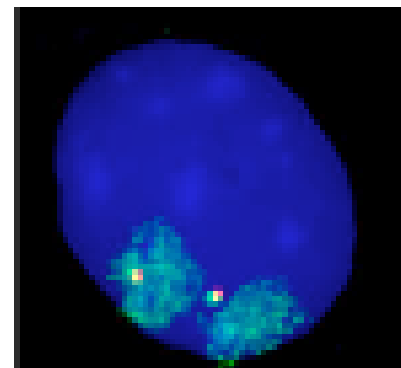
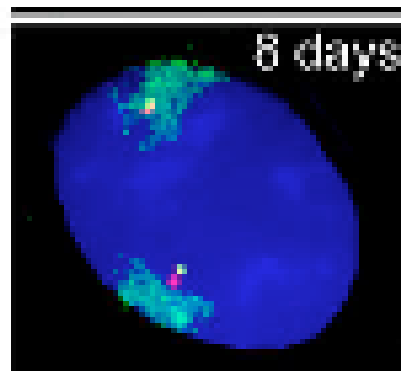
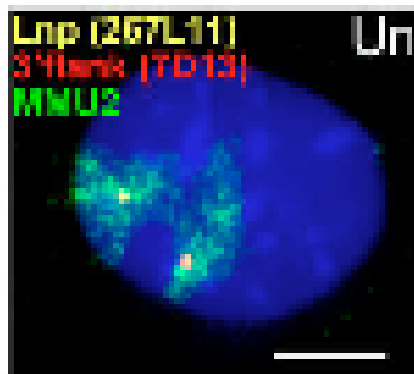


come sono le singole osservazioni



5' flank RP23-288B11 Y;
Hoxd RP23-15M17 r;

Lnp (giallo), 3' flank (rosso), MMU2 (verde)



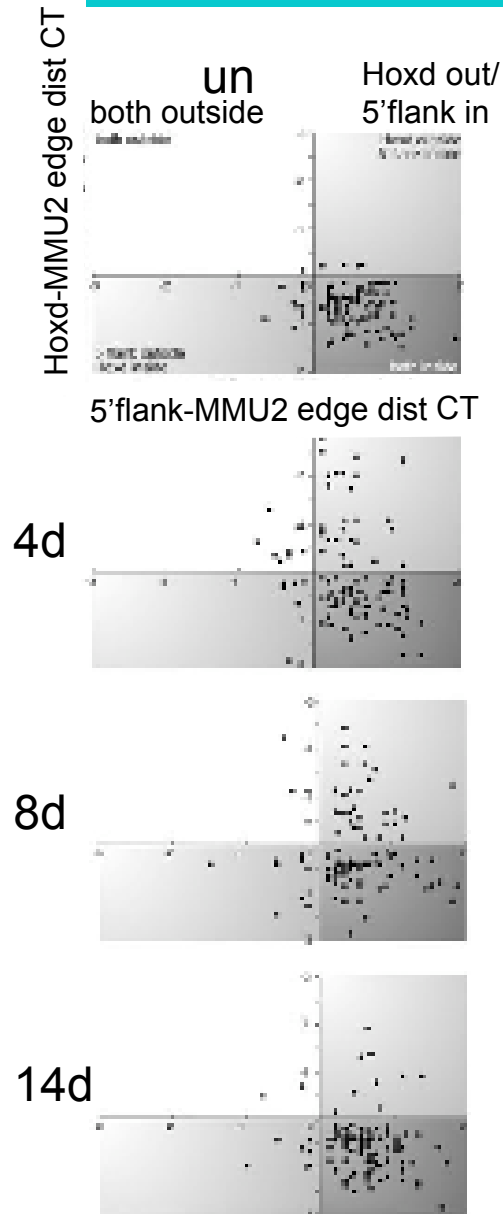
probes: BACs
RP23-267L11 y
RP23-7D13 r

Cromatina
decondensata
fuori del CT

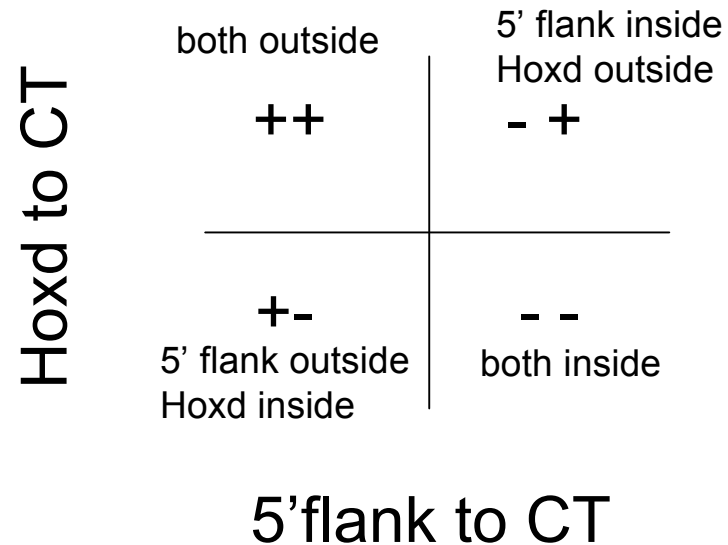
cromatina
condensata fuori
del CT

cromatina
decondensata
dentro il CT

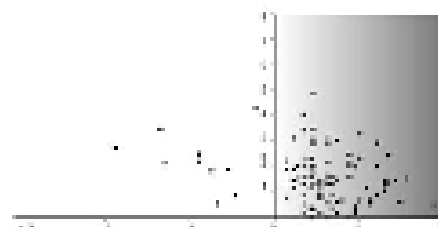
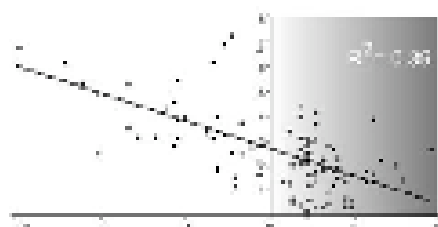
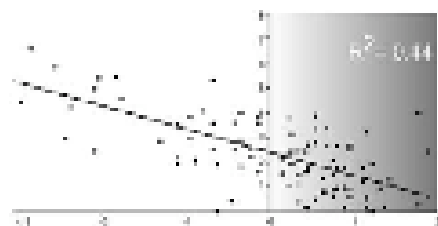
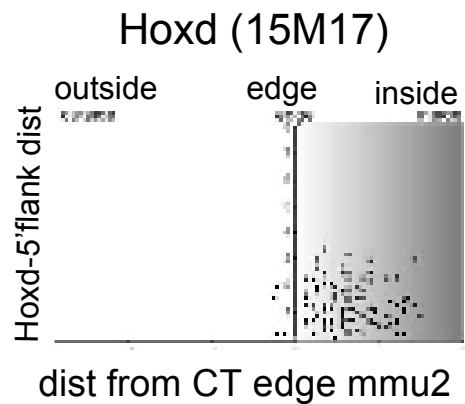
plot dei dati osservati fig6



Analisi su 4 quadranti

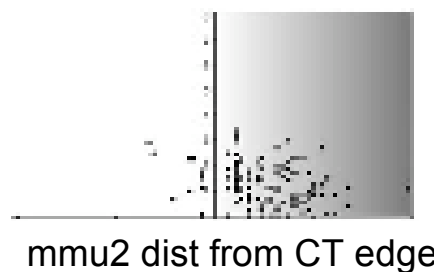


analisi dei dati con regressione

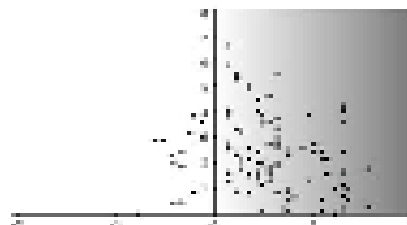


5'flank (288B11)

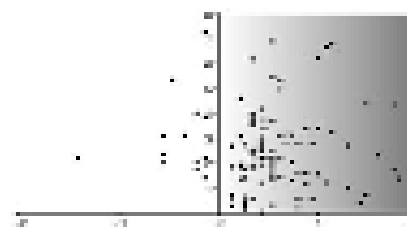
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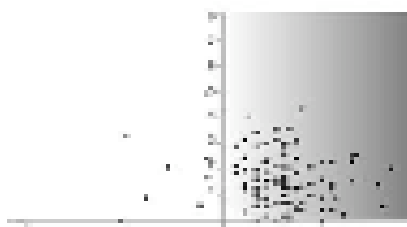
4d



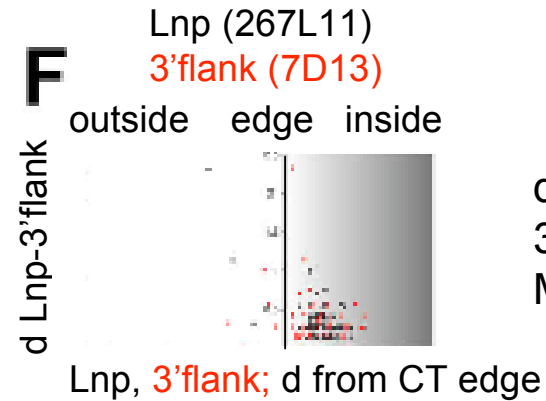
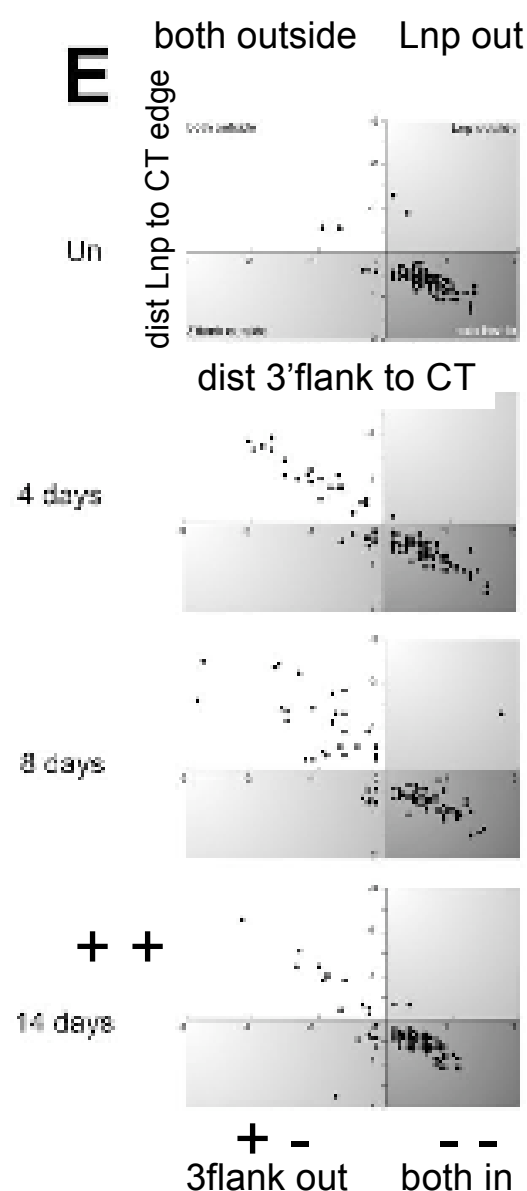
8d



14d



Distanza Lnp e 3' flank fig 6



dist. Lnp (black dots) and
3'flank (red dots) from
MMU2 edge

In this analysis a probe
signal is considered to be
outside the CT when its
distance to the CT edge is
negative. Distance >0
correspond to probe
signals inside the CT

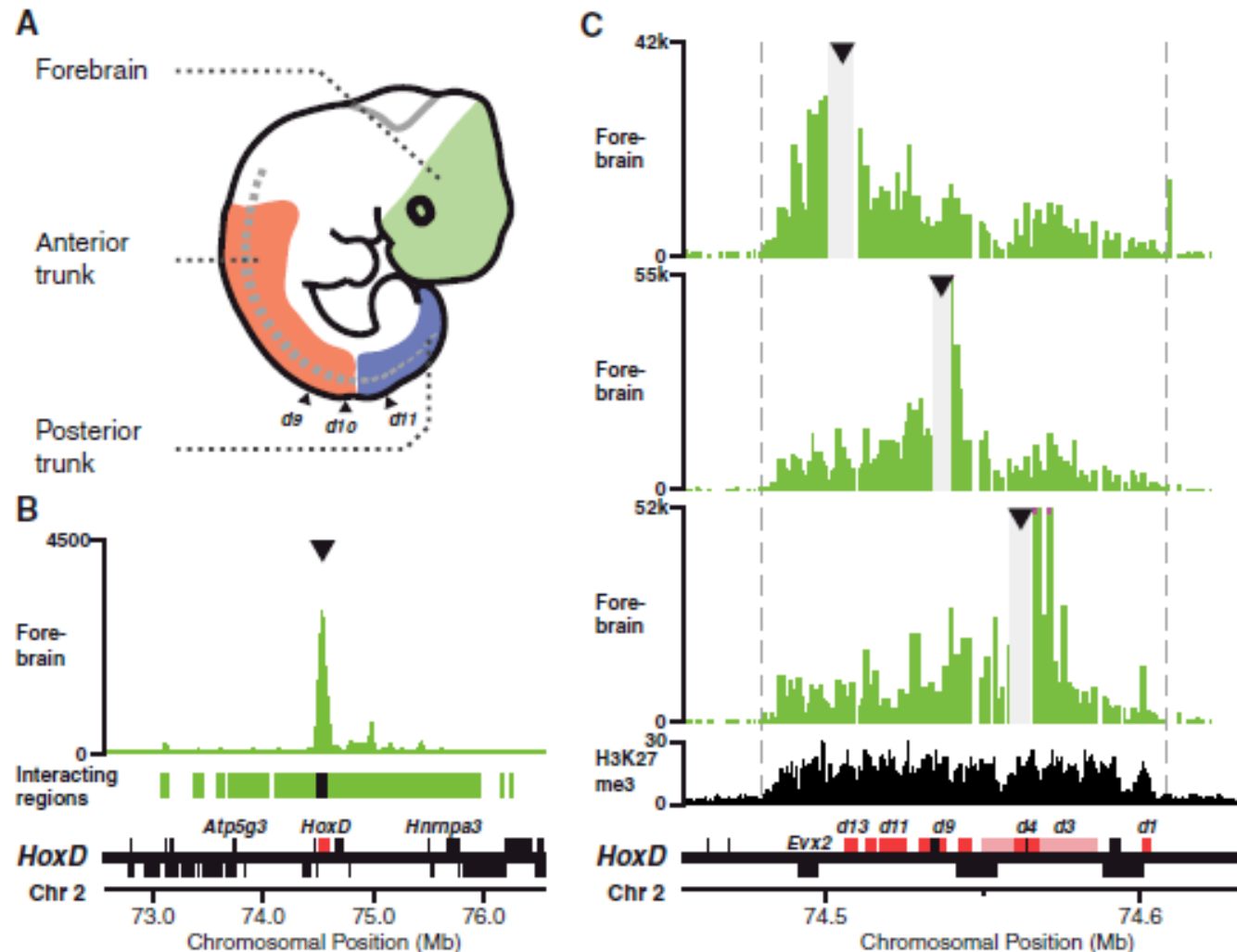
dynamic architecture of Hox clusters

Daan Noordermeer, Marion Leleu, erik Splinter, Jaques Rougemont, Wouter de Laat, Denis Duboule

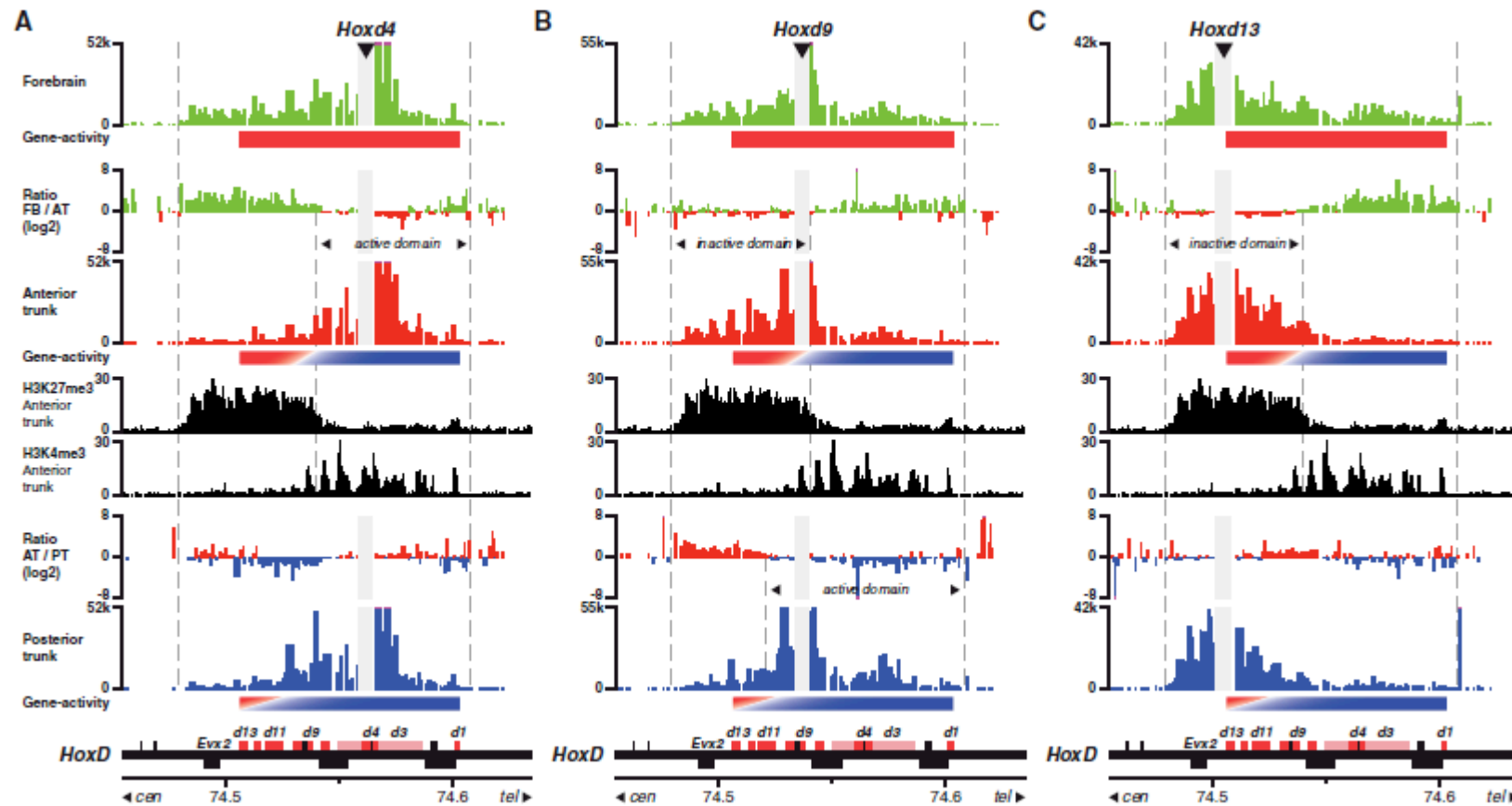
Science vol 334, 14 Ottobre 2011

1494

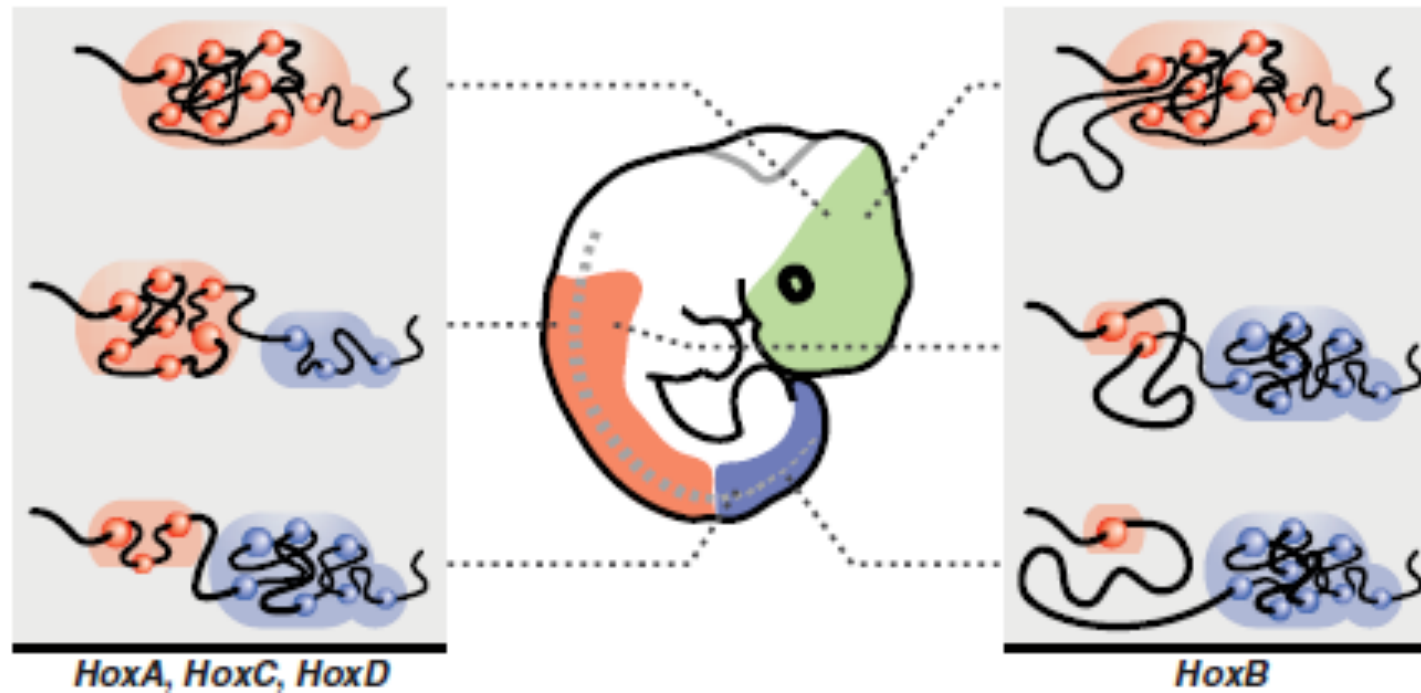
Espressione del cluster Hoxd



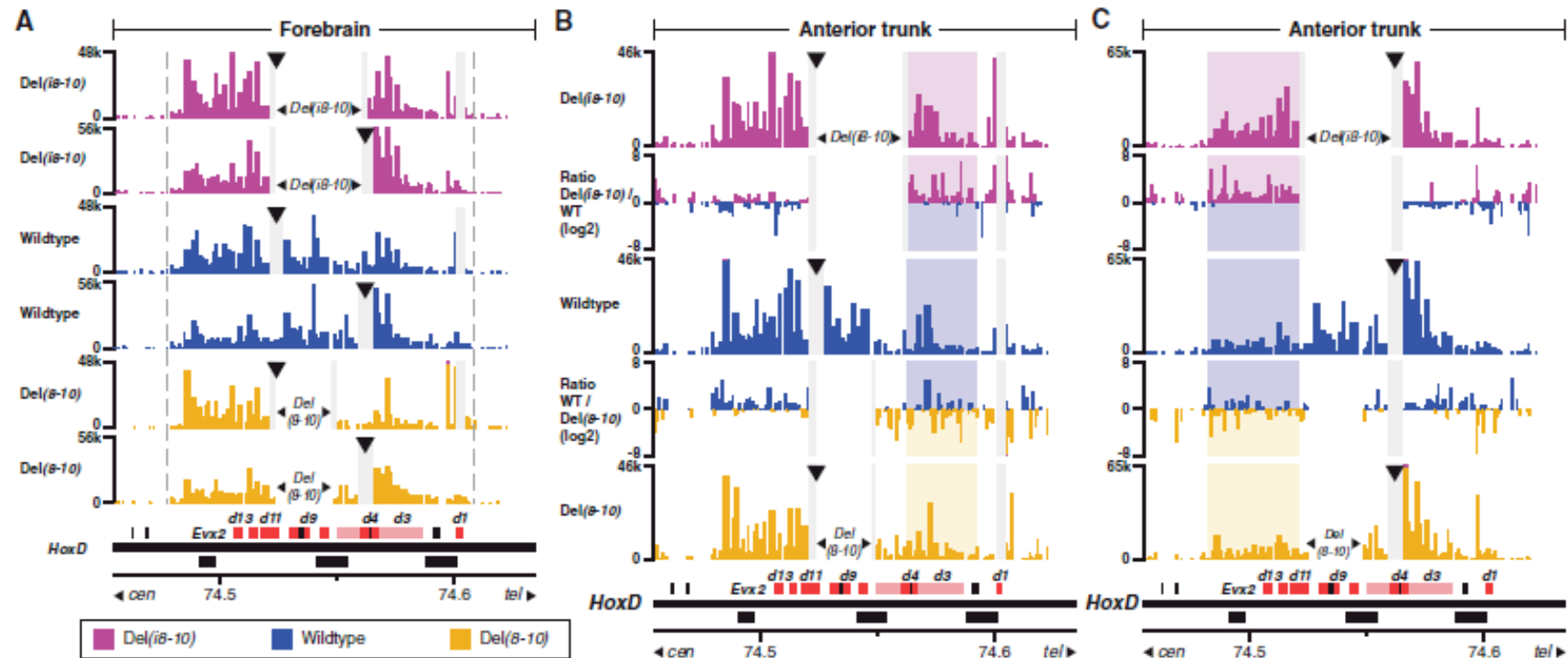
Organizzazione ed espressione



schema 3D ed espressione colineare



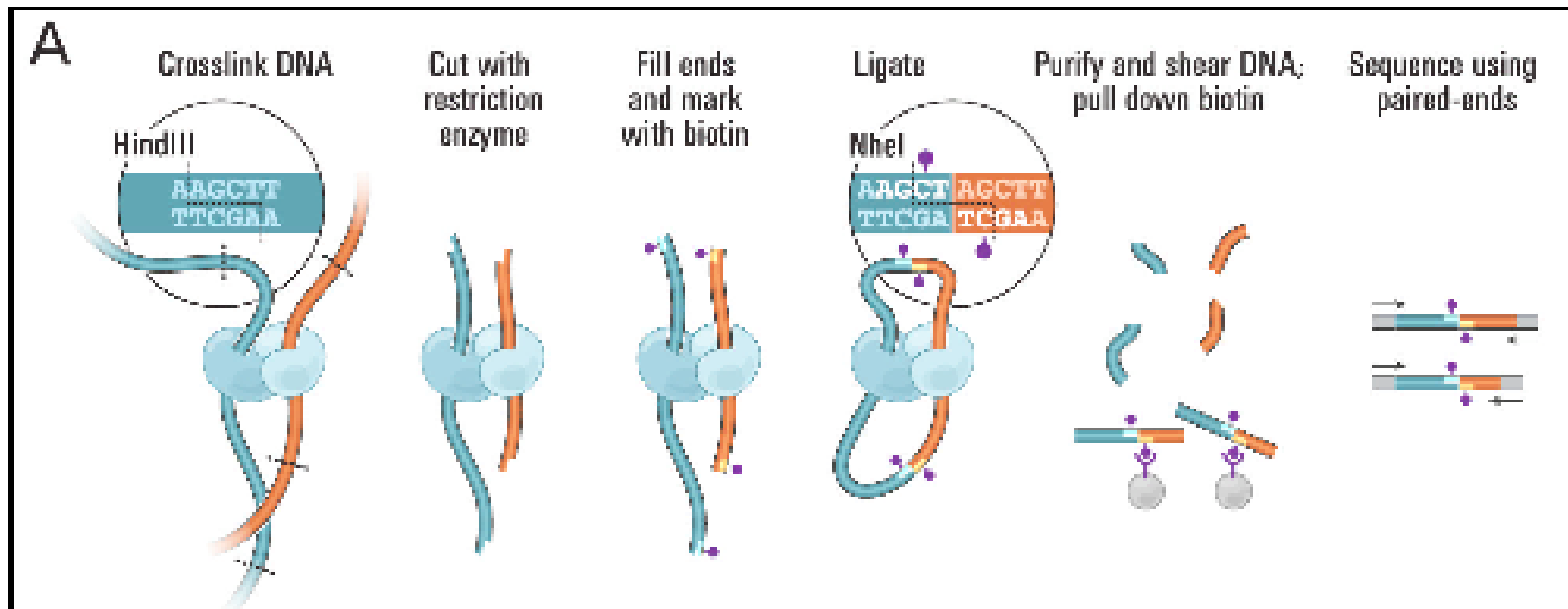
espressione Hoxd



Prossimo articolo : Erez Lieberman-Aiden et al.

Comprehensive mapping of long range interactions reveals folding principles of the human genome

Science 9 Ottobre 2009, 326 (5950) pp 289-293



Prossimo ancora: JK Baillie et al.

Somatic retrotransposition alters the genetic landscape
of the human brain

Nature 30 Ottobre 2011