ISMARA: Integrated System for Motif Activity Response Analysis

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POSTER P10

ISMARA

Integrated System for Motif Activity Response Analysis

Web-service for analysis of expression and chromatin dynamics data.

ismara.unibas.ch

- Infers key regulators driving gene expression changes across samples
- Present dynamics of regulator activity in the dataset
- Show genes, pathways and biological processes targeted by each regulator
- Build direct interaction network of regulators
- and more

ISMARA: Automated modeling of genomic signals as a democracy of regulatory motifs Piotr J. Balwierz et al., Genome Research, 2014

Modelling gene expression in terms of regulatory sites

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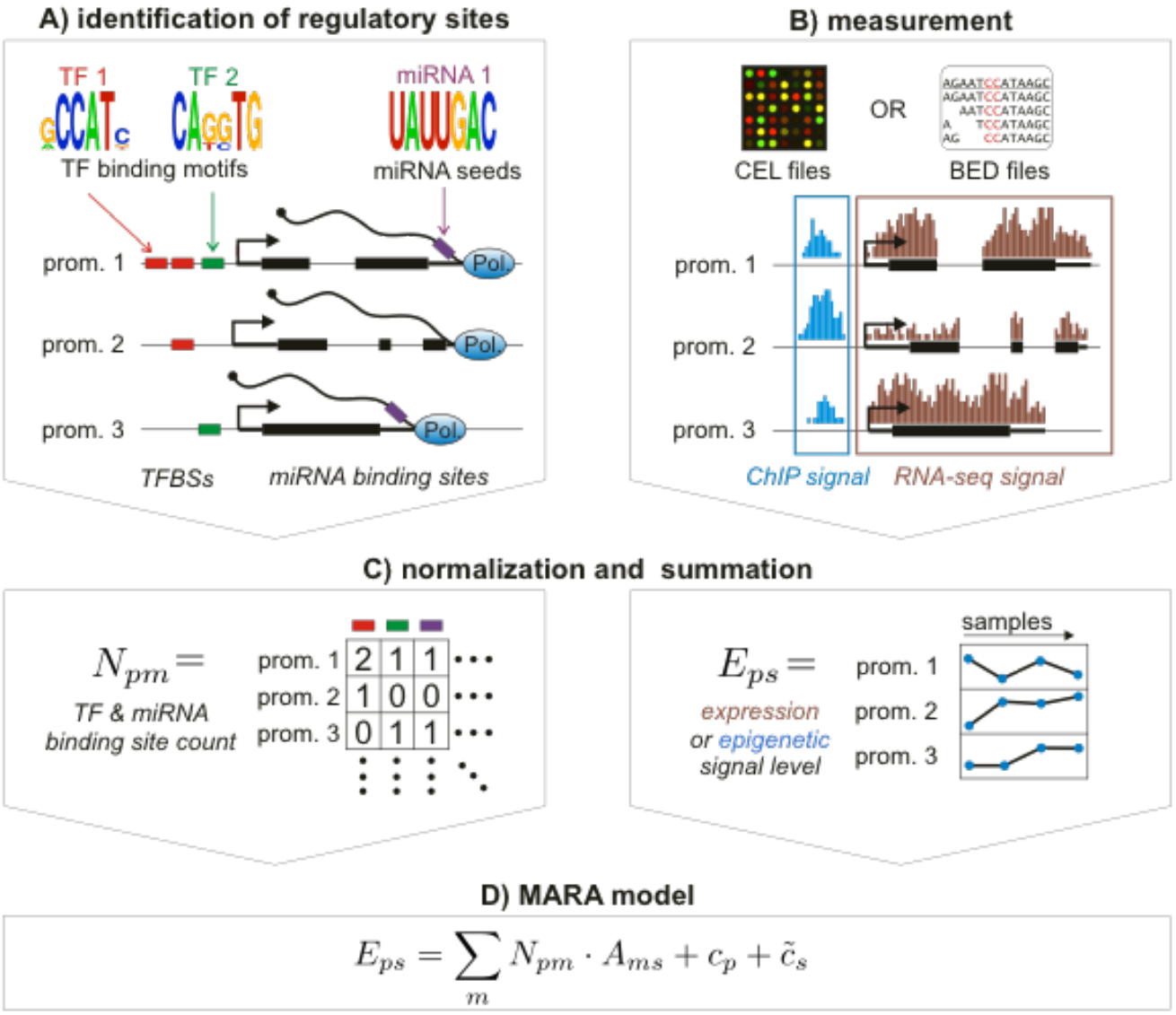


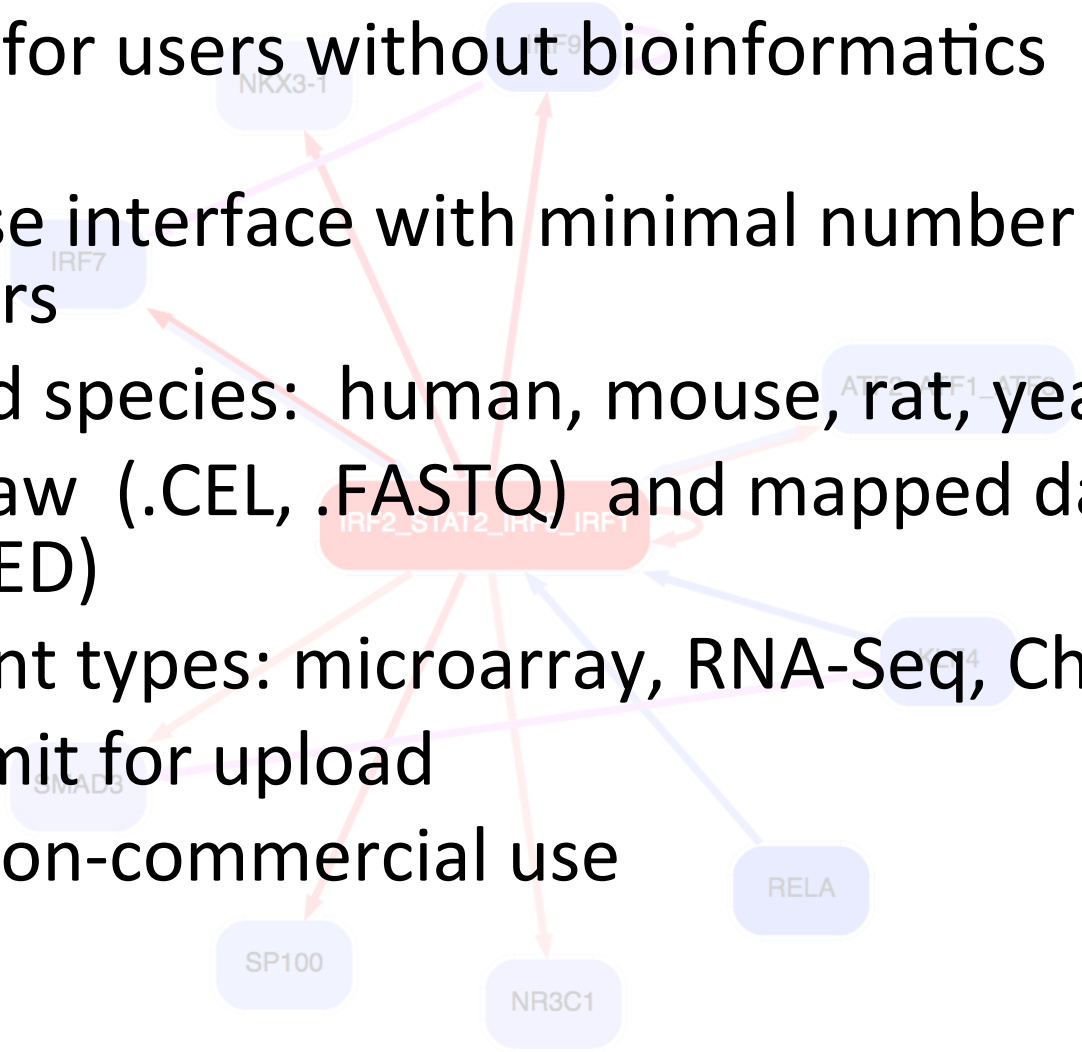
Forrest et al.
***Nat Genet* 2009**

Balwierz et al.
Genome Res
2014

ISMARA

features and highlights

- Designed for users without bioinformatics expertize
- Easy to use interface with minimal number of parameters
- Supported species: human, mouse, rat, yeast
- Accepts raw (.CEL, .FASTQ) and mapped data (.BAM, .BED)
- Experiment types: microarray, RNA-Seq, ChIP-Seq
- No size limit for upload
- Free for non-commercial use



Appetizer

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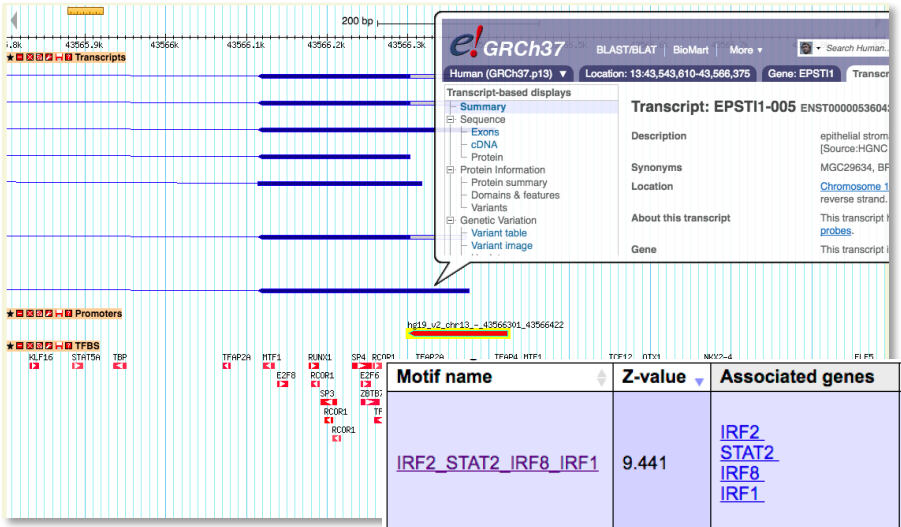
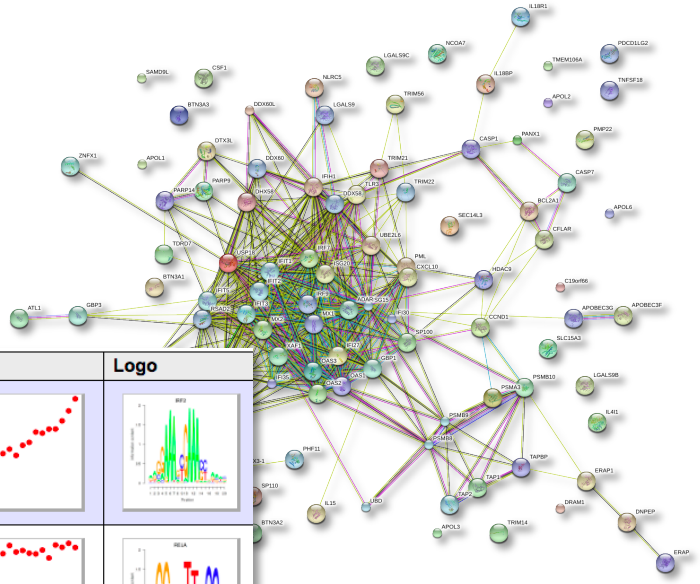
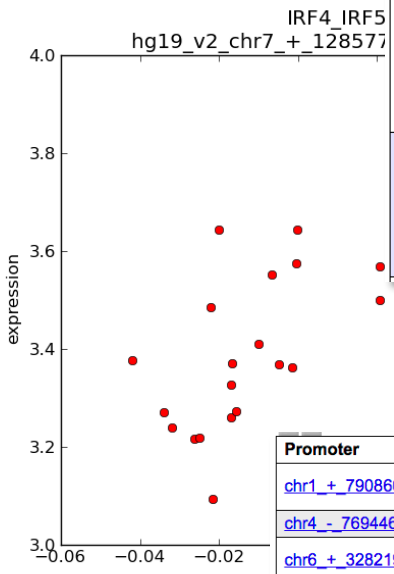




Motif name	Z-value	Associated genes	Profile	Logo
IRF2_STAT2_IRF8_IRF1	9.441	IRF2 STAT2 IRF8 IRF1		
RELA	3.686	RELA		
IRF9	3.110	IRF9		



Promoter	Score	Refseq	Gene Symbol	Gene Name
chr1_+_79086088	164.135	ENST00000370751.5 ENST00000342282.3	IFI44L	interferon-induced protein
chr4_-_76944621	143.548	ENST00000306602.1	CXCL10	chemokine (C-X-C motif)
chr6_+_32821924	131.164	ENST00000374859.2 ENST00000453265.2	PSMB9	proteasome (prosome, m
chr13_-_43566301	120.042	ENST00000398762.3 ENST00000313640.7 ENST00000313624.7	EPSTI1	epithelial stromal interacti