

Addendum: Using formaldehyde-assisted isolation of regulatory elements (FAIRE) to isolate active regulatory DNA

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In the protocol entitled ‘Using formaldehyde-assisted isolation of regulatory elements (FAIRE) to isolate active regulatory DNA,’ we described how to perform FAIRE from cultured cell lines and mammalian tissues¹. In this addendum, we compile a list of species and cell types in which FAIRE has been successfully performed according to a published report. This survey confirms that the FAIRE protocol, typically with only minor modification, is applicable to animals, plants, fungi, protists and viruses. Please note that this survey was performed manually, and so it is possible that our list of species and publications is not complete. We apologize for any omissions. Our hope is that by compiling this list, scientists who may wish to use FAIRE in the cell types or species below may refer to the listed papers for any modifications required to our protocol. There are several notable experimental systems for which we could not find published reports of FAIRE data, including *Caenorhabditis elegans*, *Tribolium* (flour beetle), zebrafish, *Xenopus* and sea urchin. Although we suspect that FAIRE will be effective in these systems, it is always possible that special modifications to the FAIRE protocol will be required. If you are having trouble getting FAIRE to work in your system, we welcome any inquiries.

Human cell lines and cultured cells

- ENCODE dataset^{2,3}
 - Lymphoblastoid cell lines (GM12878, GM12891, GM12892, GM18507, GM19239)
 - Embryonic stem cells (H1-hESC)
 - Rhabdoid tumor cells (MRT A204, MRT G401, MRT TTC549)
 - Brain cancer lines (medulloblastoma, glioblastoma)
 - Hematopoietic cancer lines (K562)
 - Breast cancer lines (MCF-7)
 - Liver cancer lines (HepG2)
 - Lung adenocarcinoma (A549)
 - Lung (bronchial) epithelial cells (NHBE)
 - Keratinocytes (NHEK)
 - Endothelial cells (HUVEC)
 - Trophoblast (HTR8svn)
 - Astrocytes (NH-A)
 - Uroepithelia (UROtsa)
 - Other human cancer lines (HeLa-S3, RCC 786-O)
- Blood cells (CD14⁺ monocytes, U937 monocytes, megakaryocytes, erythroblastoid, lymphoblastoid)^{4–6}_ENREF_2
- Mammary adenocarcinoma (MB-231, T47D, MCF-7)^{7–10}_ENREF_4
- Ewing sarcoma (EWS502)¹¹
- Normal breast cells (patient-derived)¹²
- Renal cell carcinoma (786-O) and breast cancer cells (MCF-7)¹³
- Leukemia (patient-derived, TLX⁺ T-ALL)¹⁴
- Colon adenocarcinoma (LoVo)¹⁵
- Prostate cancer (VCaP, LNCaP)^{16,17}
- Embryonic stem cells (pre- and post-embryoid body cells derived from H9-hESCs)¹⁸
- Lung adenocarcinoma (A549)¹⁹
- Chronic myelogenous leukemia (K562)²⁰
- Primary lung fibroblasts, astrocytes, and dermal fibroblasts²¹

Human primary tissues and clinical samples

- Renal cell carcinoma^{22,23}
- Pancreatic islets²⁴

Human tissues (public data from ENCODE, not yet published)

- Colon
- Endometrium
- Frontal cortex
- Kidney
- Pancreas
- Small intestine

ADDENDA

Rat

- Schwann cells^{25–27}

Mouse

- Cell lines
 - Bone marrow macrophages, fibroblasts (3T3), and adipocytes (3T3-L1)^{28–31}
 - Mammary adenocarcinoma (3134 cells) and anterior pituitary corticotroph (AtT-20 cells)³²
 - T cells (CD4⁺/CD8⁺)³³
 - Fibroblasts (L929) and erythroid cells (MEL 585)_ENREF_33 (ref. 34)
 - Testis embryonal carcinoma (F9 cells)³⁵
 - Embryonic stem cells (129Sv, E14)^{36,37}
- Tissue
 - Liver³⁸
 - Brain³⁹

Drosophila

- Cultured embryo cells (Kc cells)⁴⁰
- Embryos, appendage imaginal discs, third-instar central nervous system tissue⁴¹

Plants

- Maize husk tissue⁴²
- *Chlamydomonas reinhardtii*^{43,44}
- *Arabidopsis thaliana*⁴⁵

Fungi

- *Saccharomyces cerevisiae*^{46–49}
- *Schizosaccharomyces pombe*⁵⁰
- *Coprinopsis* (mushroom; V. Hench and P. Pukkila, personal communication)

Viruses

- Cytomegalovirus^{51,52}
- Kaposi sarcoma herpesvirus⁵³
- HPV16-positive cervical carcinoma (CaSki)⁵⁴

Protists

- *Plasmodium*⁵⁵

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