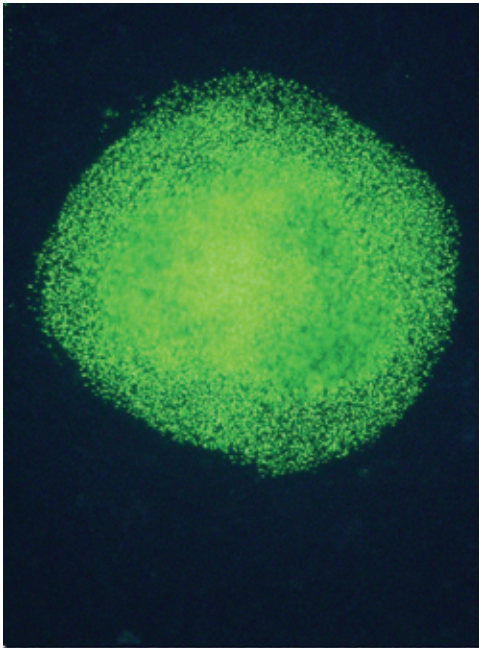




ELF[®] Phosphatase Detection Kit for Embryonic Stem Cells



Optimized by the ATCC Stem Cell Center

The ELF[®] Phosphatase Detection Kit offers a simple and robust method to fluorescently detect and visualize alkaline phosphatase activity in embryonic stem (ES) cells.

Endogenous alkaline phosphatase has been established as a marker for ES cells.¹⁻³ Scientists at the ATCC Stem Cell Center optimized the phosphatase detection protocol, making it ideal for routine verification of pluripotency in ES cell lines.⁴⁻⁵ Requiring only a few minutes to perform, this novel fluorescence-based system can be used alone or in conjunction with other techniques to provide dual-color assessment of overall in vitro stem cell pluripotency.

Your **Discoveries**[®]
Begin With **Us.**

ATCC Stem Cell Center



ATCC® Bringing confidence to stem cell research

The ELF® Phosphatase Detection Kit for Embryonic Stem Cells offers a valuable tool for monitoring the state of embryonic stem cells. It provides fast confirmation that stem cells are undifferentiated, differentiated or mixed (Figures 1, 2, and 3).

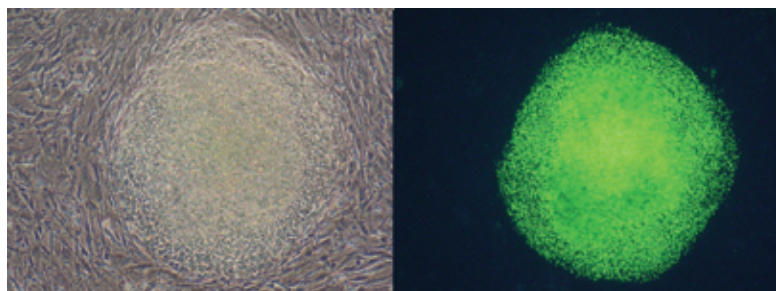


Figure 1 – Human ES cells, BG01V (ATCC® SCRC-2002™) surrounded by feeder cells are **fully undifferentiated**, as evidenced by the presence of continuous green fluorescence throughout the cell mass.

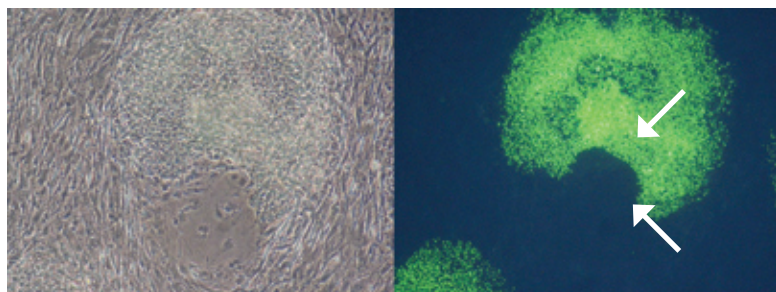


Figure 2 – Most of this BG01V colony is undifferentiated. A locus of cells has **differentiated**, as shown by the lack of fluorescence in one region (arrows).

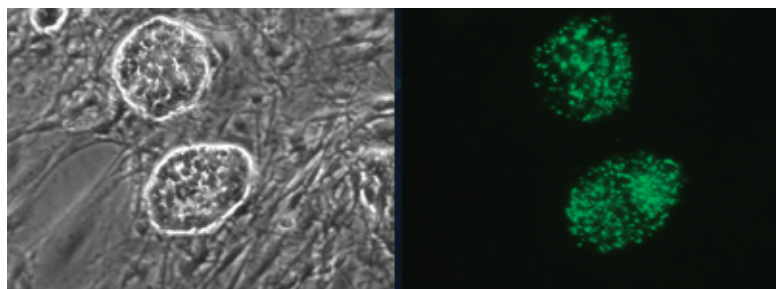


Figure 3 – The uneven fluorescence in these mouse ES cells, R1/E (ATCC® SCRC-1036™) indicates **nonuniform** maintenance of the undifferentiated state.

By enabling researchers to quickly determine the state of ES cells, the assay brings greater confidence and reproducibility to scientific data and provides the following benefits:

- **Reliable** — Optimized by the ATCC Stem Cell Center* for use on stem cells⁴⁻⁵
- **Fast** — Completed in 30 minutes
- **Convenient** — Utilizes fluorescent staining to easily assess pluripotency

* The ATCC Stem Cell Center, funded in part by NIH, provides fully-characterized human and mouse embryonic stem cells, qualified media and sera and experienced technical support.

Ensuring the easy qualification of stem cell pluripotency, the ELF Phosphatase Detection Kit can also be used in dual-color assays for more comprehensive analyses (Figure 4).

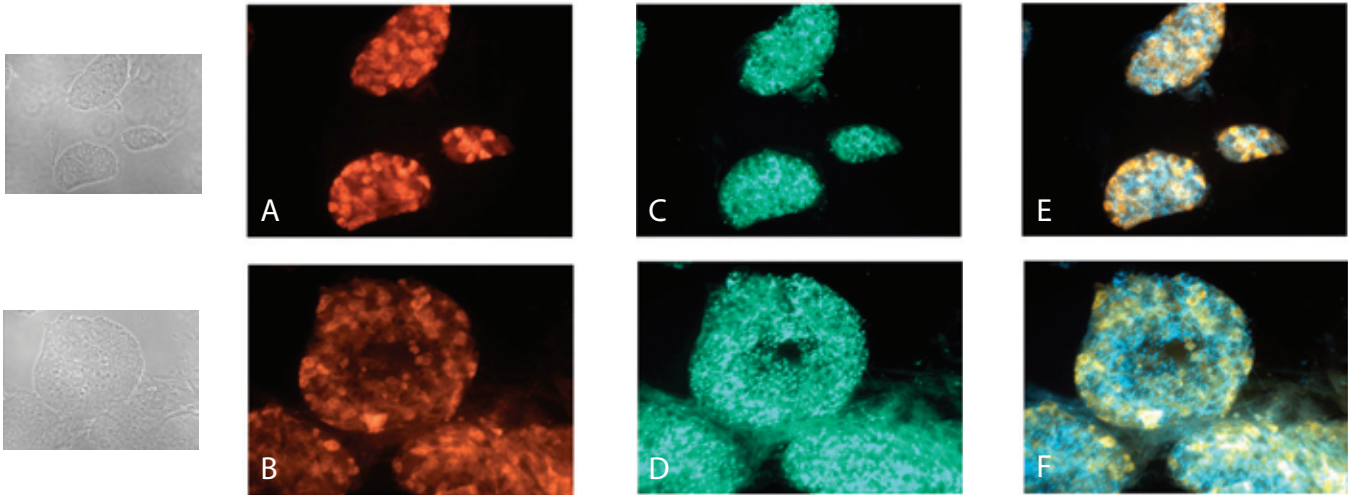


Figure 4 – Expression of the Oct-3/4 stem cell marker was detected with Texas Red in A) R1 and B) R1/E mouse ES cells. Endogenous alkaline phosphatase activity was detected by the ATCC ELF Phosphatase Detection Kit in C) R1 (ATCC® SCRC-1011™) and D) R1/E (ATCC® SCRC-1036™) cells. Markers are visualized simultaneously in E) R1 and F) R1/E cells.

To order or for more information:

Description	ATCC® No.
ELF® Phosphatase Detection Kit, 60 tests	SCRR-3010

Phone: 800-638-6597

703-365-2700

Fax: 703-365-2750

E-mail: sales@atcc.org

References

1. Shambloott, M.J., et al. Derivation of pluripotent stem cells from cultured human primordial germ cells. *Proc. Natl. Acad. Sci. USA* 95(23): 13726-13731, 1998.
2. Nagy, A., et al. Manipulating the mouse embryo: a laboratory manual, 3rd ed. Cold Spring Harbor Press: Cold Spring Harbor, New York; 2002.
3. Nagy, A., et al. Derivation of completely cell culture-derived mice from early-passage embryonic stem cells. *Proc. Natl. Acad. Sci. USA* 90(18): 8424-8428, 1993.
4. Plaia, T.W., et al. Analysis of Embryonic Stem Cell Pluripotency Using a Dual-Color Fluorescence-Based Protocol. International Society for Stem Cell Research 2nd Annual Meeting. (2004).
5. Plaia T.W., et al. Characterization of a New NIH Registered Variant Human Embryonic Stem Cell Line BG01V. A Tool for Human Embryonic Stem Cell Research. *Stem Cells*. 2005 Nov 17.

Related Products

Stem Cells

Name	Description	Strain	ATCC® No.
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Human Embryonic Stem (ES) Cells

BG01V	variant of human embryonic stem cell line BG01		SCRC-2002™
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Mouse Embryonic Stem (ES) Cells

Germline Competent Lines

ES-C57Bl/6	wild type cell line derived from inbred C57Bl6	C57Bl/6	SCRC-1002™
ES-D3 GL	wild type cell line derived from 129 substrain	129S2/SvPas	SCRC-1003™
J1	wild type cell line derived from 129 substrain	129S4/Jae	SCRC-1010™
R1	wild type cell line derived from 129 substrain	129X1 x 129S1	SCRC-1011™
RW.4	wild type cell line derived from 129 substrain	129X1/SvJ	SCRC-1018™
R1/E	wild type cell line; subclone of R1 line	129X1 x 129S1	SCRC-1036™
7AC5/EYFP	modified R1 line; constitutive YFP expression; puromycin resistant	129X1 x 129S1	SCRC-1033™

Modified In Vitro Lines

AINV 15	rtTA and HPRT cell line for targeting of plox constructs	129P2/OlaHsd	SCRC-1029™
G-Olig2	lineage-specific GFP expression	129X1/SvJ	SCRC-1037™
CE-1	cassette exchange for double lox targeting; hygromycin resistant	129S2/SvPas	SCRC-1038™
CE-3	cassette exchange for double lox targeting; puromycin resistant; constitutive GFP expression	129S2/SvPas	SCRC-1039™
ES-D3	pluripotent	129S4/Jae	CRL-1934™
ES-E14TG2a	pluripotent; HGRPT deficient	129P2/OlaHsd	CRL-1821™

Feeder Layer Cells

MEF (C57Bl/6)	C57Bl/6 embryonic fibroblasts	C57Bl/6	SCRC-1008™
MEF (C57Bl/6) MITC	C57Bl/6 embryonic fibroblasts, mitomycin C treated	C57Bl/6	SCRC-1008.2™
MEF (CF-1)	CF-1 embryonic fibroblasts	CF-1	SCRC-1040™
MEF (CF-1) MITC	CF-1 embryonic fibroblasts, mitomycin C treated	CF-1	SCRC-1040.2™
MEF (DR4)	DR4 embryonic fibroblast	DR4	SCRC-1045™
MEF (DR4) MITC	DR4 embryonic fibroblast, mitomycin C treated	DR4	SCRC-1045.2™
MEF (ICR)	ICR embryonic fibroblast	ICR	SCRC-1046™
MEF (ICR) MITC	ICR embryonic fibroblast, mitomycin C treated	ICR	SCRC-1046.2™

Reagents

Description	Quantity	Catalog No.
ES-DMEM, qualified for ES cells, without L-glutamine, with high glucose	500 ml	SCRR-2010
Fetal Bovine Serum, ES Qualified	500 ml	SCRR-30-2020
Phosphate Buffered Saline, without calcium or magnesium	500 ml	SCRR-2201

These products are intended for research purposes only. They are not intended for use in humans.

CB20-0106-03-02

ATCC

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