

*Ampli1*TM WGA Kit

Whole Genome Amplification from Single Cells



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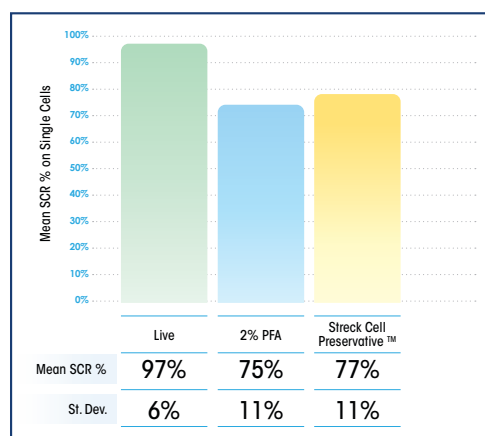
Ampli1™ WGA Kit

The *Ampli1*™ Whole Genome Amplification (WGA) Kit has been developed and optimized specifically for the amplification of the total DNA content of a single cell. The output of an *Ampli1*™ WGA procedure is a consistent and complete library of highly concentrated DNA fragments 0.2–2kb in length. *Ampli1*™ WGA-generated DNA is ideally suited for downstream genetic applications, including whole genome sequencing.

- ⊕ **RELIABLE:** Single primer-mediated PCR ensures balanced amplification
- ⊕ **REPRODUCIBLE:** Single tube, no-precipitation protocol minimizes template loss
- ⊕ **ROBUST:** Up to 4 µg DNA output from a single cell



High Quality Amplification from all Sample Types



The *Ampli1*™ WGA procedure, based on adaptor-mediated PCR following site-specific DNA digestion, is designed to work equally well with DNA from a single cell or from multiple cells. Input DNA may be derived from any sample type, including:

- ⊕ Live cells
- ⊕ Fixed cells, e.g. 2% paraformaldehyde
- ⊕ Cells in Veridex CellSave tubes processed using CellSearch® Autoprep
- ⊕ Stained cells, e.g. Hoechst 33342, antibody—fluorophore conjugates

Robust amplification from fixed or live cells

STR Call Rates (SCR) from multiplexed analysis of 11 STR loci show the Ampli1™ WGA Kit can be used equally well for DNA amplification of single live or fixed cells.

Ampli1™ WGA Protocol

Reliable, Reproducible, Robust Single Cell Amplification



1 Add Lysis Reaction Mix to each sample and incubate at +42°C.



2 Add Digestion Reaction Mix to the same tube and incubate at +37°C.



3 Add Ligation Reaction Mix and incubate at +15°C.

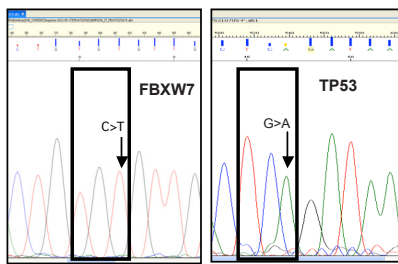


4 Add Primary PCR Reaction Mix and amplify

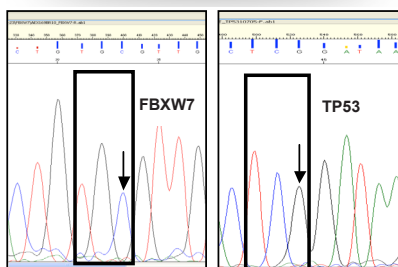
Amplify and Sequence DNA From Single Cells With the Ampli1™ WGA Kit

Single circulating tumor cells (CTCs) and white blood cells (WBCs) were isolated from a CellSearch-enriched colorectal cancer patient blood sample using Silicon Biosystems' DEPArray™ system. Cell images captured with the system's CellBrowser™ software shows Cytokeratin⁺ staining of CTCs, but not WBCs. Genomic DNA from individual CTCs and WBCs was amplified directly from isolated cells using the Ampli1™ WGA Kit and sequenced with the Ion Torrent™ Ion Ampliseq™ Cancer Panel. Sequence graphs clearly show the detection of two gene mutations, FBXW7 and TP53, in the CTCs but not the WBCs.

1 CTC	Gene	FBXW7	TP53
	Coverage	58	252
	Variant Freq	96.6%	99.2%



1 WBC	Gene	FBXW7	TP53
	Coverage	153	922
	Variant Freq	2.0%	0.4%



Maximum Flexibility for Downstream Analyses

Amplified DNA generated with the Ampli1™ WGA Kit can be used for the most demanding genomic applications, even when working with single cells.

- ⊕ SNP and Mutation Detection
- ⊕ STR Analysis
- ⊕ CNV Analysis
- ⊕ Expression Analysis
- ⊕ Next Generation Sequencing
- ⊕ Whole Genome Sequencing



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Product information:

Description

Ampli1™ WGA Kit

Whole Genome Amplification Kit

50 Reactions

Ampli1™ QC Kit

Genome Amplification Quality Control Kit

200 Reactions

Notices and Disclaimers: Ampli1™ WGA Kits are for Research Use Only and not intended for use in diagnostic procedures. Ampli1™ WGA Kits are not for resale except by authorized distributors. The Ampli1™ WGA Kit is protected by U.S. and International patents. Please contact Silicon Biosystems for licensing or other commercial terms. Silicon Biosystems The Living-Cell Company®, DEPAarray™, and Ampli1™ are trademarks of Silicon Biosystems, S.p.A. Ion Torrent® and Ion AmpliSeq™ are trademarks of Life Technologies, Inc. Streck Cell Preservative™ is a trademark of Streck Innovations. CellSearch® is a registered trademark of Veridex LLC.

CORPORATE

Silicon Biosystems S.p.A.
Via dei Lapidari, 12
I-40129 Bologna, ITALY

t: +39 051 4071300
f: +39 051 4071324
e: info@siliconbiosystems.com

U.S.A.

Silicon Biosystems
14677 Via Bettona, #334
San Diego, CA 92127 U.S.A.

t: +1 800 381 4929
f: +1 858 939 1817
e: us-info@siliconbiosystems.com