

LifeAct

A Novel Marker for Visualization of F-Actin in Living Cells



Cytoskeleton organization

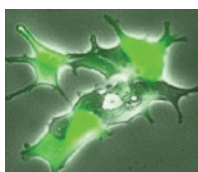
- Non-toxic actin visualization
- Fluorescence staining

Cytoskeletal dynamics

- Actin dynamics in cellular processes
- Live cell imaging and microscopy

- ✓ Brilliant visualization of F-actin
- ✓ Unrestricted actin functionality: no interference with cytoskeletal dynamics
- ✓ Excellent signal-to-noise ratio
- ✓ Access to difficult-to-transfect cells, such as primary cells
- ✓ Long-term actin staining after generation of stable cell lines

Additional equipment for researchers working with eukaryotic cells:

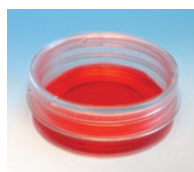


Torpedo^{DNA}

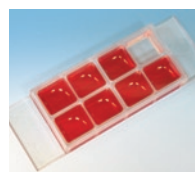
Cell Culture



Freezing Medium



μ-Dish^{35mm, high}

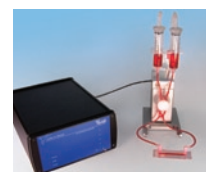


μ-Slide 8 well



μ-Slide VI^{0.4}

Microscopy – Live Cell Imaging



ibidi Pump System

Perfusion

LifeAct

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LifeAct

LifeAct, a 17-amino acid peptide, is derived from a protein found in *Saccharomyces cerevisiae*. LifeAct stains filamentous actin (F-actin) structures in living or fixed eukaryotic cells and tissues. In contrast to GFP-actin and its alternatives such as actin-binding proteins, LifeAct does not interfere with actin dynamics *in vitro* and *in vivo*, as shown in several cell types and model organisms.

LifeAct Plasmid

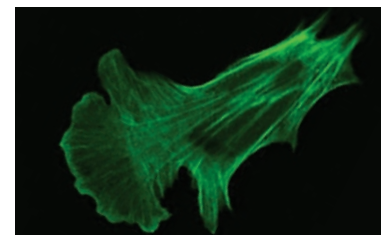
After transfection of cells with pLifeAct, F-actin is visualized using the fluorescence markers TagGFP2 or TagRFP. The plasmid is perfect for easy cell transfection of various cell types. Stable transfection of cell lines allows long-term actin staining for various applications.

LifeAct Adenoviral Vector

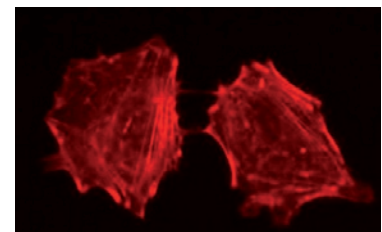
Difficult-to-transfect cells are easily transduced using the LifeAct adenoviral vector. Transduction efficiencies of up to 100% can be attained, even in primary cells (e.g. neuronal cells). F-actin is visualized using the fluorescence markers TagGFP2 or TagRFP.

Stable LifeAct expressing Cell Line

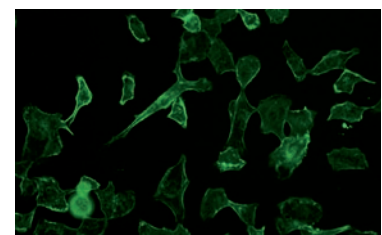
The stable human fibrosarcoma cell line HT-1080 LifeAct-TagGFP2 presents highly dynamic actin. Due to the cell line's fast growth and the absence of contact inhibition, it constitutes an ideal tumor model. As a result of stable LifeAct expression, perfect visualization of F-actin is achieved. Moreover, comprehensive characterization using ibidi's functional cell-based assays proved that this cell line is ideal for studies on migration, chemotaxis, and wound healing.



Human fibroblast transfected with p^{CMV}LifeAct-TagGFP2



Human lung cancer cell line A549 infected with rAV^{CMV}-LifeAct-TagRFP



Stable LifeAct-TagGFP2 expressing HT-1080 human fibrosarcoma cell line

Original LifeAct Publications:

Riedl J, Crevenna AH, Kessenbrock K, Yu JH, Neukirchen D, Bista M, Bradke F, Jenne DE, Holak TA, Werb Z, Sixt M & Wedlich-Söldner R. [Lifeact – a versatile marker for the visualization of F-actin](#). Nature Methods 5, 605-607 (2008).

Riedl J, Flynn KC, Raducanu A, Gärtner F, Beck G, Bösl M, Bradke F, Massberg S, Aszodi A, Sixt M & Wedlich-Söldner R. [Lifeact-mice for studying F-actin dynamics](#). Nature Methods 7, 168-169 (2010).

Ordering Information:

Plasmid p ^{CMV} LifeAct-TagGFP2, ready to use, 20 µg, concentration 500 ng/µl (CMV Promoter; green fluorescence)	60101
Plasmid p ^{CMV} LifeAct-TagRFP, ready to use, 20 µg, concentration 500 ng/µl (CMV Promoter; red fluorescence)	60102
Plasmid p ^{CAG} LifeAct-TagGFP2, ready to use, 20 µg, concentration 500 ng/µl (CAG Promoter; green fluorescence)	60106
Plasmid p ^{CAG} LifeAct-TagRFP, ready to use, 20 µg, concentration 500 ng/µl (CAG Promoter; red fluorescence)	60107
Adenovirus rAV ^{CMV} -LifeAct-TagGFP2, ready to use, 1 x 10 ⁹ IU, concentration 1 x 10 ¹⁰ IU/ml (CMV Promoter; green fluorescence)	60121
Adenovirus rAV ^{CMV} -LifeAct-TagRFP, ready to use, 1 x 10 ⁹ IU, concentration 1 x 10 ¹⁰ IU/ml (CMV Promoter; red fluorescence)	60122
Adenovirus rAV ^{CAG} -LifeAct-TagRFP, ready to use, 1 x 10 ⁹ IU, concentration 1 x 10 ¹⁰ IU/ml (CAG Promoter; red fluorescence)	60124
HT-1080 LifeAct-TagGFP2, HT-1080 cells expressing LifeAct-TagGFP2, 5 x 10 ⁵ cells/vial	40101