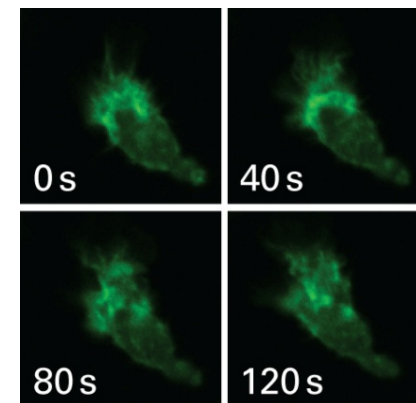
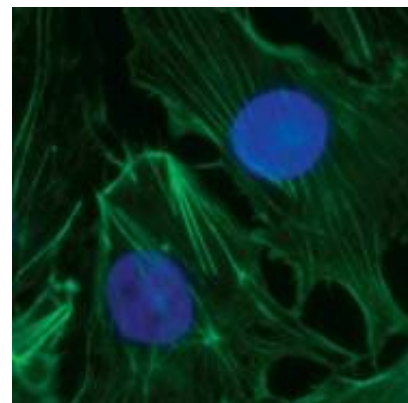
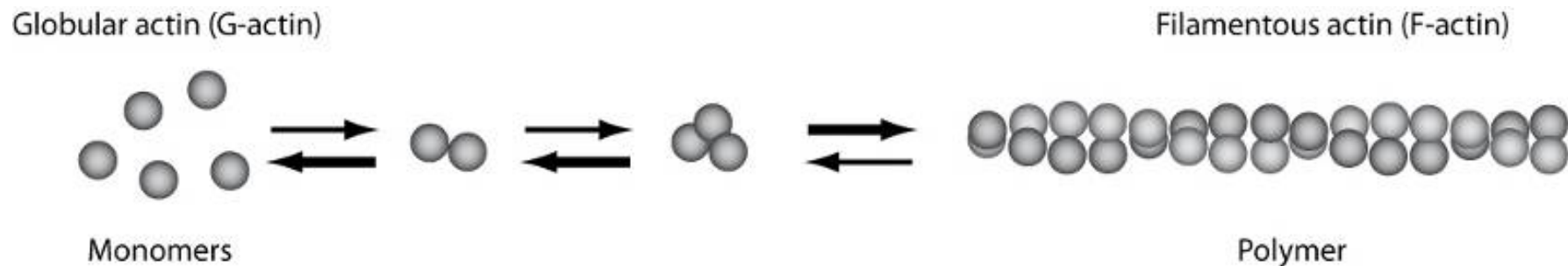


# Product Information

## LifeAct – Plasmid & Adenoviral Vector





## Types of Actin:

- G-Actin: Monomer
- F-Actin: Polymer

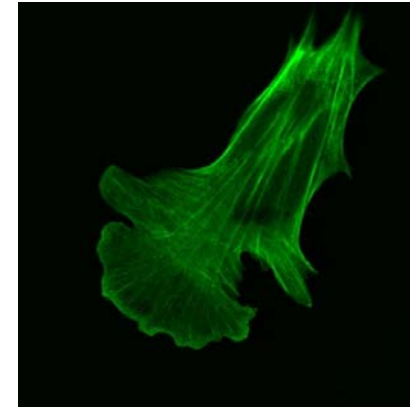
## Function:

- Builds cytoskeleton together with Tubulin and Intermediate filaments for
- Morphogenesis of cells
  - Intracellular transport
  - Cell migration

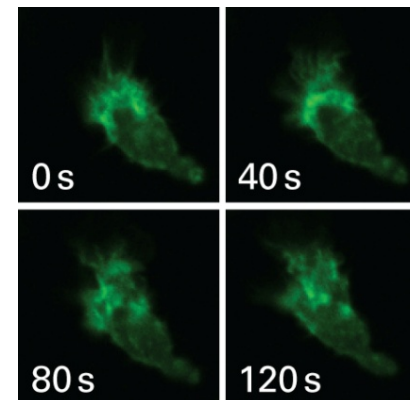
# Why Stain Actin?

To visualize:

- Cytoskeletal organization



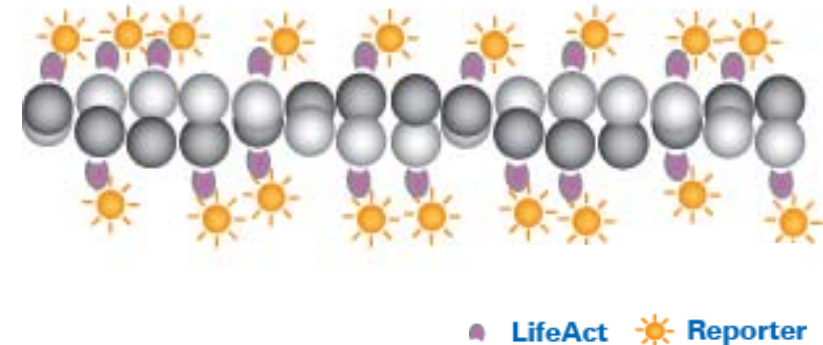
- Cellular dynamics



# New: LifeAct

## What is LifeAct?

- A 17 amino acid-peptide derived from a protein found in *Saccharomyces cerevisiae*
- It is coupled to fluorescent markers TagGFP2\* or TagRFP\*
- Stains filamentous actin (F-Actin) structures in living and fixed eukaryotic cells and tissues



\* For more information on TagGFP2 or TagRFP go to [www.evrogen.com](http://www.evrogen.com)

# Benefits of LifeAct

- Brilliant visualization of F-Actin with excellent signal-to-noise ratio  
→ Perfect imaging of cytoskeletal organization and cellular dynamics
- No interference with cytoskeletal dynamics  
→ Unrestricted Actin functionality
- Superb biocompatibility  
→ Non-toxic, even to living samples

# Benefits of LifeAct

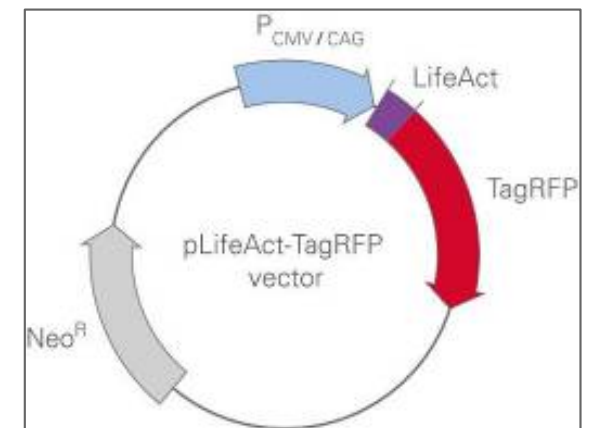
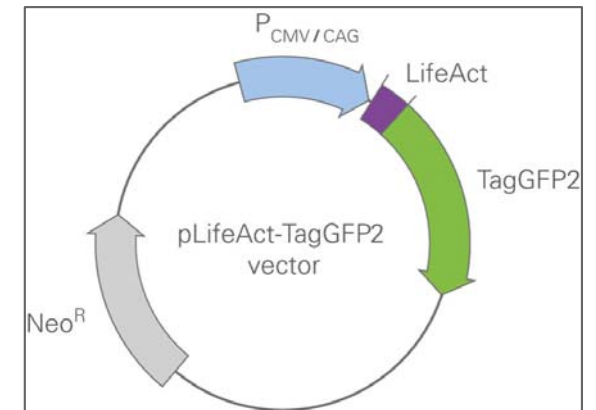
- **pLifeAct Plasmid**
  - Long-term Actin staining, after stable transfection of cell lines
- **Adenoviral vector rAV-LifeAct**
  - Up to 100% transduction efficiency
  - Access to difficult-to-transfect cells, such as primary cells

# pLifeAct Plasmid

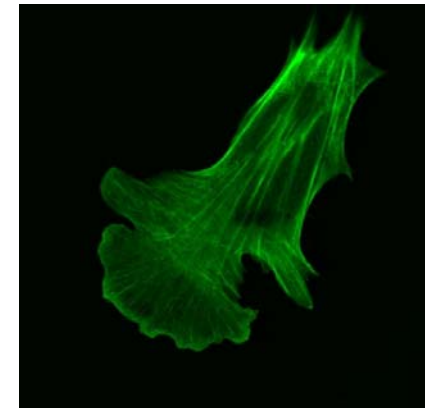
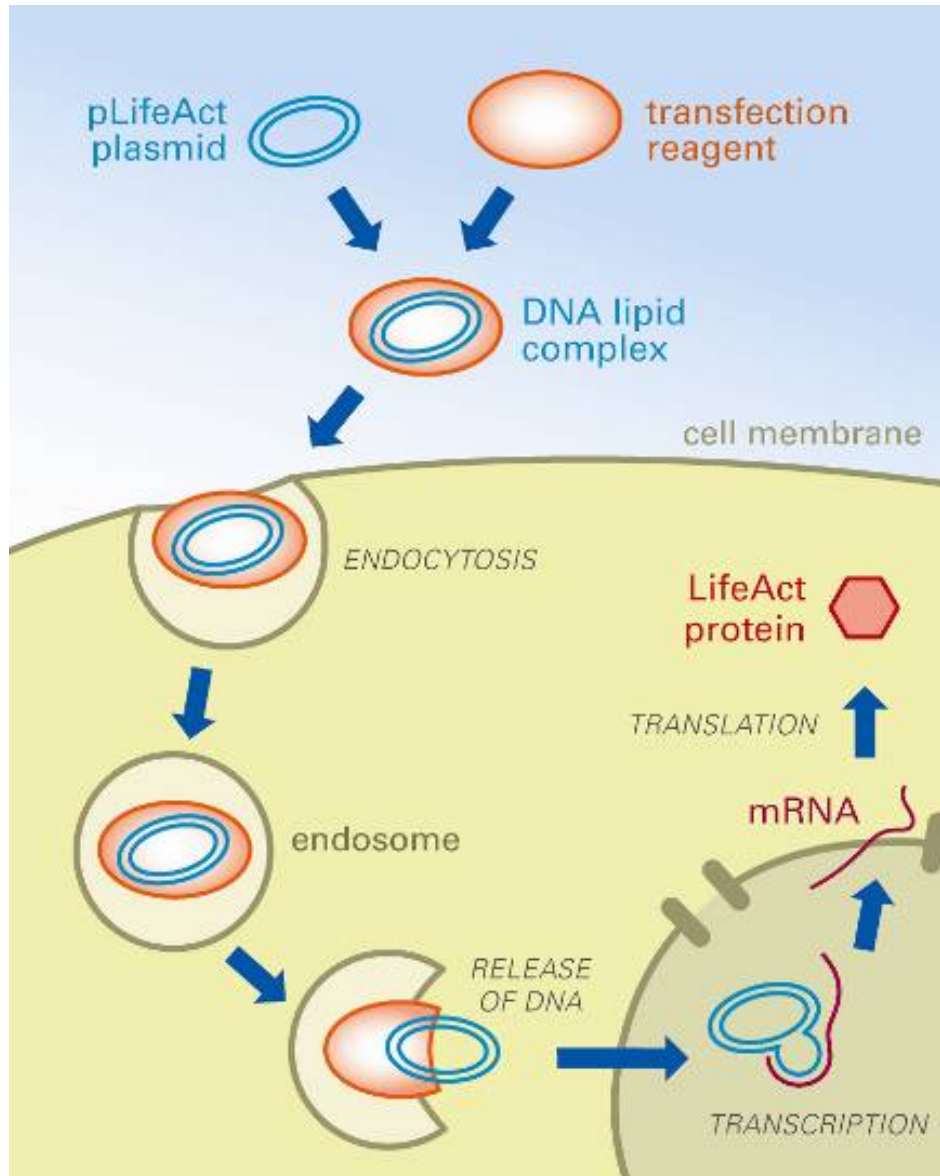
## pLifeAct contains:

- $P_{CMV}$  or  $P_{CAG}$  → Both very strong promoters\*
- LifeAct → Codes for a 17 aa Actin-binding sequence
- TagGFP2 or TagRFP → Fluorescence markers
- $Neo^R$  → Resistance against Neomycin for the generation of stable cell lines

\* $P_{CAG}$  is a non viral chicken promoter and may be better suited for use with particular cell types (e.g. lymphocytes, neurons) or for generation of stable cell lines



# pLifeAct Transfection



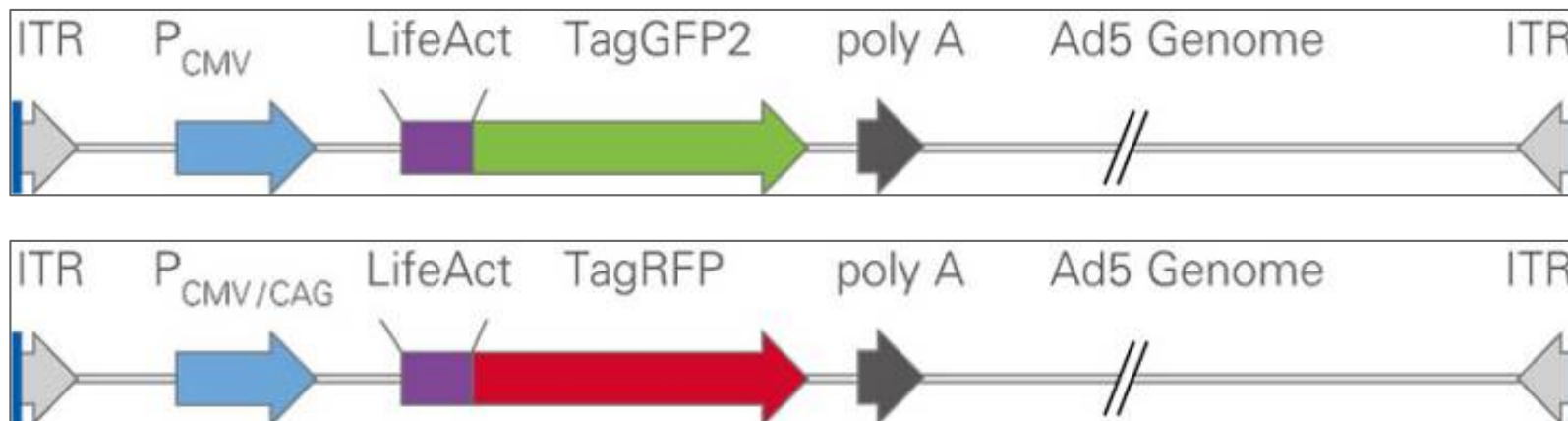
Human fibroblast transfected with p<sup>CMV</sup>LifeAct-TagGFP2

# rAV-LifeAct Adenoviral Vector

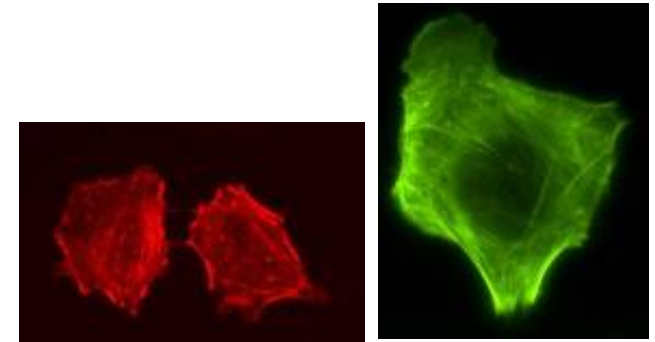
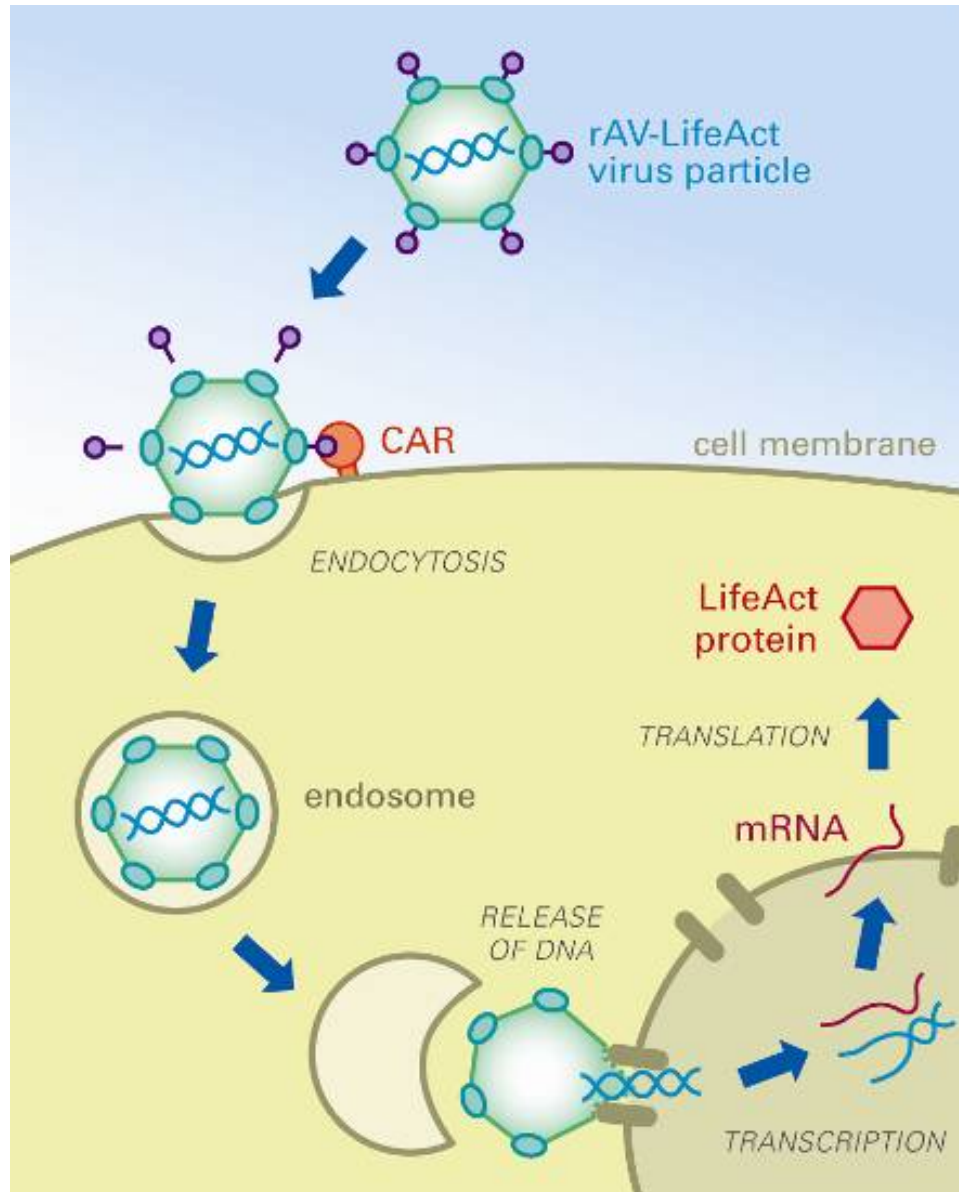
## rAV-LifeAct contains:

- replication-defective Adenovirus Serotype 5
- $P_{CMV}$  or  $P_{CAG}$  → Both very strong promoters\*
- LifeAct → Codes for a 17 aa Actin-binding sequence
- TagGFP2 or TagRFP → Fluorescence markers

\* $P_{CAG}$  is a non viral chicken promoter and may be better suited for use with particular cell types (e.g. lymphocytes, neurons) or for generation of stable cell lines

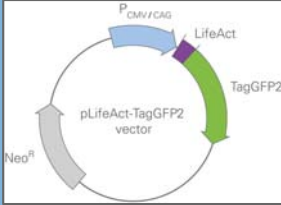



# rAV-LifeAct Transduction



Human lung cancer cell line A549 infected with rAV<sup>CMV</sup>-LifeAct-TagGFP2 (green) and rAV<sup>CMV</sup>-LifeAct-TagRFP (red)

# Method Comparison

<p><b>pLifeAct Plasmid</b></p> 	<p><b>rAV-LifeAct Adenoviral vector</b></p> 
Transfection	Transduction
Transient and stable protein expression	Only transient protein expression
Easy-to-transfect cells	Difficult-to-transfect cells
Variable transfection efficiency	Up to 100% transduction efficiency
Biosafety level 1	Biosafety level 2 for transduction
Shipment: 4 °C Storage: -20 °C	Shipment: Dry Ice Storage: -80 °C in biosafety level 2

# Ordering Information

<u>Description</u>	<u>Cat. No.</u>
p <sup>CMV</sup> LifeAct-TagGFP2, 20 µg plasmid (Green fluorescence: Ex <sub>max</sub> 483 nm / Em <sub>max</sub> 506 nm)	60101
p <sup>CMV</sup> LifeAct-TagRFP, 20 µg plasmid (Red fluorescence: Ex <sub>max</sub> 555 nm / Em <sub>max</sub> 584 nm)	60102
p <sup>CAG</sup> LifeAct-TagGFP2, 20 µg plasmid (Green fluorescence: Ex <sub>max</sub> 483 nm / Em <sub>max</sub> 506 nm)	60106
p <sup>CAG</sup> LifeAct-TagRFP, 20 µg plasmid (Red fluorescence: Ex <sub>max</sub> 555 nm / Em <sub>max</sub> 584 nm)	60107
rAV <sup>CMV</sup> -LifeAct-TagGFP2, 1x10 <sup>9</sup> IU (Green fluorescence: Ex <sub>max</sub> 483 nm / Em <sub>max</sub> 506 nm)	60121
rAV <sup>CMV</sup> -LifeAct-TagRFP, 1x10 <sup>9</sup> IU (Red fluorescence: Ex <sub>max</sub> 555 nm / Em <sub>max</sub> 584 nm)	60122
rAV <sup>CAG</sup> -LifeAct-TagRFP, 1x10 <sup>9</sup> IU (Red fluorescence: Ex <sub>max</sub> 555 nm / Em <sub>max</sub> 584 nm)	60124

# Complementary Equipment

>  $\mu$ -Dishes



>  $\mu$ -Slides

>  $\mu$ -Transfection Kits



> ibidi Freezing Medium

> ibidi Heating & Incubation  
System for Live Cell Imaging



# Further Questions?

[www.ibidi.com](http://www.ibidi.com)



Direct contact: [info@ibidi.de](mailto:info@ibidi.de)