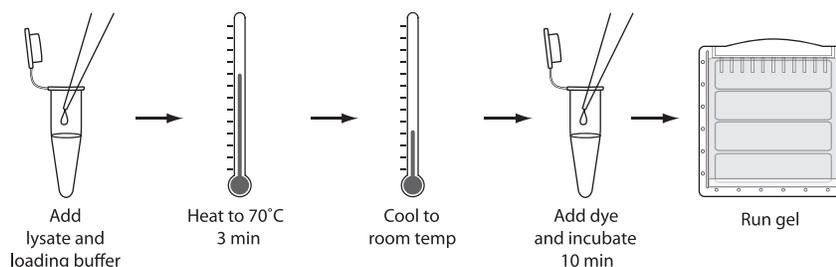


## Rapid Confirmation of Expressed Proteins in Gel with the TC-FIAsH™ Expression Analysis Detection Kits

The TC-FIAsH™ Expression Analysis Detection Kits provide a rapid and easy method of detecting TC-tagged expression proteins. By directly staining the cell lysate with FIAsH dye and orange or red total protein stain, you can visualize the TC-tagged protein as well as total protein in contrasting colors without gel post-staining. Westerns are not needed to visualize your TC-tagged protein. However, you can perform western blotting, if desired. Rapid confirmation saves time, reagent, and money. TC-tagged proteins are easily visualized in the gel cassette (without removing the gel from the glass or plastic cassette) or even after removal of gel from the cassette, using a fluorescent imager or UV transilluminator with appropriate filter sets.

A linear relationship exists between relative fluorescence units and concentration of the detected protein, allowing you to perform quantitative determinations, if necessary. The TC-tag detection kits from Invitrogen are available for use in detecting TC-tagged proteins in cell or on a gel.

To learn more, visit [www.invitrogen.com/TCFlashGelDetection](http://www.invitrogen.com/TCFlashGelDetection)



**Figure 1.** Experimental Protocol.

### Advantages of the TC-Tag

The 6-amino acid tetracysteine (TC) tag is small so there is less protein structure and function disruption—which is important in studying your protein of interest. The TC-tag is readily fused to the N- or C-terminus, or an internal site of your protein and is easily detected using the biarsenical stains, FIAsH (488 nm: green) and ReAsH (593 nm: red).

### Applications of the TC-Tag

The versatile TC-tag is useful for:

- Protein localization, turnover, and trafficking
- Receptor signaling and internalization
- Correlation of light microscopy with electron microscopy
- Pulse-chase and double-labeling experiments
- Enzyme activity studies

- SDS-PAGE detection of tagged proteins
- Affinity purification

### Features of TC-FIAsH™ Detection Kits

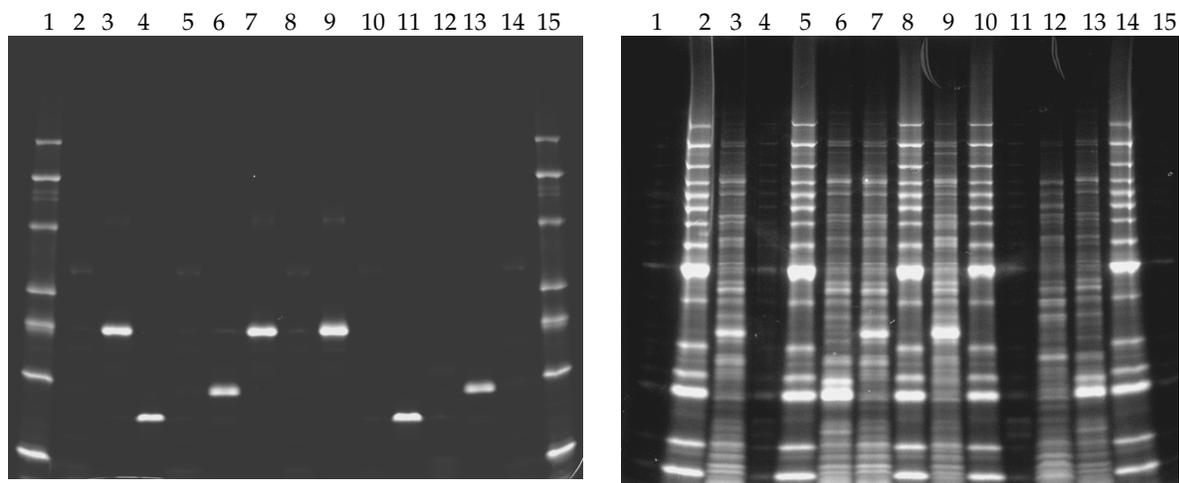
Tag size:	<1 kDa
FIAsH dye detection:	488 nm/520 nm or mid-UV
Total protein detection:	Yes
Staining time:	13 minutes
Visualization:	Within the gel cassette or after removal of gel from the cassette

**Table 1.** Detection sensitivity chart.

Fluorescent Dye	Wavelength	Protein
TC-FIAsH™ (in the cassette)	488 nm	4 ng*
	UV	60 ng*
TC-FIAsH™ (out of the cassette)	488 nm	250 pg*
	UV	1 ng*
Total protein (in the cassette)	Orange (532 nm)	100 ng**
	Red (620 nm)	100 ng**
Total protein (out of the cassette)	Orange (532 nm)	12 ng**
	Red (620 nm)	50 ng**

\*Indicates amount of TC-tagged protein

\*\*Indicates total amount of protein loaded



**Figure 3.** Purified TC-tagged proteins, crude lysates containing TC-tagged protein, and BenchMark™ Protein Ladder were subjected to protein detection using the TC-FIAsH™ Expression Analysis Detection Kit - Red (Cat. no. A10068). Samples were analyzed on a 4-20% Tris-Glycine SDS-PAGE gel and imaged using a Fuji FLA3000 laser scanner. With FIAsH detection (Panel A), only TC-tagged proteins appear with the Benchmark Fluorescent Protein Ladder while with total protein detection (Panel B), all proteins, including TC-tagged proteins are detected.

**Panel A:** TC-tagged proteins and Benchmark Fluorescent Protein Ladder visualized with 473 nm excitation with 520 nm long pass emission filter. **Panel B:** Total protein detection obtained with 633 nm excitation with 675 nm long pass emission filter. Lanes 1, 15: BenchMark™ Fluorescent Protein Ladder (4 µL); Lanes 2, 5, 8 14: BenchMark™ Protein Ladder (200 ng/band); Lanes 3, 7: Lysate expressing TC-tagged CFP protein (4 µL); Lane 4: Purified TC-tagged ACP protein (200 ng); Lanes 6, 13: Lysate expressing TC-tagged calmodulin protein (4 µL); Lane 9: Lysate expressing TC-tagged GFP protein (4 µL); Lane 10: BenchMark™ Protein Ladder (100 ng/band); Lane 11: Purified TC-tagged ACP protein (100 ng); Lane 12: *E. coli* lysate (4 µL).

**Product List** Current prices are available from [www.invitrogen.com](http://www.invitrogen.com) or from our Customer Service Department

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Catalog no.	Product Name	Unit Size
A10067	TC-FLAsH™ Expression Analysis Detection Kit - Orange *orange fluorescent in-gel detection of TC-tagged and total protein*.....	1 kit
A10068	TC-FLAsH™ Expression Analysis Detection Kit - Red *red fluorescent in-gel detection of TC-tagged and total protein*.....	1 kit

## Contact Information

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