

## Datasheet: TZC040PE

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|----------------------|---------------------|
| <b>Description:</b>  | SPYCATCHER2:RPE     |
| <b>Name:</b>         | SPYCATCHER2         |
| <b>Format:</b>       | Catcher-RPE         |
| <b>Product Type:</b> | Recombinant Protein |
| <b>Quantity:</b>     | 0.25 mg             |

## Product Details

### Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

|                | Yes | No | Not Determined | Suggested Dilution |
|----------------|-----|----|----------------|--------------------|
| Flow Cytometry | ■   |    |                |                    |

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

|                                       |                                                                                                                                                                                    |                            |                          |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------|
| <b>Target Species</b>                 | Protein/peptide tag                                                                                                                                                                |                            |                          |
| <b>Product Form</b>                   | Purified recombinant protein conjugated to R. Phycoerythrin (RPE) - liquid                                                                                                         |                            |                          |
| <b>Max Ex/Em</b>                      | <b>Fluorophore</b>                                                                                                                                                                 | <b>Excitation Max (nm)</b> | <b>Emission Max (nm)</b> |
|                                       | RPE 488nm laser                                                                                                                                                                    | 496                        | 578                      |
|                                       | RPE 561nm laser                                                                                                                                                                    | 546                        | 578                      |
| <b>Preparation</b>                    | Recombinant protein expressed in <i>E. coli</i> and purified by affinity chromatography                                                                                            |                            |                          |
| <b>Source</b>                         | E.coli                                                                                                                                                                             |                            |                          |
| <b>Buffer Solution</b>                | Phosphate buffered saline                                                                                                                                                          |                            |                          |
| <b>Preservative Stabilisers</b>       | 0.0095% MIT                                                                                                                                                                        |                            |                          |
| <b>Approx. Protein Concentrations</b> | 145µM (2 mg/mL)                                                                                                                                                                    |                            |                          |
| <b>Product Information</b>            | <b>SpyCatcher2</b> (H-SpyC2) is a 15.7 kDa protein that forms a stable covalent isopeptide bond with a second protein that includes a SpyTag. The reaction occurs spontaneously on |                            |                          |

mixing, is rapid, irreversible, high-yielding and shows good specificity. SpyCatcher2 contains a His6-tag at the N-terminus. To avoid deamidation of asparagine, a N105D mutation was introduced ([Hentrich \*et al.\* 2020](#)).

The reaction is robust at pH 5 to 8, at temperatures from +4°C to +37°C, in various buffer conditions (Ca<sup>2+</sup>/Mg<sup>2+</sup> not needed) and in the presence of detergents. The reaction also occurs inside cells (*in vivo*). Since the speed of the coupling reaction is concentration dependent, it is recommended to use SpyCatcher2 undiluted.

All the different formats of SpyCatcher2 are compatible with Bio-Rad's recombinant HuCAL® antibodies with a SpyTag2 at the C-terminus of the heavy chain.

[Download SpyCatcher coupling protocol](#)

SpyCatcher2 is available conjugated to biotin. It is also available as a modified version, SpyCatcher2-CYS, which contains a cysteine residue for site-specific conjugation by the user.

SpyCatcher2-CYS can dimerize during storage by formation of a disulfide bond via the free cysteines. Before conjugation to these cysteines, the SpyCatcher2-CYS dimers should be mildly reduced e.g., by addition of 5mM DTT and incubation for 1 hr at room temperature, followed by a fast DTT removal step, e.g., by size exclusion chromatography using PD-10 desalting columns, as DTT can interfere with the subsequent conjugation chemistry. Dialysis is not recommended for DTT removal, as the cysteines can oxidize again during this slow process.

[View all available Catchers](#)

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Protein Molecular Weight</b> | Predicted molecular weight of the purified Catcher is 15904 Da                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Purity</b>                   | ≥90% determined by SDS-PAGE under reducing conditions and visualized by coomassie blue staining                                                                                                                                                                                                                                                                                                                                   |
| <b>Instructions For Use</b>     | <a href="#">View SpyCatcher Coupling Protocol</a>                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>References</b>               | <ol style="list-style-type: none"><li>1. Keeble, A.H. <i>et al.</i> (2017) Evolving Accelerated Amidation by SpyTag/SpyCatcher to Analyze Membrane Dynamics. <a href="#">Angew Chem Int Ed Engl. 56 (52): 16521-5.</a></li><li>2. Hentrich, C. <i>et al.</i> (2021) Periplasmic expression of SpyTagged antibody fragments enables rapid modular antibody assembly. <a href="#">Cell Chem Biol. 28 (6): 813-824.e6.</a></li></ol> |
| <b>Storage</b>                  | Store at -20°C only.<br>Storage in frost-free freezers is not recommended.<br>This product should be stored undiluted. Avoid repeated freezing and thawing as this may denature the protein. Should this product contain a precipitate we recommend microcentrifugation before use.                                                                                                                                               |
| <b>Guarantee</b>                | 12 months from date of despatch                                                                                                                                                                                                                                                                                                                                                                                                   |

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| <b>Health And Safety Information</b> | <p>Material Safety Datasheet documentation #20480 available at: <a href="https://www.bio-rad-antibodies.com/SDS/TZC040PE">https://www.bio-rad-antibodies.com/SDS/TZC040PE</a></p>                                                                                                                                                                       |
| <b>Licensed Use</b>                  | <p>For <i>in vitro</i> research purposes. Any re-sale in any form or any other commercial application needs a written agreement with Bio-Rad.</p>                                                                                                                                                                                                       |
| <b>Regulatory</b>                    | <p>For research purposes only</p>                                                                                                                                                                                                                                                                                                                       |

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**Product inquiries:** [www.bio-rad-antibodies.com/technical-support](https://www.bio-rad-antibodies.com/technical-support)

To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://www.bio-rad-antibodies.com/datasheets)  
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