



The Twinkle Factory
Stain different, tag FAST.

FAST2

FAST2 is a small protein tag of 125 amino acids (14 kDa) engineered from the photoactive yellow protein (PYP) from *Halorhodospira halophila*. FAST2 can be fused to the N- or C-terminus of any protein of interest. FAST2 forms non-covalent and reversible fluorescent molecular assemblies with various ^{TF}Fluorogens of the Twinkle Factory, enabling to fluorescently label FAST2-tagged proteins in vitro, in live cells and in multicellular organisms. FAST2 differs from FAST1 by a single mutation in position 107. FAST1 contains a Val (V107) at this position while FAST2 contains an Ile (I107).

FAST2 sequence

MEHVAFGSEDIENLAKMDDGQLDGLAFGAIQLDGDGNILQYNAAEGDITGRDPKQVIGKNFFKDVA
PGTDSPEFYGKFKEGVASGNLNTMFEWMIPTSRGPTKVKIHMKKALSGDSYWVFKRV

DNA sequence coding for FAST2

atggagcatgttgctttggcagtgaggacatcgagaacactctggccaaaatggacgacggacaactggatgggttgctttggc
gcaattcagctcgatggtgacgggaatatcctgcagtacaatgctgctgaaggagacatcacaggcagagatcccaaacaggtgatt
gggaagaactcttcaaggatggtgcacctggaacggattctccgagtttacggcaaattcaaggaaggcgtagcgtcagggaatc
tgaacaccatgttcgaatggatgataccgacaagcaggggaccaaccaaggtcaagatacacatgaagaaagcccttccggtgaca
gctattgggtctttgtgaaacgggtg

Note: FAST2 was originally named "iFAST" in Tebo et al. Biochemistry 57, 5648-5653 (2018).

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EP 3 164 411; JP 2017-527,261; WO 2016/001,437 (Fluorogen activating and shifting tag (FAST))

EP17305591; PCT/EP2018/063146 (Membrane-impermeant fluorogenic chromophores)

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