TB 500
Research Applications

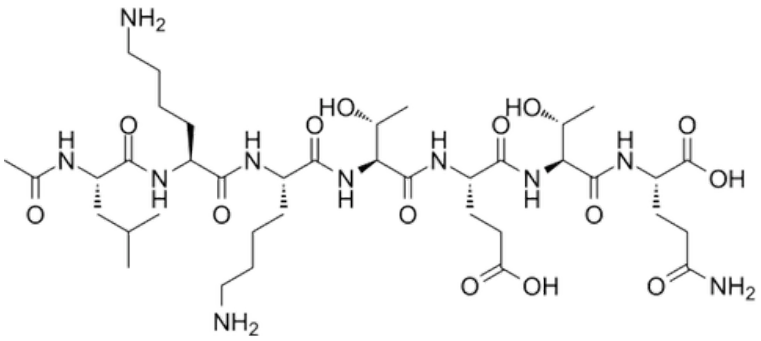
US Peptide Co

Mechanism of Action

TB-500 is a synthetic version of the naturally occurring peptide Thymosin Beta-4 (Tβ4). In research models, it has demonstrated high affinity for actin, sequestering G-actin monomers and regulating actin polymerization. TB-500 influences multiple cellular pathways involved in tissue repair, including cell migration, angiogenesis, and inflammation modulation, making it valuable for studying regenerative processes at the cellular level.

Molecular Profile

- Chemical Formula: $C_{44}H_{69}N_{13}O_{12}S$
- Molecular Weight: 1,012.2 Da
- Sequence: Ac-SDKP-Thr-Beta-Ala-$CONH_2$



Laboratory Considerations

- Store lyophilized powder at -20°C
- Once reconstituted store at 4°C
- Avoid oxidizing agents during handling

Research Applications

- Cellular repair mechanism and tissue regeneration research
- Investigation of angiogenesis and vascular development pathways
- Models examining actin regulation and cytoskeletal organization
- Research on inflammatory response modulation

References

1. Goldstein AL, et al. Thymosin β₄: a multi-functional regenerative peptide. Basic properties and clinical applications. Expert Opin Biol Ther. 2012;12(1):37-51.
2. Sosne G, et al. Thymosin beta 4 promotes corneal wound healing and decreases inflammation in vivo following alkali injury. Exp Eye Res. 2002;74(2):293-299.
3. Philp D, et al. Thymosin β4 and angiogenesis: modes of action and therapeutic potential. Angiogenesis. 2004;7(3):195-201.
4. Smart N, et al. Thymosin β4 induces adult epicardial progenitor mobilization and neovascularization. Nature. 2007;445(7124):177-182.