PRODUCT INFORMATION

FOXO4-DRI Peptide (acetate)

Item No. 46425

Synonym: FOXO4-D-retro-inverso Peptide
Peptide Sequence: ltlrkepaseiaqsileaysqngwanrrsggkr ppprrrqrrkkrg-OH
MF: $C_{228}H_{388}N_{86}O_{64} \bullet XC_2H_4O_2$
FW: 5,358.2
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years

H—DLeu—DThr—DLeu—DArg—DLys—DGlu—DPro—DAla—DSer—DGlu—DIle—DAla—DGln—DSer—DIle—DLeu—DGlu—DAla—DTyr—DSer—DGln—DAsn—Gly—DTrp—DAla—DAsn—DArg—DArg—DSer—Gly—Gly—DLys—DArg—DPro—DPro—DPro—DArg—DArg—DArg—DGln—DArg—DArg—DLys—DLys—DArg—Gly—OH

$\bullet XCH_3CO_2H$

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

FOXO4-DRI peptide (acetate) is supplied as a solid. Aqueous solutions of FOXO4-DRI peptide (acetate) can be prepared by directly dissolving the solid in aqueous buffers. FOXO4-DRI peptide (acetate) is sparingly soluble (1-10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

FOXO4-DRI peptide is a senolytic peptide corresponding to the D-retro-inverso sequence of amino acids 91-124 of forkhead box protein O4 (FOXO4) fused to the D-retro-inverso sequence of HIV Tat (48-59).[1] It binds to transactivation domain 2 of p53 ($p53^{TAD2}$; K_D = 18.5 µM) and inhibits the protein-protein interaction between FOXO4 and p53 at 300 µM.[1,2] FOXO4-DRI peptide selectively induces apoptosis in senescent IMR-90 fibroblasts over proliferating IMR-90 fibroblasts, as well as senescent A375 melanoma cells over proliferating A375 cells (IC_{50}s = ~28 and >40 µM, respectively, for A375 cells).[1,3] It protects against doxorubicin-induced liver toxicity in mice and decreases hair loss and increases physical activity in a mouse model of fast aging.[1] FOXO4-DRI peptide induces apoptosis in senescent TM3 Leydig cells and increases serum testosterone levels in naturally aged male mice.[4]

References

1. Baar, M.P., Brandt, R.M.C., Putavet, D.A., *et al.* Targeted apoptosis of senescent cells restores tissue homeostasis in response to chemotoxicity and aging. *Cell* **169(1)**, 132-147 (2017).
2. Bourgeois, B., Spreitzer, E., Platero-Rochart, D., *et al.* The disordered p53 transactivation domain is the target of FOXO4 and the senolytic compound FOXO4-DRI. *Nat. Commun.* **16(1)**, 5672 (2025).
3. Le, H.H., Cinaroglu, S.S., Manalo, E.C., *et al.* Molecular modelling of the FOXO4-TP53 interaction to design senolytic peptides for the elimination of senescent cancer cells. *EBioMedicine* **73:103646**, (2021).
4. Zhang, C., Xie, Y., Chen, H., *et al.* FOXO4-DRI alleviates age-related testosterone secretion insufficiency by targeting senescent Leydig cells in aged mice. *Aging (Albany N.Y.)* **12(2)**, 1272-1284 (2020).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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