

FOXO4-DRI acetate

Cat. No.:	HY-P4157A
Molecular Formula:	$C_{228}H_{388}N_{86}O_{64} \cdot 0.145C_2H_4O_2$
Molecular Weight:	5366.77
Sequence:	D-(Leu-Thr-Leu-Arg-Lys-Glu-Pro-Ala-Ser-Glu-Ile-Ala-Gln-Ser-Ile-Leu-Glu-Ala-Tyr-Ser-Gln-Asn-Gly-Trp-Ala-Asn-Arg-Arg-Ser-Gly-Gly-Lys-Arg-Pro-Pro-Pro-Arg-Arg-Arg-Gln-Arg-Arg-Lys-Lys-Arg-Gly)
Sequence Shortening:	D-(LTLRKEPASEIAQSILEAYSQNGWANRRSGGKRPPRRRQRKKRG)
Target:	MDM-2/p53; Apoptosis
Pathway:	Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	FOXO4-DRI acetate is a cell-permeable peptide antagonist that blocks the interaction of FOXO4 and p53. FOXO4-DRI acetate is a senolytic peptide that induces apoptosis of senescent cells ^[1] .
In Vitro	FOXO4-DRI (25 mM; 3 days) acetate causes nuclear exclusion of active p53 and induces apoptosis in senescent TM3 Leydig cells ^[1] .
	FOXO4-DRI (25 μM; 5 days) acetate significantly reduces the senescence level in PDL9 cells ^[2] .
	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
	Cell Viability Assay ^[1]
	Cell Line: Senescent Leydig cells
	Concentration: 25 mM
	Incubation Time: 3 days
	Result: Reduced the viability of senescent as compared to normal TM3 Leydig cells.
	Apoptosis Analysis ^[1]
	Cell Line: Senescent Leydig cells
Concentration: 25 mM	
Incubation Time: 3 days	
Result: The apoptosis rate increased from 10% to 27%.	
Western Blot Analysis ^[2]	
Cell Line: PDL9 cells	
Concentration: 25 μM	

	Incubation Time:	5 days
	Result:	Decreased the protein levels of representative senescent markers, including p16, p21, and p53.
	RT-PCR ^[2]	
	Cell Line:	PDL9 cells
	Concentration:	25 μ M
	Incubation Time:	5 days
	Result:	Enhanced SOX9 expression, and reduced MMP12 and MMP13 expression.
In Vivo	<p>FOXO4-DRI (5 mg/kg; i.p.; every other day for three administrations) acetate alleviates testosterone secretion insufficiency and improves the testicular microenvironment in naturally aged mice^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	
	Animal Model:	Naturally aged male C57BL/6 mice (20-24 months old) ^[1]
	Dosage:	5 mg/kg
	Administration:	Intraperitoneal injection, every other day for three administrations
	Result:	Increased serum testosterone levels. Increased levels of both 3 β -HSD and CYP11A1. Decreased interstitial SA- β -gal activity and lowered levels of senescence-associated proteins p53, p21, and p16. Decreased the levels of IL-1 β , IL-6 and TGF- β .

REFERENCES

[1]. Zhang C, et al. FOXO4-DRI alleviates age-related testosterone secretion insufficiency by targeting senescent Leydig cells in aged mice. *Aging* (Albany NY). 2020 Jan 20;12(2):1272-1284.

[2]. Huang Y, et al. Senolytic Peptide FOXO4-DRI Selectively Removes Senescent Cells From in vitro Expanded Human Chondrocytes. *Front Bioeng Biotechnol*. 2021 Apr 29;9:677576.

Caution: Product has not been fully validated for medical applications. For research use only.

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