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Data Sheet

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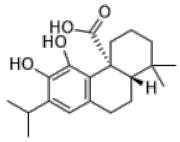
Product Name	:	Carnosic acid
Cat. No.	:	PC-22853
CAS No.	:	3650-09-7
Molecular Formula	:	$C_{20}H_{28}O_4$
Molecular Weight	:	332.44
Target	:	Aminopeptidase
Solubility	:	10 mM in DMSO



Biological Activity

Carnosic acid (Carnosate) is a highly selective inhibitor targeting the orthosteric site of **ERAP1** with IC50 of 10.73 uM, inhibits oxidative stress and inflammation, suppressescell proliferation, and has antibacterial activity, also inhibits the **BCL9/β-catenin** interaction with Ki of 3.3 uM.
Carnosic acid shows little inhibitory effect on the homologous enzyme ERAP2, IRAP, related families of aminopeptidase APs and MMP1, and several classical proteases, Trypsin, and Furin.
Carnosic acid binds stably and dose-dependently to ERAP1 at the molecular level with a dissociation KD value of 9.05 μM.
Carnosic acid regulates the endoplasmic reticulum stress response caused by ERAP1-mediated misfolding of HLA-B27.
Carnosic acid impacts the presentation of endogenous antigenic peptides in living cells by inhibiting ERAP1, thereby reducing disease-related phenotypes.
Carnosic acid inhibits β-catenin-dependent transcription, and destabilizes oncogenic β-catenin in colon cancer cells.
Carnosic acid reduces the expression of Sox2 and the number of SOX2+ cells in MB sphere cultures.

References

Wu J, et al. ***J Agric Food Chem.*** 2024 Jul 18. doi: 10.1021/acs.jafc.4c00957.

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