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# Niclosamide

National Cancer Institute

## Source

National Cancer Institute. *Niclosamide*. NCI Thesaurus. Code C66240.

An orally bioavailable chlorinated salicylanilide, with anthelmintic and potential antineoplastic activity. Upon oral administration, niclosamide specifically induces degradation of the androgen receptor (AR) variant V7 (AR-V7) through the proteasome-mediated pathway. This downregulates the expression of the AR variant, inhibits AR-V7-mediated transcriptional activity, and reduces AR-V7 recruitment to the prostate-specific antigen (PSA) gene promoter. Niclosamide also prevents AR-V7-mediated STAT3 phosphorylation and activation. This inhibits AR/STAT3-mediated signaling and prevents expression of STAT3 target genes. Altogether, this may inhibit growth of AR-V7-overexpressing cancer cells. The AR-V7 variant, which is encoded by contiguous splicing of AR exons 1/2/3/CE3, is upregulated in a variety of cancer cell types, and is associated with both cancer progression and resistance to AR-targeted therapies.