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SHP-1 Agonist SC-43

National Cancer Institute

Source

National Cancer Institute. *SHP-1 Agonist SC-43*. NCI Thesaurus. Code C156695.

An orally available, small molecule agonist of Src homology region 2 domain-containing phosphatase-1 (SHP-1; tyrosine-protein phosphatase non-receptor type 6; PTPN6) with potential antineoplastic activity. Upon administration, SHP-1 agonist SC-43 enhances SHP-1 activity by impairing the association between the N-terminal Src homology 2 (N-SH2) domain and the protein tyrosine phosphatase (PTP) domain of SHP-1, triggering a conformational change of SHP-1 and relieving its autoinhibition. Activation of SHP-1 represses signal transducer and activator of transcription 3 (STAT3) signaling by inhibiting constitutive and interleukin-6 (IL-6)-induced STAT3 phosphorylation. The STAT3 pathway is overly active in many cancer types and is implicated in cancer stem cell-mediated growth, recurrence, stemness, and resistance to conventional chemotherapies.