



CERTIFICATE OF ANALYSIS

PRODUCT:	Betulinic Acid (high purity) Antitumor and anti-HIV agent [3 β -Hydroxy-20(29)-lupaene-28-oic acid] C ₃₀ H ₄₈ O ₃ , M.W. 456.7, CAS# [472-15-1]
PRODUCT NUMBER:	B-1191
LOT NUMBER:	D1222A
APPEARANCE:	White solid
PURITY (HPLC):	$\geq 99\%$
SOLUBILITY:	Soluble in DMSO
SOURCE/HOST:	Isolated from <i>Platanus acerifolia</i> bark.
PRODUCT INFORMATION:	Antitumor and anti-HIV agent. Induces apoptosis by activating mitochondrial permeability transition (MPT). Inhibits NF- κ B activation and NF- κ B-regulated gene expression induced by carcinogens and inflammatory stimuli. Decreases expression of Bcl-2 and cyclin D1. Potent proteasome activator. Triggers CD95- and p53-independent apoptosis via activation of caspases. It induces mitochondrial permeability pore opening and the release of cytochrome c and apoptosis-inducing factor. Displays anti-HIV activity. EC ₅₀ for inhibition of HIV-1 replicaton in H9 lymphocytes: 1.4 μ M.
STORAGE & HANDLING:	Store desiccated at +4°C. <u>WARNING: IRRITANT!</u> CAUTION: For laboratory research & scientific manufacturing use only. Not for human or drug use. The pharmacological and toxicological properties of this product have not been fully investigated. Use caution when handling. Do not use this compound if you are not fully trained or are unaware of the hazards involved.

Verified: MH