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Alpha-lactalbumin-derived Synthetic Peptide-lipid Complex Alpha1H

National Cancer Institute

Source

National Cancer Institute. *Alpha-lactalbumin-derived Synthetic Peptide-lipid Complex Alpha1H*. NCI Thesaurus. Code C159497.

A synthetic proteolipid complex comprised of the alpha-1 domain of alpha-lactalbumin (lactose synthase B protein) and oleic acid, with potential antineoplastic activity. Upon intravesical instillation, alpha1H selectively accumulates in the nuclei of tumor cells and binds to histones H3, H4, and H2B. By binding to histones, alpha1H disrupts chromatin assembly and interferes with intact chromatin, thereby preventing tumor cell transcription and replication. Additionally, alpha1H inhibits the phosphorylation of multiple kinases involved in cancer-associated pathways including the Ras/Raf/ERK, PI3K/AKT, p38 MAPK and JNK signaling pathways. This may inhibit tumor cell proliferation and induce apoptosis in tumor cells that are driven by the dysregulation of certain kinases and oncogenic GTPases.