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# Liposome-encapsulated RB94 Plasmid DNA Gene Therapy Agent SGT-94

National Cancer Institute

## Source

National Cancer Institute. *Liposome-encapsulated RB94 Plasmid DNA Gene Therapy Agent SGT-94*. NCI Thesaurus. Code C106271.

A systemic gene therapy anti-cancer agent composed of cationic liposomes, which encapsulates plasmid DNA encoding for the tumor suppressor gene RB94 and is complexed with anti-transferrin receptor single chain antibody fragment (TfRscFv), with potential antineoplastic activity. Upon systemic administration of liposome-encapsulated RB94 plasmid DNA gene therapy agent SGT-94, the TfRscFv portion of this agent selectively targets the tumor cells expressing transferrin receptors. TfRscFv binding to the transferrin receptor allows receptor-mediated endocytosis and transfection, followed by the expression of RB94 gene. This induces tumor cell apoptosis through an as of yet unknown pathway. RB94 is a modified, N-terminal truncated form of the full-length protein retinoblastoma gene RB110, and exerts enhanced antitumor activity. The transferrin receptor (TfR) functions in cellular iron uptake through its interaction with transferrin, and is overexpressed in a variety of tumor types.