Poliglusam

National Cancer Institute

Source

National Cancer Institute. Poliglusam. NCI Thesaurus. Code C157372.

A naturally occurring polysaccharide composed of beta-1,4-linked glucosamine residues with potential antineoplastic activity. Upon administration, poliglusam may, through a not yet fully elucidated mechanism, reduce advanced glycation end product (AGE) levels. This may reduce the interaction between AGEs and the receptor for advanced glycation end products (RAGE, AGER), which is overexpressed in some tumor types and is associated with poor patient outcomes. AGE-RAGE interaction may induce the phosphorylation and subsequent degradation of retinoblastoma protein (Rb), a key cell cycle inhibitor and tumor suppressor, through the phosphoinositide 3-kinase (PI3K)/protein kinase B (PKB, Akt) signaling pathway. Hyperphosphorylation of Rb leads to the dissociation of the Rb-E2F complex, which triggers the activation of genes required for G1/S transition and tumorigenesis. Reducing AGE levels may limit AGE-RAGE interaction and normalize the G1 to S-phase transition, potentially reducing the development and progression of certain cancers. AGEs are non-enzymatic protein modifications produced during the normal aging process that have been shown to play a role in the development and progression of some cancers.