Nab-paclitaxel/Rituximab-coated Nanoparticle AR160

National Cancer Institute

Source

National Cancer Institute. Nab-paclitaxel/Rituximab-coated Nanoparticle AR160. NCI Thesaurus. Code C131213.

A formulation composed of nanoparticle albumin-bound (nab) paclitaxel, which is an albumin-stabilized nanoparticle containing the natural taxane paclitaxel, non-covalently coated with rituximab, a recombinant chimeric murine/human antibody directed against the CD20 antigen found on B-lymphocytes, with potential antineoplastic activity. Upon administration of nab-paclitaxel/rituximab nanoparticle AR160, the rituximab moiety specifically binds to CD20 and targets this formulation to CD20-positive tumor cells. Paclitaxel binds to and stabilizes microtubules, which prevents depolymerization and inhibits cellular motility, mitosis, and replication. This leads to cell death of the CD20-expressing tumor cells that were targeted by this agent. The combination of albumin-stabilization and rituximab-targeting allows for higher efficacy and decreased paclitaxel-induced toxicity as it specifically targets CD20-expressing tumor cells. Rituximab may also induce complement-dependent cytotoxicity and antibody-dependent cellular toxicity.