

Mechanism of action

Polatuzumab vedotin is a member of an innovative drug class called antibody drug conjugates or ADCs. These targeted therapies have been found to be effective in various treatment settings. Polatuzumab vedotin consists of a monoclonal antibody conjugated with the potent cytotoxic drug MMAE via a protease cleavable linker.

This linker provides stability to the drug until it reaches its site of action where MMAE is released.

The target of the monoclonal antibody is CD79b, a component of the B-cell receptor. The B-cell receptor is constitutively expressed on the surface of all B cells, including malignant B cells.

After binding to CD79b polatuzumab vedotin and the B cell receptor are internalised. Inside the cell, the linker of polatuzumab vedotin is degraded. MMAE is released into the cytoplasm, where it interrupts the polymerisation of microtubules.

This inhibits cell division and may eventually lead to apoptosis. MMAE is not degraded in the cell, and some evidence suggests that it could spread to neighbouring cells upon apoptosis, possibly disrupting the microenvironment of the tumor.

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