adenosine deaminase (68). The MOA by which cladribine induces apoptosis is not settled, and it is likely to have more than one component. The drug may become incorporated into DNA and inhibit the ongoing "housekeeping" activity of DNA repair, or it may directly inhibit DNA polymerases (69). Cladribine kills lymphocytes, and is thus an effective drug for multiple sclerosis (70,71). Because cladribine kills lymphocytes, it is also an effective drug against cancers involving neoplastic T cells, such as the leukemias (72) and lymphomas (73,74,75).

f. Glatiramer Acetate

Glatiramer acetate ("glatiramer") takes the form of a heterogeneous mixture of polypeptides, ranging in length from 20 to 200 amino acid residues, with an average length of 60 amino acids (76). The polypeptides are random polymers of four amino acids, glutamate, lysine, alanine, and tyrosine. Glatiramer was designed so that it would include amino acid residues that promote anchoring to MHC class II, and so that it would also include contact residues that promote binding to T-cell receptor during formation of the immune synapse (77).

The mechanism of action of glatiramer, or more accurately, of certain polypeptides in the glatiramer mixture, is described (78). First, the polypeptide binds to MHC class II, and reduces presentation by the MHC class II of peptides derived from myelin-antigens. When glatiramer binds to MHC class II, it is not processed inside DCs. In other words, when

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