

Abstract

Three biochemically distinct isotypic forms of the human T cell receptor (TcR) gamma delta structure can be expressed at the cell membrane. This unique variation in structure of TcR, which is due to C gamma gene segments utilization, prompted us to look for isotype-association functional differences. In this regard, we have developed human T cell clones or lines from normal thymus or peripheral blood from several patients. In the present report, we have selected by phenotypic, biochemical, and TcR gene rearrangement analysis representative pairs of IL2-dependent clones or lines for each TcR gamma delta isotypic form. The results showed a lack of correlation between the TcR isotypes and the ability of the cells to proliferate in response to TcR stimulation mediated through the CD3 molecular complexes. By contrast, despite the fact that all of these representative cells exhibit an NK-like activity, as measured by their ability to kill K562, the strongest lytic activity was observed with the cells having the disulfide-bonded form of the receptor. Moreover only those latter cells were able to efficiently kill the LAK-sensitive Daudi cell line.