GUEST COMMENTARY

Expression Status of Tax Protein in Human T-Cell Leukemia Virus Type 1-Transformed MT4 Cells: Recall of MT4 Cells Distributed by the NIH AIDS Research and Reference Reagent Program

KUAN-TEH JEANG,1* DAVID DERSE, 2 MARTHA MATOCHA, 3 AND OPENDRA SHARMA3

Molecular Virology Section, Laboratory of Molecular Microbiology, 1 and NIH AIDS Research and Reference Reagent Program, Pathogenesis and Basic Research Branch, Division of AIDS, 3 NIAID, NIH, Bethesda, Maryland 20892-0460, and Laboratory of Leukocyte Biology, NCI-FCRDC, NIH, Frederick, Maryland 21701 2

Human T-cell leukemia virus type 1 (HTLV-1) encodes a 40-kDa protein, Tax, that is a transcriptional activator of the viral long terminal repeat (reviewed in references 1 and 15). Tax has also been implicated in HTLV-1-mediated transformation of cells (2, 3, 14, 16) and in the pleiotropic activation of many cellular genes (reviewed in references 1 and 15). The study of Tax biology has been greatly aided by a series of transformed human T cells generated by investigators in Japan (10, 11, 18). Some of these cells, including the MT2 and MT4 cell lines, have been very important tissue culture tools for syncytium-forming assays of human immunodeficiency virus type 1 (HIV-1) infections (8).

Recently, many reports in the literature describing MT4 cells as being negative for expression of the HTLV-1 Tax protein have come to our attention (4, 7, 9, 12, 17). These reports contrast with other (chronologically earlier) reports describing abundant expression of Tax in MT4 cells (e.g., reference 6). Because Tax influences the expression of many cellular genes (reviewed in references 1 and 15) and the expression/replication of HIV-1 (5), cells that do express Tax are likely to produce very different functional results from cells that do not. The popular use of MT4 cells in many biological/virological assays makes imperative a clarification of the expression status of Tax in these cells.

In the course of investigating this issue, we have traced a common source of Tax-negative MT4 cells to the NIH AIDS Research and Reference Reagent Program (ARP) (3). Figure 1A shows that MT4(KTJ) and MT4(5/26/89) have identical patterns by Pst I (lanes 1 and 3) and Sma I (not shown) digestions. Figure 1B shows that MT4(5/26/89) produced identical patterns by Pst I (lanes 1 and 3) and Sma I (not shown) digestions.


