

# New Surrogate Marker for Diagnosis of HIV/AIDS Infection and for Evaluation of Treatment Effectiveness

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## Technology description

This technology describes the identification of a new surrogate marker, TNF-related apoptosis-inducing ligand (TRAIL), that can be universally employed to monitor the progression of HIV infection and other conditions and diseases associated with immune system activation and immunoassays for assessing the amount of TRAIL in a biological sample. In the case of HIV infection, measuring levels of this surrogate marker can distinguish among infected individuals with high viral load, infected individuals with low viral load, and uninfected individuals. Only two surrogate markers are currently recognized by the Food and Drug Administration as clinically relevant to HIV progression, HIV viral load and the absolute number of peripheral CD4+ T cells. Tests for assessing HIV viral load employ PCR, the use of which has drawbacks, including cross-contamination. TRAIL has mechanistic implications for HIV-1 pathogenesis and directly correlates to viral load but not necessarily inversely with CD4+ T cell count. Other surrogate markers have been proposed but do not consistently reflect AIDS progression in all individuals or may result in overlooking possible treatments that may affect disease progression but do not affect the chosen marker. Therefore, use of this new surrogate marker to assess disease progression in infected individuals and to evaluate the effectiveness of various treatment regimens has several advantages over currently used methods.

## Institution

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