OPTIMIZATION OF ANTIBODIES THAT BIND LYMPHOCYTE ACTIVATION GENE-3 (LAG-3), AND USES THEREOF

Abstract

The present invention provides isolated monoclonal antibodies that specifically bind LAG-3, and have optimized functional properties compared to previously described anti-LAG-3 antibodies, such as antibody 25F7 (US 2011/0150892 A1). These properties include reduced deamidation sites, while still retaining high affinity binding to human LAG-3, and physical (i.e., thermal and chemical) stability. Nucleic acid molecules encoding the antibodies of the invention, expression vectors, host cells and methods for expressing the antibodies of the invention are also provided, as well as immunoconjugates, bispecific molecules and pharmaceutical compositions comprising the antibodies. The present invention also provides methods for detecting LAG-3, as well as methods for treating stimulating immune responses using an anti-LAG-3 antibody of the invention. Combination therapy, in which the antibodies are co-administered with at least one additional immunostimulatory antibody, is also provided.

[Fig. 11A]