Resiquimod

National Cancer Institute

Source

An imidazoquinolinamine and Toll-like receptor (TLR) agonist with potential immune response modifying activity. Resiquimod exerts its effect through the TLR signaling pathway by binding to and activating TLR7 and 8 mainly on dendritic cells, macrophages, and B-lymphocytes. This induces the nuclear translocation of the transcription activator NF-kB as well as activation of other transcription factors. This may lead to an increase in mRNA levels and subsequent production of cytokines, especially interferon-alpha (INF-a) and other cytokines, thereby enhancing T-helper 1 (Th1) immune responses. In addition, topical application of resiquimod appears to activate Langerhans' cells, leading to an enhanced activation of T-lymphocytes. Due to its immunostimulatory activity, this agent may potentially be useful as a vaccine adjuvant.