TLR-7 based HIV Therapeutic

OCR Number: OCR 6098

Description:

Treatment of HIV infection by inhibiting Toll-like receptor 7 signaling

- Existing anti-viral drugs focus on suppressing viral activity rather than awakening the host’s immune system.
- Activation of the Toll-like receptor 7 (TLR7) on CD4+ T cells results in down-regulation of immune response known as T-cell anergy.
- Inhibitors of TLR7 reverse T-cell anergy caused by HIV infection, as well as reduce HIV activity in both \textit{in vitro} and \textit{ex vivo} systems made of cells from HIV patients.
- \textit{In vivo} study using a humanized mouse model confirms the efficacy of TLR7 blockade in treating HIV infection.
- This mechanism may open a new avenue in the fight against HIV.

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{fig1.png}
\caption{\textit{In vivo} proof of concept using a humanized mouse model. Viral load measured in mice infected with HIV-1 in the presence (right) or absence (left) of the TLR7 inhibitor IRS661 after 7 days of infection.}
\end{figure}

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Patents: A PCT has been filed.


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