Long-Acting Injectable Colloidal Formulations for HIV Integrase Inhibitors

This technology offers injectable formulations of HIV integrase inhibitors designed for extended drug release, enabling less frequent dosing and improved patient adherence in both treatment and prevention settings.

What is the Problem?

Current HIV therapies often require daily oral dosing, which can be challenging for patients to maintain consistently over time. Missed doses increase the risk of viral resistance and reduce treatment efficacy. In the context of HIV prevention, adherence to daily regimens is also a major barrier, particularly in populations with limited access to healthcare. There is a growing need for long-acting drug delivery systems that reduce dosing frequency while maintaining therapeutic levels. Existing long-acting options are limited in scope and may not be suitable for all drug classes or patient populations.

What is the Solution?

This innovation introduces colloidal pharmaceutical compositions—suspensions of drug particles stabilized in liquid—for long-acting delivery of integrase strand transfer inhibitors (INSTIs), a key class of antiretroviral drugs. The formulations are designed for intramuscular or subcutaneous injection and maintain drug release over extended periods, potentially weeks or months. The technology leverages particle engineering and excipient selection to optimize drug stability, solubility, and bioavailability. It is compatible with multiple INSTIs, including dolutegravir and cabotegravir, and may be adapted for other small-molecule antivirals. These injectable compositions offer a promising alternative to daily oral dosing, with potential applications in both HIV treatment and pre-exposure prophylaxis (PrEP).

What is the Competitive Advantage?

-Enables sustained drug release from a single injection, reducing dosing frequency and improving adherence.

-Compatible with multiple INSTIs, allowing flexibility in formulation and therapeutic strategy.

-Designed for scalable manufacturing using conventional pharmaceutical processes.

-May improve access and outcomes in resource-limited settings by reducing reliance on daily medication.

Technology ID

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Category

Therapeutics/Infection
Selection of Available Technologies
Therapeutics/Other

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-Offers potential for combination therapies or co-formulation with other long-acting agents.

Patent Information:

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References

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