GRIFFITHSIN FAST DISSOLVING INSERT (GRFT FDI)

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GRFT Fast Dissolving Insert (FDI) in brief

- Contains Griffithsin (GRFT): a Non-ARV anti-HIV protein derived from red algae that gets released from the insert as it dissolves
- Individuals insert the GRFT FDI vaginally (or rectally) themselves shortly before sex
- Designed to provide protection against HIV for at least 4 hours after insertion
- Also protects from Herpes Simplex Virus (HSV) and Human Papilloma Virus (HPV)

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Why GRFT FDI? What gaps does it fill?

- As non-ARV, likely to have fewer side effects, and because GRFT is not used for HIV treatment, less concern for emergence of cross-resistance
- GRFT is a naturally occurring protein with extremely potent anti-HIV activity
- The GRFT FDI is discreet, easy to use, portable
- Anticipated to be safe in pregnant and breastfeeding women
- Inexpensive, scalable, able to manufacture in low- and middle-income countries
- Additional aspirational features:
  - HIV testing may not be needed for GRFT FDI use
  - Potential for over-the-counter access in the future

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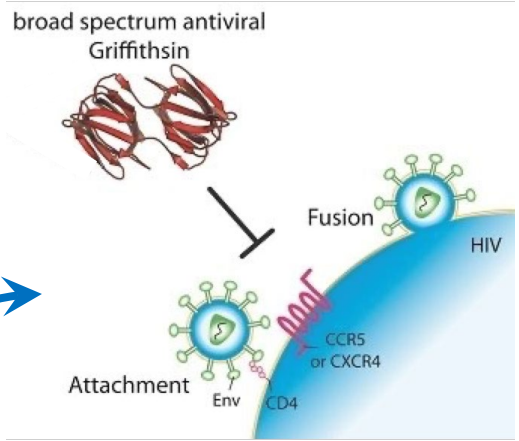
How does it work exactly?



Lusvarghi et al 2016

GRFT binds to the outside of the HIV and HSV viruses. Blocks HIV, HSV and HPV entry into healthy cells

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What have we learned so far?

- GRFT FDIs are stable under high temperature and humidity conditions
- FDIs disintegrate rapidly (less than 2 minutes) into clear gel with no residue when studied in the laboratory
- Clinical, animal and laboratory studies suggest the GRFT FDI could provide protection for at least 4 hours (likely longer) after vaginal insertion
- GRFT gel appears to be safe and tolerable when used in the vagina with no absorption into the blood circulation, minimizing side effects
- According to the global internet survey (n=600), more women were interested in using an FDI than any other formulation

Derby N, Lal M, Aravantinou M,et al. *Nat Commun.* 2018 Sep 24;9(1):3881. PMID: 30250170
Teleshova N, Keller MJ, et al. *PLoS One*. 2022 Jan 20;17(1):e0261775. PMID: 35051209.

Key questions for future trials

- Can we increase the duration of protection to 8 or 12 hours?
- What duration of protection is desirable for an on-demand (inserted before sex) product?
- Is a GRFT FDI safe and well-tolerated by women in Africa?

We will answer these questions through studies in monkeys, clinical trials, plus consultations with potential end-users and stakeholders

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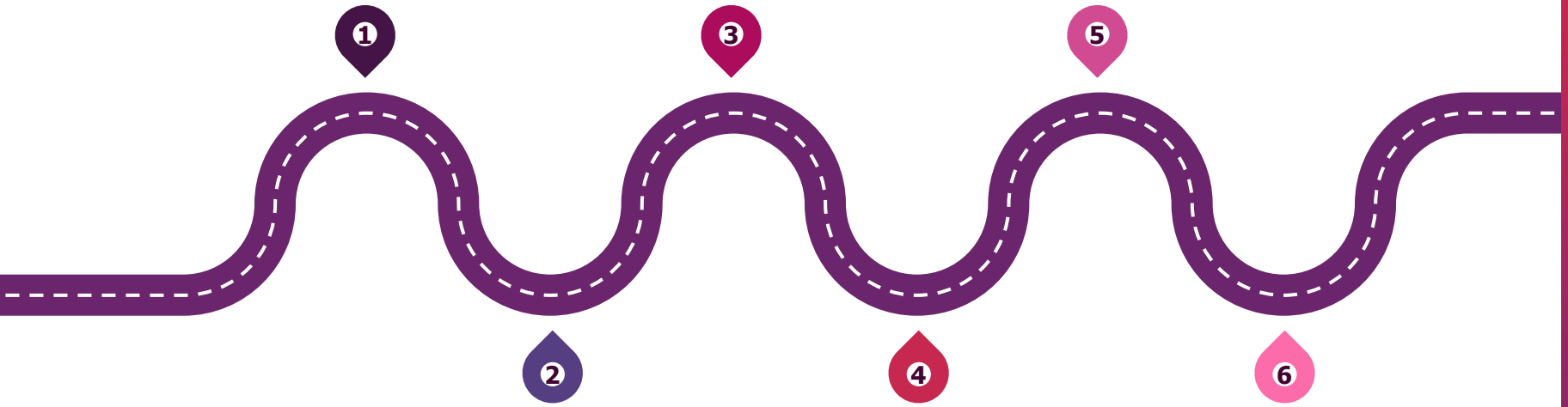
Overall Product Development Timeline

Aug - Sep 2022
- Finalize GRFT FDI formulations for animal studies
- Start stability studies
- End-user design consultations

Dec 2022 - Feb 2023
- Finish rat and rabbit studies

July-Dec 2023
- Submit Investigational New Drug application (IND) to FDA
- Manufacture FDIs and prepare materials to conduct clinical study



Oct - Nov 2022
- FDIs manufactured for animal studies
- Start rabbit disintegration studies
- Start rat toxicology studies
- Start non-human primate (monkey) toxicology & safety studies

Apr - May 2023
- Finish monkey studies Conduct vaginal irritation studies

Jan-March 2024
- Start initial clinical study

Acknowledgements

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