

# THE POPULATION COUNCIL: PIONEERING NEW TOOLS TO PREVENT HIV, STIS, AND UNINTENDED PREGNANCY

**Population Council researchers are pioneering bold approaches to reducing sexually transmitted infections (STIs) and unintended pregnancy by developing a new generation of products, called multi-purpose prevention technologies (MPTs).**

These MPTs—gels, fast-dissolving inserts, and intravaginal rings—are designed to prevent HIV, other STIs, and/or unintended pregnancy simultaneously, allowing women and men to lead healthy sexual and reproductive lives.

## PC-1005 Gel

PC-1005 gel is the only candidate MPT designed for both vaginal and rectal use and to prevent HIV, HSV, and HPV simultaneously. Based on recent Phase 1 study data, PC-1005 is safe for vaginal use.

PC-1005 will undergo additional Phase 1 vaginal and rectal testing in 2017-18.

- PC-1005 contains a combination of MIV-150, zinc acetate, and carrageenan that provides broad-spectrum antiviral activity.
- MIV-150, a highly potent antiretroviral drug that is effective against HIV.
- Zinc acetate, an antiviral that protects against HIV and HSV.
- Carrageenan, a seaweed-derived compound with highly potent activity against different types of HPV. Carrageenan also strengthens zinc's activity against HSV.
- Innovative delivery systems for the drug combinations in PC-1005 may include sustained-release intravaginal rings, or combining PC-1005 with a SILCS diaphragm.



## PC-9500 Fast-Dissolving Insert

The Population Council is collaborating with PATH to develop PC-9500, a candidate MPT designed for on-demand vaginal, and possibly rectal, use to prevent HIV, HSV, and HPV simultaneously. PC-9500 contains a combination of griffithsin (GRFT) and carrageenan, providing broad-spectrum antiviral activity.

- GRFT is a naturally occurring algae-derived protein that inhibits HIV and other pathogens, including HSV.
- GRFT is the most potent anti-HIV agent described in the literature.
- GRFT could eliminate the risk of HIV drug cross-resistance, because no other antiretroviral with similar mode of action is used in treatment.
- When combined with carrageenan, GRFT also inhibits HPV.



## Intravaginal Ring

Council researchers are also developing an IVR to provide sustained-release protection from HIV, HSV, and HPV for up to 90 days. FDI and IVR development will be supported by a Phase 1 safety and PK study of a GRFT gel, which is planned for 2017-18. This will be the first in-human study of a GRFT MPT.

