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# FORMULATION OF IQP-0528 INTO INTRAVAGINAL RINGS AS A TOPICAL MICROBICIDE FOR THE PREVENTION OF HIV

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## PURPOSE

IQP-0528, shown to be a highly potent, non-toxic, dual acting HIV inhibitor that targets both virus entry and reverse transcription, is being developed into an intravaginal ring formulation as a topical microbicide.

## METHODS

Pre-formulation in vitro assays in vaginal and seminal fluid stimulants measuring mechanism of action, p24 and/or RT activity, and toxicity against primary cell lines were preformed to evaluate the efficacy of IQP-0528. IQP-0528 was formulated into a Tecoflex EG-85A polymer vaginal ring manufactured via hot-melt extrusion. In vitro stability and release of IQP-0528 from the vaginal rings were preformed in scintillation vials at 37°C and shaken at 80 rpm for 14 days.

## RESULTS

In standard in vitro assays, IQP-0528 was active against all clinical strains of virus in the nanomolar to sub-nanomolar concentration range with therapeutic indices greater than one million. Acute toxicology evaluations determined the compound to be non-toxic up to 1000 mg/kg/day when dosed orally. When formulated into a vaginal ring, IQP-0528 demonstrated no significant degradation at accelerated stability conditions (40°C / 75%RH) for 30 days. In drug release studies, IQP-0528 demonstrated a dose dependant near-linear release of drug from the vaginal rings over 14 days.

## CONCLUSIONS

IQP-0528 is a novel candidate for a vaginal topical microbicide based on its dual mechanism of action, high level of potency, lack of toxicity, and toxicology profile. The formulation of IQP-0528 into intravaginal rings provide it with long term stability and a controlled drug release profile that can engineered to reach optimal therapeutic concentrations in vivo.