SUPPLEMENTARY FIGURES

Figure 1S. A) Representative sections of the vaginal epithelium of a pigtail macaque receiving 30 mg DMPA. Biopsies were taken during the luteal and follicular phases of the menstrual cycles and at 3-week intervals following DMPA dosing. B) Vaginal epithelial thickness from 3 biopsies is also shown.

Figure 2S. Dynamic changes in the number of epithelial cell layers in vaginal biopsies from pigtail macaques following administration of a single IM injection of 30, 15, 3, or 1 mg of DMPA. The shaded areas denote the values observed during the luteal and follicular phase of the menstrual cycle. These values were obtained prior to DMPA administration. Horizontal lines denote mean number of epithelial cell layers (n=6, 2 animals per dose; 3-4 biopsies per animal and time point). The 2 animals from each dose group are coded as open or closed circles.

Figure 3S. Kinetics of progesterone and estrogen in plasma before and after a single dose of DMPA. The concentrations of progesterone and estrogen were measured weekly prior to and after DMPA treatment during the titration experiment. Progesterone is shown by the solid gray line and estrogen is shown by the dotted black line. The shaded areas represent periods with detectable MPA in plasma. Arrows represent biopsy collection times (red, luteal; blue, follicular; dark, post-DMPA injection).

Figure 4S. Plasma viremia in macaques infected with SHIV during DMPA treatment or during their normal menstrual cycle (untreated controls). All 12 animals were exposed vaginally to SHIV until they become SHIV RNA positive. Treated animals continued receiving DMPA after confirmed infection to evaluate effects of DMPA on virus replication.
<table>
<thead>
<tr>
<th>DMPA dose (mg)</th>
<th>Cmax (ng/ml)</th>
<th>AUC$_{0-84}$ (ng*day/ml)</th>
<th>Tmax (days)</th>
<th>Half-life (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.7</td>
<td>27.5</td>
<td>14</td>
<td>7.7</td>
</tr>
<tr>
<td>3</td>
<td>3.0</td>
<td>79.2</td>
<td>14</td>
<td>9.5</td>
</tr>
<tr>
<td>15</td>
<td>13.6</td>
<td>214</td>
<td>17.5</td>
<td>9.0</td>
</tr>
<tr>
<td>30</td>
<td>19.9</td>
<td>398</td>
<td>21</td>
<td>11.5</td>
</tr>
<tr>
<td>150 mg in women*</td>
<td>2.5</td>
<td>99</td>
<td>15 (14-28)</td>
<td>32 (11-115)</td>
</tr>
</tbody>
</table>

*Nanda et al (19)
**A**

Normal Menstrual Cycle

- Follicular
- Luteal

Post-Injection (30 mg DMPA)

- 3wk
- 6wk
- 9wk
- 12wk

**B**

Epithelial thickness (mm)

<table>
<thead>
<tr>
<th>Follicular</th>
<th>Luteal</th>
<th>3 wk</th>
<th>6 wk</th>
<th>9 wk</th>
<th>12 wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
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</tbody>
</table>

Figure 1S
Figure 2S

- **DMPA (30 mg)**
- **DMPA (15 mg)**
- **DMPA (3 mg)**
- **DMPA (1 mg)**

Each graph shows the number of cell layers over different stages: Follicular, Luteal, 3 wks, 6 wks, 9 wks, and 12 wks. The y-axis represents the number of cell layers, ranging from 0 to 40. The x-axis shows the time stages.
Figure 3S

Progesterone [ng/mL] vs. Weeks Post-Injection:
- PCl - 30 mg
- PYI - 15 mg
- PKg2 - 3 mg
- 96p047 - 1 g
- PBm1 - 15 mg
- PYI - 15 mg

Estrogen [ng/mL] vs. Weeks Post-Injection:
- PBm1 - 15 mg
- PKg2 - 3 mg
- PCl - 30 mg
- PYI - 15 mg
- 96p047 - 1 g
- PYI - 15 mg

Progestosterone and Estrogen Levels following different treatments over time.
Figure 4S

DMPA treated

Untreated controls

Log$_{10}$ RNA copies/ml

Weeks

0 5 10 15 20 25

Log$_{10}$ RNA copies/ml

Weeks

0 5 10 15 20 25