WHAT IS CLAIMED IS:

1. A method of inhibiting a virus from infecting cells in a target region, comprising the steps of:

imposing an alternating electric field in the target region for a duration of time, the alternating electric field having a frequency and a field strength, wherein when the alternating electric field is imposed in the target region for the duration of time, the alternating electric field inhibits infection of the cells in the target region by the virus.

2. The method of claim 1, wherein the target region is a region within a live subject, and wherein the alternating electric field is safe for the subject.

3. The method of claim 2, wherein the target region is tumor-free.

4. A method according to any of claims 1-3, further comprising the step of delivering an antiviral agent to the target region so that a therapeutically effective dose of the antiviral agent is present in the target region while the imposing is performed.

5. A method according to any of claims 1-3, wherein the alternating electric field has a frequency between 50 and 500 kHz.

6. A method according to any of claims 1-3, wherein the alternating electric field has a frequency between 25 kHz and 1 MHz.

7. A method according to any of claims 1-3, wherein the alternating electric field has a frequency of about 200 kHz.

8. A method according to any of claims 1-3, wherein the alternating electric field has a field strength between 1 and 5 V/cm RMS.

9. A method according to any of claims 1-3, wherein the alternating electric field has a field strength of about 1.2 V/cm RMS.

10. A method according to any of claims 1-3, wherein the duration of time is between 1 and 48 hours.

11. A method according to any of claims 1-3, wherein the duration of time is between 2 and 14 days.

12. A method according to any of claims 1-3, wherein the duration of time is about 48 hours.

13. A method according to any of claims 1-3, wherein the alternating electric field has an orientation that is repeatedly switched between at least two directions during the duration of time.

14. The method of claim 13, wherein the orientation of the alternating electric field is switched about once a second.

15. A method according to any of claims 1-3, wherein the alternating electric field has an orientation that is repeatedly switched between a first direction and a second direction during the duration of time, wherein the first direction is roughly perpendicular to the second direction.

16. A method according to any of claims 1-3, wherein the alternating electric field is applied to the target region via capacitively coupled electrodes.