

CLAIMS

1. A medical patch for creating or maintaining an area of human tissue free of one or more contaminants comprising:

an adhesive fixed to a perimeter of an impermeable backing, the impermeable backing comprising one or more removable windows, wherein each of the one or more removable windows is removable to expose one or more access sites on the area;

a permeable layer coupled to the impermeable backing interior to the adhesive; and

an antimicrobial agent located within the permeable layer, the antimicrobial agent comprising at least one or more of hydrogen peroxide, carbamide peroxide, a chelator, or an alcohol.

2. The patch as recited in claim 1, wherein the one or more contaminants comprises at least one of bacteria, spores, parasites, viruses, bodily fluids, fungi or a combination thereof.

3. The patch as recited in claim 2, wherein the one or more bacteria includes methicillin-resistant *Staphylococcus aureus* (MRSA), *Pseudomonas aeruginosa* or other resistant bacteria.

4. The patch as recited in any one of claims 1-3, wherein the each of the one or more access sites corresponds to one or more locations on the human tissue where penetration is desired for a medical procedure.

5. The patch as recited in any one of claims 1-4, wherein the chelator comprises one of ethylenediaminetetraacetic acid (EDTA), salts of EDTA, sodium citrate, or another biocompatible chelator.

6. The patch as recited in claim 5, wherein the antimicrobial agent comprises:

about 5 to about 50 mg/ml of ethylenediaminetetraacetic acid (EDTA);

at most about 70% ethanol, by volume;

at most about 7.5% hydrogen peroxide, by volume; and

water.

7. A method of creating an area free of one or more contaminants comprising:

identifying the area to be sanitized or disinfected;

applying an adhesive patch to the area, the adhesive patch comprising:

an impermeable backing layer, the impermeable backing layer including one or more removable windows, wherein each of the one or more removable windows is removable to expose one or more access sites on the area;

an adhesive boundary fixed around an exterior edge of the impermeable backing layer;

a permeable layer coupled to the impermeable backing layer and interior to the adhesive boundary; and

an antimicrobial composition retained by the permeable layer.

8. The method as recited in claim 7, wherein the one or more contaminants includes methicillin-resistant *Staphylococcus aureus* (MRSA), *Pseudomonas aeruginosa* or other resistant bacteria.

9. The method as recited in claim 7 or 8, wherein the area to be sanitized or disinfected comprises a portion of human skin.

10. The method as recited in any one of claims 7-9, wherein applying the adhesive patch to the area further comprises:

aligning the one or more removable windows of the adhesive patch with the one or more access sites on the area to be sanitized or disinfected;

placing the aligned adhesive patch on the area to be sanitized or disinfected allowing the antimicrobial agent to come in contact with the one or more contaminants;

allowing the adhesive patch to remain on the area;

removing the one or more removable windows aligned with the one or more access sites; and

accessing the one or more access sites.

11. The method as recited in any one of claims 7-9, wherein the impermeable backing layer further comprises one or more markings, wherein each of the one or more markings represents the one or more access sites on the area, and wherein applying the adhesive patch to the area further comprises:

aligning the one or more markings with the one or more access sites on the area to be sanitized or disinfected;

placing the aligned adhesive patch on the area to be sanitized or disinfected allowing the antimicrobial agent to come in contact with the one or more contaminants;

allowing the adhesive patch to remain on the area;

accessing the one or more access sites through the one or more markings.

12. The method as recited in any one of claims 7-11, wherein the antimicrobial agent comprises:

about 5 to about 50 mg/ml of ethylenediaminetetraacetic acid (EDTA);

at most about 70% ethanol, by volume;

at most about 7.5% hydrogen peroxide, by volume; and

water.

13. A medical patch comprising:

a transparent impermeable backing layer, wherein the transparent impermeable backing layer includes one or more removable windows wherein each of the one or more removable windows is removable to expose one or more access sites;

an adhesive attached to a perimeter of the impermeable backing layer; and
an antimicrobial gel located interior to the adhesive perimeter on the impermeable backing layer, the antimicrobial gel comprising at least one or more of hydrogen peroxide, carbamide peroxide, a chelator, or an alcohol.

14. The medical patch as recited in claim 13, wherein each of the one or more access sites corresponds to an incision site or a penetration site for a predetermined medical procedure.

15. The medical patch as recited in claim 13 or 14, wherein the antimicrobial gel comprises:

about 5 to about 50 mg/ml of ethylenediaminetetraacetic acid (EDTA);
at most about 70% ethanol, by volume;
at most about 7.5% hydrogen peroxide, by volume; and
water.

16. The medical patch as recited in any one of claims 13-15, wherein the antimicrobial gel is effective to disinfect an area of human skin of one or more of a bacterium, a spore, a parasite, a virus, a fungus, a bodily fluid or a combination thereof.

17. The medical patch as recited in claim 16, wherein the one or more bacterium include methicillin-resistant *Staphylococcus aureus* (MRSA), *Pseudomonas aeruginosa* or other resistant bacteria.

18. The medical patch as recited in any one of claims 13-17, wherein the transparent impermeable backing layer comprises polyethylene, silicon oxide coated polymeric films, polypropylene, polysilicone, polytetrafluoroethylene, polyvinyl chloride, mylar, urethane polymer, acrylate polymer, or mixtures thereof.