

cocatalysts (such as copper, rhodium, silver, platinum, gold, etc.), or other suitable metal oxide photocatalysts. Purified gas hydrogen peroxide gas may also be produced by electrolytic processes using anodes and cathodes made from any suitable metal, or constructed from metal oxide ceramics using morphology that permits immediate removal of hydrogen peroxide gas before it can be reduced. Alternatively, hydrogen peroxide gas may be produced by high frequency excitation of gaseous water and oxygen molecules on a suitable supporting substrate using morphology that permits immediate removal of hydrogen peroxide gas before it can be reduced.

SUMMARY OF THE INVENTION

[0015] In an aspect, the present disclosure provides for, and includes, enclosed spaces for human or veterinary use comprising purified hydrogen peroxide gas (PHPG) at a concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone.

[0016] In another aspect, the present disclosure provides for, and includes, dwellings having purified hydrogen peroxide gas (PHPG) at concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone.

[0016a] In yet another aspect, the present disclosure provides for a method of improving air quality in an enclosed space comprising introducing purified hydrogen peroxide gas (PHPG) concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone, wherein said air stream is introduced from an indoor air recirculation stream.

[0017] In a further aspect, the present disclosure provides for, and includes, a method for preparing a purified hydrogen peroxide gas (PHPG) containing environment comprising generating PHPG that is substantially free of hydration and ozone, and accumulating said PHPG until a final concentration of at least 0.01 parts per million (ppm) is achieved.

[0018] In an aspect embodiment, the present disclosure provides for, and includes, a method for preparing a purified hydrogen peroxide gas (PHPG) containing environment comprising generating PHPG that is substantially free of hydration and ozone, and accumulating said PHPG until a final concentration of at least 0.01 parts per million (ppm) is achieved.

[0019] In an ~~aspect~~embodiment, the present disclosure provides for, and includes, a method for providing an enclosed space comprising a purified hydrogen peroxide gas (PHPG) comprising providing PHPG that is substantially free of hydration and ozone to said environment at a rate sufficient to maintain PHPG gas at a final concentration of at least 0.01 parts per million (ppm)

[0020] In another aspect, the present disclosure provides for the use of a purified hydrogen peroxide gas (PHPG) in the manufacture of a medicament for treating a respiratory illness in a subject, wherein said medicament provides an environment that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million (ppm); and wherein the subject is to be exposed to said environment for at least one period of time, and wherein said treating comprises reducing the severity of a respiratory infection, reducing the duration of a respiratory infection, reducing the severity of an allergy, preventing transmission of a respiratory infection, reducing transmission of a respiratory infection in a population, improving lung function, or any combination thereof.

[0020a] In a further aspect, there is provided the use of a purified hydrogen peroxide gas (PHPG) in the manufacture of a medicament for controlling a pathogen in the respiratory system of a subject, wherein said medicament generates an environment that is substantially free of hydration and ozone, wherein said environment accumulates said PHPG at a final concentration of at least 0.01 parts per million, and wherein said subject is to be exposed to said PHPG containing environment for a period of time.

[0020b] In an aspectembodiment, the present disclosure provides for, and includes, a method of treatment comprising providing a treatment environment comprising an enclosed space suitable for habitation wherein said treatment environment comprises a purified hydrogen peroxide gas (PHPG) concentration of at least 0.01 parts per million and the PHPG is non-hydrated and free of ozone and exposing a subject in need of treatment to the treatment environment for a treatment period.

[0021] In an ~~embodiment~~aspect, the present disclosure provides for, and includes, a method for treating a respiratory illness in a subject comprising providing an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million (ppm) and exposing the subject to the environment for at least one period of time, wherein the treating comprises reducing the severity of a respiratory infection, reducing the duration of a respiratory infection, reducing the severity of an allergy, preventing transmission of a respiratory infection, reducing transmission of a respiratory infection in a population, improving lung function, or any combination thereof.

[0022] In an embodiment aspect, the present disclosure provides for, and includes, a method for treating a respiratory condition in a subject in need thereof comprising providing the subject in need with an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million (ppm).

[0023] In an embodiment aspect, the present disclosure provides for, and includes, a method for reducing the severity of a respiratory infection in a subject comprising providing a purified hydrogen peroxide gas (PHPG) containing environment comprising PHPG that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million (ppm), and exposing the subject to the PHPG containing environment for a period of time, wherein the severity of the respiratory infection is reduced.

[0024] In an embodiment aspect, the present disclosure provides for, and includes, a generating a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone to an environment, wherein the environment accumulates the PHPG at a final concentration of at least 0.01 parts per million, and exposing the subject to the PHPG containing environment for a period of time.

[0025] In an embodiment aspect, the present disclosure provides for, and includes, a method for preventing a respiratory infection comprising generating a hydrogen peroxide gas that is substantially free of hydration and ozone and providing the hydrogen peroxide gas to an environment wherein the environment accumulates the PHPG at a final concentration of at least 0.01 parts per million and chronically exposing an animal at risk for respiratory infection to the environment.

[0026] In an embodiment aspect, the present disclosure provides for, and includes, a method for reducing the transmission of a respiratory infection from a first subject having the respiratory infection to a second subject not having the respiratory infection comprising providing an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million and exposing the first subject having the respiratory infection to the environment for one or more periods of time.

[0027] In an embodiment aspect, the present disclosure provides for, and includes, a method of supplementing endogenous H₂O₂ in the lung of a subject comprising exposing the subject to an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone, wherein the environment accumulates the PHPG at a final concentration of at least 0.01 parts per million.

[0028] In an embodiment aspect, the present disclosure provides for, and includes, a method for enhancing host defenses to a respiratory infection of a subject comprising providing an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million and exposing the subject to the environment for one or more periods of time, thereby increasing the level of hypothiocyanate ion in the lungs of the subject.

[0029] In an embodiment aspect, the present disclosure provides for, and includes, a method for stimulating the host defenses to a respiratory infection of a subject comprising providing an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million and exposing the subject to the environment for one or more periods of time, thereby increasing the level of hypothiocyanate ion in the lungs of the subject.

[0030] In an embodiment aspect, the present disclosure provides for, and includes, a method of managing a condition affecting the lungs of a subject comprising generating a purified hydrogen

peroxide gas (PHPG) that is substantially free of hydration and ozone to an environment wherein the environment accumulates the PHPG at a final concentration of at least 0.01 parts per million, and exposing the subject to the PHPG containing environment for a period of time.

5 [0031] In an embodiment aspect, the present disclosure provides for, and includes, a method of decreasing the severity of a respiratory infection in a subject comprising providing an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million and exposing the subject to the environment for one or more periods of time, wherein the severity of the
10 respiratory infection is decreased.

[0032] In an embodiment aspect, the present disclosure provides for, and includes, a method of increasing the rate of hypothiocyanate ion production catalyzed by lactoperoxidase (LPO) in the lungs of a subject comprising providing an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone at a final
15 concentration of at least 0.01 parts per million and exposing the subject to the environment for one or more periods of time.

[0033] In an embodiment aspect, the present disclosure provides for, and includes, a method of improving the lung function of a subject comprising providing an environment comprising a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone at
20 a final concentration of at least 0.01 parts per million and exposing the subject to the environment for one or more periods of time.

[0034] In an aspect, the present disclosure provides for, and includes, the use of a purified hydrogen peroxide gas (PHPG) for the preparation of an environment suitable for preventing, treating, or controlling a respiratory illness in a subject comprising generating a hydrogen
25 peroxide gas that is substantially free of hydration and ozone and providing the hydrogen peroxide gas to an environment wherein the environment accumulates the PHPG at a final concentration of at least 0.01 parts per million.

[0035] In an aspect, the present disclosure provides for, and includes, a method for preparing an environment suitable for occupancy of a subject comprising providing a device for
30 producing purified hydrogen peroxide gas (PHPG), wherein the PHPG is substantially free of

What is claimed:

1. An enclosed space for human or veterinary use, said enclosed space comprising purified hydrogen peroxide gas (PHPG) at a concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone.
- 5 2. A dwelling comprising purified hydrogen peroxide gas (PHPG) at concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone.
3. A method of improving air quality in an enclosed space comprising introducing purified hydrogen peroxide gas (PHPG) concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone, wherein said air stream
10 is introduced from an indoor air recirculation stream.
4. A method for preparing a purified hydrogen peroxide gas (PHPG) containing environment comprising:
generating PHPG that is substantially free of hydration and ozone, and accumulating said PHPG until a final concentration of at least 0.01 parts per million (ppm) is
15 achieved.
5. A method for providing an enclosed space comprising a purified hydrogen peroxide gas (PHPG) comprising:
providing PHPG that is substantially free of hydration and ozone to said environment at a rate sufficient to maintain PHPG gas at a final concentration of at least 0.01 parts
20 per million (ppm).
6. A method of treatment comprising:
providing a treatment environment comprising an enclosed space suitable for habitation wherein said treatment environment comprises a purified hydrogen peroxide gas (PHPG) concentration of at least 0.01 parts per million and said PHPG is
25 non-hydrated and free of ozone;
exposing a subject in need of treatment to said treatment environment for a treatment period.
7. A method for increasing the concentration of hypothiocyanate ion in a respiratory system comprising:

generating a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone; and
providing said hydrogen peroxide gas to the lungs of an animal, thereby increasing the concentration of hypothiocyanate ion.

- 5 8. The method of claim 7, wherein said providing comprises directing said PHPG to an environment for inhalation by said animal or directing said PHPG directly to lungs of an animal.
9. A method for treating a respiratory illness in a subject comprising:
providing an environment comprising a purified hydrogen peroxide gas (PHPG) that
10 is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million (ppm); and
exposing said subject to said environment for at least one period of time, wherein said treating comprises reducing the severity of a respiratory infection, reducing the
duration of a respiratory infection, reducing the severity of an allergy, preventing
15 transmission of a respiratory infection, reducing transmission of a respiratory infection in a population, improving lung function, or any combination thereof.
10. The method of claim 9, wherein said improving lung function comprises increasing static lung volume, increasing total lung capacity, increasing the partial pressure of oxygen in arterial blood gases, decreasing residual volume, or any combination
20 thereof.
11. The method of claim 9, wherein said lung function is measured using spirometry.
12. The method of claim 9, wherein said environment is an enclosed space.
13. The method of claim 9, wherein said period of time is at least 15, at least 30, at least 60, at least 90, at least 120, at least 180, at least 240, at least 300, at least 360, at least
25 420, or at least 480 consecutive minutes.
14. The method of claim 9, wherein said period time is at least 15, at least 30, at least 60, at least 90, or at least 120 minutes over a 24 hour, or 48 hour period.
15. The method of claim 9, wherein said period time is at least 8, at least 16 or at least 24 hours over a 7 day period.

16. The method of claim 9, wherein the total time of exposure is at least 1, 2, 3, 4, 5, 6, 7, 8, or more hours.
17. The method of claim 9, wherein said exposing is repeated 1, 2, 3, or more times daily, weekly, bi-weekly, or monthly.
- 5 18. The method of claim 9, wherein said environment comprises PHPG at a final concentration of at least 0.1 ppm, at least 0.2 ppm, at least 0.3 ppm, at least 0.4 ppm, at least 0.5 ppm, or at least 1.0 ppm.
19. A method for treating a respiratory condition in a subject in need thereof comprising: providing said subject in need with an environment comprising a purified hydrogen
10 peroxide gas (PHPG) that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million (ppm).
20. A method for reducing the severity of a respiratory infection in a subject comprising: providing a purified hydrogen peroxide gas (PHPG) containing environment
15 comprising PHPG that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million (ppm), and exposing said subject to said PHPG containing environment for a period of time, wherein the severity of said respiratory infection is reduced.
21. The method of claim 20, wherein said respiratory infection is selected from the group consisting of severe acute respiratory syndrome (SARS), Middle East Respiratory
20 Syndrome (MERS), ebola, porcine reproductive and respiratory syndrome virus (PRRSV) infection, and respiratory syncytial virus.
22. A method for controlling a pathogen in the respiratory system of a subject comprising:
25 generating a purified hydrogen peroxide gas (PHPG) that is substantially free of hydration and ozone to an environment, wherein said environment accumulates said PHPG at a final concentration of at least 0.01 parts per million, and exposing said subject to said PHPG containing environment for a period of time.
23. The method of claim 22, wherein said pathogen is selected from the group consisting of a virus, a bacterium, a fungus, and a parasite.

24. The method of claim 22, wherein said respiratory system comprises one or more of the trachea, the bronchi, the conducting bronchioles, the respiratory bronchioles, the alveolar sac, the oral cavity, and the nasopharyngeal cavity.
25. The method of claim 23, wherein said fungus is from the genus *Aspergillus*.
- 5 26. The method of claim 23, wherein said fungus is selected from the group consisting of *Histoplasma capsulatum*, blastomyces, *Cryptococcus neoformans*, *Pneumocystis jiroveci*, *Coccidioides immitis*, *Blastomyces dermatitidis*, *Pneumocystis jirovecii*, *Sporothrix schenckii*, *Cryptococcus neoformans*, *Aspergillus fumigatus*, and *Candida albicans*.
- 10 27. The method of claim 23, wherein said virus is a double stranded DNA virus, a single-stranded DNA virus, a double-stranded RNA virus, a positive sense single-stranded RNA virus, a negative sense single-stranded RNA virus, a single stranded RNA retrovirus, or a double-stranded DNA retrovirus.
28. The method of claim 23, wherein said bacterium is *Acinetobacter baumannii*,
15 *Mycoplasma*, *Pneumococcus*, *Chlamydophila pneumoniae*, *Mycobacterium tuberculosis*, *Streptococcus pneumoniae*, *Haemophilus* species, or *Staphylococcus aureus*.
29. The method of claim 23, wherein said parasite is a protozoan, a nematode, or a trematode.
- 20 30. The method of claim 29, wherein said parasite is selected from the group consisting of *Toxoplasma gondii*, *Strongyloides stercoralis*, *Ascaris lumbricoides*, *Plasmodium malariae*, *Echinococcus granulosus*, *Dirofilaria immitis*, *Paragonimus westermani*, *Entamoeba histolytica*, *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Necator americanus*, *Toxocara canis*, *Schistosoma mansoni*, *Schistosomahaematobium*,
25 *Schistosoma japonicum*, *Strongyloides stercoralis*, *Wuchereria bancrofti*, and *Brugia malayi*.
31. The method of claim 22, wherein said subject is selected from the group consisting of a human, a laboratory animal, a house-pet, or a livestock animal.

32. The method of claim 31, wherein said livestock animal is selected from the group consisting of cattle, a horse, a sheep, a goat, a pig, a chicken, a duck, a goose, an alpaca, a banteng, a bison, a camel, a deer, a donkey, a llama, a rabbit, a reindeer, or a yak.
- 5 33. The method of claim 31, wherein said house-pet is a dog, a cat, a bird, a reptile, or a rodent.
34. The method of claim 31, wherein said laboratory animal is a monkey, a rabbit, a guinea pig, a rat, or a mouse.
- 10 35. The method of claim 22, wherein said controlling comprises preventing infection of a subject by said pathogen; preventing the transmission of said pathogen from a subject to a second subject, decreasing the number of pathogen infected subjects in a population, reducing the number or severity of the symptoms of infection with said pathogen, decreasing the length of time a subject is infected with said pathogen, decreasing the number of sick days taken by a subject infected with said pathogen, or
- 15 decreasing the use of over-the-counter medication by a subject.
36. A method for preventing a respiratory infection comprising:
generating a hydrogen peroxide gas that is substantially free of hydration and ozone;
providing said hydrogen peroxide gas to an environment wherein said environment accumulates said PHPG at a final concentration of at least 0.01 parts per million; and
- 20 chronically exposing an animal at risk for respiratory infection to said environment.
37. A method for reducing the transmission of a respiratory infection from a first subject having said respiratory infection to a second subject not having said respiratory infection comprising:
providing an environment comprising a purified hydrogen peroxide gas (PHPG) that
- 25 is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million; and
exposing said first subject having said respiratory infection to said environment for one or more periods of time.
38. The method of claim 9, wherein said period of time is at least 1 hour per day for at
- 30 least one week.

39. A method of supplementing endogenous H_2O_2 in the lung of a subject comprising:
exposing said subject to an environment comprising a purified hydrogen peroxide gas
(PHPG) that is substantially free of hydration and ozone, wherein said
environment accumulates said PHPG at a final concentration of at least 0.01 parts
per million.
40. A method for enhancing host defenses to a respiratory infection of a subject
comprising:
providing an environment comprising a purified hydrogen peroxide gas (PHPG) that
is substantially free of hydration and ozone at a final concentration of at least 0.01
parts per million; and
exposing said subject to said environment for one or more periods of time, thereby
increasing the level of hypothiocyanate ion in the lungs of said subject.
41. A method for stimulating the host defenses to a respiratory infection of a subject
comprising:
providing an environment comprising a purified hydrogen peroxide gas (PHPG) that
is substantially free of hydration and ozone at a final concentration of at least
0.01 parts per million; and
exposing said subject to said environment for one or more periods of time, thereby
increasing the level of hypothiocyanate ions in the lungs of said subject.
42. A method of managing a condition affecting the lungs of a subject comprising:
generating a purified hydrogen peroxide gas (PHPG) that is substantially free of
hydration and ozone to an environment wherein said environment accumulates
said PHPG at a final concentration of at least 0.01 parts per million, and
exposing said subject to said PHPG containing environment for a period of time.
43. The method of claim 42, wherein said condition is selected from the group consisting
of chronic obstructive pulmonary disease (COPD), pneumonia, an allergy, asthma,
prematurity, and cystic fibrosis.
44. The method of claim 42, wherein said exposing is in combination with a respiratory
therapy selected from the group consisting of deep breathing exercises, postural
drainage, incentive spirometry, and chest physiotherapy.

45. A method of decreasing the severity of a respiratory infection in a subject comprising:
providing an environment comprising a purified hydrogen peroxide gas (PHPG) that
is substantially free of hydration and ozone at a final concentration of at least 0.01
parts per million; and
5 exposing said subject to said environment for one or more periods of time, wherein
the severity of said respiratory infection is decreased.
46. A method of increasing the rate of hypothiocyanate ion production catalyzed by
lactoperoxidase (LPO) in the lungs of a subject comprising:
providing an environment comprising a purified hydrogen peroxide gas (PHPG) that
10 is substantially free of hydration and ozone at a final concentration of at least 0.01
parts per million; and
exposing said subject to said environment for one or more periods of time.
47. A method of improving the lung function of a subject comprising:
providing an environment comprising a purified hydrogen peroxide gas (PHPG) that
15 is substantially free of hydration and ozone at a final concentration of at least 0.01
parts per million; and
exposing said subject to said environment for one or more periods of time.
48. Use of a purified hydrogen peroxide gas (PHPG) for the preparation of an
environment suitable for preventing, treating, or controlling a respiratory illness in a
20 subject comprising:
generating a hydrogen peroxide gas that is substantially free of hydration and ozone;
and
providing said hydrogen peroxide gas to an environment wherein said environment
accumulates said PHPG at a final concentration of at least 0.01 parts per million.
49. A method for preparing an environment suitable for occupancy of a subject
25 comprising:
providing a device for producing purified hydrogen peroxide gas (PHPG), wherein
said PHPG is substantially free of hydration and ozone, and wherein said environment
has a reduced level of infectious agents, allergens, or a combination thereof.
30

What is claimed:

1. An enclosed space for human or veterinary use, said enclosed space comprising purified hydrogen peroxide gas (PHPG) at a concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone.
- 5 2. A dwelling comprising purified hydrogen peroxide gas (PHPG) at concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone.
3. A method of improving air quality in an enclosed space comprising introducing purified hydrogen peroxide gas (PHPG) concentration of at least 0.01 parts per million wherein said PHPG is non-hydrated and free of ozone, wherein said air stream
10 is introduced from an indoor air recirculation stream.
4. A method for preparing a purified hydrogen peroxide gas (PHPG) containing environment comprising:
generating PHPG that is substantially free of hydration and ozone, and accumulating said PHPG until a final concentration of at least 0.01 parts per million (ppm) is
15 achieved.
5. Use of a purified hydrogen peroxide gas (PHPG) in the manufacture of a medicament for treating a respiratory illness in a subject,
wherein said medicament provides an environment that is substantially free of hydration and ozone at a final concentration of at least 0.01 parts per million (ppm);
20 and
wherein the subject is to be exposed to said environment for at least one period of time, and wherein said treating comprises reducing the severity of a respiratory infection, reducing the duration of a respiratory infection, reducing the severity of an allergy, preventing transmission of a respiratory infection, reducing transmission of a
25 respiratory infection in a population, improving lung function, or any combination thereof.
6. The use of claim 5, wherein said improving lung function comprises increasing static lung volume, increasing total lung capacity, increasing the partial pressure of oxygen in arterial blood gases, decreasing residual volume, or any combination thereof.

7. The use of claim 5, wherein said environment is an enclosed space.
8. The use of claim 5, wherein said period of time is at least 15, at least 30, at least 60, at least 90, at least 120, at least 180, at least 240, at least 300, at least 360, at least 420, or at least 480 consecutive minutes.
- 5 9. The use of claim 5, wherein said period time is at least 15, at least 30, at least 60, at least 90, or at least 120 minutes over a 24 hour, or 48 hour period.
10. The use of claim 5, wherein said period time is at least 8, at least 16 or at least 24 hours over a 7 day period.
11. The use of claim 5, wherein the total time of exposure is at least 1, 2, 3, 4, 5, 6, 7, 8, or more hours.
- 10 12. The use of claim 5, wherein said exposure is repeated 1, 2, 3, or more times daily, weekly, bi-weekly, or monthly.
13. The use of claim 5, wherein said environment comprises PHPG at a final concentration of at least 0.1 ppm, at least 0.2 ppm, at least 0.3 ppm, at least 0.4 ppm, at least 0.5 ppm, or at least 1.0 ppm.
- 15 14. The use of claim 5 for reducing the severity of a respiratory infection, wherein said respiratory infection is selected from the group consisting of severe acute respiratory syndrome (SARS), Middle East Respiratory Syndrome (MERS), ebola, porcine reproductive and respiratory syndrome virus (PRRSV) infection, and respiratory syncytial virus.
- 20 15. Use of a purified hydrogen peroxide gas (PHPG) in the manufacture of a medicament for controlling a pathogen in the respiratory system of a subject, wherein said medicament generates an environment that is substantially free of hydration and ozone, wherein said environment accumulates said PHPG at a final concentration of at least 0.01 parts per million, and
- 25 wherein said subject is to be exposed to said PHPG containing environment for a period of time.

16. The use of claim 15, wherein said pathogen is selected from the group consisting of a virus, a bacterium, a fungus, and a parasite.
17. The use of claim 15, wherein said respiratory system comprises one or more of the trachea, the bronchi, the conducting bronchioles, the respiratory bronchioles, the alveolar sac, the oral cavity, and the nasopharyngeal cavity.
18. The use of claim 16, wherein said fungus is from the genus *Aspergillus*.
19. The use of claim 16, wherein said fungus is selected from the group consisting of *Histoplasma capsulatum*, blastomyces, *Cryptococcus neoformans*, *Pneumocystis jiroveci*, *Coccidioides immitis*, *Blastomyces dermatitidis*, *Pneumocystis jirovecii*, *Sporothrix schenckii*, *Cryptococcus neoformans*, *Aspergillus fumigatus*, and *Candida albicans*.
20. The use of claim 16, wherein said virus is a double stranded DNA virus, a single-stranded DNA virus, a double-stranded RNA virus, a positive sense single-stranded RNA virus, a negative sense single-stranded RNA virus, a single stranded RNA retrovirus, or a double-stranded DNA retrovirus.
21. The use of claim 16, wherein said bacterium is *Acinetobacter baumannii*, *Mycoplasma*, *Pneumococcus*, *Chlamydomphila pneumoniae*, *Mycobacterium tuberculosis*, *Streptococcus pneumoniae*, *Haemophilus* species, or *Staphylococcus aureus*.
22. The use of claim 16, wherein said parasite is a protozoan, a nematode, or a trematode.
23. The use of claim 22, wherein said parasite is selected from the group consisting of *Toxoplasma gondii*, *Strongyloides stercoralis*, *Ascaris lumbricoides*, *Plasmodium malariae*, *Echinococcus granulosus*, *Dirofilaria immitis*, *Paragonimus westermani*, *Entamoeba histolytica*, *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Necator americanus*, *Toxocara canis*, *Schistosoma mansoni*, *Schistosomahaematobiu*, *Schistosoma japonicum*, *Strongyloides stercoralis*, *Wuchereria bancrofti*, and *Brugia malayi*.
24. The use of claim 15, wherein said controlling comprises preventing infection of a subject by said pathogen; preventing the transmission of said pathogen from a subject

to a second subject, decreasing the number of pathogen infected subjects in a population, reducing the number or severity of the symptoms of infection with said pathogen, decreasing the length of time a subject is infected with said pathogen, decreasing the number of sick days taken by a subject infected with said pathogen, or decreasing the use of over-the-counter medication by a subject.

25. Use of a purified hydrogen peroxide gas (PHPG) for the preparation of an environment suitable for preventing, treating, or controlling a respiratory illness in a subject comprising:

generating a hydrogen peroxide gas that is substantially free of hydration and ozone; and

providing said hydrogen peroxide gas to an environment wherein said environment accumulates said PHPG at a final concentration of at least 0.01 parts per million.

26. A method for preparing an environment suitable for occupancy of a subject comprising:

providing a device for producing purified hydrogen peroxide gas (PHPG), wherein said PHPG is substantially free of hydration and ozone, and wherein said environment has a reduced level of infectious agents, allergens, or a combination thereof.