

What Chemical Disinfectant Should be used for the Study?

Disinfection describes a process that eliminates microorganisms, except bacterial spores, from inanimate objects or surfaces.

A **disinfectant** is a chemical substance or compound used to inactivate or destroy microorganisms on inert surfaces.

Factors that affect disinfectant effectiveness



Nature of microorganisms

(agent properties, including innate resistance, number of organisms)



Disinfectant properties

(formulation mode of action, concentration, contact time)



Physical and chemical factors

(temperature, pH, relative humidity, water hardness, surface topography)



Presence of exogenous materials

(organic and inorganic materials)



Presence of biofilms

Source: <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/efficacy.html>

Certain groups of microorganisms present varying degrees of resistance to chemical disinfectants. To select an effective disinfectant for the work environment, consider the following:



1

What are the common pathogens that will be encountered while providing participant care?

2

What are the most resistant microorganisms that may be encountered when surfaces are disinfected during daily cleanings and room turnovers?

The following table provides a list of disinfectants that are effective against several commonly used study agents in gene therapy studies in clinical settings. Please ensure that the surfaces and items are treated with the disinfectant for the contact time recommended by the manufacturer.

Study Agent Basis

Note: If the proposed disinfectant is not on the list, please reach out to your Sabai Associate Partner to verify the effectiveness of the chemical disinfectant against the study agent.

Least Resistant

Human Cells, Genetic Materials (e.g., mRNA, Plasmids) Bacteria

- *Lactococcus lactis*
- *Listeria monocytogenes*

Enveloped Viruses

- Human immunodeficiency virus (HIV)
- Hepatitis B virus (HBV)
- Respiratory syncytial virus (RSV)
- Vaccinia virus
- Influenza A/B virus
- Measles virus
- SARS-CoV-2

Nonenveloped Viruses

- Adenoviruses
- Adeno-associated viruses (AAV)

Mycobacteria spp.

- *M. tuberculosis*
- *M. leprae*
- *M. avium*

Most Resistant

Examples of Effective Disinfectants for All Listed Study Agents

**Super Sani-Cloth®
Germicidal Disposable Wipe
(2 minutes)**

**PDI Sani-Cloth® Bleach
Disposable Wipe
(2 minutes)**

**PDI AF3 Sani-Cloth®
Disposable Wipe
(3 minutes)**

**CaviWipes™ 2.0
(2 minutes)**

**CaviWipes™ Bleach
(3 minutes)**

**Clorox™ Disinfecting Wipes
(4 minutes)**

**Clorox™ Healthcare Bleach
Germicidal Cleaner
(1 minute)**

**PeridoxRTU™ Sporicide
Disinfectant
(2 minutes)**

**Oxivir™ Tb Wipes
(1 minute)**

**McKesson Disposable
Germicidal Surface Wipes
(2 minutes)**

**Freshly prepared 1:10 dilution
of 5.25% sodium hypochlorite
(bleach)
(10 minutes)**