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OTC Product: Kleenex Anti-Viral Tissue

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Category: Antiviral facial tissues

Manufacturer: Kimberly-Clark

Ingredients: Citric acid 7.51% and sodium lauryl sulfate 2.02%

Use: Helps prevent transmission of viruses that cause upper-respiratory infections.

Availability: Box of 75 or 112 tissues, size 8.4 × 8.2 inches

Discussion: Although the common cold is a heterogenous illness caused by various viral organisms, rhinoviruses are the most frequent culprit, causing 30% to 50% of all common cold cases.¹ While influenza viruses are most frequently transmitted by airborne aerosol droplets from a cough or sneeze, rhinoviruses are transmitted most efficiently by self-inoculation from touching the eyes or nose following hand contact with an infected person or contaminated surface.¹ Antiviral tissues may decrease transmission of viral upper respiratory infections by preventing the transfer of virus to the hands of the infected individual after blowing the nose, or sneezing or coughing into the tissue.

The active ingredients in Kleenex antiviral facial tissues have antiviral activity in laboratory studies. Many viruses have a lipid envelope, and sodium lauryl sulfate may disrupt this envelope and allow introduction of citric acid, which denatures viral proteins and inactivates the virus. Although rhinoviruses do not have a lipid envelope, they contain proteins that are susceptible to denaturation by organic acids such as citric acid. Studies have not been published on the cur-

rently available antiviral tissues, but trials were conducted on a similar product that was never marketed. That product, tested in vitro and in vivo clinical trials, contained citric acid, sodium lauryl sulfate, and malic acid. In laboratory in vitro studies, the rhinoviruses that had been suspended in either culture medium or nasal mucus were unable to pass through the treated tissues without becoming inactivated, whereas viruses were able to pass through the untreated placebo tissues intact. However, viruses remaining on the nasal side of the treated and untreated tissues were not inactivated.² In laboratory experimental viral transmission studies, virucidal tissues were more effective for preventing transmission of rhinoviruses from an infected person to a noninfected person, compared with untreated placebo tissues.³ Studies outside of the laboratory using the same antiviral tissues yielded mixed results, and the tissues were not proven to be as effective for preventing natural infections within the home.

The center layer of Kleenex's three-ply product contains the moisture-activated antiviral ingredients. Viruses must come into contact with the antiviral ingredients to be inactivated, so mucus on the surface of the tissue may still contain transmissible viruses. According to the manufacturer, the active ingredients in the tissue inactivate 99.9% of rhinoviruses type 1A and 2, influenza A and influenza B, and respiratory syncytial virus (RSV) within 15 minutes. Kleenex antiviral tissues have not been proven to protect against trans-

mission of coronaviruses, which cause 10% to 15% of viral upper-respiratory infections.¹ Although the antiviral tissues are more expensive than regular Kleenex tissues, they are priced similarly to the premium Kleenex lines.

Patient information¹

- Antiviral tissues will not cure the common cold or influenza but may help prevent transmission to healthy people of viruses that cause upper-respiratory tract infections.
- Not all viruses that commonly cause viral upper-respiratory infections are inactivated by the antiviral ingredients in Kleenex antiviral tissues.
- The active ingredients in the Kleenex antiviral tissues have not been tested for antibacterial activity, and they will not protect against transmission of bacterial organisms.
- Frequent hand washing is still the most effective method to decrease the risk of transmission of the common cold, influenza, and RSV and should be used in conjunction with antiviral tissues.
- The tissues should not be used as a surface cleaner; they will not disinfect hands or inanimate objects.
- Discard the tissues appropriately after use.

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