

C31G



Drug Description

C31G is an equimolar mixture of two amphoteric, surface-active molecules: a C14 alkyl amino oxide and a C16 alkyl betaine. [1] The vaginal gel is formulated with hydroxyethyl cellulose. [2]

HIV/AIDS-Related Uses

C31G is being investigated as a surface-active agent for the prevention of HIV; it is being studied in a vaginal gel formulation.[3]

Non-HIV/AIDS-Related Uses

C31G is a broad-spectrum anti-infective compound that displays activity against gram-positive and gram-negative bacteria, fungi, yeast, and enveloped viruses. C31G is being developed as a contraceptive and for the prevention of sexually transmitted diseases, including HIV, chlamydia, herpes, and gonorrhea. C31G is also being studied in an oral rinse formulation for the prevention of oral candidiasis in cancer patients undergoing chemotherapy and in a dermatologic application for the treatment of acne, impetigo, and diabetic and decubitus ulcers.[4]

Pharmacology

C31G binds to the surface of a microorganism, causing an irreversible disruption of the phospholipid membrane and resulting in destruction of the cell.

C31G has been tested against several different subtypes, clades, and strains of HIV; all are equally susceptible. C31G also inhibits herpes simplex virus (HSV) -1 and -2 as measured by in vitro plaque assays. Studies in mouse xenograft models have shown that C31G inhibits transmission of HSV.[5]

In a 3-day, once-daily dosing clinical trial designed to assess multiple formulations for safety and usability, the 1.0% C31G copolymer gel was the best tolerated, most acceptable formulation.[6]

Adverse Events/Toxicity

In a Phase I clinical study, 80% of the women using C31G vaginal gel experienced symptoms of vaginal burning or heat, compared to 25% of women using nonoxynol-9 and 5% of women using a placebo gel. On colposcopy, 50% of women developed new lesions, 25% had lesions that disrupted epithelial integrity, and 50% had minor lesions. Twelve percent of women had epithelial disruption that was assessed by the colposcopist as applicator-related.[7]

Clinical Trials

For information on clinical trials that involve C31G, visit the ClinicalTrials.gov web site at <http://www.clinicaltrials.gov>. In the Search box, enter: C31G AND HIV Infections.

Dosing Information

Mode of Delivery: Vaginal gel, oral rinse, and dermal application.[8]

Chemistry

CAS Number: 86903-77-7[9]

Physical Description: Clear, colorless gel when formulated with hydroxyethyl cellulose.[10]

Other Names

C-31G[11]

Savvy[12]

1-letra-decamine,N-N-dimethyl-noxide,N-(carboxymethyl),N-dimethyl-1-hexadecamine)[13]

Further Reading

Ballagh SA, Baker JM, Henry DM, Archer DF. Safety of single daily use for one week of C31G HEC gel in women. *Contraception*. 2002 Nov;66(5):369-75.

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Further Reading (cont.)

Higgins J, Bowden M. Microbicides--evaluating multiple formulations of C31G. *Contraception*. 2002 Nov;66(5):365-8.

Krebs FC, Miller SR, Catalone BJ, Fichorova R, Anderson D, Malamud D, Howett MK, Wigdahl B. Comparative in vitro sensitivities of human immune cell lines, vaginal and cervical epithelial cell lines, and primary cells to candidate microbicides nonoxynol 9, C31G, and sodium dodecyl sulfate. *Antimicrob Agents Chemother*. 2002 Jul;46(7):2292-8.

Krebs FC, Miller SR, Malamud D, Howett MK, Wigdahl B. Inactivation of human immunodeficiency virus type 1 by nonoxynol-9, C31G, or an alkyl sulfate, sodium dodecyl sulfate. *Antiviral Res*. 1999 Oct;43(3):157-73.

Manufacturer Information

C31G
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For More Information

Contact your doctor or an AIDSinfo Health Information Specialist:

- Via Phone: 1-800-448-0440 Monday - Friday, 12:00 p.m. (Noon) - 5:00 p.m. ET
- Via Live Help: http://aidsinfo.nih.gov/live_help Monday - Friday, 12:00 p.m. (Noon) - 4:00 p.m. ET

References

1. *Antimicrob Agents Chemother* - 2000 Jul;44(7):1954-60.
2. *Contraception* - 2002 Nov;66(5):369-75.
3. Biosyn, Inc - Available at <http://www.biosyn-inc.com/>. Accessed 10/08/03.

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12. Alliance for Microbicide Development - Available at <http://www.microbicide.org>. Accessed 10/08/03.
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