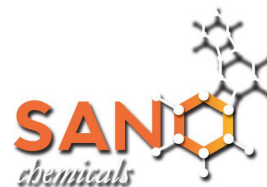


Sano Chemicals

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Sano Chemicals introduces Occidiofungin: the fungus killer

Sano Chemicals, located in Bryan, Texas, specializes in the development of first-in-class drugs, with its current lead being the unique fungicide occidiofungin.

Occidiofungin is being developed to provide a new solution to treat serious and chronic fungal infections. Qualified infectious disease product and fast track designations by the US Food and Drug Administration (FDA) have been granted for this antifungal to cure recurrent vulvovaginal candidiasis (RVVC), which is an unmet medical need. Products to treat dermal, oral, and systemic fungal infections are in development using occidiofungin.

The origins of occidiofungin lie in a fortuitous observation. Shien Lu, a plant pathologist from Mississippi State University, noticed a section of healthy green grass growing in an area blighted by the fungal infection brown patch disease. By analyzing the resistant plants, he isolated the bacterial strain that produces occidiofungin¹⁻³ (Fig. 1).

Spotlight on women's health

Women's health has been neglected and overlooked for decades. Research addressing several diseases that primarily or solely affect women has been massively underfunded—with a prime example being the development of an effective solution for curing RVVC. Janice Miles, director, owner, and CEO of Sano Chemicals, understands and empathizes with women who have conditions that have been neglected by the medical research community.

RVVC affects 9 million women in the USA and over 130 million women globally per year, with nearly 10% of women aged 25–35 years being affected. Current therapies are non-curative and can result in the development of resistant strains. Available medications are very expensive, require treatment for 6 months or more, and can interact with birth control and other drugs. These medications also contribute to serious side effects including liver and kidney toxicity. In combination, these factors often reduce patient compliance and treatment benefits.

Occidiofungin provides a way around these obstacles. Sano Chemicals has developed Occidiofungin as a convenient gel formulation that is applied intravaginally with a preloaded applicator to achieve complete cure of RVVC. By targeting the site of infection and employing a novel mechanism of action, occidiofungin rapidly induces apoptotic cell death in fungi. Moreover, it does not harm bacteria, enabling restoration of the protective microbial flora.

Existing therapeutics used to treat RVVC are fungistatic or moderately fungicidal, and do not provide an effective treatment for millions of women. Occidiofungin, by contrast, is strongly fungicidal against yeast, delivering a ≥ 3 log reduction in the number of colony-forming units at the minimum inhibitory concentration. Occidiofungin is effective

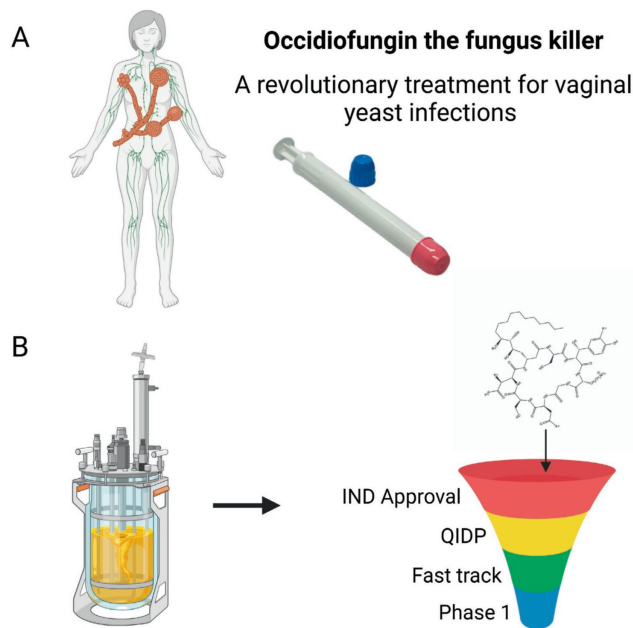


Fig. 1 | Occidiofungin: the fungus killer. **a**, Sano Chemicals is developing occidiofungin as a gel formulation preloaded into a convenient applicator for the treatment of vaginal yeast infections. **b**, The company has in-house capacity to manufacture occidiofungin for all stages of clinical development. The drug is currently in phase 1 trials and has both qualified infectious disease product (QIDP) and fast track designations. IND, investigational new drug application.

against all *Candida* species, including *C. glabrata*, *C. krusei*, and *C. auris*, the last of which has been identified as an emerging infective agent in intensive-care units across the USA.

Further antibiotics in development

Sano Chemicals is developing other antibiotics to treat Gram-positive infections, including methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridioides difficile*, and multidrug-resistant tuberculosis⁴⁻⁶. Additional agents are being developed to treat breast cancer, ovarian cancer, B cell lymphoma, and astrocytoma.

While the treatment of RVVC is a multi-billion-dollar industry, occidiofungin is also being developed to meet other emerging needs. It is currently in phase 1 clinical trials. Sano Chemicals is now looking for a partner to complete phase 2 trials: it has patents on the composition, use, and manufacture of occidiofungin in the USA, Europe, and Asia, and is seeking investment funds of up to \$15 million for phase 2 testing. Interest from a pharmaceutical company has already been expressed for when phase 2 testing has been completed.

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