BIOLOGIC ASSAY FOR RAPAMYCIN AGONISTS AND ANTAGONISTS

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ABSTRACT

U.C. Berkeley scientists have developed a set of yeast tester strains that will enable the discovery of new compounds with rapamycin-like action. Rapamycin is an immunosuppressant drug and an antifugicidal antibiotic. The tester strains consist of mutants and control strains. The mutants are highly sensitive to the growth inhibitory action of rapamycin and the control strains can be used to eliminate drug lead candidates that inhibit growth through non-specific mechanisms.

The panel of tester strains may be used to identify new drug lead compounds with immunosuppressive or antifungal activity in an in vivo system. Unlike ex-vivo assays consisting of isolated cell components or enzymes, this in vivo assay obviates the need to question whether the active compounds can traverse the membrane to elicit an effect in the intact cellular milieu. The control strains further refine the assay through elimination of compounds that inhibit cell growth through mechanisms other than rapamycin-like inhibition, such as through general cell toxicity of cell lysis.

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