

Production of Lentinan by Submerged Cultivation of *Lentinus edodes* (Berk.) Sing.

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A process has been established for the mycelial cultivation of *Lentinus edodes* (Berk.) Sing. in submerged, agitated liquid cultures. A suitable medium has been developed to yield biomass concentrations of 7.6 g/liter. Inoculum size was important for the success of the fermentation. High inoculum concentrations gave increased biomass and polysaccharide production and decrease in fermentation time. While low pH (3.5) favored production of biomass, lentinan yield was greater at pH 5. Polysaccharides with similar infrared spectra to those obtained from the

fruiting bodies of *L. edodes* have been extracted from ferment-produced biomass and from the culture fluid itself. An improved assay procedure for the extraction of the polysaccharides has been developed and there appears to be some difference in the molecular composition of the intra- and extracellular lentinan. Lentinan produced extracellularly was much more effective in stimulating antibody production in mice than that extracted from the biomass produced by fermentation methods and fruiting bodies.