The structure of the glucuronoxylomannan produced by culinary-medicinal yellow brain mushroom (Tremella mesenterica Ritz.: Fr., Heterobasidiomycetes) grown as one cell biomass in submerged culture

The yellow brain mushroom Tremella mesenterica possesses a wide spectrum of medicinal properties, including immunostimulating, protecting against radiation, antidiabetic, anti-inflammatory, hypocholesterolemic, hepatoprotective, and antiallergic effects. A unique feature of T mesenterica is that most of the above mentioned medicinal properties depend on glucuronoxylomannan (GXM) contained in fruiting bodies or produced in pure culture conditions. We developed a new strain of T mesenterica CBS 101939, which grows in submerged culture and offers superior yields of one-cell biomass rich in exocellular heteropolysaccharide GXM. The structure of the GXM was analyzed by NMR spectroscopy and chemical methods. The polysaccharide has a defined repeating unit structure, which is O-acetylated at several points. [GRAPHICS] These results differ from previously published structure of Tremella extracellular polysaccharides, where mannan backbone was believed to be randomly glycosylated with xylan chains of different length. (C) 2004 Elsevier Ltd. All rights reserved.