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Nutritional requirements for the simultaneous production of mycelial biomass and exo-polysaccharide from *Cordyceps militaris* NG1

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Optimization of submerged culture conditions for the mycelial biomass and production of exo-polysaccharide in *Cordyceps militaris* NG1 was studied. The optimal temperature and initial pH for exo-polysaccharide production by *C. militaris* NG1 in shake flask culture were found to be 30℃ and 8.0, respectively. Sucrose (40 g/l) and Corn steep powder (5 g/l) were the most suitable carbon and nitrogen source for both mycelial biomass and exo-polysaccharide production. There was a distinct morphological change of mycelium between organic and inorganic nitrogen sources: more highly branched and hairly pellets were formed in the medium of organic nitrogen sources. Under optimal culture conditions, the maximum mycelial biomass and exo-polysaccharide productions were 22.9 g/l and 5.1 g/l in a 5-l stirred-tank fermenter.