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Title	Method for culturing the <i>Rhodotorula gracilis</i> CNMN-YS-03 strain
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Description	The invention relates to microbiology and biotechnology, specifically to a method for culturing pigmented yeast strain <i>Rhodotorula gracilis</i> CNMN-YS-03 to achieve increased biomass productivity, enhanced carotenoid and carbohydrate content. This method can be applied in biotechnology for the cultivation of pigmented yeast strains, particularly after prolonged lyophilized storage for the targeted synthesis of bioactive compounds of interest. The essence of the present invention provides a method for culturing the strain <i>Rhodotorula gracilis</i> CNMN-YS-03, specifically after reactivation from a lyophilized state using a standard rehydration medium (distilled H₂O) or with the addition of a mannoprotein extract obtained from yeast biomass remaining after Lager beer production (MPB) or Merlot red wine production (MPV) at a concentration of 1–10% vol. The <i>Rhodotorula gracilis</i> CNMN-YS-03 strain is cultured in beer wort medium with a sugar content of 6.0° Blg at a temperature of 27–28°C on a shaker at 200 rpm under continuous illumination for 120 hours. The invention results in an increase in productivity by 2.83-2.99 times, carotenoid content by 2.25-2.47 times and carbohydrate content by 4.27-4.54 times compared to YPD medium or medium supplemented with agri-food waste containing carrot peel extract, celery peel extract, or a

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mixture of carrot peel and celery peel extracts in a 1:1 ratio.

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Applications: Biotechnology