IONOGENIC GROUPS OF THE CELL SURFACE OF *SACCHAROMYCES CEREVISIALE*

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Most strains of *Saccharomyces cerevisiae* are negatively charged above pH 3.0. Two types of ionogenic groups have been postulated to contribute to this negative charge viz (1) phosphodiester groups in the side chains of the cell-wall phosphomannan (2) carboxyl groups of the acidic wall protein. This paper deals with evidence which support this view. To obtain this evidence electrophoretic mobility of a strain of *Saccharomyces cerevisiae* (NCYC 366) was studied before and after treatment to remove protein or phosphate. Protein was removed from the cell-wall surface by treatment with trypsin. To remove phosphate, which is in the diesterified state, a technique was used which specifically excizes phosphodiester groups and mannose residues distal to these groups. It involved treating cells with hydrofluoric acid (60%, v/v) at O°C.

Treatment with trypsin decreased the mobility due to protein by about 90%; while treatment with hydrofluoric acid decreased the mobility due to phosphate by about 85%. These observed effects on the electrophoretic mobility, which gives a measure of the surface charge indicated the relative contributions from these two types of ionogenic groups to the surface charge.