

1. Title Starch hydrolysing *Bacillus halodurans* isolates from a Kenyan soda lake Author/s [Suhaila Hashim](#), [Osvaldo Delgado](#), [Rajni Hatti-Kaul](#), Francis J Mulaa, [Bo Mattiasson](#) Department/s [Biotechnology \(LTH\)](#)

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**Abstract** English Fourteen obligate alkaliphilic and halotolerant bacterial isolates, exhibiting extracellular amylase activity at 55degreesC and pH 10, were isolated from hot springs around Lake Bogoria, Kenya. From 16S rDNA sequence analysis, nine isolates shared 100% identity with *Bacillus halodurans* strain DSM 497(T), while the rest shared 99% identity with alkaliphilic *Bacillus* species A-59. PCR of the intergenic spacer region between 16S and 23S rRNA genes (ISR-PCR) divided the isolates into two groups, while tDNA-PCR divided them into three groups. *Bacillus halodurans* DSM 497T had a different ISR pattern from the isolates, while it had a tDNA-PCR profile similar to the group that shared 99% identity with alkaliphilic *Bacillus* species A-59. All isolates hydrolysed soluble starch as well as amylose, amylopectin and pullulan. The amylase activity (1.2 - 1.8 U ml(-1)) in the culture broths had an optimum temperature of 55 - 65degreesC, was stimulated by 1 mM Ca<sup>2+</sup>, and was either partially (16 - 30%) or completely inhibited by 1 mM EDTA. Activity staining of the cell-free culture supernatant from the isolates revealed five alkaline active amylase bands. Subject  
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