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## Potential of the Common Ice Plant, *Mesembryanthemum crystallinum* as a New High-Functional Food as Evaluated by Polyol Accumulation

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**Abstract:** We measured the concentration of polyols (pinitol, ononitol, and myo-inositol), which are known to have health-promoting and/or disease-preventing functions, in the common ice plant (*Mesembryanthemum crystallinum* L.) cultured under salt- and drought-stressed treatments. In NaCl-treated plant the concentration of pinitol/ononitol increased with increasing NaCl concentration in culture solution. The maximal concentration was 3.6 mg g<sup>-1</sup> FW, which was found in the shoot top, followed by small side shoots (2.1 mg g<sup>-1</sup> FW) of mature plants grown with 400 mM NaCl for 35 ds. The drought stress also accelerated the accumulation of pinitol/ononitol. The maximal concentration was 1.2 mg g<sup>-1</sup> FW, which was found in the shoot top of plants under the stress for 25 ds. The myo-inositol increased in salt-stressed plants at 3 ds after the start of the treatment and then decreased with the lapse of time during stress. The concentration of polyols in the ice plant was comparable to that in the other species reported to accumulate polyols at high levels. Radical scavenging activity evaluated by DPPH assay was increased two-fold by 400 mM NaCl treatment, which was twice as high as that in the leaves of lettuce (*Lactuca sativa* L.). These results indicated the high potential of the ice plant as a polyol-rich high-functional food.

**Keywords:** [Common ice plant](#), [Myo-inositol](#), [Pinitol](#), [Salt stress](#)

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