

The biological relevance of sulfated polysaccharides in higher plants

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Recently we reported the occurrence of sulfated galactans in the cell wall of marine angiosperms (seagrass). The presence of these sulfated polysaccharides in marine angiosperms, but not in terrestrial or sweet water vascular plants raises the hypothesis of a relationship between the occurrence of sulfated polysaccharides and salinity. When marine angiosperm was maintained for a period of two weeks in sweet water the biosynthesis of sulfated polysaccharide was completely. In a reversal way, if the NaCl concentration is gradually re-established, the biosynthesis of sulfated polysaccharide re-starts, indicating that the occurrence of SP is directly related to the environmental salinity. Further tests demonstrated the presence of sulfated polysaccharides on other higher plants, such as two angiosperms (*Rhizophora mangle* and *Avicennia sp.*) and a pteridophyte (*Acrostichum aureum*). Overall, these results indicated that the presence of sulfated polysaccharides in higher plants is related to environmental salinity and that was conserved during the evolution of higher plants.