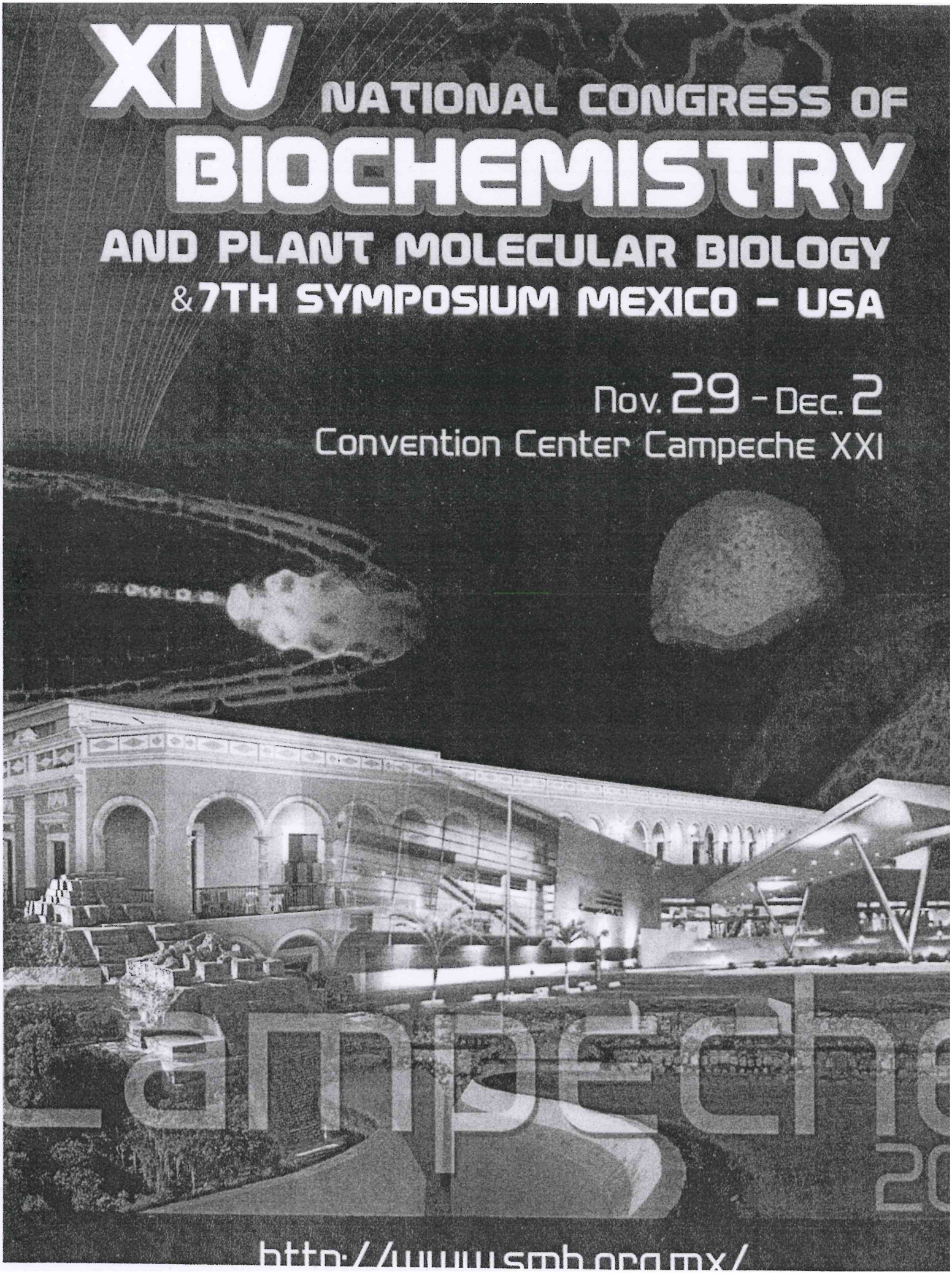
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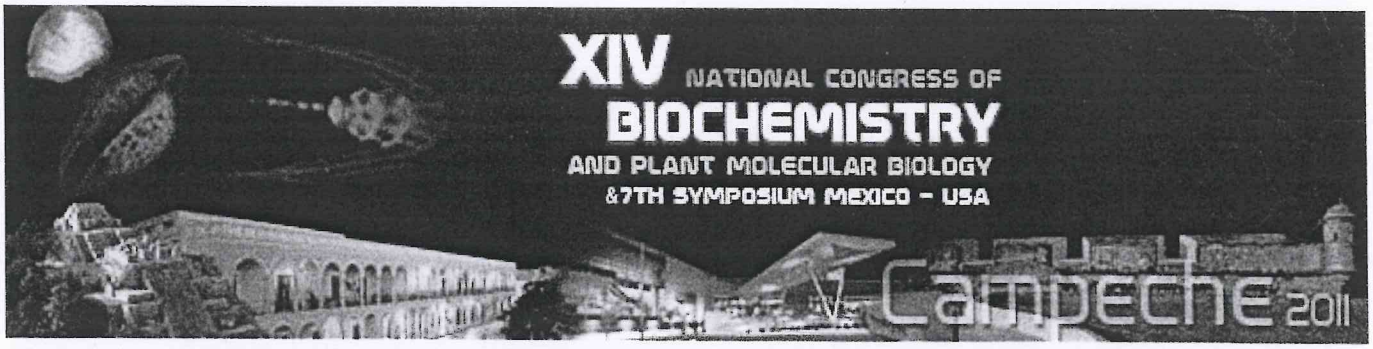

Abscisic Acid improves drought tolerance of the Mexican moss *Pseudocrosidium replicatum*

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Drought is one of the most severe abiotic stresses worldwide that affects plants production, however some species have developed the ability to survive severe water deficit. Our research group has focused on the study of the Mexican moss *Pseudocrossidium replicatum*; the first step was to classify it according to its desiccation tolerance by using the "Austin protocol"[1]. The results showed that this specie is fully desiccation tolerant type "A", the highest category. In addition we have carried out *in vitro* assays of germination and protonemata tissue whit and with out an abcsisic acid (ABA) treatment. Interestingly the *P. replicatum* spores germination sensitivity is reduce when compared to *Arabidopsis thaliana* seeds, a vascular plant whose germination is inhibited on 5μM ABA. *P. replicatum* showed 84% germination in presence of 25μM ABA and 50% under 50μM ABA conditions. On the other hand, assays using young protonemata tissue (15 d grown under control conditions) were transferred to media containing 10μM ABA for 24h (ABA-pre-treatment), then pre-treated and non pre-treated protonemata samples were transferred to stressing conditions using plate added with 1.5, 1.75 and 2M sorbitol for 10d. During the stress treatments the photosynthetic activity and chlorophyll pigment were drastically reduced (to undetectable levels), and when the stressed tissued were re transfered to control conditions these parameters were restored; moreover, the ABA pre-treated tissues showed a better recovery. A molecular study of this moss specie is under way in order to identify ABA related transcription factors involved in its drought tolerance.

1) Wood, A.J. (2007). The nature and distribution of vegetative desiccation-tolerance in hornworts, liverworts and mosses. The Bryologist 110 (2), 163-177.