

عنوان مقاله:

(The effect of cold plasma, methyl jasmonate and putrescine on genetic variation of Catharanthus roseus (L

محل انتشار:

بیستمین کنگره ملی و هشتمین کنگره بین‌المللی زیست‌شناسی ایران (سال: 1397)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

Catharanthus roseus is a medical plant belonging to the family Apocynaceae. This plant plays a considerable role in medicine for treatment of various diseases because of production more than 130 terpenoid indole alkaloids. Despite its importance, sources of the compounds are still limited. Genetic changes would be a possible way to increase the TIA productions. Sequence Related Amplified Polymorphism (SRAP) is a novel molecular marker system which is based on open reading frames (ORFs). The purpose of this study was to evaluate the effect of cold plasma jet and plant hormones on genetic variation. The cold helium plasma jet operated at 13.5 KV and 50 seconds, for hormones treatment seeds were soaked in methyl jasmonate (100 μ M) and putrescine (100mg/L), cold plasma + methyl jasmonate and plasma+ putrescine. Genetic diversity was determined by using 10 primers of (SRAP) marker. The results showed that the highest genetic variation was for putrescine treated plants ($N_e = 1.414$, $I = 0.299$, $H_e = 0.214$ and $P\% = 44.44$). Neighbor- Joining and PCoA ordination based on SRAP data showed the genetic distance between MJ treated plants and the rest of the groups studied. Cold plasma treated plants spread in four main NJ clusters. However, the SRAP markers revealed low genetic variations because of its nature (coding sequences). The further study is necessary to evaluating the production of alkaloid components of treated plants.

کلمات کلیدی:

C. roseus, SRAP, Putrescine, Methyl jasmonate, Cold plasma

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