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In Vitro Induction of Crown Galls by *Agrobacterium tumefaciens* Super Virulent Strain A281 (pTiBo 542) in Lentil (*Lens culinaris* Medik.)

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**Abstract:** Twenty-one genotypes of lentils (*Lens culinaris* Medik.), obtained from different sources in Turkey and Pakistan, were included in the study. Seeds were germinated in MS medium for 6-10 days with a 16 h photoperiod at 24°C, from which leaf and stem explants were isolated for inoculation with super virulent strain A281 (pTiBo 542) :: pBI121.1 agropine/mannopine type of *Agrobacterium tumefaciens*. The binary plasmid pBI121.1 carried a GUS gene directed by CaMV 35S promoter in order to confirm transformation by GUS expression. Parameters recorded include percentage of tumour formation, tumour diameter, and tumour weight. Pul 11, Kışlık Yeşil 21, Akm 565 were best when leaf explants were used, whereas Kırmızı 51, Malazgirt, Akm 49 and Akm 196 were best when stem explants were used in tumour induction. Pul 11, Kırmızı 51, İll 62, Emre 20, Malazgirt, Akm 565, Akm 49, Akm 62, Akm 196, Akm 261, Akm 263, Akm 302 and Akm 362 formed tumours on both leaf and stem explants. Four cultivars, namely, Masoor 85, Masoor 93, Akm 247 and Akm 258, did not induce tumours on leaf explants, whereas six genotypes, namely, Sazak 91, Kayı 91, Masoor 85, Masoor 93 Akm 247 and Akm 260 had no tumours when stem explants were used. Tumour induction was also confirmed by histochemical GUS analysis.

**Key Words:** *Lens culinaris* Medik., lentils, *Agrobacterium tumefaciens*, tumour induction, GUS analysis

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