



**Supplementary information S1:** Somatic embryo induced on the callus formed at the base of the axillary shoot subjected to rooting treatment consisting of IBA (3 mg/L) plus NAA (0.1 mg/L) for two weeks.

**Supplementary information S2:** Callus response of three different explant types excised from axillary shoot cultures of three adult genotypes of holm oak and cultured on three different treatments.

Treatment (mg/L)	Callus from apex explants (%)			Callus from node explants (%)			Callus from leaf explants (%)		
	Q10-SE	Q3-SE	E00	Q10-SE	Q3-SE	E00	Q10-SE	Q3-SE	E00
<b>IAA 4 + BA 0.5</b>									
<b>2wks</b>	34.0 ± 4.8	0.0 ± 0.0	1.0 ± 0.9	78.0 ± 5.1	0.0 ± 0.0	2.0 ± 1.3	7.0 ± 2.0	0.0 ± 0.0	82.0 ± 4.4
<b>4wks</b>	76.0 ± 4.8	2.0 ± 1.3	27.0 ± 2,5	79.0 ± 5.1	7.0 ± 2.6	22.0 ± 1.9	--	--	--
<b>8wks</b>	72.0 ± 5.9	21.0 ± 6.8	57.0 ± 4.5	84.0 ± 4.3	22.0 ± 5.3	38.0 ± 5.3	40.0 ± 4.1	2.0 ± 1.3	99.0 ± 0.9
<b>NAA 4 + BA 0.5</b>									
<b>2wks</b>	100.0 ± 0.0	14.0 ± 2.1	96.0 ± 1.6	97.0 ± 2.0	52.0 ± 7.2	94.0 ± 2.9	98.0 ± 1.3	40.0 ± 4.3	3.0 ± 1.5
<b>4wks</b>	100.0 ± 0.0	42.0 ± 7.9	98.0 ± 1.6	100.0 ± 0.0	57.0 ± 3.2	97.0 ± 2.0	--	--	--
<b>8wks</b>	100.0 ± 0.0	34.0 ± 4.1	99.0 ± 0.9	100.0 ± 0.0	64.0 ± 5.3	99.0 ± 0.9	99.0 ± 1.0	74.0 ± 3.8	43.0 ± 1.5
<b>IBA 3 + NAA 0.1</b>									
<b>2wks</b>	100.0 ± 0.0	99.1 ± 1.0	96.0 ± 2.1	100.0 ± 0.0	91.0 ± 4.8	86.0 ± 3.5	100.0 ± 0.0	96.0 ± 2.1	83.0 ± 4,7
<b>8wks</b>	99.0 ± 1.0	94.0 ± 3.2	98.0 ± 1.9	100.0 ± 0.0	84.0 ± 3.2	100.0 ± 0.0	100.0 ± 0.0	100.0 ± 0.0	96.0 ± 2.1

BA: 6-Benzylaminopurine; IAA: indole-3-acetic acid; IBA: indole-3-butiric acid; NAA: 1-naphthaleneacetic acid; wks: weeks.



**Supplementary information S3:** Adventitious root formation in leaves cultured on induction medium with 3 mg/L IBA plus 0.1 mg/L NAA.



**Supplementary information S4:** A. Somatic embryos originated from proembryogenic masses after 6 weeks of culture on proliferation medium. B. Plant recovery after 8 weeks of culture of somatic embryos in germination medium. A: diameter dish 90 mm. B: diameter jar 90 cm.