Tarragon (*Artemisia dracunculus* L.) is a perennial herb in the Asteraceae (daisy) family and used for medicinal and aromatic purposes. Especially its valuable secondary metabolite Artemisinin is used as a therapeutic agent and shown to possess selective anticancer properties, indicating cytotoxic effects against a wide range of cancer types. UV-C (254 nm) radiation can been used as a potential abiotic elicitor agent to enhance the synthesis of secondary metabolites in plants. Thus, this study represents the effect of UV-C irradiation to investigate the callus induction and production of artemisinin content in callus cultures obtained from *Artemisia dracunculus* L. Leaves were used as explants and cultured on MS medium supplemented with 2.0 mg/l benzylaminopurine (BAP) and 1.0 mg/l naphthaleneacetic acid (NAA). Calli formed after 5-6 weeks and subcultured two times each of 3-4 week duration. After the second subculture, 14 days old calli were exposed to UV-C irradiation at 10 and 15 cm distance from the source for 5 and 10 min using UV-C lamps (30 watt) at 254 nm. Artemisinin content was measured after 48 hours. The artemisinin content was measured by the high performance liquid chromatography (HPLC). According to the results, callus induction and artemisinin production in callus cultures was positive affected depending on UV-C treatments. This study also highlights the effects of UV-C as a potential elicitor of pharmacological important plant phenolics and on callus response of futuristic studies for plant tissue culture techniques.

**Keywords:** Artemisinin, *Artemisia dracunculus* L., Callus culture, Tarragon, UV-C