**Isoquinoline Alkaloids**

**Botanical Name:** *[Fumaria densiflora](http://eol.org/pages/5474242/overview/)* DC

**Family name:** *Fumariaceae*

**Active components:** Protopine (% 0.29-0.27), fumariline (% 0.21-0.20), β-allocrptopine (% 0.32-0.30)

*Fumaria* species have been used in traditional medicine as antihypertensives, diuretics, hepatoprotectants and laxatives (to treat gastrointestinal disorders), as well as in the treatment of raches and conjunctivitis. The biological activity of *Fumaria* is mostly associated with the presence of isoquinoline alkaloids in the plant. In the last few

years, a large number of scientific reports have been described the properties of *Fumaria*. There are seventeen wild-growing species belonging to this genus in Turkey.

The extracts of *F. officinalis* L. have been used in traditionalmedicine for varied purposes treatment of digestive problems, certain metabolic diseases, liver disorders and to purify blood. Phytochemical investigation revealed the presence of several alkaloids such as adlumidiceine, copticine, fumariline, perfumine, protopine, fumaranine, fumaritine, paprafumicin and paprarine. The plant has also been evaluated pharmacologically and shown to possess antihelmintic, antipyretic and hypoglycemic properties.*[Fumaria densiflora](http://eol.org/pages/5474242/overview/)* is annual herb that reaches up to 10-25 cm long Leaves are 2-6 cm. Flowers are with pink and blackish-red tipped petals.

**Extraction Method:**

Arial parts of plants (25 g) were dried, powdered and extracted with ethanol in a Soxhlet apparatus until Mayer’s test was negative, and then evaporated in vacuum. The ethanolic residue was taken up in % 1 hydrochloric acid (50 ml), filtered and the aqueous acid solution brought to pH 9-9.5 with % 25 ammonium hydroxide and extracted with chloroform (5 x 150 ml). The extracts were dried with anhydrous sodium sulphate and the solvent evaporated to afford a crude extract of alkaloids.

**Identification of isoquinoline Alkaloids**

TLC: Mobile phase *TLC-densitometry two different solvent systems as:*

*- toluene : chloroform : methanol : % 25 ammonium hydroxide (5:3:1:1)*

*-* chloroform : methanol (8:2)

Spray reagent: Dragendorff’s reagent