Background and Aims: The Crataegus genus is widely distributed in Iran. It belongs to Rosaceae family and there are 17 species of that genus in Iran which one of them is Crataegus pontica C. Koch.

Methods: In this paper some microscopical and macroscopical characteristics of this plant were analyzed, then were compared with other features that were expressed previously in recent reports. All components in C. pontica, were analyzed by thin layer chromatography method and then were specified the type of flavonoids and hydroxycinnamic acids in C. pontica. Its flavonoids was analyzed quantitatively based on Deutsch Pharmacopoeia method according to hyproside content. Flavonoids are using for determining the chemosystematic relevancies in some species, so in this paper C. pontica was compared with three other species of Crataegus genus such as C. monogyna, C. melanocarpa and C. curvisepala that are found in Iran, and also with the medicinal standard species of Crataegus genus which is called C. oxyacantha.

Results: Lots of microscopically and macroscopically features of C. pontica are indentical to other types of crataegus. Hyproside, rutin and chlorogenic acid are the main flavonoids and hydroxcinnamic acid of the plant. Also these are the main and common structural components in all species of that genus are mentioned above.

Conclusions: It seems that researchers can use hyproside, rutin and chlorogenic acid in future chemosystematic studies about Crataegus genus and other genera of Rosaceae family.

Keywords: Chemotaxonomy; Crataegus pontica; Hyproside