be obtained from its macroscopy, microscopy, fluorescence parameters and chemical fingerprint of medicinal plant materials. Macroscopic and microscopic methods are the simplest and cheapest methods to establish the correct identity of plant materials (Apraj et al. 2011). The transverse section was prepared with freehand sections of leaves and stems that were stained with safranine to confirm their lignifications. Microscopic observations of the stems during maceration was also carried out, and the specific diagnostic characteristics were recorded, which give a clear idea about the specific histological characteristics of crude drugs, besides the macromorphological and cytomorphological characteristics. While these diagnostic features enable the analyst to know the nature and characteristics of crude drugs, further evaluation of numerical parameters indicate their acceptability by criteria other than the morphological characteristics (Mukherjee 2007).

14.3.2 Qualitative Screening of Phytochemicals

The phytochemical screening on *P. hexapetalum* leaves, bark and pods revealed the presence of secondary metabolites like alkaloids, saponins, phenolic compounds, tannins, flavonoids and glycosides, were found to be variously distributed in all the parts of the plant and are presented in Table 14.3.

The chemical nature of the active constituents present in the plant material can be identified by performing preliminary phytochemical screening of that plant materials. The results from phytochemical analysis revealed the presence of flavonoids, phenols, carbohydrates, alkaloids, steroids, tannins and saponins. The qualitative estimations performed in the study depicted the presence of carbohydrates, flavonoids, phenols and tannins in major quantities, while saponins and alkaloids were

TABLE 14.3
Qualitative Screening of Phytochemicals in *P. hexapetalum*

Chemical Constituents	Leaf	Bark	Pod
Alkaloids	+	+	+
Saponins	+	+	+
Phenolics	+++	+++	+++
Tannins	+++	+++	++
Flavonoids	+++	+++	++
Glycosides	+	+	++
Flavonol glycosides	++	+++	++
Cardiac glycosides	+	++	+
Phytosterols	++	++	+++
Fixed oils and fats	+	+	++
Gums and mucilages	–	–	–

Note: (+): Presence of chemical compound, (–): Absence of chemical compound; (+) < (++) < (+++): Based on the intensity of characteristic colour.