Abstract
Red Lapacho (*Tabebuia impetiginosa*, syn. *Tabebuia avellanedae*), a canopy tree indigenous to the Amazonian rainforest and other parts of South America, has been acclaimed to be one of the “miraculous” cures for cancer and tumours. For the first time, during the 1960s, it attracted considerable attention in Brazil and Argentina as a ‘wonder drug’. Traditionally, the botanical drug is widely used in local and traditional phytomedicine, usually ingested as a decoction prepared from the inner bark of the tree to treat numerous conditions like bacterial and fungal infections, fever, syphilis, malaria, trypanosomiasis, as well as stomach and bladder disorders. As early as 1873, biomedical uses of Red Lapacho (“Pau D’Arco”) were reported. In 1967 after reports in the Brazilian press it came back to the light of clinicians (and the public in general). The news magazine *O’Cruzeiro* started reporting “miraculous” cures in cancer patients in a hospital. Natural sciences interest in the plant also began in the 1960s when the United States National Cancer Institute (NCI) systematically began researching plant extracts all over the world looking for active compounds against cancer and looked at *Tabebuia impetiginosa* in considerable detail. Two main bioactive components have been isolated from *Tabebuia impetiginosa*: lapachol and lapachone. Lapachone is considered to be the main anti-tumour compound, and pro-apoptotic effects were observed *in vitro*. Some mechanistic studies on this compound’s molecular effects have been conducted. The other main constituents isolated from Red Lapacho are also reviewed briefly. The drug appears to be generally safe and one of the most important interactions of *Tabebuia impetiginosa* has been associated with interference in the biological cycle of Vitamin K in the body. The botanical (drug) material available on the international markets seems to be of varying quality and composition, making a specific assessment of the products’ therapeutic claims problematic. This also highlights the need for appropriate analytical techniques, which are reviewed as well. The bioscientific evidence for products derived from *Tabebuia impetiginosa* is insufficient and one of the core challenges of future research will be – based on the recognition of the drug’s widespread use – to establish appropriate quality control procedures. Further research into the clinical effects and the pharmacology of chemically characterized extracts is also warranted.