

Effect of Extract of *Andrographis paniculata* on *In-vitro* Dissolution of Gallstones

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Abstract—Medicinal plants have been known for millennia and are highly esteemed all over the world as a rich source of therapeutic agents for the prevention of various ailments. Cholethiasis is one of the most prevalent digestive disease. Almost 12% of adults are suffering from the problems of gallstone. The prevalence of gallstone is rising due to the increasing cases of obesity, insulin resistance and the metabolic syndrome. Due to the involvement of many molecules of hepatic, bile and intestinal system in the pathophysiology of this disease, It becomes very difficult to find a therapeutic target. The pharmacological treatment is limited, so when gallstones generate symptoms, medical treatment indicates gallbladder removal which puts excessive pressure on the liver as well as increases the chances of pancreatitis. Given the small number of drugs that have been developed for treating this disease, the research of natural products becomes of paramount importance. The aim of my work is to use *Andrographis paniculata*, as a potential herb to dissolve the gallstone in in-vitro surrounding; where we prepare the plant extract in different solvents and study the dissolution of the gallstone in them. Followed by the dissolution studies, we further extracted andrographolide using soxhlet apparatus and studied different diterpene lactones using a set of solvents. Certain phytochemical tests were performed to study and recognize the specific derivative accountable for the dissolution. Results of this study showed that *Andrographis paniculata* can dissolve the gallstones in in-vitro conditions.

Keywords: Gallstones; Cholethiasis; Herbal Dissolution.