Abstract

Farnesoid X receptor is mostly expressed in liver cells and its activation may be used for the treatment of cirrhosis causing diseases, especially biliary cirrhosis and nonalcoholic steatosis. These two latter diseases are most common in developed countries and, as of date, no effective treatments are available. Therefore, the aim of this project is the design and synthesis of novel bile acid analogues with subsequent biological evaluation towards farnesoid X receptor. Thus, a series of new compounds were designed using computational modeling studies and chemical synthesis was done to develop structure-activity relationships. Chemical structure analysis and purity was confirmed by conventional analytical methods. Finally, synthetic compounds were profiled against farnesoid X receptor in collaboration with the Pharmaceutical faculty of Charles University in Hradec Králové.

Keywords: farnesoid X receptor, FXR, bile acids