

arthritis and injury. As per the reports of Kalpana and Rishi (2009) *S. venulosa* possesses anti rheumatic activity and its stem and twigs are crushed together with black pepper seed and water for menstruation disorders. The roots of *S. chinensis* and leaves of *S. rubriflora* are used for curing rheumatism and bone fractures (Pei 1985; Abdolbaset 2011) and *S. capitata* is traditionally used to recover bone dislocation by wrapping its leaf paste in a cloth and externally applied along with sesame oil on the affected place (Maria et al. 2014). As per the report of Witthawaskul et al. (2003), *S. leucantha* is used as a single herbal drug for the treatment of chronic asthma and for the prevention of asthma attacks. *S. brevipedicellata* Harms and *S. elliptica* (Blume) Harms are used for curing headaches when applied as a poultice (Abdolbaset et al. 2011; Homervergel and Young 2014).

## 10.4 PHARMACOLOGICAL STUDIES AND PHYTOCHEMICAL SCREENING

Several *Schefflera* species possessed a wide range of biological activities and contained various phytochemicals.

### 10.4.1 PHARMACOLOGICAL STUDIES

The former reports on the pharmacological properties of *Schefflera* plants are discussed in the following sections.

#### 10.4.1.1 Antimicrobial Activity

The *S. racemosa* plant extract shows potential antibacterial activity against *Escherichia coli* (Malar et al. 2015). Potduang et al. (2007) reported that the ethanol extract of *S. leucantha* has a broad spectrum of antimicrobial effect against various respiratory tract infection-causing microorganisms. The studies on southern China's 21 kinds of medicinal plants found *S. octophylla* has some anti-RSV (respiratory syncytial virus) ( $IC_{50}$  12.5 mg L<sup>-1</sup>). Also the 3,5-O-caffeoyl acid II and 3,4-O-caffeoyl acid II from *S. heptaphylla* has anti-RSV virus activity ( $IC_{50}$  1.2, 1.16  $\mu$ g/mL) (Li et al. 2004, 2005; Xu et al. 2006). Caffeoylquinic acid derivatives (3, 4-Di-O-caffeoylquinic acid, 3, 5-Di-O-caffeoylquinic acid) isolated from *S. heptaphylla* possess anti-RSV activity (Yaolan et al. 2005).

#### 10.4.1.2 Antiplasmodial Activity

*S. umbellifera*'s ethanolic and ethyl acetate extracts and isolated compound betulin exhibited good antiplasmodial activity against the *Plasmodium falciparum*, a malaria-causing agent, in an *in vitro* assay (Tetyana et al. 2002; Mthembu et al. 2010).

#### 10.4.1.3 Anti-Inflammatory Activity

*S. arboricola* has been used as most important plant for the preparation of Shuang-Qi gout capsule in China. It can cure rheumatoid arthritis, rheumatism, joint pain, fever, sore throat, etc. and is also found to be effective clinically for