11 Selective Chinese Viviparous Ferns, Their Bioactive Principles and Economical Values
A Review

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11.1 INTRODUCTION

Ferns first appear in the fossil record 360 million years ago in the late Devonian period. Genetically similar to seed plants, ferns represent a critical clade for comparative evolutionary studies in land plants (Pryer et al. 2002; Barker and Wolf 2010). Thus, as an early tracheophyte, Pteridophytes are an important outgroup for studying the evolution of wood, seeds, pollen, flowers and fruit among other economically important characteristics found in seed plants, as well as the evolution of development in these complex structures and the expansion of gene families associated with seed plant evolution (e.g. transcription-associated proteins) (Nakazato et al. 2008; Barker 2009; Barker and Wolf 2010). Though, we have not yet understood ferns on the basis of special character on vivipary, in some pteridophytes, fertilization takes place inside female gametophytes, on the sporangium on the mother plant itself. Vivipary is considered as an important step in the evolution of seed habit in vascular plants. Furthermore, megaspores remain within the sporangium, which germinate and develop into the gametophyte and are fertilised. The gametophytes of *Selaginella* show complete dependence of gametophyte upon sporophyte, as in angiosperms. Moreover, the viability period of chlorophyll is frequently very short