modulates Aβ metabolism and neuroprotective activity, and receives much attention as a promising candidate for AD treatment.

9.3.10 *Melissa officinalis*

M. officinalis exhibits ACh receptor activity in the CNS with both nicotinic and muscarinic interacting abilities (Perry et al. 1999). Reports showed its inherent capability to modulate mood, improve cognition and minimize agitation in AD patients (Kennedy et al. 2002). It has been widely used as a memory-improving medicine in the European system of traditional medicine (Howes et al. 2003). Ethanolic leaf extracts were reported to bind muscarinic receptors (Wake et al. 2000), whereas methanolic leaf extracts exhibited mood and attention-improving properties (Kennedy et al. 2002). Hydroalcoholic extracts are effective in cognition deficits in mild to moderate AD patients (Akhondzadeh et al. 2003a). In addition, essential oils and extracts had AChE inhibition effects and antioxidant properties, respectively (Ferreira et al. 2003). The cognition-enhancing potential of the extract is attributable to cholinergic binding properties. Aromatherapy using essential oil from *M. officinalis* reported to decrease agitation in severe dementia patients (Ballard et al. 2002).

9.3.11 *Panax ginseng*

The neuroprotective potential of ginseng was validated in AD experimental models. *P. ginseng* has shown to be effective in the improvement of cognitive performance in AD patients (Lee et al. 2008). Ginseng was found to regenerate axons and synapses (Tohda et al. 2005) and increase hippocampal synaptic densities (Mook-Jung et al. 2001). Ginsenosides, which are steroid-like compounds, are the active components in ginseng (Chen et al. 2006). Ginsenosides have the potential to minimize Aβ, reduce the Aβ inhibition of hippocampal cholinergic transmission and hinder Aβ–induced memory loss (Wang et al. 2006). Ginseng was shown to improve the cognitive and psychomotor performance by increasing brain cholinergic function and restore the damaged networks. In healthy humans, ginseng enhanced cognitive performance (Kennedy et al. 2001). Furthermore, *P. ginseng* increased cerebral blood flow and scavenged ROS due to its antioxidant potential (Kitts et al. 2000; Kim et al. 2002). The nonsaponin fraction enhanced memory and learning in aged rats, whereas polyacetylenic alcohols promoted neuritogenesis (Yamazaki et al. 2001).

9.3.12 *Salvia officinalis*

S. officinalis offered benefits in cognition and exhibited cholinesterase inhibitor effects in patients with AD (Akhondzadeh et al. 2003b). Both AChE and butyrylcholinesterase inhibitory activities with reduced anxiety and increased alertness were exhibited by ethanolic leaf extracts (Perry et al. 1996; Kennedy et al. 2006). In addition, leaf alcoholic extracts offered protection against Aβ–induced neurotoxicity (Iuvone et al. 2006). Memory performance was improved in an elderly cohort study with ethanolic extract of *S. officinalis* (Scholey et al. 2008). *S. officinalis*