1.3.2 Propranolol medical uses

PRN is used for the treatment of various cardiovascular diseases mainly essential hypertension because it decreases heart rate, myocardial contractility, and cardiac output (Brunton *et al.* 2006; Craig and Stitzel 2004; Wang *et al.* 2013). However, its action on blood pressure reduction is complex. After acute administration, PRN blocks vascular β_2 receptors leading to a reduction in the cardiac output so peripheral resistance increases in proportion that maintain blood pressure to normal, and compensatory reflexes resulting in activation of vascular α receptors which is not blocked by PRN. As a result, blood pressure is not altered significantly; on the other hand, chronic administration of PRN decreases blood pressure, and this is why PRN is used in essential hypertension but not for hypertensive crisis (Brunton *et al.* 2006; Craig and Stitzel 2004). PRN is also used for the treatment of patient with angina pectoris (Brunton *et al.* 2006; Craig and Stitzel 2004; Hebb *et al.* 1968), atrial fibrillation, congestive heart failure, myocardial infraction (ischemic heart disease), and is used in the treatment of supraventricular arrhythmias, supraventricular tachycardias as well as ventricular arrhythmias/tachycardias (Brunton *et al.* 2006; Chafin *et al.* 1999; Katzung *et al.* 2004; Wang *et al.* 2013). PRN is found to be effective in the treatment of neurologic diseases, such as headache, and is used in migraine prophylaxis because it reduces the frequency and intensity of migraine (Katzung *et al.* 2004; Shields and Goadsby 2005). Furthermore, PRN has anti-inflammatory, antioxidant properties, and lipid peroxidation inhibitory activity as well as some anti-cancer activities (Nkontchou *et al.* 2012). PRN is also used in the treatment of thyrotoxic crisis (Brunton *et al.* 2006). In addition to that, PRN and nadolol combination is used to decrease the