***Enzyme induction***

Drug interactions caused by induction of CYP450 are significantly less common than those caused by CYP450 inhibition and impact the efficacy and therapeutic goals rather than toxicity caused by CYP450 (Bjornsson *et al.* 2003; Kashuba and Bertino Jr 2001). Induction of drug-metabolizing activity can be due to either a decrease in the proteolytic degradation of the enzyme or due to synthesis of new enzyme protein. Synthesis of new enzyme protein is due to an increased messenger RNA (mRNA) production (transcription) or in the translation of mRNA into protein (Craig and Stitzel 2004). Barbiturates are the classical example for drugs that induce P450 enzyme system. Therefore, a susceptible drug will be metabolized more rapidly resulting in reduced BA, shorter half-life ($t_{0.5}$), and reduced efficacy (Corrie and Hardman 2011).