Summary & Conclusion
Effect of single and multiple doses of honey on the metabolism of carbamazepine, diltiazem, phenytoin, paracetamol and digoxin was studied in rabbits.

These drugs are metabolized by different cytochrome P 450 enzymes viz. carbamazepine and diltiazem by CYP3A, phenytoin by CYP2C19, paracetamol by glucuronidation. Digoxin is eliminated via kidney and is a substrate for P-glycoprotein.

Both single and multiple dose administration of honey significantly reduced the AUC and CL of orally administered carbamazepine and diltiazem. In i.v diltiazem study also multiple dose of honey showed similar results. Multiple dose administration of artificial honey did not alter the carbamazepine kinetics significantly.

In phenytoin study, single dose administration of honey increased the AUC by 60% (not statistically significant), but after multiple dose of honey the AUC and other pharmacokinetic parameters of phenytoin were comparable with that of control.

Paracetamol kinetic data was not altered by either single or multiple dose administration of honey.

In the digoxin study, AUC of the drug was not altered by honey treatment.

The results of the present study suggest that honey may induce CYP3A enzyme, since it increased the metabolism of carbamazepine and diltiazem.
The CYP2C19 may not be significantly altered by honey as evidenced by phenytoin data.

The result of paracetamol study suggests that glucuronide conjugation activity may not be significantly altered by honey.

Limited data available in the digoxin study suggests that honey may not affect P-glycoprotein activity.

It is concluded that honey may stimulate the metabolism of drugs that are metabolized by CYP3A enzymes. It may not have significant effect on the metabolism of drugs mediated by CYP2C19 and glucuronic conjugating enzyme.