CYP1A2

CYP1A2 is a member of the cytochrome P450 superfamily of enzymes.

CYP1A2 localizes to the endoplasmic reticulum and its expression is induced by some polycyclic aromatic hydrocarbons (PAHs), some of which are found in cigarette smoke. The enzyme's endogenous substrate is unknown; however, it is able to metabolize some PAHs to carcinogenic intermediates. Other xenobiotic substrates for this enzyme include caffeine, aflatoxin B1, and paracetamol (acetaminophen). The transcript from this gene contains four Alu sequences flanked by direct repeats in the 3' untranslated region.

Smoking induces (CYP1A2) in the metabolism of clopidogrel. Clopidogrel shows better inhibition of platelet aggregation in smokers than nonsmokers [1] and smokers are less likely to be hyporesponders than nonsmokers [2].

1)
Bliden KP, Dichiara J, Lawal L, Singla A, Antonino MJ, Baker BA, Bailey WL, Tantry US, Gurbel PA. The association of cigarette smoking with enhanced platelet inhibition by clopidogrel. J Am Coll Cardiol. 2008 Aug 12;52(7):531-3. doi: 10.1016/j.jacc.2008.04.045. PubMed PMID: 18687246.
2)
Matetzky S, Shenkman B, Guetta V, Shechter M, Beinart R, Goldenberg I, Novikov I, Pres H, Savion N, Varon D, Hod H. Clopidogrel resistance is associated with increased risk of recurrent atherothrombotic events in patients with acute myocardial infarction. Circulation. 2004 Jun 29;109(25):3171-5. Epub 2004 Jun 7. Erratum in: Circulation. 2011 Oct 25;124(17):e459. Bienart, Roy [corrected to Beinart, Roy]. PubMed PMID: 15184279.