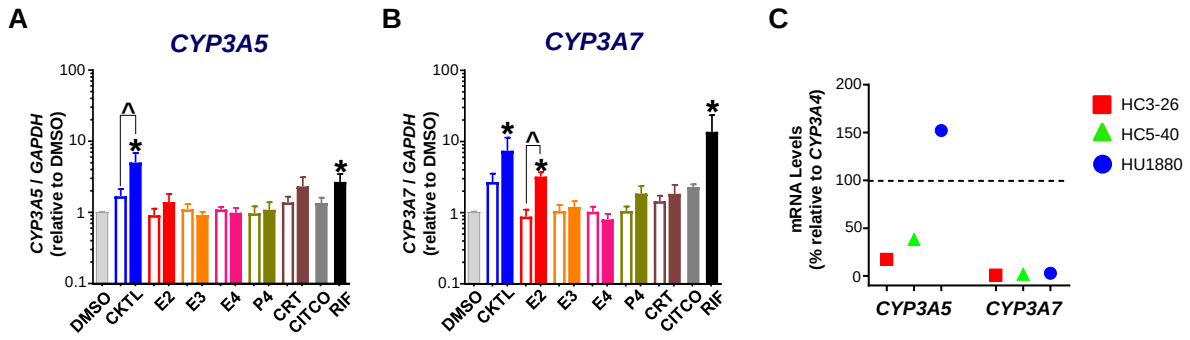
Supplemental Table 1. Characteristics of the female human hepatocyte donors.

Vendor	**Lot**	**Age** (years)	**Gender**	**Race**	**Serology**	**Drug History**	**Cause of death**
Gibco	HU1880	34	F	Cauc	-	Lyrica, Vitamin B	Not reported
Xenotech	HC3-26 [a]	43	F	Cauc	-	Not reported	Cerebrovascular accident
Gibco	HU8284	46	F	Cauc	-	None	Self inflicted gunshot wound
Xenotech	HC5-40 [b]	49	F	Cauc	CMV+	Not reported	Anoxia

[a] Hepatocytes from this lot were Transporter Certified™ (BioIVT, Durham, NC)

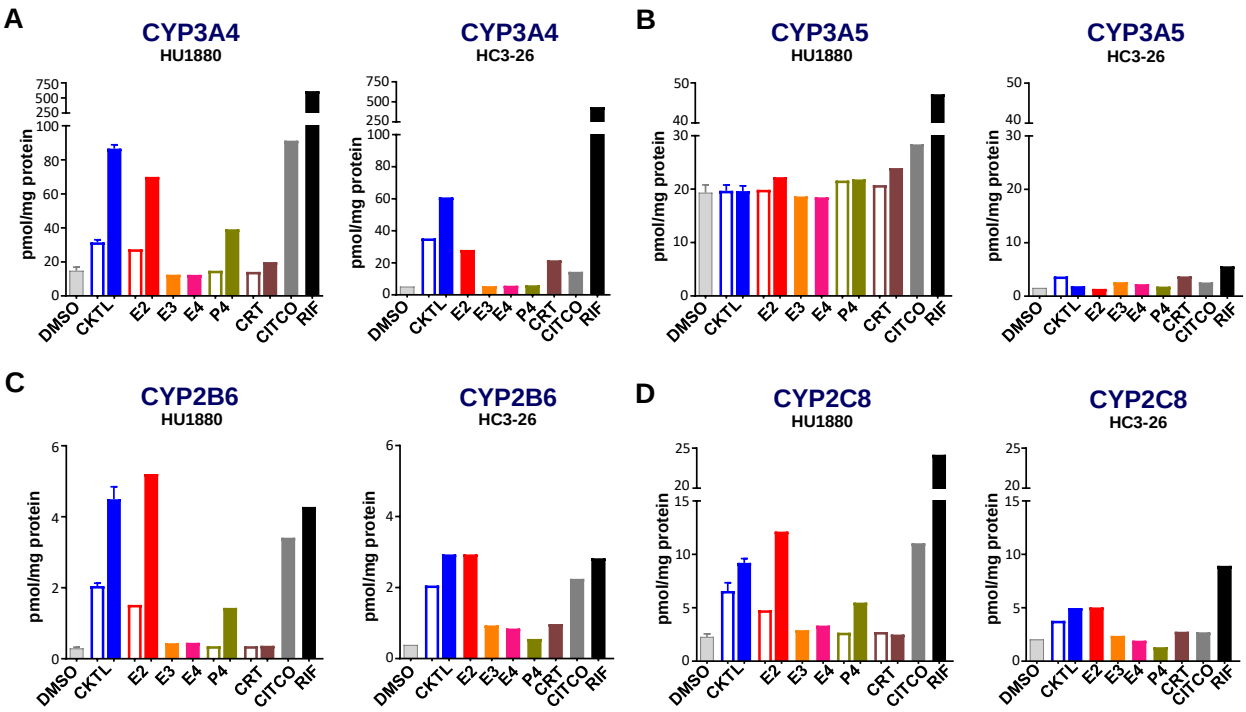
[b] Hepatocytes from this lot exhibited suboptimal cell viability in culture during the mRNA induction experiment, and thus were not used for the subsequent quantitative proteomics and nifedipine metabolism experiments.

Supplemental Figure 1.



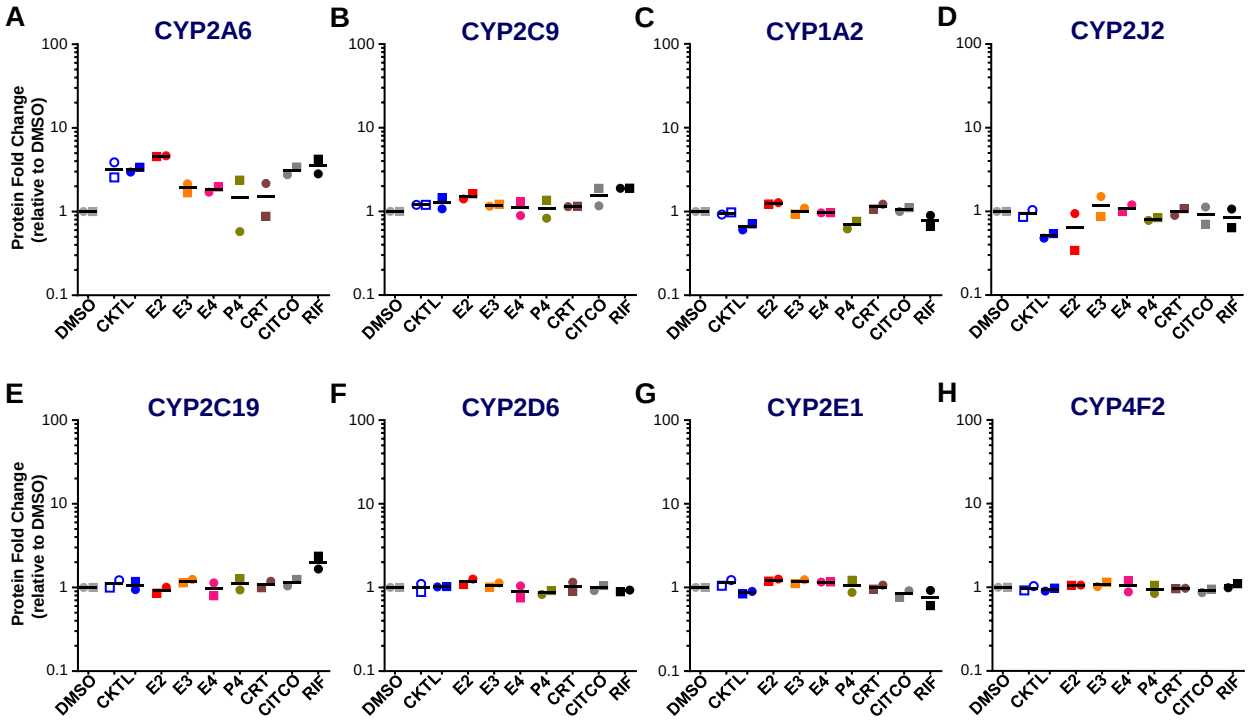
Supplemental Figure 1. Effect of pregnancy-related hormones on *CYP3A5* and *CYP3A7* mRNA levels in SCHH. Human hepatocytes from three female donors (HU1880, HC3-26 and HC5-40) were exposed to hormones (E2, E3, E4, P4, CRT), either individually or in combination as a cocktail (CKTL) of all hormones, or controls (DMSO, CITCO, Rifampin [RIF]) for 72 h (n=2/group within each donor). (A) *CYP3A5* and (B) *CYP3A7* mRNA levels were quantified, normalized to *GAPDH*, expressed relative to vehicle (DMSO) control within each donor, and then combined for comparison across experimental groups (n=3 donors/group; *p<0.05 vs. DMSO). Concentration-dependent effects were evaluated (open bar: 1 µM, solid bar: 10 µM; ^p<0.05 1 vs. 10 µM). (C) Average basal *CYP3A5* and *CYP3A7* mRNA levels, relative to *CYP3A4*, in SCHH from donors HU1880, HC3-26 and HC5-40 (mean: n=2/donor).

Supplemental Figure 2.



Supplemental Figure 2. Effect of pregnancy-related hormones on absolute protein concentrations of CYP3A4, CYP3A5, CYP2B6, and CYP2C8 in SCHH by donor. Following 72 h of hormone exposure, (A) CYP3A4, (B) CYP3A5, (C) CYP2B6, and (D) CYP2C8 protein concentrations were quantified by QTAP in SCHH membrane-associated protein isolated from two donors (HU1880, HC3-26). Absolute protein concentrations in the individual hormone (E2, E3, E4, P4, CRT) and control (CITCO, RIF) treatment groups in donor HU1880 and donor HC3-26 (mean: n=2/group). Concentration-dependent effects (open bar: 1 µM, solid bar: 10 µM) were evaluated for E2, P4 and CRT in donor HU1880 only. Protein concentrations in the DMSO and hormone cocktail (CKTL) groups in donor HU1880 (mean ± SEM: n=3-4/group) and donor HC3-26 (mean: n=2/group), which are also presented in Figure 2 (CYP3A4, CYP3A5) and Figure 5 (CYP2B6, CYP2C8), are included for comparison.

Supplemental Figure 3.



Supplemental Figure 3. Effect of pregnancy-related hormones on protein concentration of other key CYP isoforms in SCHH. Following 72 h of hormone exposure, protein concentrations of eight additional CYP isoforms (A: CYP2A6, B: CYP2C9, C: CYP1A2, D: CYP2J2, E: CYP2C19, F: CYP2D6, G: CYP2E1, H: CYP4F2) were quantified by QTAP in SCHH membrane-associated proteins isolated from two donors (HU1880, HC3-26). Protein levels of each CYP isoform were expressed relative to vehicle (DMSO) within each donor, and then combined for comparison across experimental groups. The effect within donor HC3-26 (circles) and donor HU1880 (squares) is represented by the individual data points. Open circles and squares represent 1 µM CKTL. Solid circles and squares represent 10 µM CKTL and 10 µM for the individual hormones.