ADME: Blood Partitioning

Background:
Pharmacokinetic parameters are usually determined by analysis of drug concentrations in plasma what could be misleading if drug distribution differs between blood and plasma. Therefore, in vitro blood partitioning represents an important DMPK property used for better interpretation and understanding of PK properties of tested compound.

Blood partitioning of the tested compound could be concentration- and time-dependent, involving both passive diffusion, protein binding and/or active transporters.

Assay description

Fresh blood source

mouse (CD1, Balb/c), rat (SD), human

Compound concentration

500 ng/ml (0.5% MeOH)

Compound requirements

1-2 mg of dry matter

Incubation details

1h at 37ºC

number of replicates: 3

Assay controls

verapamil, chloroquine (Figure 1 and 2)

Detection method

LC-MS/MS with internal standard

Results

blood to plasma ratio

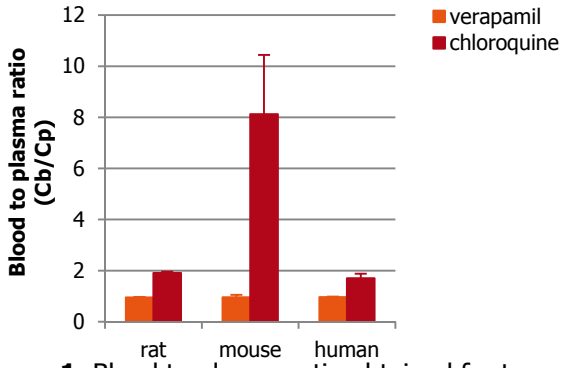

Figure 1. Blood to plasma ratio obtained for two reference compounds in 3 different species

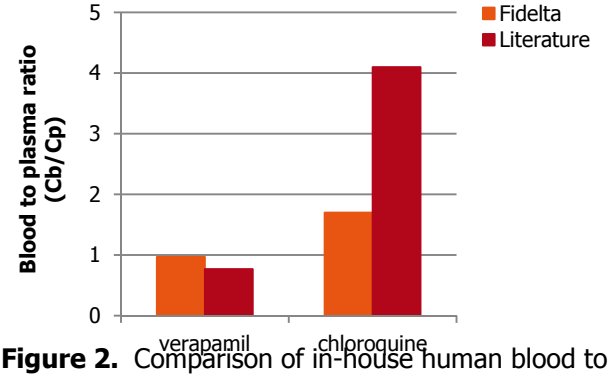

Figure 2. Comparison of in-house human blood to plasma ratio with literature values[1,2]

[1] Obach 1999, Drug Metab Dispos 27, 1350
[2] Yu et al 2005, Rapid Commun in Mass Spectrom19, 250

Assay details adjustable to client's and/or project specific requests

Contact us:
Adrijana Vinter, Business Development
adrijana.vinter@glpg.com
+385 91 265 5527

Mila Vrančić, Business Development
mila.vrancic@glpg.com
+385 91 265 5528