

## HEK293 transporter assays

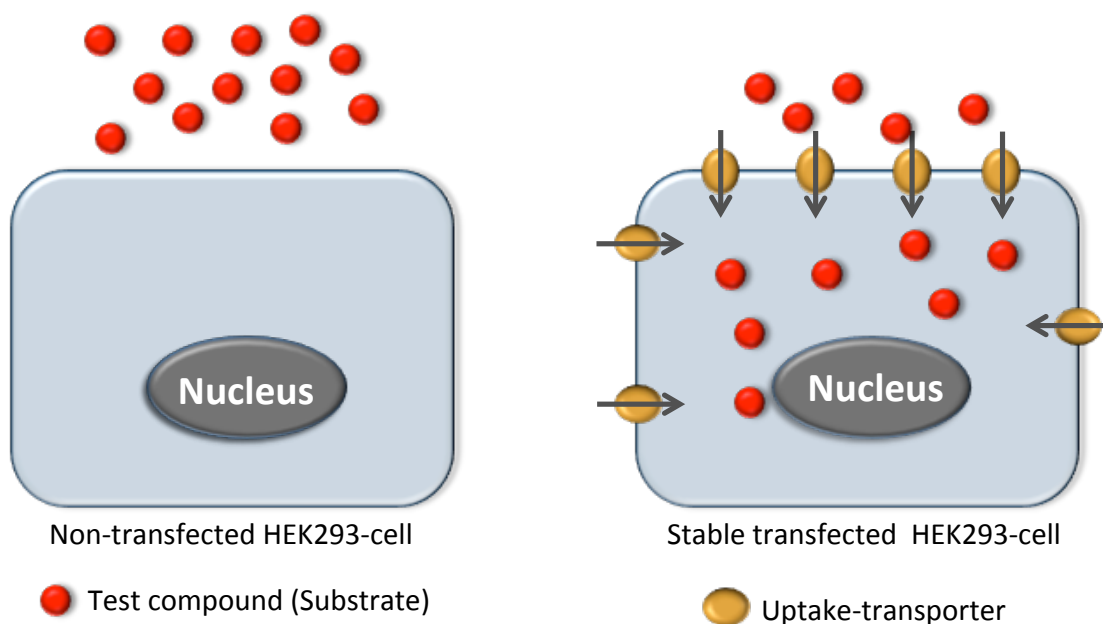
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Membrane transporters can be major determinants of the absorption, distribution and elimination of drugs. Moreover, drug interactions with transporters could mediate drug-drug interactions (DDIs). Therefore, the transporter-mediated transport and inhibitory effects on transporter proteins and of drugs is investigated in early stages of drug development. Stable transfected cell lines expressing clinically important transporter proteins are well established tools to characterize the inhibitory effects, the uptake and/or the efflux of drugs.

### Uptake and Competition assays

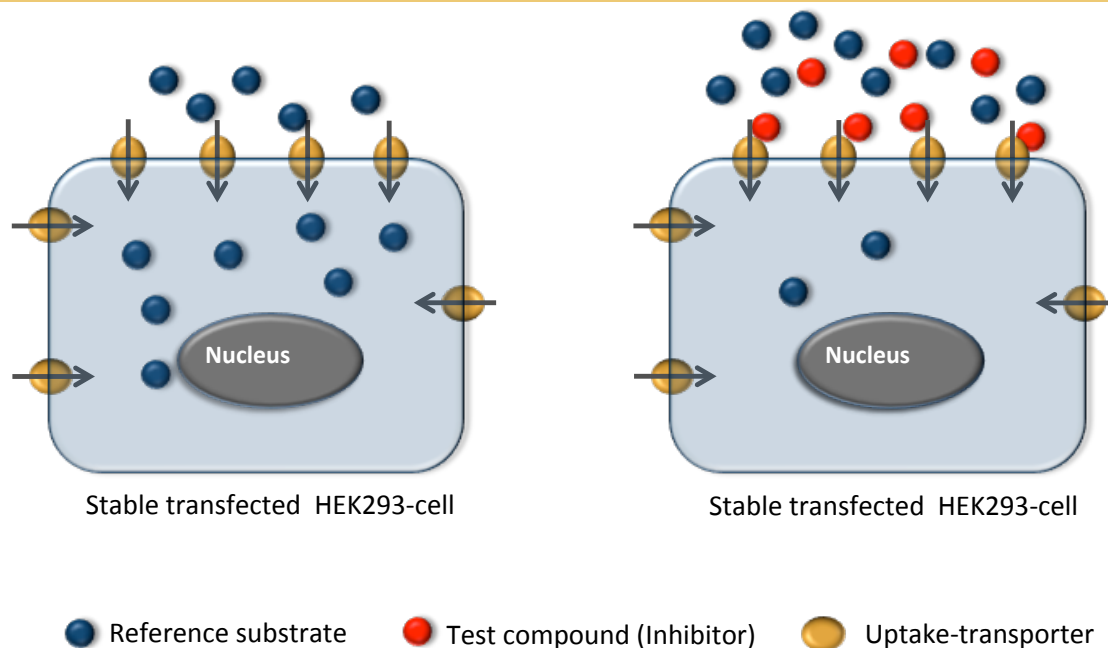
To test the inhibitory effects and/or the transporter mediated uptake of drugs, well characterized stable transfected HEK293 cells expressing uptake transporters are seeded on a 24-well plate. Drugs are given to the cells in a suitable buffer at 37°C for an individual defined time and concentration. The amount of intracellular drug concentration can be quantified by using HPLC, LC-MS/MS or, if radio-labelled substrates are used by liquid scintillation counting.

### Test principle uptake assay



Stable transfected HEK293 cells expressing the transporter protein of interest are incubated with the test compound. Uptake of test compound is detected using analytical methods like HPLC, LC-MS/MS or others.

Test principle competition assay



HEK293 cells are incubated with a reference substance in the presence of increasing concentrations of the test compound. The ability of the test compound to inhibit the uptake of the reference substrate is detected by analytical methods like HPLC, LC-MS/MS or liquid scintillation counting.

Available stable transfected HEK293 cell lines

**SLC21/SLCO – The organic anion transporting family:**

OATP1A2, OATP1A2\*2, OATP1A2\*3

OATP1B1, OATP1B1\*1b, OATP1B1\*5 OATP1B1\*15

OATP1B3, OATP1B3<sub>S112A</sub>, OATP1B3<sub>M233I</sub>, OATP1B3<sub>G522C</sub>, OATP1B3<sub>S112A, M233I</sub>

OATP2B1

OATP2B1 transfected cells and genetic variants of OATP2B1 (OATP2B1<sub>V201M</sub>, OATP2B1<sub>R312Q</sub>, OATP2B1<sub>S486F</sub>) are also available in MDCK2 cells.

**SLC22 – Organic cation transporter family**

OCT1

OCT3

**SLC10 – Sodium bile salt co-transport family**

ASBT (Apical Sodium Bile Acid Transporter)

NTCP (Na<sup>+</sup>-Taurocholate Co-transporting Polypeptide)