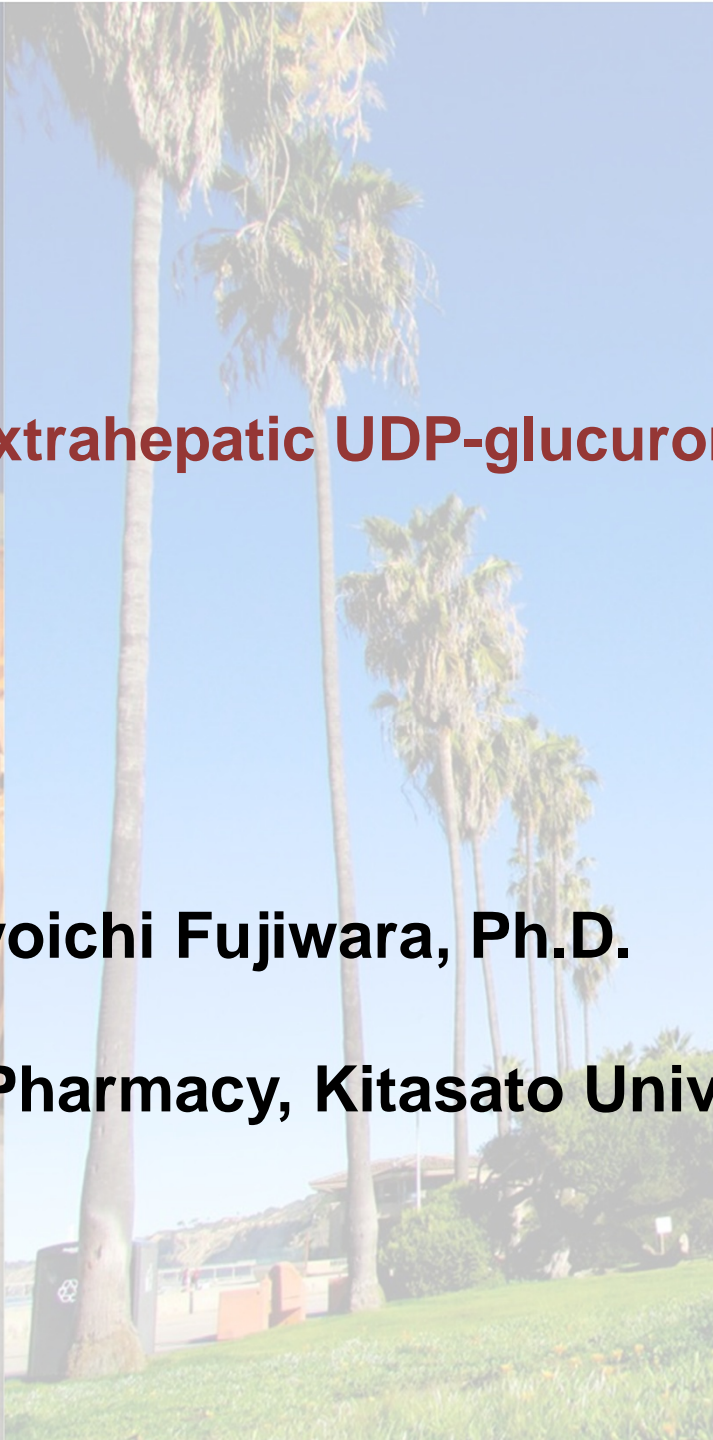


JSSX, Oct 14th, 2016

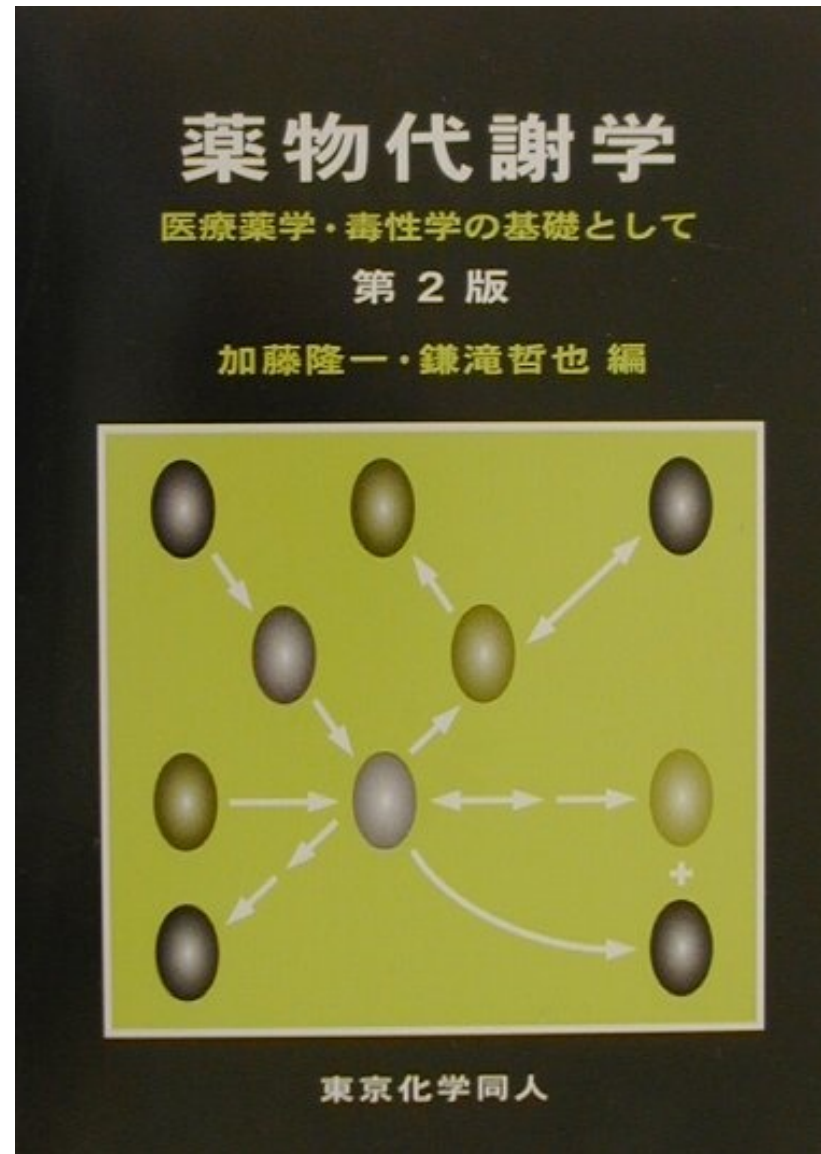
Study on hepatic and extrahepatic UDP-glucuronosyltransferase

Ryoichi Fujiwara, Ph.D.

School of Pharmacy, Kitasato University



A book I was very interested in

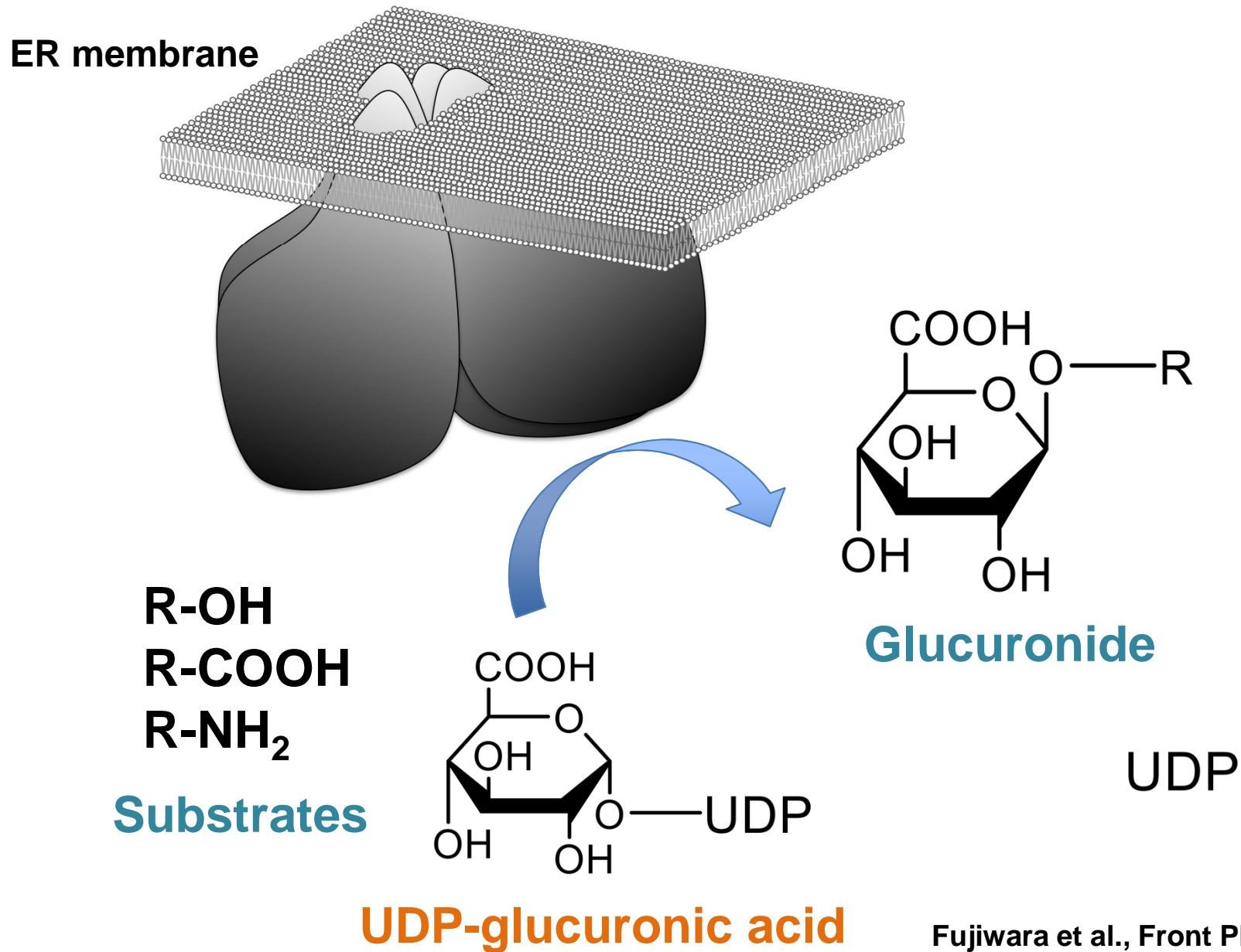


Two options...

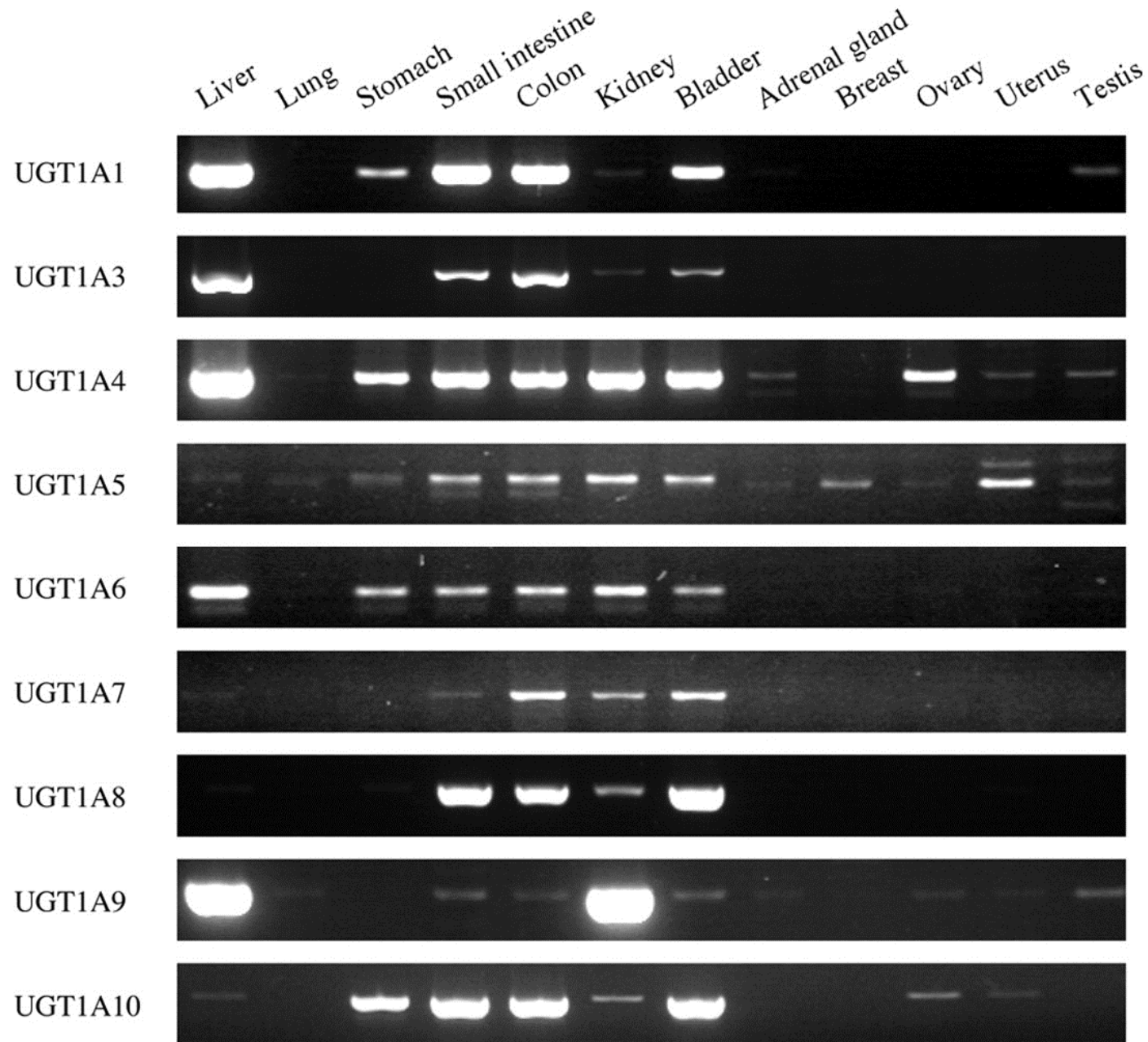


Noto-jima, 2004

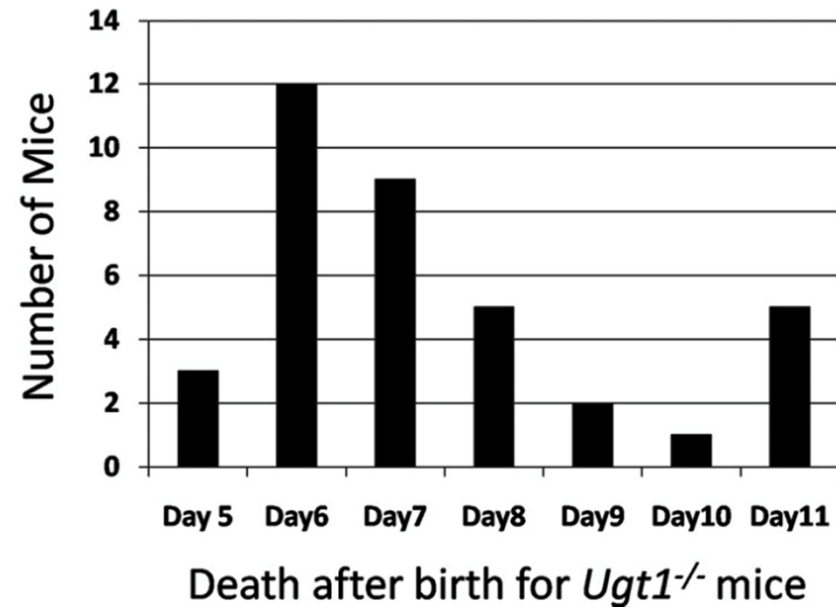
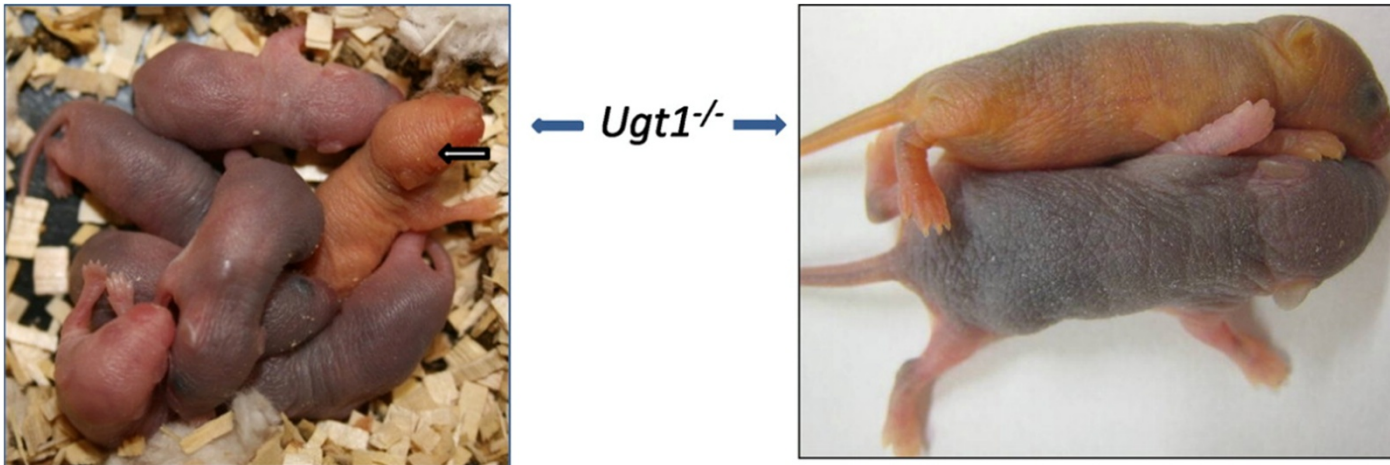
UDP-Glucuronosyltransferase (UGT)



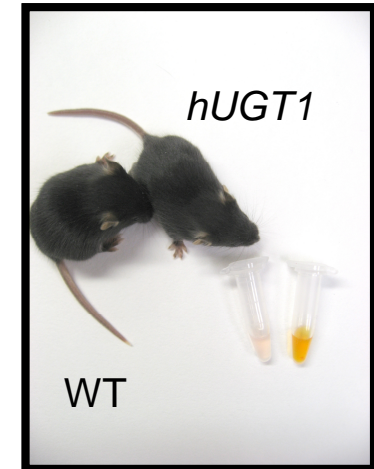
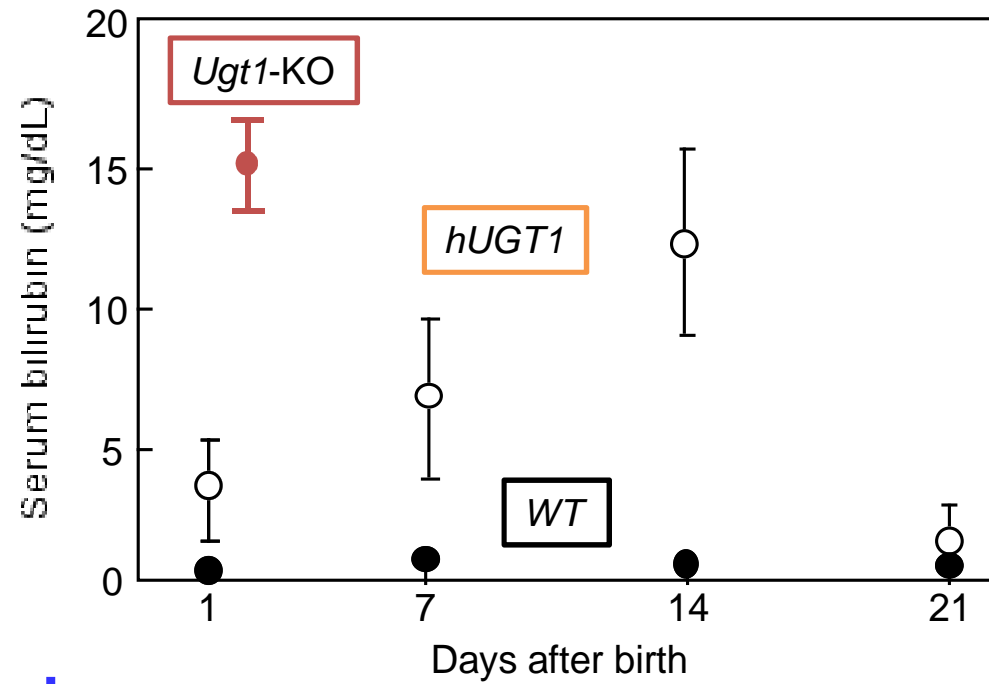
Tissue-specific expression of UGTs



Ugt1 knockout mice are lethal



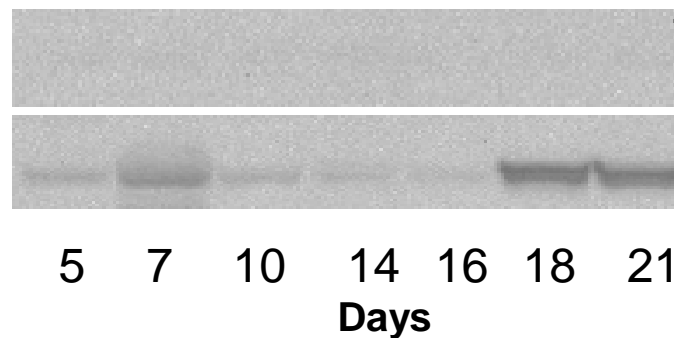
Human *UGT1* gene rescues the lethality of *Ugt1*-null mice



UGT1A1 protein

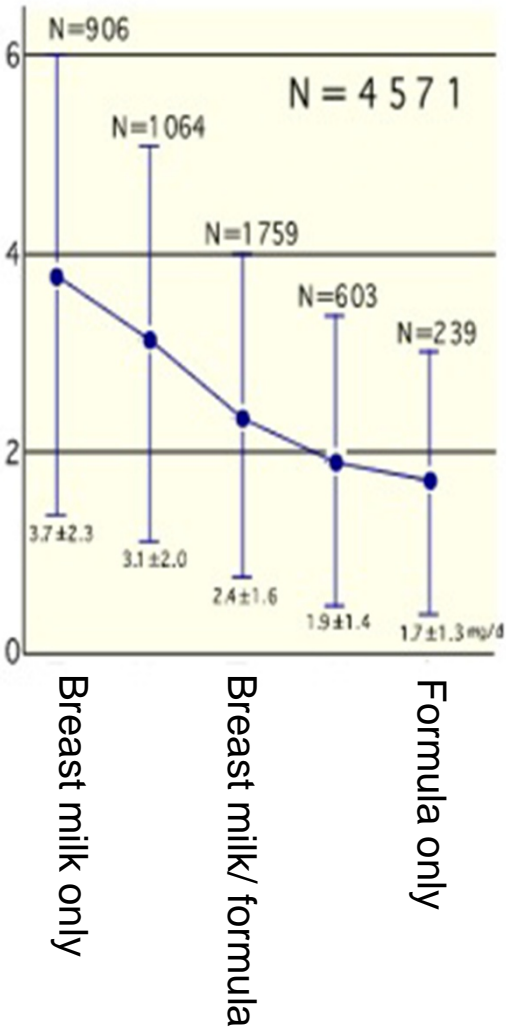
Liver

Small intestine

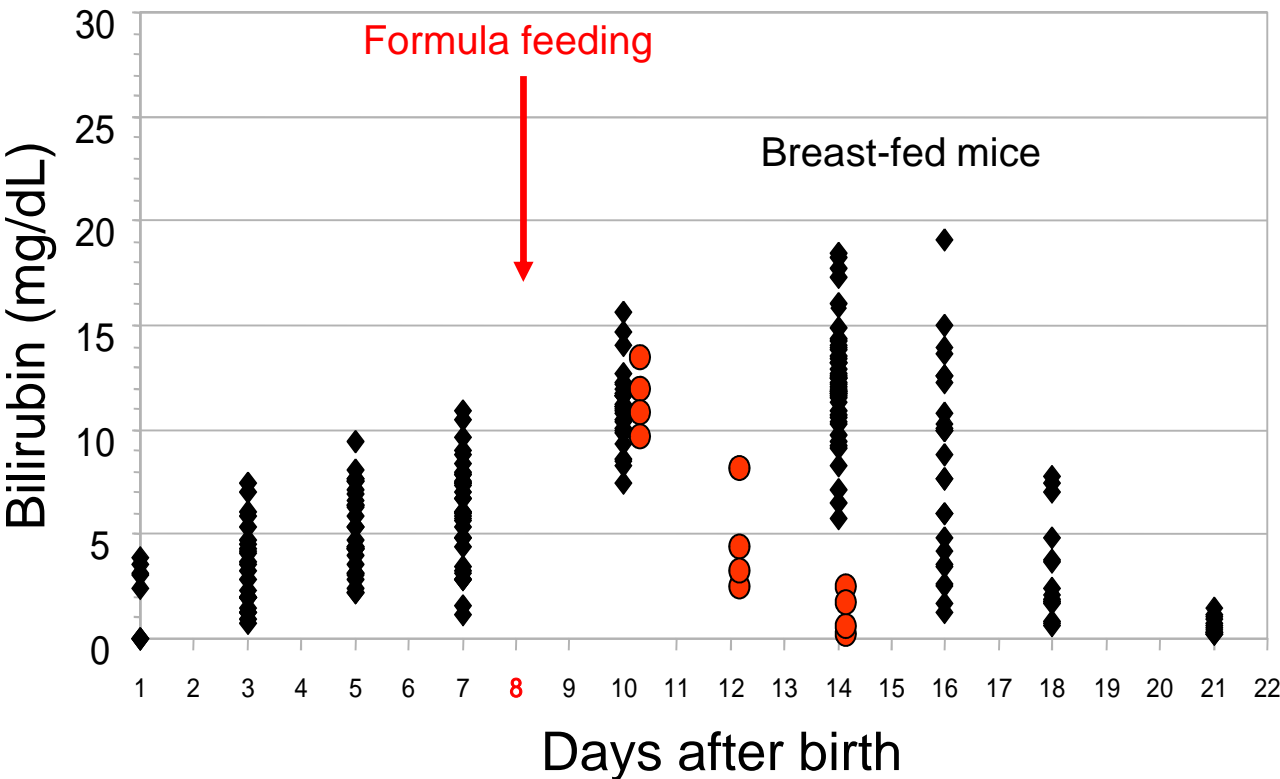


Formula milk reduces serum bilirubin levels

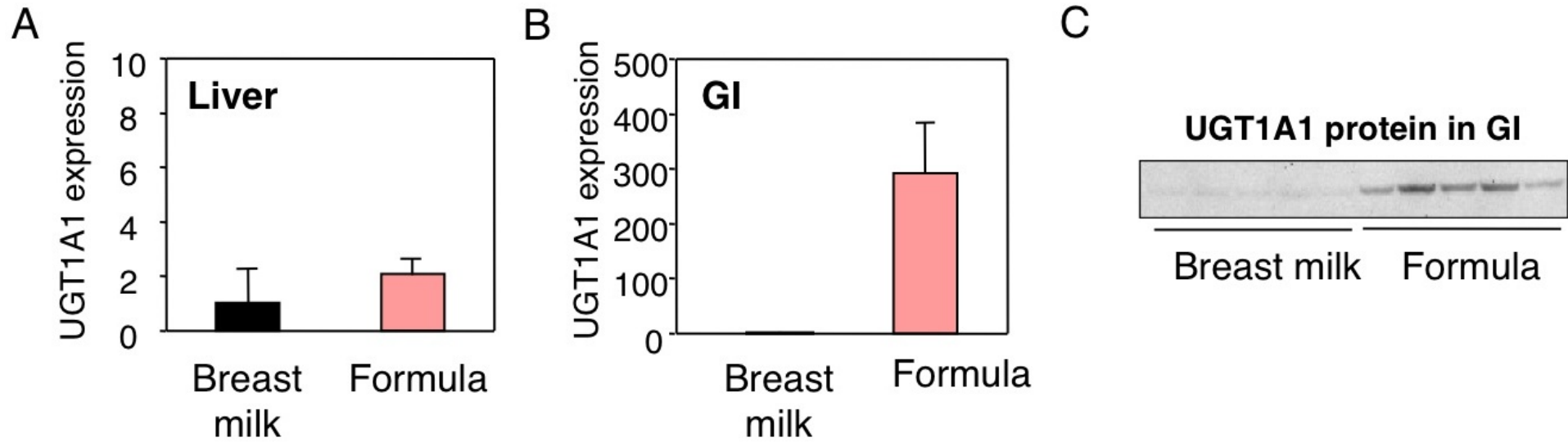
Humans



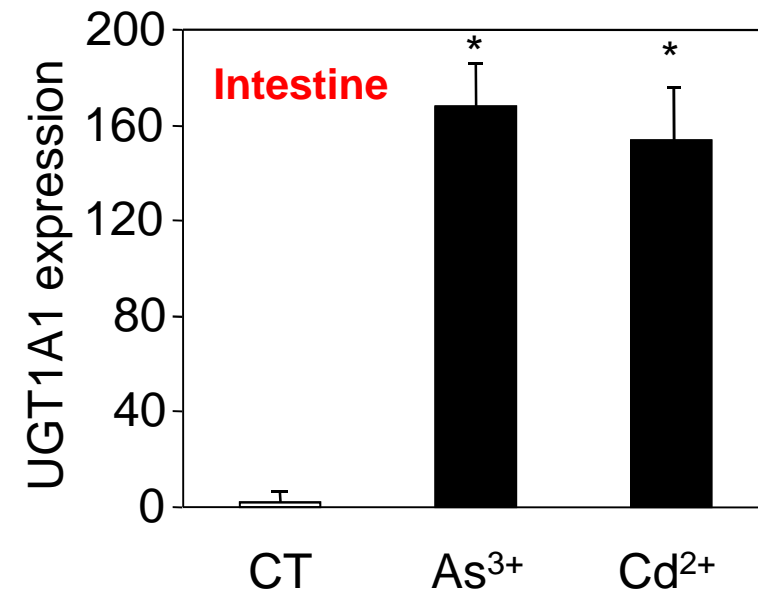
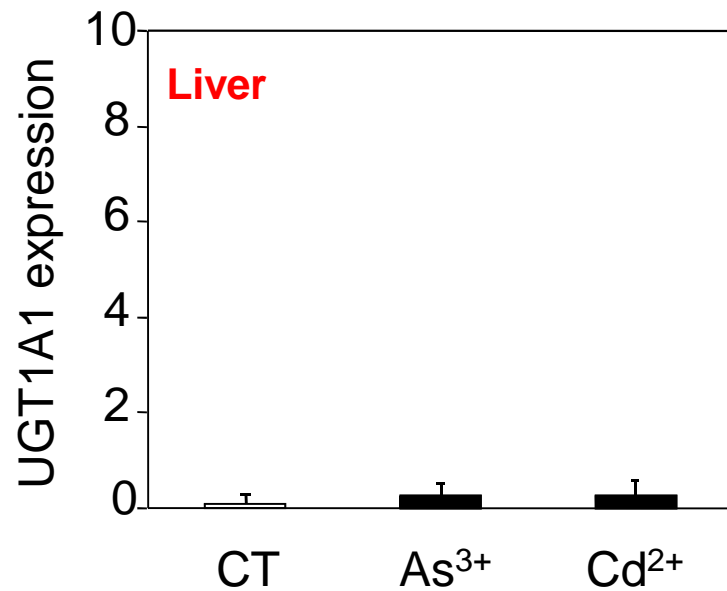
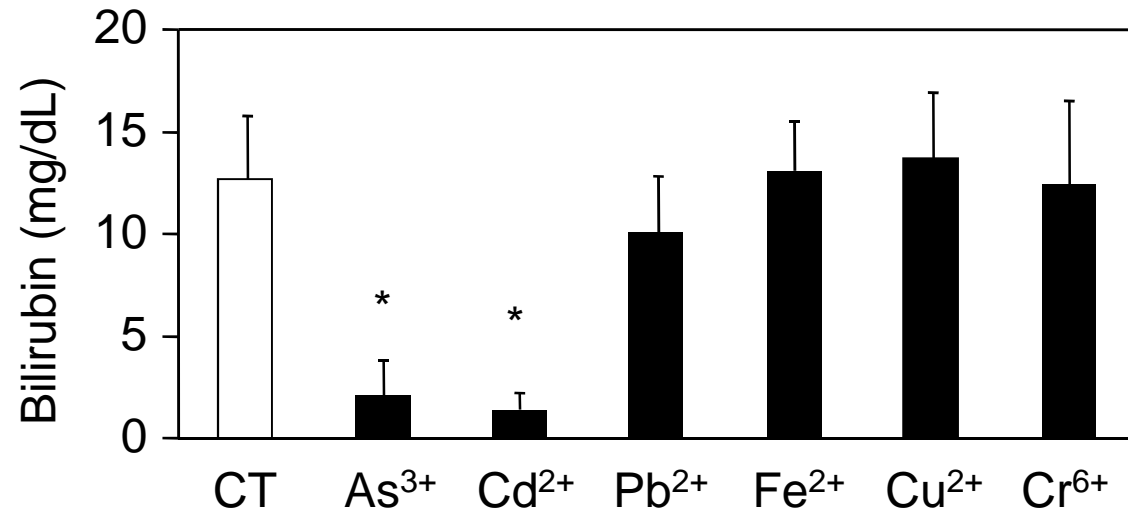
Humanized mice



Formula feeding induces intestinal UGT1A1



Arsenic and cadmium induce intestinal UGT1A1



Conclusions

- Although hepatic UGT1A1 is a main bilirubin-metabolizing enzyme in the liver, **intestinal UGT1A1** highly regulates serum bilirubin levels in neonates.
- UGTs are also expressed in **other extrahepatic tissues** such as kidney, skin, and brain.
- Not only **hepatic UGTs** but also **extrahepatic UGTs** contribute to glucuronidation of endogenous and exogenous substances **in vivo**.

My deep appreciation goes to...

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