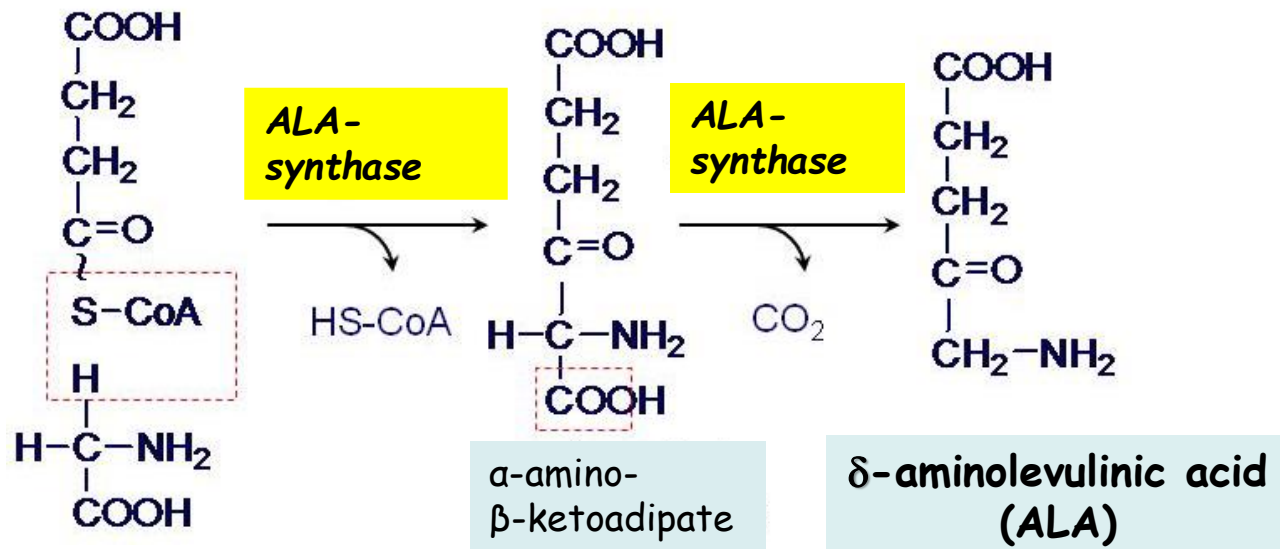


# **Metabolism of tetrapyrroles**

**11<sup>th</sup> week**

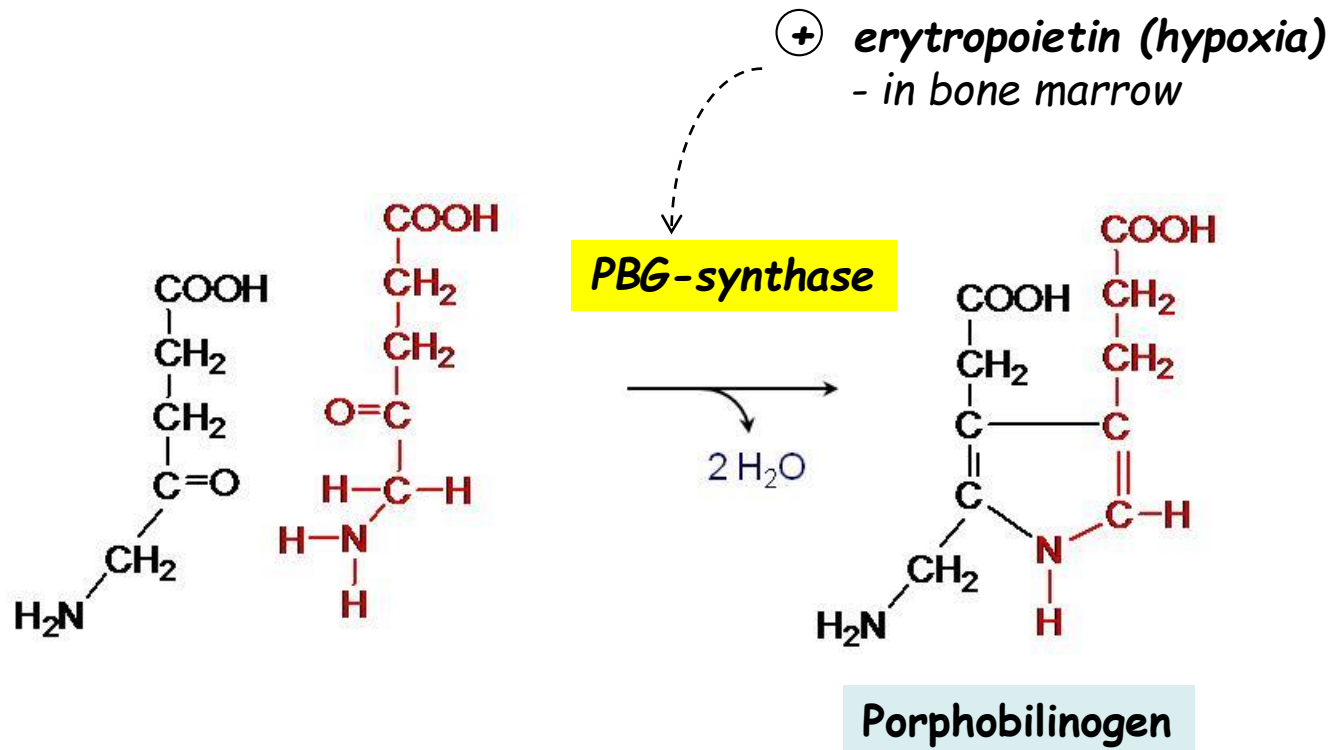
# Heme synthesis

1st reaction: condensation and decarboxylation  
= MITOCHONDRION

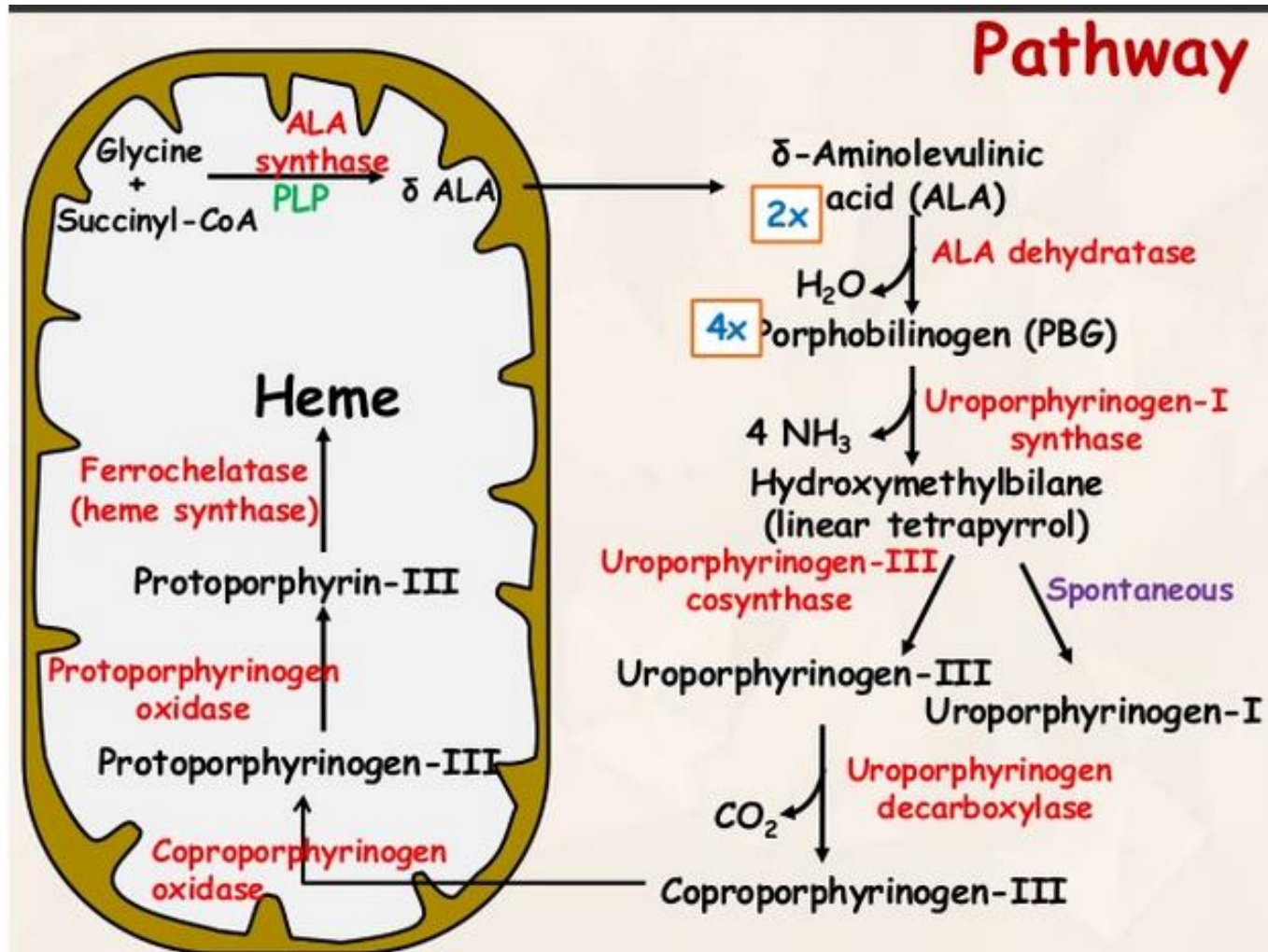


# Heme synthesis

## 2nd reaction: condensation = CYTOSOL

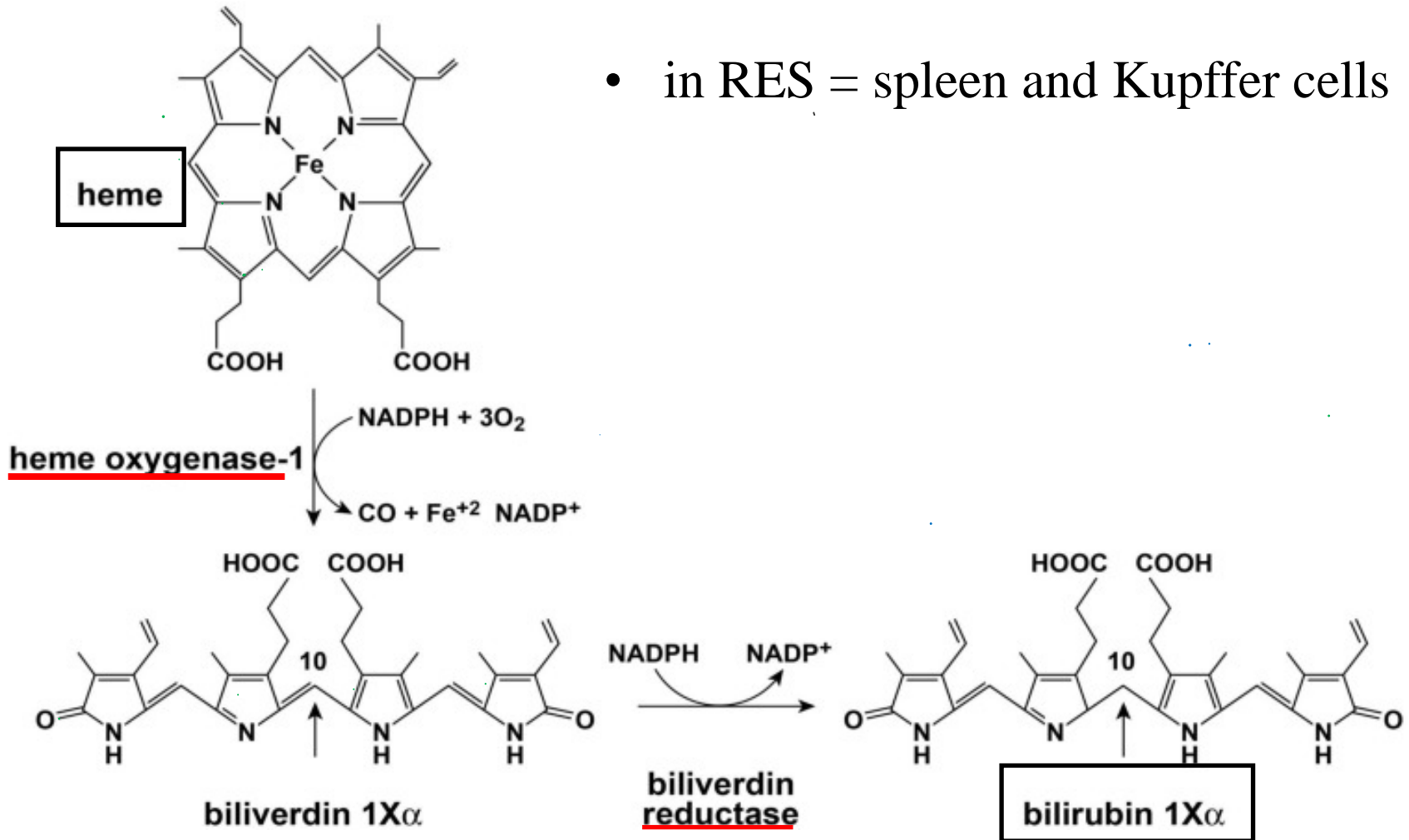


# Heme synthesis

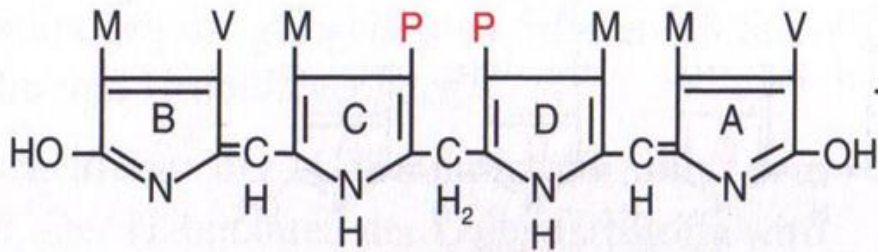


# Hemoglobin degradation

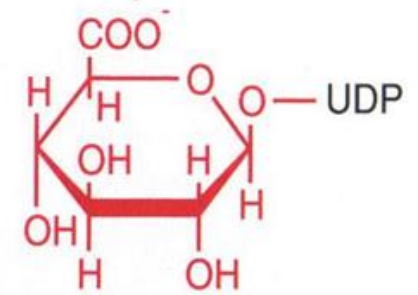
- in RES = spleen and Kupffer cells



# Bilirubin conjugation



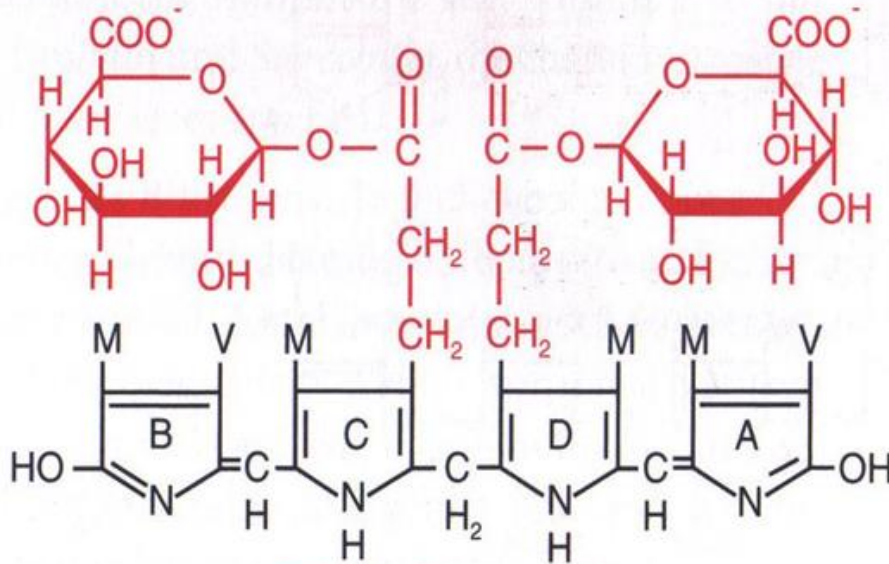
Bilirubin



UDP-Glucuronate

UDP-Glucuronyl-transferase

• in smooth ER



Bilirubindiglucuronid

2 UDP

# Synthesis of UDP-glucuronic acid

GLUCOSE



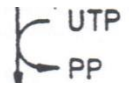
*hexokinase*

GLUCOSE-6-P



*phosphoglucomutase*

GLUCOSE-1-P

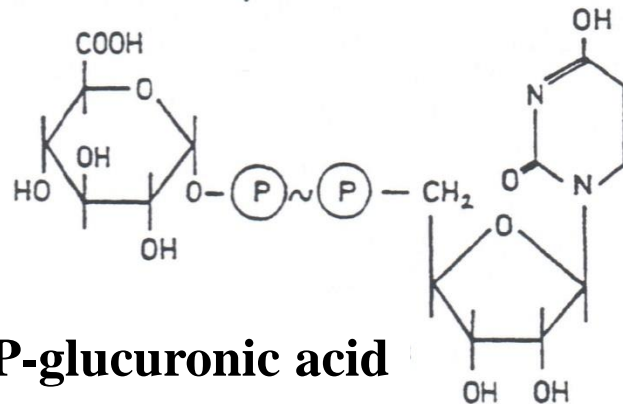


*UDPG-phosphorylase*

UDP-GLUCOSE

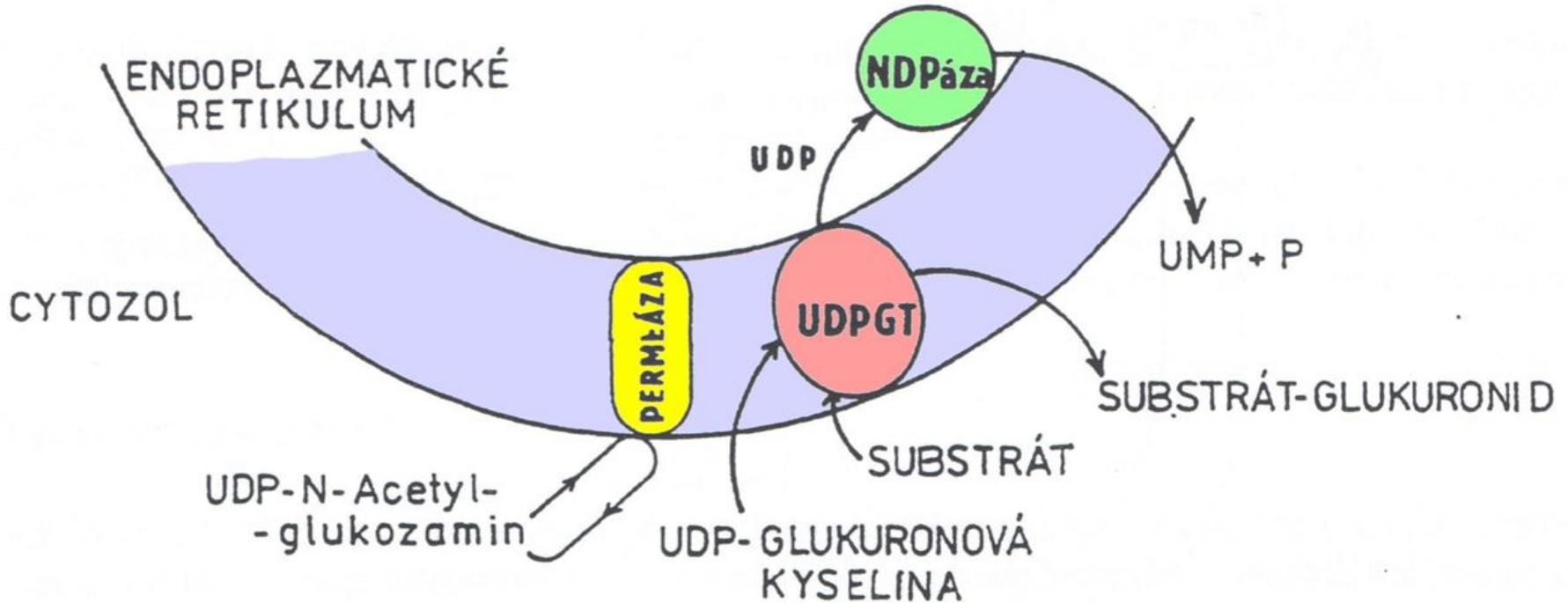


*UDP-glucosedehydrogenase*



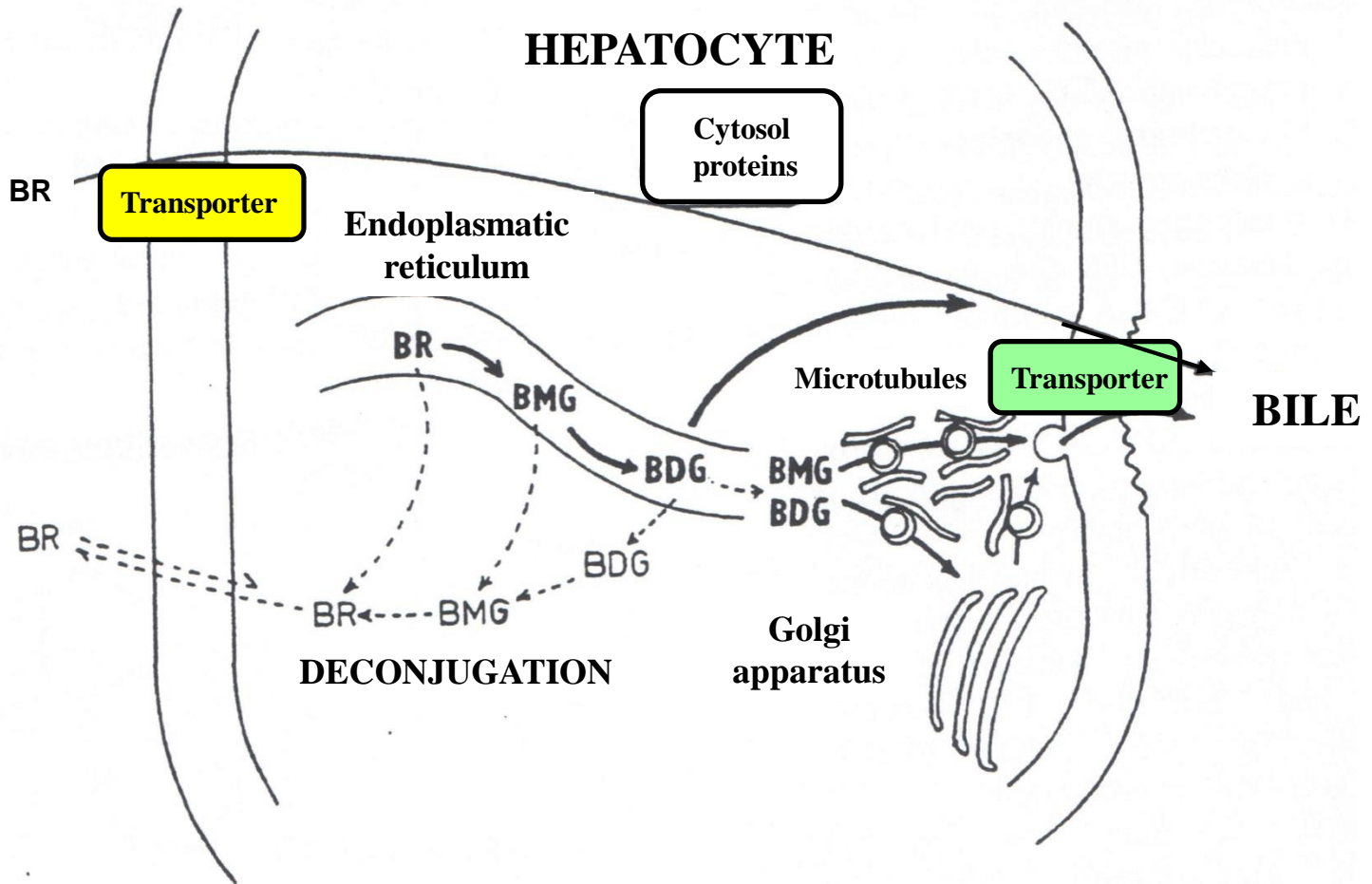
**UDP-glucuronic acid**

# Bilirubin conjugation

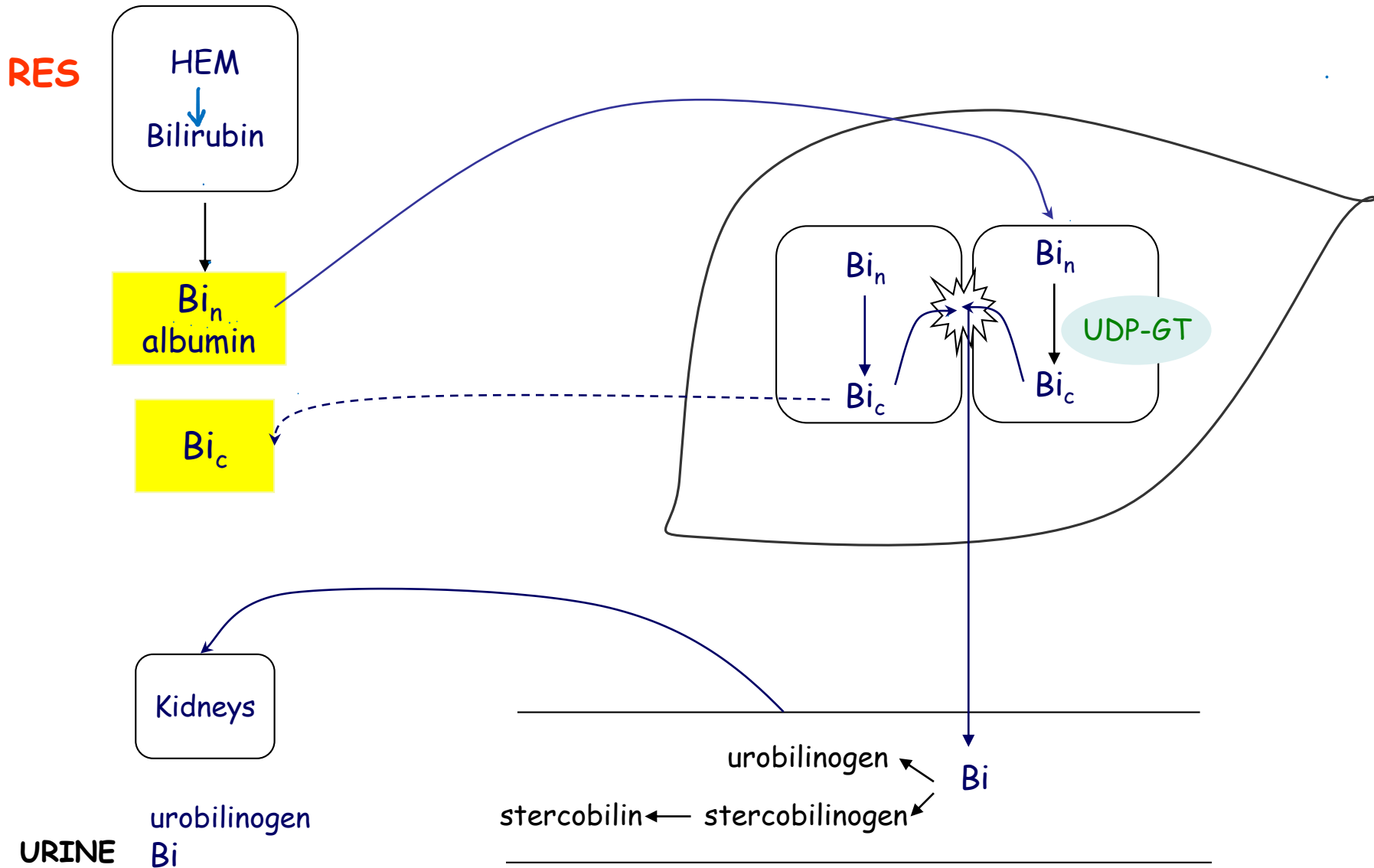




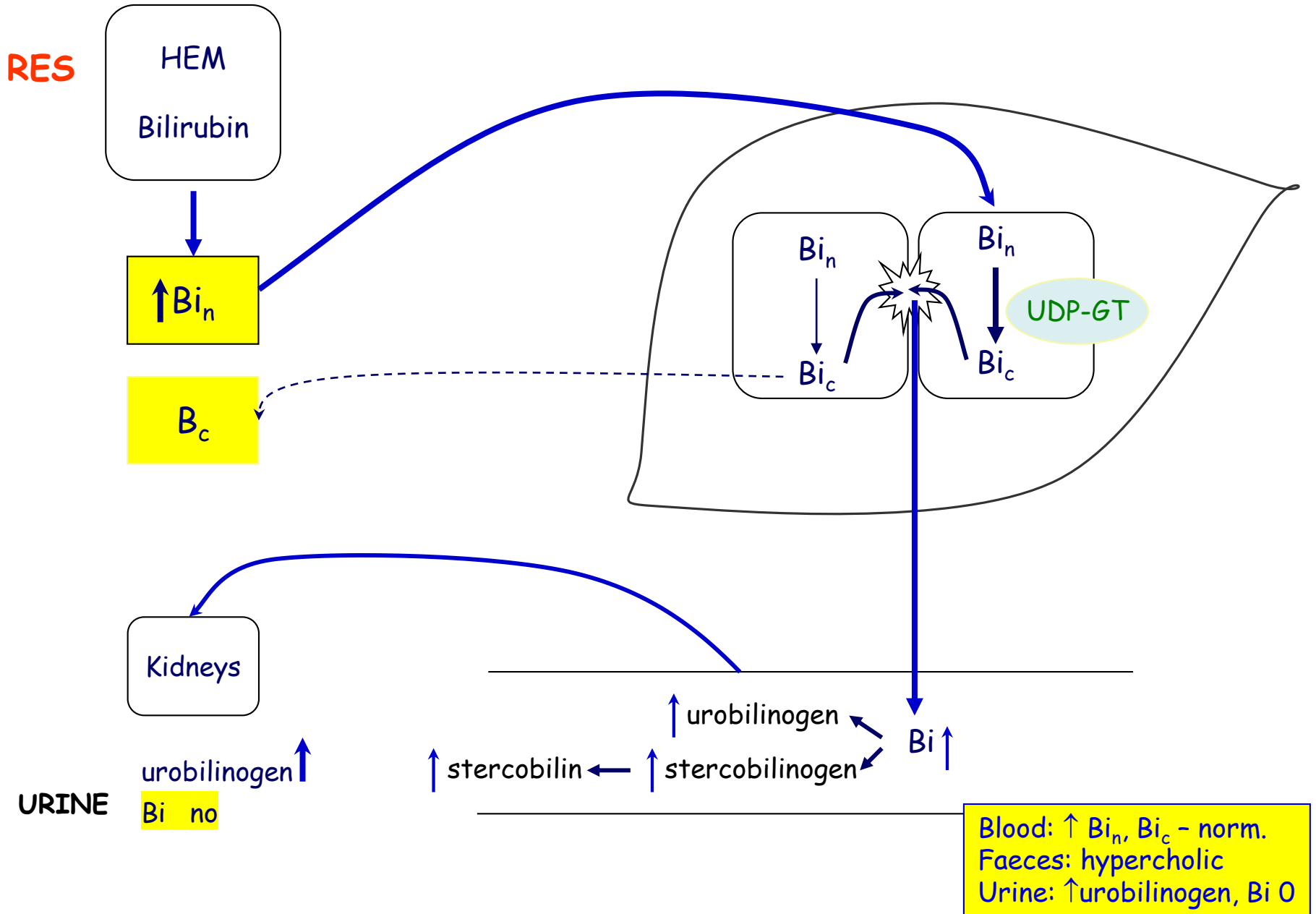
# Transport of bilirubin into bile



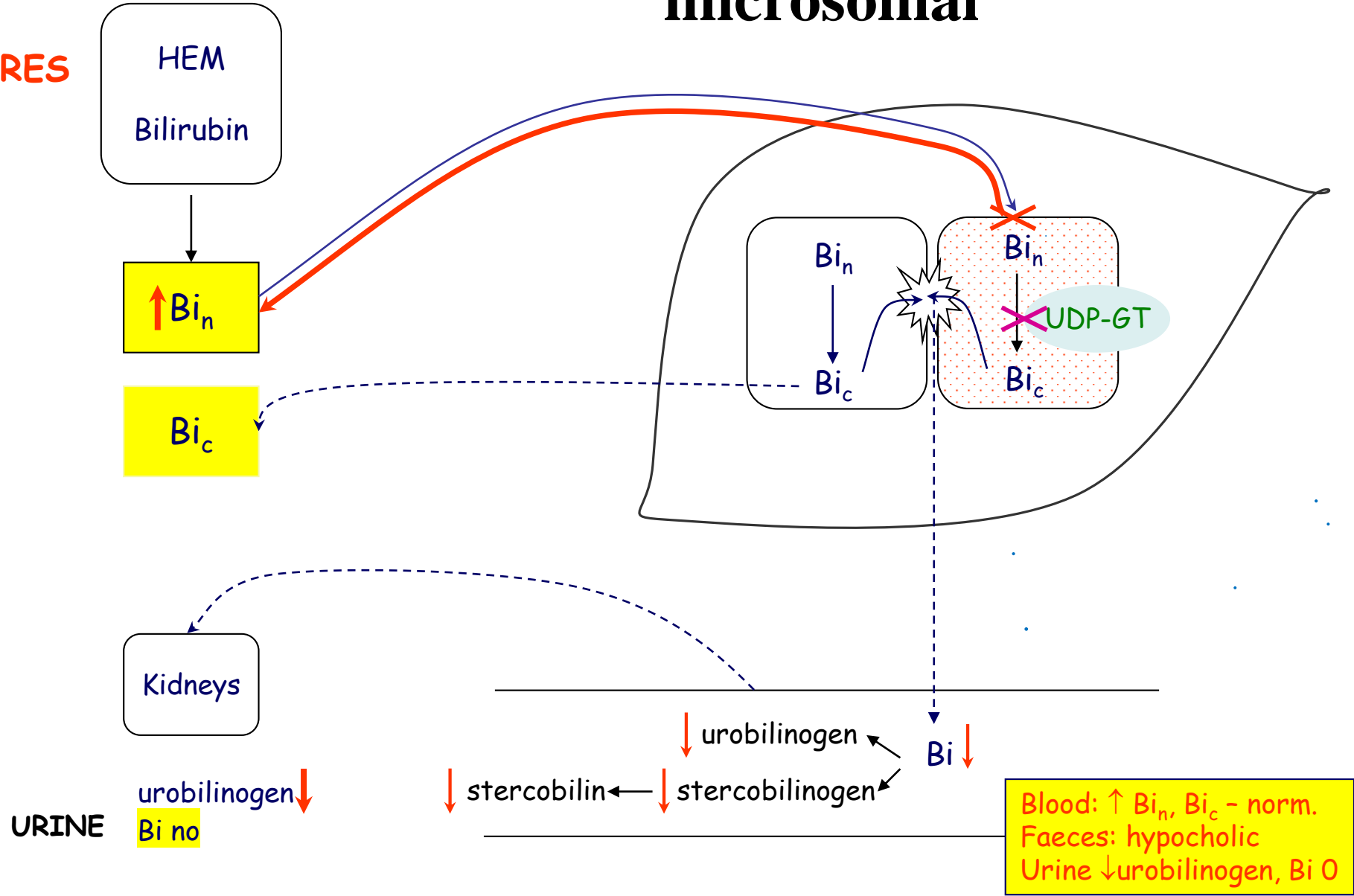
# Heme degradation - SUMMARY



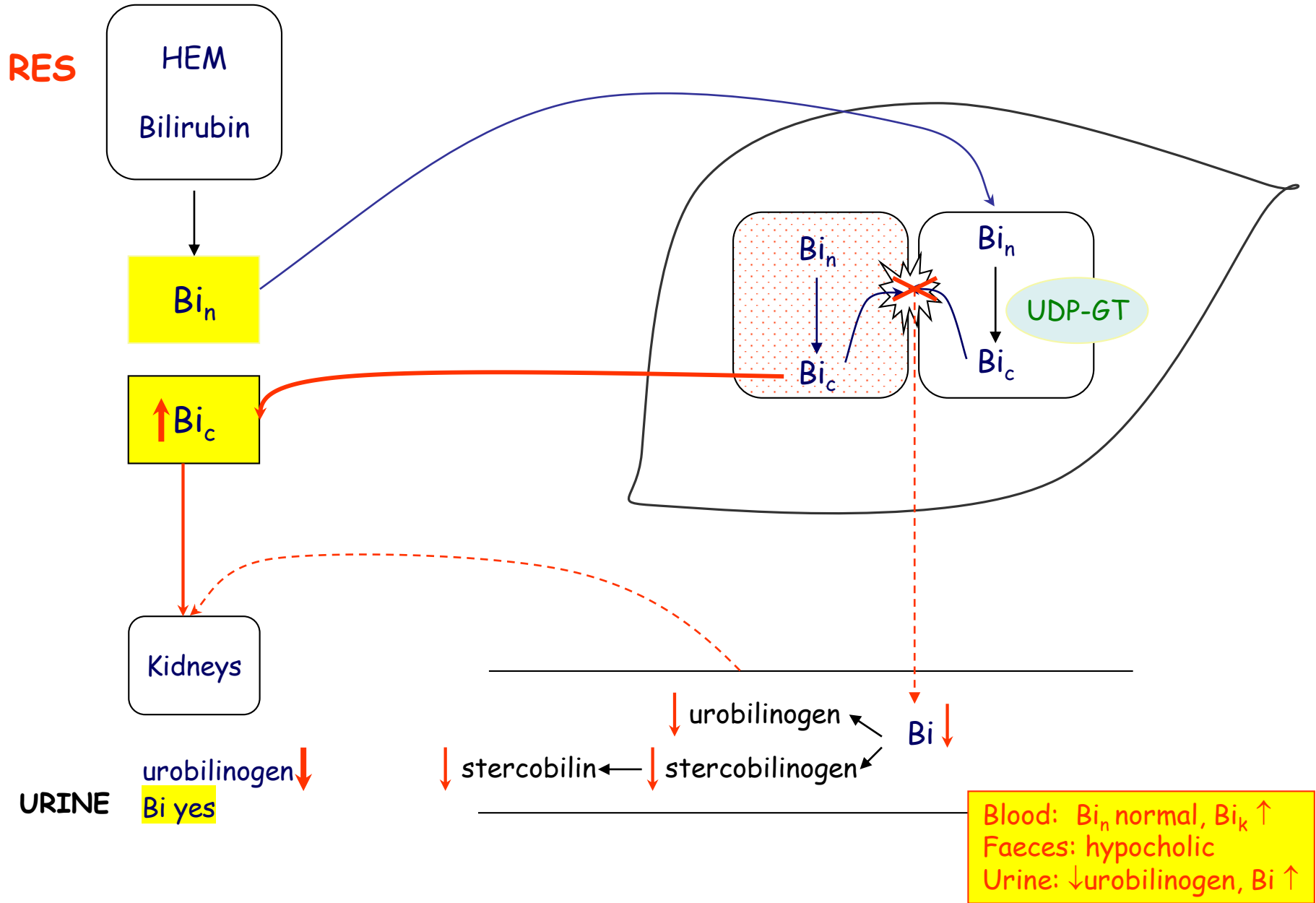
# Prehepatic jaundice



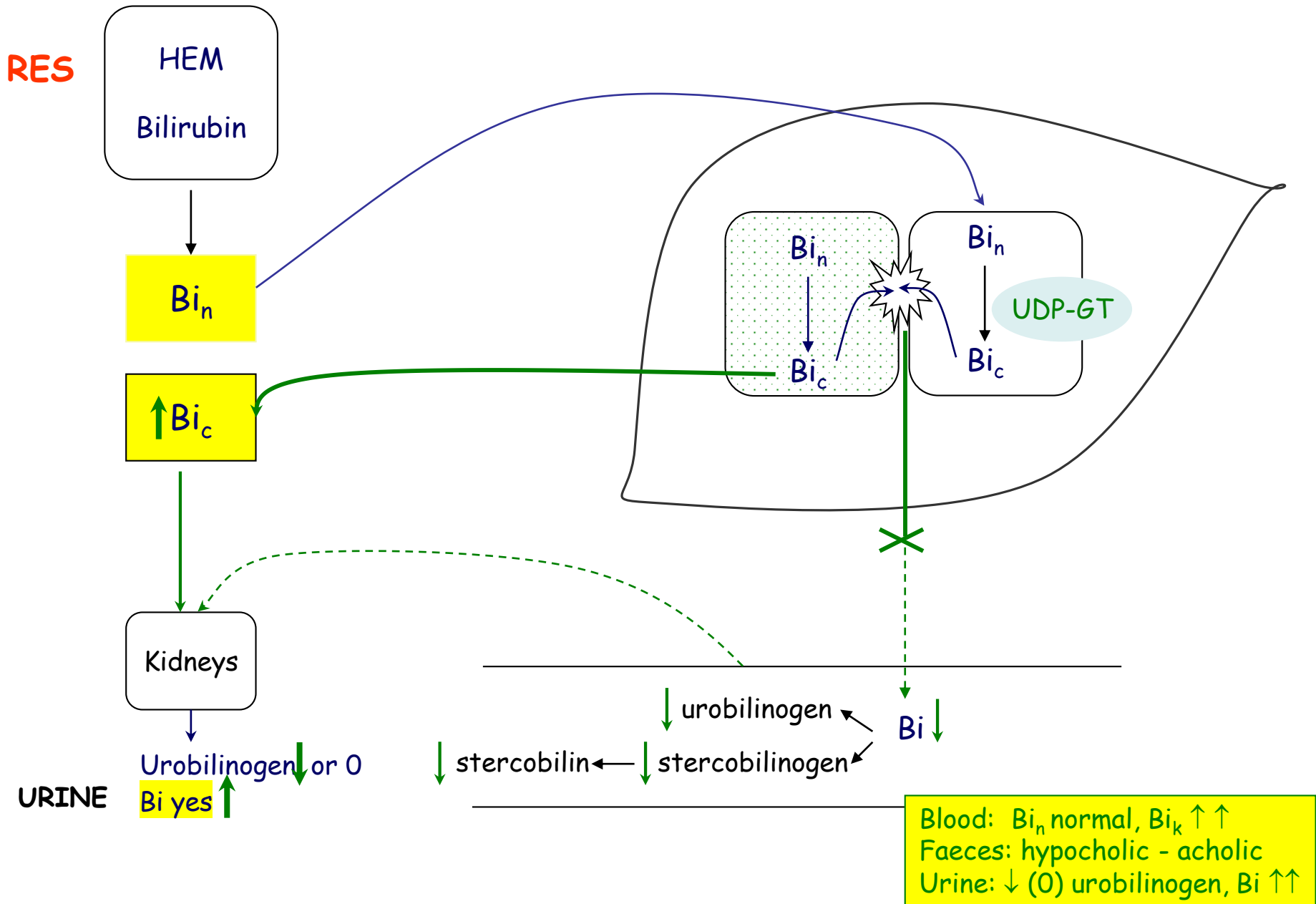
# Hepatic jaundice – premicrosomal and microsomal



# Hepatic jaundice – postmicrosomal



# Posthepatic jaundice



# Causes of jaundice

- Neonatal jaundice
- Hemolysis
- Liver diseases
- Cholestasis (intra- a extrahepatic)
- Bile duct obstruction
- Benign hyperbilirubinemia (Gilbert sy.)