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Cytochrome P450 (version 2019.4) in the IUPHAR/BPS Guide to Pharmacology Database

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Abstract

The cytochrome P450 enzyme family (CYP450), E.C. 1.14.-.-, were originally defined by their strong absorbance at 450 nm due to the reduced carbon monoxide-complexed haem component of the cytochromes. They are an extensive family of haem-containing monooxygenases with a huge range of both endogenous and exogenous substrates. These include sterols, fat-soluble vitamins, pesticides and carcinogens as well as drugs. The substrates of some orphan CYP are not known. Listed below are the human enzymes; their relationship with rodent CYP450 enzyme activities is obscure in that the species orthologue may not catalyse the metabolism of the same substrates. Although the majority of CYP450 enzyme activities are concentrated in the liver, the extrahepatic enzyme activities also contribute to patho/physiological processes. Genetic variation of CYP450 isoforms is widespread and likely underlies a significant proportion of the individual variation to drug administration.

Contents

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Please note that the database version for the citations given in GtoPdb are to the most recent preceding version in which the family or its subfamilies and targets were substantially changed. The links below are to the current version. If you need to consult the cited version, rather than the most recent version, please contact the GtoPdb curators.

Database links

Cytochrome P450
http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=242

- CYP1 family

http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=261

Enzymes

CYP1A1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1318

CYP1A2

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1319

CYP1B1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1320

CYP2 family

http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=262

Enzymes

CYP2A6

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1321

CYP2A7

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1322

CYP2A13

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1323

CYP2B6

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1324

CYP2C8

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1325

CYP2C9

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1326

CYP2C18

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1327

CYP2C19

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1328

CYP2D6

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1329

CYP2E1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1330

CYP2F1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1331

CYP2J2

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1332

CYP2R1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1333

CYP2S1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1334

CYP2U1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1335

CYP2W1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1336

CYP3 family

http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=263

Enzymes

CYP3A4

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1337

CYP3A5

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1338

CYP3A7

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1339

CYP3A43

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1340

CYP4 family

http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=264

Enzymes

CYP4A11

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1341

CYP4A22

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1342

CYP4B1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1343

CYP4F2

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1344

CYP4F3

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1345

CYP4F8

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1346

CYP4F11

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1347

CYP4F12

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1348

CYP4F22

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1349

CYP4V2

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1350

CYP4X1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1351

CYP4Z1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1352

CYP5, CYP7 and CYP8 families

http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=265

Enzymes

Thromboxane synthase(CYP5A1)

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1353

Prostacyclin synthase(CYP8A1)

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1356

CYP7A1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1354

CYP7B1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1355

CYP8B1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1357

CYP11, CYP17, CYP19, CYP20 and CYP21 families

http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=266

Enzymes

CYP11A1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1358

CYP11B1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1359

Aldosterone synthase(CYP11B2)

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1360

CYP17A1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1361

Aromatase(CYP19A1)

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1362

CYP20A1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1363

CYP21A2

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1364

CYP24, CYP26 and CYP27 families

http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=267

Enzymes

CYP24A1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1365

CYP26A1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1366

CYP26B1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1367

CYP26C1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1368

Sterol 27-hydroxylase(CYP27A1)

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1369

CYP27B1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1370

CYP27C1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1371

CYP39, CYP46 and CYP51 families

http://www.guidetopharmacology.org/GRAC/FamilyDisplayForward?familyId=268

Enzymes

CYP39A1

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1372

Cholesterol 24-hydroxylase(CYP46A1)

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1373

Lanosterol 14-α-demethylase(CYP51A1)

http://www.guidetopharmacology.org/GRAC/ObjectDisplayForward?objectId=1374

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