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Comparison of Weight Loss Products

Modified May 2025

The chart below reviews pertinent information about use of approved weight-loss products, including dosing, expected weight loss, cost, and considerations for use. For information on bariatric surgery, see our chart, *Bariatric Surgery and Medication Use*.

Drug/Cost[c]	Weight Loss[b]	Usual Dose[a]	Comments[a]
Products that work as a sympathomimetic, anorectic, or to reduce appetite[d]			
Diethylpropion (generics, US only) Cost: <$1/day (IR); <$5 (CR) Schedule IV	~3.6% to 8%[6,7,10]	• For short-term use (a few weeks)[e] in patients 16 years and older: » **IR**: 25 mg PO TID one hour before meals or QID (TID plus mid-evening dose). » **CR**: 75 mg once daily mid-morning. • Discontinue if tolerance develops or if not effective after four weeks (e.g., <1.8 kg [4 pounds] lost).	• Monitor BP and HR.[8] • Avoid abrupt discontinuation to prevent withdrawal symptoms after prolonged use. • Evidence quality is low.[8] • **Discontinuation rate due to adverse effects**: ~1 in 12 patients.[6]
Phentermine (US only: Adipex-P, generics; Lomaira; generic 15 mg and 30 mg capsules Cost: • Adipex-P: <$1/day (generic) • Lomaira: <$5/day • generic 15 mg, 30 mg capsules: <$1/day Schedule IV	~3.63% to 5.1%[5,8]	• For short-term use (a few weeks)[e] in patients 17 years and older: » **Adipex-P**: 37.5 mg PO once daily before breakfast OR one to two hours after breakfast. » **Lomaira**: 8 mg PO TID 30 minutes before meals. » **generic 15, 30 mg capsule**: 15 to 30 mg ~2 hours after breakfast. • Discontinue if tolerance develops.	• Avoid in CV disease.[8] Monitor BP and HR.[8] • Avoid late evening dosing to prevent insomnia. • Withdrawal symptoms may occur after prolonged use of high doses. • Evidence quality is low.[8] • **Discontinuation rate due to adverse effects**: ~ 1 in 18 patients (37.5 mg once daily);[1] ~1 in 10 patients (15 mg once daily).[2]
Phentermine/topiramate ER (Qsymia, US only) Cost: <$10/day Schedule IV Provide a MedGuide with each Rx. Pharmacy must be REMS-certified (www.qsymiarems.com).	~6.6% to 8.6%[5]	For patients 12 years and older: • Start with 3.75 mg/23 mg PO once daily in the morning x 14 days, then double the dose. Increase to 11.25/69 mg, then to 15/92 mg if needed. • Discontinue after 12 weeks at max dose if patient has not achieved a reduction of ≥5% of baseline body weight (adults) or BMI (pediatrics).	• Consider for patients with migraine.[8] • Avoid in CV disease and uncontrolled hypertension.[8] Monitor BP and HR.[8] • Monitoring: **see footnote f**. • Avoid evening dosing to prevent insomnia. • Avoid abrupt discontinuation to prevent withdrawal symptoms (including seizures), especially with higher doses. • **Discontinuation rate due to adverse effects**: ~1 in 6 patients.[3]
Products that work as a GLP-1 receptor agonist (and GIP receptor agonist [tirzepatide]) to reduce appetite and food/calorie intake. See our chart, *Comparison of GLP-1 and GIP/GLP-1 Receptor Agonists*.			
Product that works to inhibit GI lipase to prevent fat absorption			
Orlistat (Xenical) (Alli [over-the-counter (OTC); US only]) Cost: • **US**: ~$15/day (Xenical); <$5/day (Alli) • **Canada**: ~$6/day (Xenical)	~2.78 to 4%[5,8]	• For patients **12 years and older**: » Xenical: 120 mg PO TID with each main meal containing fat (and a diet with ~30% of calories from fat). • For patients **18 years and older**: » Alli: 60 mg PO up to TID with meals containing fat. • Recommend an MVI with A, D, E, K, and beta-carotene at bedtime or **≥2 hours before or after** orlistat.	• Not a preferred option due to side effects (e.g., fecal incontinence, gas).[8] • May carry small risk of cholelithiasis.[8] • May reduce absorption of certain meds. See product labeling for specifics (e.g., timing, monitoring, dose adjustments). • Recommend additional contraception if patients taking an oral contraceptive experience severe diarrhea (Canada). • **Discontinuation rate for Xenical due to adverse effects**: ~1 in 12 patients.

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Drug/Cost[c]	Weight Loss[b]	Usual Dose[a]	Comments[a]
Product that works to reduce appetite and cravings[9]			
Naltrexone 8 mg/ bupropion 90 mg ER (Contrave) Provide a MedGuide with each Rx (US). Cost: • **US**: ~$20/day • **Canada**: $10/day	~3.2%[5]	For patients 18 years and older: • 2 tabs PO BID (start with 1 tab once daily, increase by 1 tab weekly to target dose). » Avoid taking with a high-fat meal to minimize seizure risk. • Discontinue after 12 weeks at the maintenance dose if <5% weight loss achieved.	• Requires dose reduction with CYP2B6 inhibitors, or kidney or liver impairment. CYP2B6 inducers can reduce efficacy. • Avoid in patients taking opioids (due to naltrexone). • Monitor for increases in BP, HR, and suicidal thoughts/behavior (due to bupropion). • **Discontinuation rate due to adverse effects**: ~1 in 4 patients.
Product that works to reduce hepatic gluconeogenesis, insulin production, and appetite[11]			
Metformin Cost: • **US**: <$1/day (IR); ~$2/day (ER) • **Canada**: <$1/day (IR); ~$3/day (ER)	Pediatrics: BMIz score[g] reduction 0.26 (a modest reduction); ~5 kg[16]	For patients 6 to 17 years of age: • IR: 500 mg BID, increased over 3 weeks to 1,000 mg BID. Decrease dose by 250 mg/ dose if not tolerated, and try to escalate after a week.[12] • ER (for adolescents only): 1,000 mg once daily, increased over 3 weeks to 2,000 mg once daily. Decrease dose by 500 mg/day if not tolerated, and try to escalate after a week.[12]	• Suggested by Canadian guidelines for patients ≥12 years of age.[13] • GI side effects (e.g., nausea, vomiting, diarrhea) are common.[14] • Lactic acidosis is rare in children and adolescents.[14]
Product that works as a melanocortin 4 (MC4) receptor agonist to reduce appetite			
Setmelanotide (Imcivree) Cost: • **US**: ~$360/mg • **Canada**: available only from a specialty distributer.	~3.5%[9]	• For patients 6 years of age and older, target dose is 3 mg once daily (start with 1 to 2 mg once daily [US], or 0.5 to 1 mg once daily [Canada], depending on age, increasing every two weeks as tolerated). • See product labeling for titration details. • Discontinue after 12 to 16 weeks at full dose if <5% weight loss achieved.	• Approved in patients with o**besity due to Bardet-Biedl syndrome or abnormality of one of the following**: » proopiomelanocortin (POMC) » proprotein convertase subtilisin/kexin type 1 (PCSK1) » leptin receptor (LEPR) • Requires dose reduction for eGFR • 15 to 29 mL/min/1.73 m². • **Discontinuation rate due to adverse effects**: ~1 in 20 patients.[9]

Abbreviations: BID = twice daily; BP = blood pressure; CR = controlled-release; CV = cardiovascular; ER = extended-release; GI = gastrointestinal; GIP = glucose-dependent insulinotropic polypeptide; GLP = GLP-1 = glucagon-like peptide-1; HR = heart rate; IR = immediate-release; PO = orally; TID = three times daily; QID = four times daily.

Footnotes:

a. **Information from product labeling, unless otherwise noted. US prescribing information**: diethylpropion extended-release (Lannett Company, December 2019); diethylpropion hydrochloride tablet (Chartwell, March 2023); Adipex-P (March 2024); Lomaira (December 2023); phentermine capsule 15 mg, 30 mg (Sunrise, April 2022); Qsymia (September 2024); Xenical (July 2024); Alli (January 2024); Contrave (May 2024); Imcivree (November 2023). **Canadian product monographs**: Xenical (July 2023); Contrave (August 2023); Imcivree (May 2023).

b. **Expected weight loss** with lifestyle changes and/or diet. **Weight loss is the amount above that seen with placebo**. Weight loss varies based on lifestyle modification, dose achieved, concomitant medications, etc.

c. Pricing (for generic when available) based on wholesale acquisition cost (WAC). US medication pricing by Elsevier, accessed January 2025 (metformin April 2025).

d. Older amphetamines indicated for weight loss (e.g., benzphetamine [US], methamphetamine [US], phendimetrazine [US]) are not included in the chart. However, adverse effects, contraindications, and cautions are similar to diethylpropion and phentermine. Product labeling should be consulted for more specific information.

e. Though product labeling may specify use should be limited to a few weeks, guidelines suggest that if weight loss from an approved medication is at least 5% at 12 weeks, medications can be continued long-term.[4,8]

f. Qsymia: monitor for (due to topiramate):
- decreased sweating, hyperthermia
- pregnancy (test baseline and monthly due to risk of birth defects)
- mood, behavior, or sleep changes; suicidal ideation/behaviors
- cognitive impairment
- metabolic acidosis
- reduced kidney function
- hypokalemia
- vision changes (angle closure glaucoma)

g. BMIz score is body mass index adjusted for child sex and age.[15] Minimally important difference is 0.25.[16]

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Drug Interactions: Cytochrome P450 (CYP), P-glycoprotein, and More

This chart lists substrates, inhibitors, and inducers of several common cytochrome P450 isoenzymes and drug transporters. When using this chart, keep in mind that:

- It is prudent to use any combination with potential for interaction with caution (e.g., conservative dosing, appropriate monitoring), especially those involving drugs with a narrow therapeutic index and/or potentially serious dose-dependent side effects.
- **This table is not comprehensive**. See footnote b for some limitations to keep in mind.
  - For interactions with **HIV** or **hepatitis** antivirals, see the University of Liverpool drug interactions checker at https://www.hiv-druginteractions.org/checker (HIV) or https://hep-druginteractions.org/checker (hepatitis).
  - For interactions involving **dietary supplements**, see our Natmed Pro at https://naturalmedicines.therapeuticresearch.com/.
- Designation as a substrate, inhibitor, or inducer does not always mean that the interaction is of clinical significance.
- Many drugs impact multiple transporters **and** CYP450 isoenzymes. This interplay makes it challenging to predict clinical impact.
- A medication that interacts with one substrate of a particular pathway does not necessarily interact with all substrates of that pathway.
- A medication that is a substrate of an isoenzyme is not always an inhibitor of that isoenzyme.
- Drug metabolism is affected by genetics, age, nutrition, liver disease, hormones, and other endogenous chemicals.
- Additional influences on drug interactions include dosing (e.g., dose, timing, sequence, route of administration, duration of therapy), concomitant medications, pharmacodynamic interaction (e.g., gemfibrozil plus fluvastatin), specific drug features (e.g., therapeutic window, extraction ratio, side effect profile, multiple metabolic pathways), and phase II interactions (e.g., glucuronidation).

--Information in this chart is based on the references below and product labeling.--

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Abametapir	SUB, inHIB[a]					inHIB[a]		CYP2B6 inHIB[a]
Abemaciclib						SUB[a]	SUB, inHIB	BCRP SUB and inHIB; OCT2, MATE1, MATE2K inHIB
Acalabrutinib						SUB[a]	SUB	BCRP SUB and inHIB; MATE1 inHIB
Abiraterone	inHIB	inHIB[a]	inHIB	inHIB	inHIB*[,a]	SUB,[a] inHIB	inHIB	OATP1B1 inHIB
Abrocitinib			SUB[a]	SUB[a,e]		SUB	inHIB[a]	OAT3 SUB; OCT1 inHIB; CYP2B6 SUB
Acetaminophen	SUB					SUB		CYP2E1 SUB[c]
Acyclovir	inHIB							OAT3 SUB

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Adagrasib	SUB	SUB	SUB, inHIB[a]	SUB	SUB, inHIB[a]	SUB,[a,e] inHIB[a]	inHIB[a]	CYP2B6 SUB
Ado-trastuzumab emtansine						SUB[a]	SUB	
Afatinib							SUB,[a] inHIB	BCRP SUB and inHIB
Alecensa						SUB		
Alectinib							SUB, inHIB	BCRP inHIB
Alfentanil						SUB[a]		
Alfuzosin						SUB[a]		
Aliskiren						SUB[a]	SUB[a]	
Allopurinol	inHIB[a]							
Almotriptan					SUB	SUB[a]		
Alosetron	SUB[a,e]		SUB			SUB[a]		
Alpelisib						SUB[a]	inHIB	BCRP SUB[a]
Alprazolam						SUB[a]		
Ambrisentan				SUB		SUB[a]	SUB[a]	OATP1B1, OATP1B3 SUB and inHIB
Amiodarone	inHIB	SUB	inHIB*,[a]		inHIB[a]	SUB,[a] inHIB[a]	inHIB[a]	OCT2 inHIB
Amitriptyline			SUB	SUB[a,e]	SUB[a,e]		SUB	
Amlodipine						SUB,[a] inHIB[a]		
Amoxapine					SUB[a]			
Amphetamine	inHIB				SUB,[a] inHIB	inHIB		
Apalutamide		SUB,[a] inHIB*	inDUC[a]	inDUC[a]		SUB,[a] inDUC[a]	inDUC[a]	CYP2B6 inDUC and inHIB*; BCRP, OATP1B1 inDUC;[a] OCT2, OAT3, MATE inHIB
Apixaban						SUB[a]	SUB[a]	
Apremilast						SUB[a]	SUB	

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Aprepitant	SUB		inDUC[a]	SUB		SUB,[a] inHIB,*,[a] inDUC[a]		
Arformoterol				SUB	SUB[e]			
Aripiprazole					SUB[a]	SUB[a]		
Armodafinil				inHIB[a]		SUB, inDUC[a]	SUB	
Artemether/ lumefantrine			SUB	SUB, inDUC	inHIB[a]	SUB,[a] inDUC[a]		CYP2B6 SUB, inDUC
Asciminib		inHIB	inHIB[a]	InHIB		SUB,[a] inHIB[a]	inHIB[a]	BCRP inHIB[a] and SUB; OATP1B,[a] OCT1 inHIB
Asenapine	SUB[e]				SUB, inHIB[a]	SUB		
Atogepant						SUB[a]	SUB	BCRP, OATP1B1,[a] OATP1B3,[a] OAT1 SUB
Atomoxetine					SUB,[a] inHIB[a]			
Atorvastatin						SUB,[a] inHIB[a]	SUB,[a] inHIB[a]	BCRP, OATP1B1, OATP1B3 SUB[a]
Avacopan						SUB,[a] inHIB[a]		
Avanafil						SUB[a]		
Avapritinib		inHIB	SUB, inHIB			SUB,[a] inHIB	inHIB	BCRP, MATE1, MATE2K, inHIB
Avatrombopag		inDUC	SUB,[a] inDUC			SUB[a]		BCRP, OAT3 inHIB
Axitinib	SUB			SUB		SUB[a,e]		
Azithromycin							SUB, inHIB[a]	
Beclomethasone						SUB		
Bedaquiline						SUB[a]		
Belinostat		inHIB	SUB			SUB	SUB	CYP2A6 SUB
Belumosudil	inHIB	SUB		inHIB	SUB, inHIB	SUB,[a,e] inHIB	SUB, inHIB	BCRP, OATP1B1 inHIB

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Belzutifan				SUB[a,e]		SUB, inDUC[a]	SUB	OATP1B1, OATP1B3 SUB; MATE2K inHIB
Bendamustine	SUB[a]						SUB	BCRP SUB
Binimetinib							SUB	BCRP SUB
Benznidazole							SUB	
Berotralstat			inHIB	inHIB	inHIB*[,a]	inHIB*[,a]	SUB,[a] inHIB[a]	BCRP SUB
Bexarotene						inDUC[a]		
Bicalutamide			inHIB	inHIB	inHIB	inHIB[a]		
Bortezomib	SUB			SUB, inHIB		SUB[a]		
Bosentan			SUB,[a] inDUC[a]			SUB,[a] inDUC[a]		OATP1B1,[a] OATP1B3 SUB
Brentuximab vedotin						SUB,[a] inHIB	SUB	
Brexpiprazole					SUB[a]	SUB[a]		
Brigatinib		SUB	inDUC	inDUC		SUB,[a] inDUC	SUB	BCRP SUB
Brivaracetam			SUB	SUB[a]				
Budesonide						SUB[a]	SUB, inHIB	
Buprenorphine						SUB[a]		
Bupropion					inHIB**[,a]			CYPB6 SUB[a,e]
Buspirone						SUB[a]		
Cabazitaxel		SUB				SUB[a,e]	SUB, inHIB	BCRP, OAT1B1, OAT1B3, OCT1 inHIB
Cabozantinib			inHIB	inHIB		SUB,[a] inHIB	inHIB	CYP1A1 inDUC
Caffeine	SUB					SUB		
Canagliflozin						SUB	SUB, inHIB[a]	
Cannabidiol	inHIB[a]	inHIB[a]	inHIB[a]	SUB,[a] inHIB[a]		SUB[a]	inHIB[a]	CYP2B6 inHIB and inDUC;[a] BCRP inHIB
Capecitabine			inHIB[a]					

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Capivasertib					inHIB	SUB,[a] inHIB		BCRP, OATP1B1, OATP1B3, OAT3, MATE1, MATE2K, OCT2 inHIB
Capmatinib	inHIB[a]					SUB[a]	inHIB[a]	BCRP, MATE1, MATE2K inHIB[a]
Captopril							inHIB[a]	
Carbamazepine	inDUC[a]	SUB, inDUC[a]	inDUC[a]	inDUC[a]		SUB,[a,e] inDUC[a]	SUB, inDUC[a]	CYP2B6 inDUC;[a] OATP1B1 inHIB[a]
Carfilzomib						inHIB	SUB, inHIB	
Cariprazine					SUB	SUB[a,e]	inHIB	
Carisoprodol				SUB[a]				
Carvedilol	SUB		SUB[a,e]	SUB	SUB[a,e]	SUB	SUB,[a] inHIB[a]	CYP2E1 SUB
Cefaclor								OAT3 SUB
Ceftobiprole								OATP1B1, OATP1B3 inhibitor; OAT1, OCT2 SUB
Celecoxib			SUB[a]		inHIB[a]			
Cenobamate		inDUC		inHIB*,[a]		inDUC[a]		CYP2B6 inDUC[a]
Ceritinib			inHIB[a]			SUB,[a] inHIB**,[a]	SUB[a]	
Cevimeline					SUB[a]	SUB[a]		
Charbroiled meat	inDUC							
Chlordiazepoxide	SUB			SUB		SUB		
Chloroquine		SUB[E]			SUB, inHIB[a]	SUB[a,e]	inHIB[a]	
Chlorpheniramine					SUB, inHIB[a]	SUB		
Chlorpromazine					SUB,[a] inHIB[a]			
Chlorzoxazone						inHIB		CYP2E1 SUB
Ciclesonide					SUB[d]	SUB		

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Cilostazol				SUB[a]		SUB,[a] inHIB[a]		
Cimetidine	inHIB[a]			inHIB[a]	inHIB	inHIB[a]	inHIB[a]	OCT2, OAT3, MATE1, MATE2K inHIB
Cinacalcet	SUB				SUB, inHIB*[,a]	SUB[a]		
Ciprofloxacin	inHIB**[,a]					inHIB*[,a]		OAT1, OAT3 SUB
Citalopram	inHIB			SUB,[a,e] inHIB	SUB, inHIB	SUB[e]		
Clarithromycin						SUB,[a] inHIB**[,a]	inHIB[a]	OATP1B1, OATP1B3 inHIB[a]
Clemastine					inHIB			
Clindamycin						SUB		
Clobazam				SUB[a]	inHIB[a]	SUB, inDUC[a]	SUB	CYP2B6 SUB
Clomipramine	SUB[a]			SUB	SUB,[a] inHIB			
Clonazepam						SUB		
Clopidogrel	SUB[d]	inHIB*[,a]	SUB	SUB[a,d,e]		SUB[d]		CYP2B6 SUB[d] and inHIB
Clozapine	SUB[a]				SUB[a]	SUB[a]		
Cobimetinib						SUB[a]	SUB	
Cocaine					inHIB	SUB, inHIB		
Codeine					SUB[a,d]	SUB[a]		
Colchicine						SUB[a]	SUB,[a] inHIB[a]	
Copanlisib						SUB[a]	SUB	BCRP SUB; MATE2K inHIB
Cranberry	inHIB		inHIB			inHIB		BCRP inHIB and inDUC
Crizotinib						SUB,[a] inHIB*[,a]	SUB, inHIB	CYP2B6, OCT1, OCT2 inHIB
Crofelemer						inHIB		OATP1A2 inHIB
Cyclobenzaprine	SUB[e]				SUB	SUB[e]		

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Cyclophosphamide			SUB[d]	SUB[d]		SUB,[d] inDUC[a]		CYP2A6, CYP2B6 SUB[d]
Cyclosporine						SUB,[a] inHIB[a]	SUB,[a] inHIB[a]	BCRP, OATP1B1,[a] OATP1B3[a] inHIB
Dabigatran							SUB[a]	
Dabrafenib		SUB[a]	inDUC[a]			SUB,[a] inDUC[a]	SUB	BCRP SUB and inHIB; OCT2, OAT1, OAT3 inHIB
Dacomitinib					inHIB[a]	SUB	SUB, inHIB	BCRP SUB and inHIB; OAT1 inHIB
Dactinomycin							SUB	OATP1B3 SUB
Danazol						inHIB[a]		
Danicopan							inHIB[a]	BCRP inHIB[a]
Dapagliflozin							SUB	
Daprodustat		SUB,[a] inHIB						OATP1B1, OATP1B3 inHIB; BCRP, OAT1, OAT3 SUB
Dapsone			SUB			SUB		
Daridorexant						SUB,[a] inHIB[a]	inHIB[a]	
Darifenacin					SUB, inHIB[a]	SUB[a]		
Darolutamide						SUB[a]	SUB[a]	BCRP, OATP1B1, OATP1B3 inHIB[a]
Dasatinib						SUB[a]	SUB	
Daunorubicin							SUB	
Deferasirox	inHIB[a]	inHIB*,[a]				inDUC		
Deflazacort						SUB[a]	SUB	
Delafloxacin			inDUC			inDUC	SUB	BCRP SUB
Desipramine					SUB[a]			
Desogestrel			SUB			SUB		
Desvenlafaxine					inHIB[a]	SUB		
Deutetrabenazine	SUB				SUB[a,e]	SUB		

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Dexamethasone			inDUC			SUB,[a] inDUC[a]	SUB, inDUC	
Dexlansoprazole				SUB[e]		SUB		
Dextromethorphan					SUB			
Dextromethorphan/ Quinidine					inHIB[a]	SUB[a]	SUB, inHIB[a]	
Diazepam				SUB[a,e]		SUB[a]		CYP2B6 SUB
Diclofenac		SUB	SUB[a,e]			SUB		
Dienogest						SUB[a]		
Digoxin							SUB[a]	
Dihydroergotamine						SUB[a]		
Diltiazem						SUB,[a] inHIB*,[a]	inHIB[a]	
Diphenhydramine	SUB		SUB	SUB	SUB,[e] inHIB[a]			
Disopyramide						SUB[a]		
Disulfiram	SUB, inHIB		inHIB[a]			SUB[e]		CYP2E1 inHIB** and SUB; CYP2B6 SUB
Dipyridamole							inHIB[a]	
Docetaxel						SUB[a]		OATP1B1, OATP1B3 SUB
Dofetilide						SUB[a]		MATE1 SUB[a]
Dolasetron					SUB	SUB		
Domperidone						SUB[a]		
Donepezil					SUB	SUB		
Doxepin	SUB		SUB	SUB[a,e]	SUB,[a,e] inHIB*	SUB		
Dronabinol			SUB[a]			SUB[a]		
Dronabinol			SUB[a]			SUB[a]		
Dronedarone					inHIB*,[a]	SUB,[a] inHIB*,[a]	inHIB[a]	OCT2, OATP1B1, OATP1B3 inHIB

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Drospirenone						SUB[a]		
Duloxetine	SUB[a]				SUB,[a] inHIB*,[a]			
Dutasteride						SUB[a]		
Duvelisib						SUB[a]	SUB	BCRP SUB
Edoxaban							SUB[a]	
Elacestrant			SUB			SUB[a]	inHIB[a]	CYP2A6 SUB; BCRP inHIB;[a] OAT2B1 SUB
Elagolix		SUB		inHIB[a]	SUB	SUB,[a,e] inDUC[a]	SUB, inHIB[a]	OATP1B1, OATP1B3 SUB[a]
Eletriptan						SUB[a]		
Elexacaftor/ tezacaftor/ivacaftor			inHIB[a]			SUB[a]	inHIB[a]	OATP1B1, OATP1B3 inHIB[a]
Eliglustat					SUB,[a,e] inHIB[a]	SUB[a]	SUB, inHIB[a]	
Eltrombopag		inHIB	inHIB					BCRP,[a] OATP1B1,[a] OATP1B3 inHIB
Empagliflozin							SUB	BCRP, OATP1B1, OATP1B3, OAT3 SUB
Encorafenib				SUB	SUB	SUB,[a,e] inDUC[a]	SUB, inHIB	BCRP,[a] OATP1B1,[a] OATP1B3,[a] OCT2 inHIB
Enfortumab vedotin						SUB[a]	SUB[a]	
Entrectinib						SUB[a]	SUB	BCRP SUB
Enzalutamide		SUB[a]	inDUC[a]	inDUC[a]		SUB,[a] inDUC[a]	inHIB	CYP2B6 inDUC
Eplerenone						SUB[a]		
Eravacycline						SUB[a]		
Erdafitinib			SUB[a,e]			SUB[a]	inHIB[a]	OCT2 inHIB
Ergotamine						SUB[a]		
Erlotinib	SUB[a]					SUB[a,e]		CYP1A1 SUB
Ertugliflozin							SUB	BCRP SUB
Erythromycin						SUB, inHIB*,[a]	SUB, inHIB[a]	OATP1B1, OATP1B3 inHIB[a]

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Escitalopram				SUB	SUB, inHIB	SUB	SUB	
Eslicarbazepine				inHIB*,[a]		inDUC[a]		
Estradiol	SUB					SUB[a]		
Esomeprazole				SUB,[a] inHIB*,[a]		SUB[a]		
Eszopiclone						SUB[a]		
Ethinyl estradiol	inHIB*,[a]		SUB	inHIB[a]		SUB,[e] inHIB[a]		
Ethosuximide						SUB		
Etonogestrel						SUB[a]		
Etoposide						SUB	SUB[a]	
Etrasimod		SUB[a]	SUB[a]			SUB[a]		
Everolimus					inHIB[a]	SUB,[a] inHIB[a]	SUB[a]	
Exemestane						SUB[a]		
Ezetimibe								OATP1B1 SUB[a]
Famotidine	inHIB[a]							OAT1, OAT3 SUB
Febuxostat	SUB	SUB	SUB			SUB		BCRP inHIB
Fedratinib				SUB,[a] inHIB[a]	inHIB[a]	SUB,[a] inHIB[a]	SUB, inHIB	BCRP, OATP1B1, OATP1B3, OCT1, OCT2,[a] MATE1,[a] MATE2K[a] inHIB
Felbamate				inHIB*,[a]		inDUC[a]		
Felodipine						SUB[a]	inHIB[a]	
Fenofibrate		inHIB	inHIB	inHIB				CYP2A6 inHIB
Fentanyl						SUB[a]	SUB	
Fesoterodine					SUB	SUB[a]		
Fexinidazole	inHIB[a]			inHIB[a]		SUB,[a] inHIB[a]		CYP2B6 inDUC;[a] OAT1, OAT3, OCT1, OCT2, MATE1, MATE2K inHIB[a]

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Fexofenadine							SUB[a]	OATP1B1, OATP1B3 SUB
Fezolinetant	SUB[a]						SUB	
Fidaxomicin							SUB	
Finasteride						SUB		
Finerenone						SUB[a]		
Fingolimod						SUB[a]		
Flecainide					SUB[a]			
Flibanserin				SUB[a]		SUB[a,e]	inHIB[a]	
Fluconazole			inHIB*[,a]	inHIB**[,a]		inHIB*[,a]	inHIB[a]	
Fluorouracil			inHIB[a]					
Fluoxetine			SUB, inHIB	inHIB**[,a]	SUB, inHIB,**[,a]	inHIB[a]		
Fluphenazine					SUB, inHIB			
Flurbiprofen			SUB					
Flutamide	SUB[e]					SUB, inDUC		
Fluticasone						SUB[a]	SUB	
Fluvastatin		SUB	SUB,[a,e] inHIB[a]			SUB		BCRP, OATP1B1,[a] OATP1B3 SUB[a]
Fluvoxamine	SUB, inHIB**[,a]		inHIB[a]	inHIB**[,a]	SUB, inHIB[a]	inHIB[a]	SUB	
Formoterol			SUB	SUB	SUB			CYP2A6 SUB
Fosphenytoin	inDUC		SUB,[a,e] inDUC[a]	SUB,[a] inDUC		inDUC[a]	inDUC[a]	CYP2B6 inDUC[a]
Fostamatinib						SUB,[a] inHIB[a]	SUB, inHIB[a]	BCRP inHIB[a]
Frovatriptan	SUB							
Fruquintinib		SUB	SUB	SUB		SUB[a,e]		
Fulvestrant						SUB		
Furosemide								OAT1, OAT3 SUB
Futibatinib						SUB[a]	SUB,[a] inHIB[a]	BCRP inHIB[a] and SUB

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Galantamine					SUB	SUB		
Ganaxolone				SUB	SUB	SUB[a]		CYP2B6 SUB
Gefitinib					SUB[a]	SUB[a]	SUB	
Gemfibrozil	inHIB	inHIB**[,a]	inHIB	inHIB				OAT3, OATP1B1,[a] OATP1B3, OATP2B1 inHIB
Gepirone						SUB[a]		
Gilteritinib						SUB[a]	SUB,[a] inHIB[a]	BCRP, OCT1 inHIB[a]
Givinostat						inHIB[a]		OCT2 inHIB[a]
Givosiran	inHIB[a]				inHIB[a]			
Glasdegib						SUB[a]	SUB, inHIB	BCRP SUB and inHIB; MATE1, MATE2K inHIB
Glimepiride			SUB[a]					
Glipizide			SUB[a]					
Glyburide			SUB[a,e]			SUB	SUB	BCRP, OATP1B1,[a] OATP1B3, OATP2B1, OAT3 SUB
Grapefruit juice						inHIB*[,a]	inHIB[a]	
Griseofulvin						inDUC[a]		
Guanfacine						SUB[a]		OCT1, OCT2 SUB; MATE1, OCT1[a] inHIB
Haloperidol	SUB				SUB,[a] inHIB	SUB,[a,e]		
Hydrocodone					SUB[d]	SUB[a]		
Hydrocortisone						SUB[a]		
Hydroxychloroquine		SUB[e]			SUB, inHIB	SUB,[a,e] inHIB	inHIB[a]	MATE1, MATE2K inHIB
Ibrexafungerp						SUB,[a] inHIB[a]	inHIB	OATP1B3 inHIB
Ibrutinib						SUB[a]	inHIB	BCRP inHIB
Ibuprofen			SUB					
Idelalisib		inHIB		inHIB		SUB,[a] inHIB**[,a]	SUB[a]	BCRP SUB and inDUC

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Ifosfamide						SUB[a,d]		CYP2B6 SUB
Iloperidone					SUB[a]	SUB[a]	inHIB	
Imatinib	SUB		SUB, inHIB[a]	SUB	SUB, inHIB[a]	SUB,[a,e] inHIB*,[a]	SUB[a]	BCRP SUB[a]
Imipramine	SUB			SUB	SUB[a]		SUB	
Indomethacin			SUB					
Iptacopan		SUB[a]						
Irbesartan			SUB					
Irinotecan						SUB[a]	SUB	BCRP, OATP1B1 SUB[a]
Isavuconazonium						SUB,[a] inHIB*,[a]	inHIB[a]	CYP2B6 inDUC;[a] BCRP, OCT2, MATE1, MATE2K inHIB
Isoniazid			inHIB	inHIB[a]		inHIB[a]		CYP2E1 inDUC[a]
Isotretinoin		SUB	SUB			SUB		CYP2B6 SUB
Isradipine						SUB[a]		
Istradefylline						SUB,[a] inHIB[a]	inHIB[a]	
Itraconazole						SUB,[a] inHIB**,[a]	SUB, inHIB[a]	BCRP inHIB
Ivabradine						SUB[a]		
Ivermectin					SUB	SUB[e]		CYP2E1 SUB
Ivosidenib		inDUC[a]	inDUC[a]			SUB,[a] inDUC[a]	SUB, inHIB	CYP2B6 inDUC,[a] OAT3 inHIB
Ixabepilone						SUB[a]	SUB, inHIB	
Ixazomib						SUB[a]	SUB	
Ketoconazole			inHIB[a]	inHIB*		SUB,[a] inHIB**,[a]	inHIB[a]	MATE1 inHIB
Ketoprofen								OAT3 SUB
Labetalol					inHIB			
Lacosamide			SUB	SUB		SUB		
Lansoprazole				SUB		SUB		
Lapatinib		SUB, inHIB[a]		SUB		SUB,[a,e] inHIB[a]	SUB,[a] inHIB[a]	BCRP SUB,[a] inHIB; OATP1B1 inHIB

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Larotrectinib						SUB,[a] inHIB[a]	SUB	
Lasmiditan							inHIB[a]	OCT1, MATE1, MATE2K inHIB
Lefamulin		inHIB				SUB,[a] inHIB[a]	SUB[a]	BCRP, MATE1 inHIB
Leflunomide	inDUC,[a] SUB[d,a]	inHIB[a]		SUB[d,a]		SUB[d,a]		OAT3, BCRP, OATP1B1, OATP1B3 inHIB[a]
Lemborexant						SUB,[a] inDUC, inHIB	SUB	CYP2B6 inDUC[a]
Leniolisib	inHIB[a]						SUB[a]	BCRP, OATP1B1, OATP1B3 inHIB[a]
Lenvatinib	inHIB		inHIB	inHIB	inHIB	SUB	SUB	CYP2B6 inHIB, BCRP SUB
Letermovir		inHIB[a]	inDUC[a]	inDUC[a]	SUB	SUB, inHIB*,[a]	SUB,[a] inHIB	BCRP inHIB; CYP2B6 inDUC; OATP1B1, OATP1B3 SUB and inHIB;[a] OAT3 inHIB
Letrozole				inHIB		SUB		
Levoketoconazole		inHIB[a]				SUB,[a] inHIB**,[a]	inHIB[a]	OCT2, MATE1 inHIB;[a] CYP2B6 inHIB[a]
Levomilnacipran		SUB			SUB	SUB[a,e]	SUB	
Levonorgestrel			SUB			SUB[e]		,
Lidocaine	SUB				SUB	SUB		
Linagliptin						SUB[a]	SUB,[a] inHIB	
Lofexidine	SUB			SUB	SUB[a,e]			
Lomitapide	SUB	SUB		SUB		SUB,[a,e] inHIB[a]	inHIB[a]	CYP2B6 SUB
Loperamide		SUB[e]			SUB	SUB[e]	SUB	CYP2B6 SUB
Loratadine					SUB[d]	SUB[d,e]	SUB	
Lorlatinib			inDUC			SUB,[a] inDUC[a]	inDUC[a]	CYP2B6 inDUC

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Losartan			SUB[d]			SUB[d]		
Lovastatin						SUB[a]	SUB,[a] inHIB[a]	OATP1B1 SUB
Loxapine					SUB	SUB	inHIB	
Luliconazole		inHIB		inHIB[a]		inHIB		CYP2B6
Lumacaftor/ Ivacaftor		inDUC[a]	inDUC,[a] inHIB[a]	inDUC[a]		SUB inDUC[a]	inDUC,[a] inHIB[a]	CYP2B6 inDUC[a]
Lumateperone						SUB[a]		
Lurasidone						SUB[a]		
Lurbinectedin						SUB[a]		OATP1B1, OATP1B3, OCT1 inHIB
Macimorelin						SUB[a]		
Macitentan			SUB[a]			SUB[a]		
Maralixibat								OAT2B1 inHIB[a]
Maribavir	SUB					SUB,[a,e] inHIB[a]	inHIB[a]	BCRP inHIB[a]
Mavacamten				SUB[a]		SUB[a]		CYP2B6 inDUC
Meclizine					SUB[a]			
Mefenamic acid			SUB					
Mefloquine						SUB	SUB,[a] inHIB[a]	
Melatonin	SUB[e]		SUB	SUB				CYP1A1, CYP1B1 SUB
Meloxicam			SUB[e]			SUB		
Meperidine						SUB[a]		CYP2B6 SUB[a]
Metformin								OCT2, MATE1, MATE2K SUB[a]
Methadone			SUB[a]	SUB[a]	SUB,[a] inHIB	SUB[a]	SUB	CYP2B6 SUB[a]
Methamphetamine					SUB,[a] inHIB			
Methotrexate								BCRP,[a] OAT3 SUB
Methylprednisolone						SUB[a]		
Methoxsalen	inHIB*							
Metoclopramide					SUB,[a] inHIB			

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Metoprolol					SUB[a]			
Metronidazole			inHIB*,[a]					
Mexiletine	SUB, inHIB*,[a]				SUB[e]			
Midazolam						SUB,[a] inHIB[a]		
Midostaurin	inHIB	inHIB			inHIB	SUB,[a] inHIB		OATP1B1, BCRP inHIB;[a] CYP2E1 inHIB; CYP2B6 inDUC[a]
Mifepristone		inHIB[a]	inHIB[a]			SUB,[a] inHIB[a]	inHIB[a]	CYP2B6 inHIB;[a] BCRP inHIB
Milk thistle			inHIB					
Mirabegron					SUB, inHIB*,[a]	SUB, inHIB	SUB, inHIB	OCT1, OCT2, OCT3 SUB
Mirvetuximab						SUB,[a] inHIB	SUB	
Mirtazapine	SUB				SUB	SUB		
Mitapivat		inDUC[a]	inDUC[a]	inDUC[a]		SUB,[a] inDUC[a]	SUB, inHIB[a]	CYP2B6 inDUC[a]
Mitoxantrone								BCRP SUB;[a] CYP2E1 inDUC
Mobocertinib						SUB,[a] inDUC[a]	SUB, inHIB	BCRP inHIB
Moclobemide				SUB, inHIB[a]	SUB, inHIB*,[a]			
Modafinil	inDUC		inHIB	inHIB[a]		SUB, inDUC[a]		CYP2B6 inDUC
Momelotinib								BCRP inHIB[a]
Mometasone						SUB[a]		
Montelukast		SUB[e]	SUB			SUB		
Morphine							SUB	
Nafcillin						inDUC[a]		
Naldemedine						SUB[a]	SUB[a]	
Naloxegol						SUB[a]	SUB	
Naproxen	SUB	SUB	SUB[e]					

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Nateglinide			SUB,[a,e] inHIB			SUB		OATP1B1, OATP1B3 SUB[a]
Nebivolol					SUB[a]			
Nefazodone						SUB, inHIB**,[a]		
Neratinib						SUB[a]	SUB,[a] inHIB[a]	
Netupitant/ Palonosetron			SUB		SUB	SUB,[a,e] inHIB*,[a]	SUB, inHIB	BCRP inHIB
Nicardipine		SUB, inHIB[a]		inHIB[a]	SUB, inHIB[a]	SUB,[a] inHIB[a]	inHIB[a]	
Nifedipine						SUB,[a] inHIB		
Nilotinib		SUB, inHIB, inDUC			inHIB	SUB,[a,e] inHIB[a]	SUB,[a] inHIB	CYP2B6 inHIB
Nilutamide				SUB				
Nimodipine						SUB[a]		
Nintedanib						SUB[a]	SUB[a]	
Niraparib	inDUC						SUB	BCRP SUB and inHIB; MATE1, MATE2 inHIB
Nirmatrelvir/ ritonavir					inHIB[a]	SUB,[a] inHIB**,[a]	SUB, inHIB[a]	OATP1B1 inHIB[a]
Nirogacestat			SUB	SUB, inDUC[a]	SUB	SUB,[a,e] inHIB[a]	SUB, inHIB	
Nisoldipine						SUB[a]		
Norgestimate			SUB			SUB[e]		CYP2B6 SUB
Norethindrone				SUB[a]		SUB[a,e]		
Nortriptyline					SUB[a,e]	SUB		
Obeticholic acid	inHIB[a]							OAP1B1, OATP1B3 inHIB
Odevixibat							SUB	
Olanzapine	SUB[a,e]				SUB			

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Olaparib						SUB[a]	SUB, inHIB	CYP2B6 inHIB and inDUC; BCRP, OATP1B1, OCT1, OCT2, OAT3, MATE1, MATE2K inHIB
Oliceridine			SUB	SUB	SUB[a,e]	SUB[a,e]		
Olmesartan								OATP1B1 SUB[a]
Olodaterol		SUB[e]	SUB[e]			SUB		
Olutasidenib	SUB, inDUC	SUB, inDUC	SUB, inDUC	SUB		SUB,[a,e] inDUC[a]	inHIB	CYP2B6 inDUC; BCRP, OATP1B1, OATP1B3, OAT3, OCT2, MATE1, MATE2K inHIB
Omadacycline							SUB	
Omaveloxolone		SUB, inDUC[a]				SUB,[a,e] inDUC[a]		OAT1 inHIB[a]
Omeprazole				SUB,[a,e] inHIB[a]		SUB[a]	inHIB[a]	
Ondansetron	SUB				SUB	SUB[e]	SUB	
Opicapone							SUB	BCRP, OATP1B3, OATP2B1 SUB
Oritavancin			inHIB	inHIB	inHIB	inHIB, inDUC		CYP2B6 inHIB
Osilodrostat	inHIB[a]			inHIB[a]	SUB, inHIB	SUB,[a] inHIB		CYP2B6 SUB[a]
Osimertinib						SUB[a]	SUB, inHIB[a]	BCRP SUB[a] and inHIB
Ospemifene	inHIB		SUB,[a,e] inHIB	SUB,[a] inHIB	inHIB	SUB,[a,e] inHIB		CYP2B6 inHIB
Oteseconazole								BCRP inHIB[a]
Oxcarbazepine				inHIB[a]		SUB,[a] inDUC[a]		
Oxybutynin						SUB[a]		
Oxycodone					SUB[a]	SUB[a]		
Ozanimod		SUB[a]				SUB		

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Paclitaxel		SUB[a]				SUB[a]	SUB[a]	OATP1B1, OATP1B3 SUB
Pacritinib	inHIB[a]			inHIB		SUB,[a] inHIB[a]	inHIB[a]	BCRP,[a] OCT1,[a] OCT2 inHIB
Palbociclib						SUB,[a] inHIB[a]	inHIB	BCRP, OCT1 inHIB
Paliperidone					SUB	SUB[a]	SUB,[a] inHIB	
Palonosetron	SUB				SUB[e]	SUB		
Palovarotene						SUB,[a] inDUC		CYP2B6 inDUC
Pantoprazole			SUB	SUB[e]	SUB	SUB		
Paroxetine					SUB, inHIB**,[a]	SUB		
Pasireotide							SUB	
Pazopanib		inHIB[a]			inHIB[a]	SUB,[a] inHIB[a]	SUB[a]	BCRP SUB[a]
Peginterferon alpha-2a	inHIB[a]							
Peginterferon alpha-2b	inHIB[a]				inHIB[a]			
Pemigatinib						SUB[a]	SUB, inHIB	BCRP SUB; OCT2, MATE1 inHIB
Penicillin G								OAT3 SUB
Pentamidine					SUB			CYP1A1 SUB
Perampanel	SUB					SUB,[a,e] inDUC[a]		CYP2B6 SUB, inDUC
Perphenazine	SUB		SUB	SUB	SUB,[a,e] inHIB[a]	SUB		
Pexidartinib						SUB,[a] inDUC[a]		CYP2B6 inHIB and inDUC; OATP1B1, OATP1B3, OATP2B1, MATE1, MATE2K inHIB

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Phenobarbital			SUB,[a,e] inDUC[a]	SUB[a]		inDUC[a]	inDUC	CYP2E1 SUB;[a] CYP2B6 inDUC[a]
Phenytoin	inDUC		SUB,[a,e] inDUC[a]	SUB,[a] inDUC		inDUC[a]	inDUC[a]	CYP2B6 inDUC[a]
Pimavanserin						SUB[a]		
Pimozide	SUB[a]				SUB[a]	SUB[a,e]		
Pindolol					inHIB[a]			
Pioglitazone		SUB[a,e]				SUB, inDUC[a]		
Pirfenidone	SUB,[a,e] inHIB		SUB,[a] inHIB	SUB,[a] inHIB	SUB,[a] inHIB	inHIB	inHIB	CYP2E1 SUB[a]
Piroxicam			SUB					
Pitolisant					SUB[a,e]	SUB,[a] inDUC[a]		
Pirtobrutinib	inHIB	inHIB*,[a]	inHIB	inHIB[a]	inHIB	SUB,[a] inHIB[a]	SUB, inHIB[a]	CYP2B6 inHIB and inDUC; BCRP inHIB[a] and SUB
Pitavastatin		SUB	SUB[a]				SUB[a]	OATP1B1,[a] OATP1B3 SUB
Pitolisant					SUB[a]	SUB,[a] inDUC[a]		
Polatuzumab						SUB[a]	SUB	
Pomalidomide	SUB[a,e]			SUB	SUB	SUB[a,e]	SUB[a]	
Ponatinib		SUB			SUB	SUB[a]	SUB, inHIB	BCRP SUB, inHIB
Posaconazole						inHIB**,[a]	SUB,[a] inHIB[a]	
Pralsetinib	SUB				SUB	SUB,[a,e]	SUB,[a] inHIB	BCRP SUB and inHIB; OATP1B1, OATP1B3, OAT1, MATE1 MATE2K inHIB
Prasugrel			SUB	SUB		SUB[e]		CYP2B6 SUB[e]

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Pravastatin								OATP1B1,[a] OATP1B3,[a] OAT3 SUB
Prazosin								BCRP SUB
Prednisolone						SUB		
Prednisone				inDUC		SUB,[a,d] inDUC	SUB	
Primidone (also see phenobarbital)				SUB[a,d]		inDUC[a]		
Progesterone				SUB		SUB		
Proguanil				SUB[d]				
Promethazine					SUB, inHIB[a]			
Propafenone	SUB, inHIB[a]				SUB,[a,e] inHIB[a]	SUB[a]	inHIB[a]	
Propofol								CYP2B6 SUB
Propranolol	SUB[a]			SUB[a]	SUB[a]	SUB	SUB	
Protriptyline					SUB[a]			
Quetiapine						SUB[a]		
Quinidine					inHIB**,[a]	SUB[a]	SUB,[a] inHIB[a]	
Quinine					inHIB[a]	SUB,[a] inHIB[a]	SUB, inHIB[a]	
Quizartinib						SUB[a]	SUB	
Rabeprazole				SUB		SUB[e]		
Ramelteon	SUB[a,e]		SUB[a]			SUB[a]		
Ranolazine					SUB, inHIB	SUB,[a,e] inHIB[a]	SUB,[a] inHIB[a]	OCT2, MATE1, MATE2K inHIB[a]
Rasagiline	SUB[a]							
Regorafenib			inHIB[a]		inHIB	SUB[a]		CYP2B6, BCRP[a] inHIB[a]
Relugolix		SUB				SUB.[a,e] inDUC	SUB,[a] inHIB	CYP2B6 inDUC; BCRP inHIB
Repaglinide		SUB[a]				SUB[a]		OATP1B1, OATP1B3 SUB[a]

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Repotrectinib		inDUC	inDUC	inDUC		SUB,[a] inDUC[a]	SUB,[a] inHIB	CYP2B6 inDUC; BCRP, OATP1B1, MATE2K inHIB
Resmetirom		SUB,[a] inHIB[a]						OATP1B1, OATP1B3 SUB[a]
Revefenacin							SUB	BCRP, OATP1B1, OATP1B3 SUB
Ribocicli	inHIB					SUB,[a] inHIB		CYP2E1, BCRP, OCT2, MATE1 inHIB
Rifabutin						SUB,[a] inDUC[a]		
Rifampin	inDUC[a]	inDUC	inDUC[a]	inDUC[a]		inDUC[a]	inDUC[a]	OATP1B1 SUB; OATP1B1 and OATP1B3 inHIB;[a] CYP2B6 inDUC
Rifapentine		inDUC[a]	inDUC[a]			inDUC[a]		
Rifaximin						SUB, inDUC	SUB[a]	OATP1A2, OATP1B1, OATP1B3 SUB;[a] OAT1A2, OATP1B1, OATP1B3 inHIB
Riluzole	SUB							
Rimegepant			SUB			SUB,[a,e] inHIB	SUB[a]	BCRP SUB; OAT3, OATP1B1, OATP1B3, OCT2, MATE1 inHIB
Riociguat						SUB[a]	SUB[a]	CYP1A1, CYP2J2, BCRP SUB[a]
Ripretinib		SUB, inHIB			SUB	SUB[a,e]	SUB, inHIB	CYP2E1, BCRP SUB; BCRP, MATE1 inHIB
Risdiplam						inHIB		MATE1, MATE2 inHIB[a]
Risperidone					SUB[a]	SUB[a]	SUB	
Ritlecitinib	inHIB[a]					SUB,[a] inHIB[a]		
Rivaroxaban						SUB[a]	SUB[a]	
Roflumilast	SUB[a]					SUB[a]		
Rolapitant					inHIB*,[a]	SUB[a]	inHIB[a]	BCRP inHIB[a]

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Romidepsin				SUB		SUB[a,e]	SUB	CYP2B6, CYP1A1 SUB
Ropinirole	SUB							
Ropivacaine	SUB							
Rosuvastatin		SUB[a]	SUB[a]	SUB				BCRP, OATP1B1, OATP1B3 SUB[a]
Rucaparib	SUB, inHIB[a]		inHIB[a]	inHIB[a]	SUB[e]	SUB, inHIB[a]	SUB, inHIB	BCRP SUB; OAT1, OAT3, OATP1B1, OATP1B3, MATE1, MATE2K, OCT1, OCT2 inHIB
Rufinamide						inDUC[a]		CYP2E1 inHIB
Ruxolitinib			SUB[a]			SUB[a,e]		
Safinamide						SUB		
Sacubitril/valsartan								OATP1B1, OATP1B3 inHIB[a]
Salmeterol						SUB[a]		
Samidorphan		SUB		SUB		SUB[a,e]		
Sarecycline							inHIB[a]	
Saxagliptin						SUB[a]	SUB[a]	
Selexipag		SUB[a,e]				SUB	SUB	BCRP, OATP1B1, OATP1B3 SUB
Selinexor						SUB		OATP1B3 inHIB
Selpercatinib		inHIB*[,a]				SUB,[a] inHIB[a]	SUB, inHIB[a]	BCRP SUB; BCRP, MATE1 inHIB
Selumetinib	SUB		SUB	SUB		SUB[a,e]	SUB	CYP2E1, CYP2A6, BCRP SUB
Sertraline			SUB	SUB[e]	SUB, inHIB[a]	SUB, inHIB[a]	inHIB[a]	CYP2B6 SUB
Sildenafil		SUB				SUB[a,e]		OATP1B1 inHIB[a]
Silodosin						SUB[a]	SUB[a]	
Simvastatin						SUB[a]	SUB,[a] inHIB[a]	OATP1B1, OATP1B3 SUB[a]
Siponimod		SUB[a]	SUB[a]			SUB[a]		
Sirolimus						SUB[a]	SUB[a]	

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Sitagliptin		SUB				SUB[e]	SUB[a]	OAT3 SUB
Smoking (tobacco)	inDUC[a]							
Sodium phenylbutyrate/ taurursodiol	inDUC	inHIB[a]				inDUC	inHIB[a]	CYP2B6 inHIB and inDUC; OAT1, BCRP, OAT1 inHIB;[a] OATP1B3, OAT3, MATE2K
Solifenacin						SUB[a]		
Sonidegib						SUB[a]		BCRP inHIB
Sorafenib		SUB, inHIB	inHIB			SUB[a]	inHIB	CYP2B6 SUB and inHIB
Sotagliflozin						SUB	inHIB[a]	BCRP inHIB; OAT3, OATP1B1, OATP1B3 SUB
Sotorasib		inDUC	inDUC			SUB,[a] inDUC[a]	inHIB[a]	BCRP inHIB;[a] CYP2B6 inDUC
Sparsentan			inDUC[a]	inDUC[a]		SUB[a]	SUB, inHIB	CYP2B6 inDUC;[a] BCRP SUB and inHIB; OATP1B3, OAT3 inHIB
Spironolactone		inHIB[a]				inHIB[a]		
Stiripentol	SUB,[a] inHIB,[a] inDUC[a]	inHIB[a]		SUB,[a] inHIB[a]		SUB,[a] inHIB,[a] inDUC[a]	inHIB[a]	CYP2B6 inHIB and inDUC;[a] BCRP inHIB[a]
St. John's wort			inDUC[a]	inDUC[a]		inDUC[a]	inDUC[a]	
Sulbactam/ durlobactam								OAT1 SUB
Sulfamethoxazole/ Trimethoprim		inHIB*,[a]	SUB, inHIB[a]				SUB	OCT1, OCT2 SUB; OCT2,[a] MATE1, MATE2K inHIB[a]
Sulfasalazine								BCRP SUB[a]
Sufentanil						SUB[a]		
Sumatriptan								OCT1 SUB
Sunitinib						SUB[a]		
Suvorexant				SUB		SUB,[a,e] inHIB	inHIB[a]	

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Tacrolimus						SUB,[a] inHIB[a]	inHIB[a]	
Tadalafil						SUB[a]		
Talazoparib							SUB[a]	BCRP SUB[a]
Tamoxifen			SUB	SUB	SUB[a,d,e]	SUB[a,d,e]	SUB	CYP2B6 SUB
Tamsulosin					SUB[a]	SUB[a]		
Tasimelteon	SUB[a]					SUB[a]		
Tazemetostat						SUB[a]	SUB	MATE1, MATE2K inHIB
Tecovirimat		inHIB[a]		inHIB		inDUC[a]		BCRP inHIB
Telmisartan				inHIB				
Telotristat						inDUC[a]	SUB	
Temsirolimus						SUB[a]	SUB,[a] inHIB[a]	
Tepotinib		SUB				SUB	inHIB[a]	BCRP inHIB
Terbinafine	SUB	SUB	SUB[a]	SUB	inHIB**,[a]	SUB[a]		
Teriflunomide	inDUC[a]	inHIB*,[a]						BCRP, OATP1B1, OATP1B3, OAT3, inHIB[a]
Testosterone						SUB	SUB, inHIB	
Tetrabenazine					SUB[a]			
Theophylline	SUB[a,e]					SUB[a]		CYP2E1 SUB
Thioridazine				SUB	SUB,[a,e] inHIB[a]	inDUC[a]		
Tiagabine						SUB		
Thiotepa						SUB[a]		CYP2B6 SUB[a]
Ticagrelor						SUB,[a] inHIB[a]	SUB,[a] inHIB[a]	
Tigecycline							SUB	
Timolol					SUB[a]			
Tinidazole						SUB[a]		
Tisotumab vedotin-tftv						SUB[a]	SUB	

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Tivozanib						SUB[a]		BCRP inHIB
Tizanidine	SUB[a]							
Tofacitinib				SUB[a]		SUB[a]		
Tolterodine					SUB	SUB[a]		
Tolvaptan						SUB[a]	SUB,[a] inHIB[a]	BCRP, OAT3, OATP1B1 inHIB[a]
Topiramate				inHIB		inDUC[a]	SUB	
Topotecan							SUB[a]	BCRP SUB[a]
Toremifene						SUB[a]		
Torsemide		inHIB	SUB,[a] inHIB[a]					
Tramadol					SUB[a,d]	SUB[a]		CYP2B6 inHIB
Trametinib							SUB	
Trazodone						SUB[a]		
Treprostinil		SUB[a,e]	SUB					
Tretinoin		SUB				SUB[a]		CYP2E SUB
Triamterene	SUB							
Triazolam						SUB[a]		
Trabectedin						SUB[a]		
Triclabendazole	inHIB	inHIB	inHIB	inHIB[a]	inHIB	inHIB		CYP2B6, CYP2A6 inHIB
Trifluoperazine	SUB							
Trilaciclib							SUB	BCRP SUB; OCT2, MATE1, MATE2K inHIB[a]
Trimethoprim		inHIB[a]					SUB	OCT1, OCT2 SUB; OCT2,[a] MATE1, MATE2K inHIB
Trimipramine				SUB	SUB[a]	SUB		
Trofinetide						inHIB[a]		OATP1B1, OATP1B3 inHIB[a]

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Tucatinib		SUB[a,e]				SUB,[a] inHIB[a]	SUB, inHIB[a]	BCRP SUB; OCT2, MATE1, MATE2 inHIB[a]
Ubrogepant						SUB[a]	SUB[a]	BCRP SUB[a]
Ulipristal						SUB[a]	inHIB	BCRP inHIB
Umeclidinium					SUB		SUB	
Upadacitinib					inHIB	SUB,[a] inDUC		
Uridine triacetate							SUB, inHIB[a]	
Vadadustat								OAT1, OAT3 SUB;[a] BCRP inHIB;[a] OAT3 inHIB[a]
Valbenazine					SUB[a]	SUB[a]	inHIB[a]	
Valproic acid			SUB,[e] inHIB[a]	SUB, inHIB[a]		inHIB		
Valsartan			SUB					OATP1B1 SUB[a]
Vamorolone		SUB				SUB[a]		
Vandetanib						SUB[a]	inHIB[a]	OCT2 inHIB
Vardenafil			SUB			SUB[a]		
Varenicline								OCT2
Vemurafenib	inHIB*,[a]	inHIB	inHIB	inHIB	inHIB	SUB,[a] inDUC	SUB, inHIB[a]	BCRP SUB and inHIB
Venetoclax		inHIB	inHIB			SUB[a]	SUB,[a] inHIB[a]	BCRP SUB and inHIB; OATP1B1 inHIB
Venlafaxine					SUB,[a,e] inHIB[a]	SUB[a]	SUB	
Verapamil	SUB, inHIB[a]	SUB	SUB			SUB,[a] inHIB*,[a]	SUB, inHIB[a]	MATE1 inHIB
Vericiguat							SUB	BCRP SUB
Vilanterol						SUB[a]	SUB	
Vilazodone		inHIB		SUB	SUB	SUB[a,e]	inHIB[a]	
Viloxazine	inHIB**,[a]				inHIB[a]	inHIB[a]		MATE1 inHIB
Vinblastine						SUB[a]	SUB	

Drug	CYP1A2	CYP2C8	CYP2C9	CYP2C19	CYP2D6	CYP3A4/5	P-gp	Other
Vincristine						SUB[a]	SUB[a]	
Vinorelbine						SUB[a]	SUB	
Vismodegib			SUB			SUB		
Voclosporin						SUB[a]	inHIB[a]	OATP1B1,[a] OATP1B3 inHIB[a]
Vonoprazan			SUB	SUB, inHIB[a]	SUB	SUB,[a] inHIB		CYP2B6 SUB and inHIB
Voriconazole			SUB,[a] inHIB[a]	SUB,[a] inHIB*,[a]		SUB,[a] inHIB**,[a]		CYP2B6 inHIB
Vortioxetine		SUB	SUB	SUB	SUB[a,e]	SUB[a]		CYP2A6, CYP2B6 SUB
Voxelotor						SUB,[a] inHIB[a]		
R-Warfarin	SUB[a]					SUB[a]		
S-Warfarin			SUB[a]					
Zafirlukast			SUB, inHIB[a]			inHIB[a]		
Zaleplon						SUB[a]		
Zanubrutinib						SUB,[a] inDUC	SUB	
Zavegepant					SUB	SUB[e]	SUB	OATP1B3[a]
Zileuton	SUB, inHIB[a]		SUB			SUB		
Ziprasidone	SUB					SUB[e]		
Zolmitriptan	SUB[a]					SUB		
Zolpidem						SUB[a]		
Zonisamide						SUB[a]	inHIB[a]	
Zopiclone		SUB				SUB[a,e]		
Zuranolone						SUB[a]		

**strong inhibitor (≥5-fold increase in exposure, or >80% decrease in clearance of substrate)
*moderate inhibitor (≥2 to <5-fold increase in exposure, or 50% to 80% decrease in clearance of substrate.

a. Product labeling or other evidence supports particular vigilance or proactive action to manage potential for clinically significant interactions involving this enzyme or transporter. Check product labeling of object and precipitant drug for specific guidance (e.g., **contraindications**, warnings, cautions, **dose adjustment**, and/or monitoring).
b. **Limitations** of this chart: A medication might not be listed as a substrate of an enzyme that is a minor metabolic pathway for the medication, or if there is only in vitro or weak evidence of that isoenzyme's/transporter's potential for a clinically significant drug interaction involving the medication. In addition, drugs that are weak inhibitors or inducers of an enzyme/transporter might not be listed. Information about interactions, especially those involving substrates, is constantly evolving. Inhibition and induction potency is not well-defined for most medications.
c. Acetaminophen: toxic metabolite is produced via CYP2E1; therefore, **induction** of CYP2E1 can increase toxicity risk.[6]
d. Relies on this enzyme for conversion to active metabolites. Inhibition of this enzyme may reduce efficacy, whereas induction of this enzyme may increase efficacy and/or toxicity.
e. A major CYP450 metabolic pathway.

Abbreviations: BCRP = breast cancer resistance protein, HIV = human immunodeficiency virus; inDUC = inducer; inHIB = inhibitor; MATE = multidrug and toxin extrusion protein; OAT = organic anion transporter, OATP = organic anion transporting polypeptide; OCT = organic cation transporter; P-gp = p-glycoprotein; SUB = substrate

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

Levels of Evidence

In accordance with our goal of providing Evidence-Based information, we are citing the **LEVEL OF EVIDENCE** for the clinical recommendations we publish.

Level	Definition	Study Quality
A	Good-quality patient-oriented evidence.*	1. High-quality randomized controlled trial (RCT) 2. Systematic review (SR)/Meta-analysis of RCTs with consistent findings 3. All-or-none study
B	Inconsistent or limited-quality patient-oriented evidence.*	1. Lower-quality RCT 2. SR/Meta-analysis with low-quality clinical trials or of studies with inconsistent findings 3. Cohort study 4. Case control study
C	Consensus; usual practice; expert opinion; disease-oriented evidence (e.g., physiologic or surrogate endpoints); case series for studies of diagnosis, treatment, prevention, or screening.	

***Outcomes that matter to patients** (e.g., morbidity, mortality, symptom improvement, quality of life).

[Adapted from Ebell MH, Siwek J, Weiss BD, et al. Strength of Recommendation Taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. Am Fam Physician 2004;69:548-56. https://www.aafp.org/pubs/afp/issues/2004/0201/p548.html.]

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Cite this document as follows: **Clinical Resource*, Cytochrome P450 (CYP), P-glycoprotein, and More. Pharmacist's Letter/Pharmacy Technician's Letter/Prescriber Insights.* May 2024. [400508]**