

Cytochrome P450 and PUFAs



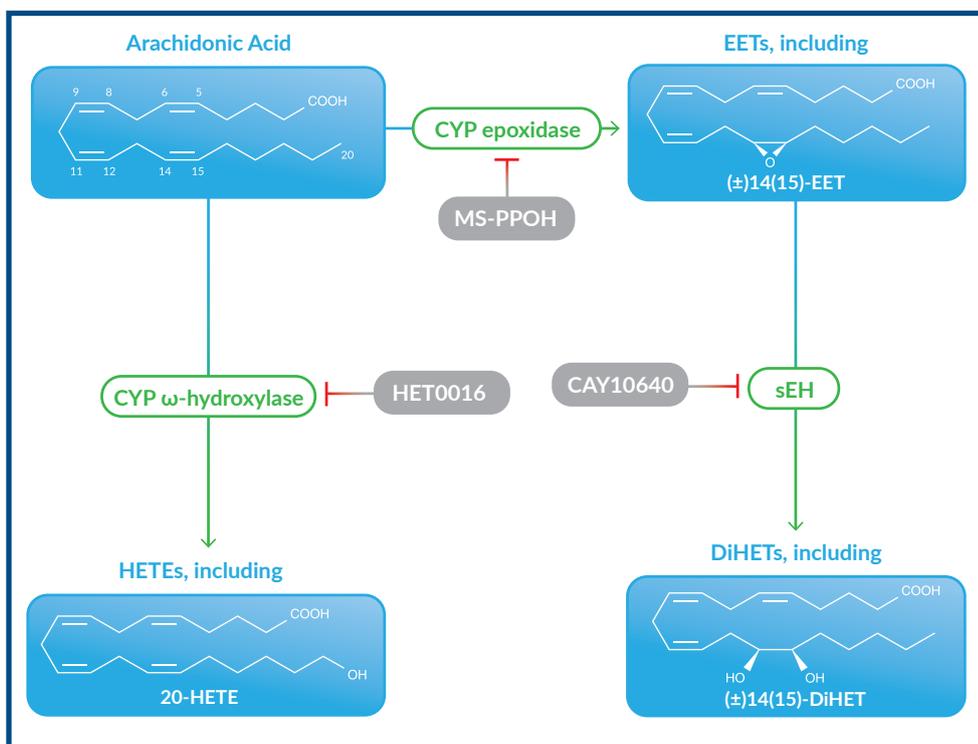
The family of cytochrome P450 (CYP) enzymes includes monooxygenases that are expressed in a tissue-dependent fashion. Certain isoforms mediate the oxidation of polyunsaturated fatty acids (PUFAs), including arachidonic acid, to produce monohydroxylated derivatives. Other CYP enzymes catalyze epoxidation reactions. Epoxides are converted by soluble epoxide hydrolase (sEH) to dihydroxy products. These bioactive lipids have important roles in cell signaling and have implications in hypertension, cancer, diabetes, and other diseases.

CYP Products

Arachidonic Acid

Item No.	Product Name
51211	(±)5(6)-DiHET
50211	(±)5(6)-EET
51351	(±)8(9)-DiHET
50351	(±)8(9)-EET
51511	(±)11(12)-DiHET
50511	(±)11(12)-EET
51651	(±)14(15)-DiHET
50651	(±)14(15)-EET
10007767	19(R)-HETE
10007766	19(S)-HETE
90030	20-HETE

Also available: ethanamide, methyl ester, deuterated, and MaxSpec® forms



Eicosapentaenoic Acid

Item No.	Product Name
90114	(±)5(6)-EpETE methyl ester
10467	(±)5(6)-DiHETE
10473	(±)8(9)-DiHETE
10470	(±)8(9)-EpETE
10466	(±)11(12)-DiHETE
10462	(±)11(12)-EpETE
10006998	(±)14(15)-DiHETE
10173	(±)14(15)-EpETE
10006999	(±)17(18)-DiHETE
50861	(±)17(18)-EpETE

MaxSpec® standards available for (±)14(15)-DiHETE, (±)17(18)-DiHETE, and (±)17(18)-EpETE

Docosahexaenoic Acid

Item No.	Product Name
90314	(±)4(5)-EpDPA methyl ester
10469	(±)7(8)-DiHDPA
10465	(±)7(8)-EpDPA
18174	(±)10(11)-DiHDPA
10471	(±)10(11)-EpDPA
18175	(±)13(14)-DiHDPA
10464	(±)13(14)-EpDPA
18176	(±)16(17)-DiHDPA
10174	(±)16(17)-EpDPA
10007001	(±)19(20)-DiHDPA
10175	(±)19(20)-EpDPA

MaxSpec® standards available for (±)16(17)-DiHDPA, (±)19(20)-DiHDPA, (±)16(17)-EpDPA, and (±)19(20)-EpDPA

DGLA and Linoleic Acid

Item No.	Product Name
53400	(±)9(10)-DiHOME
52400	(±)9(10)-EpOME
10009832	(±)12(13)-DiHOME
52450	(±)12(13)-EpOME
10007527	(±)14(15)-EpEDE
10007528	(±)14(15)-EpEDE methyl ester

Also available: deuterated forms

LC-MS Mixtures

Item No.	Product Name	Supplied As	Contains (1-10 µg/ml of each compound)
20665	Arachidonic Acid CYP450 Metabolite LC-MS Mixture*	1 ampule	(±)14(15)-DiHET, (±)11(12)-DiHET, (±)8(9)-DiHET, (±)5(6)-DiHET, 19(R)-HETE, 20-HETE, (±)14(15)-EET, (±)11(12)-EET, and (±)8(9)-EET
22639	Docosahexaenoic Acid CYP450 Oxylipins LC-MS Mixture	1 ampule	(±)7(8)-EpDPA, (±)10(11)-EpDPA, (±)13(14)-EpDPA, (±)16(17)-EpDPA, (±)19(20)-EpDPA, (±)7(8)-DiHDPA, (±)10(11)-DiHDPA, (±)13(14)-DiHDPA, (±)16(17)-DiHDPA, (±)19(20)-DiHDPA
21394	EPA CYP450 Oxylipin LC-MS Mixture	1 ampule	(±)8(9)-EpETE, (±)11(12)-EpETE, (±)14(15)-EpETE, (±)17(18)-EpETE, (±)5(6)-DiHETE, (±)11(12)-DiHETE, (±)8(9)-DiHETE, (±)14(15)-DiHETE, (±)17(18)-DiHETE
20794	Linoleic Acid Oxylipins LC-MS Mixture*	1 ampule	9(S)-HODE, 9-OxoODE, 13(S)-HODE, 13-OxoODE, (±)9(10)-EpOME, (±)9(10)DiHOME, (±)12(13)-EpOME, (±)12(13)-DiHOME

*Stable isotope-labeled mixtures are also available

CYP Inhibitors and Reagents

Item No.	Product Name	Description
10018	DDMS	A selective CYP4A2 inhibitor that works <i>in vivo</i>
16808	Dibenzylfluorescein	A fluorogenic probe that acts as a substrate of CYPs 2C8, 2C9, 2C19, 3A4, and aromatase (CYP19)
31570	12(S)-hydroxy-16-Heptadecynoic Acid	A mechanism-based inhibitor of prostaglandin ω -hydroxylase ($K_i = 1.8 \mu\text{M}$)
75780	HET0016	Inhibits CYP4A and CYP4F isoforms ($\text{IC}_{50} = 8.9 \text{ nM}$)
75770	MS-PPOH	Inhibits CYP4A2 and CYP4A3 ($\text{IC}_{50} = 13 \mu\text{M}$); no effect on CYP4A1
90270	17-Octadecynoic Acid	A suicide inhibitor of leukotriene B ₄ 20-hydroxylase and renal CYP450 ω -hydroxylase
75760	PPOH	Inhibits CYP4A2 and CYP4A3 ($\text{IC}_{50} = 9 \mu\text{M}$); no effect on CYP4A1
15040	SKF 525A (hydrochloride)	Demonstrates 100% inhibition of the various CYP450 isoforms at 1-100 μM
10008517	Tienilic Acid	A suicide substrate of CYP2C9 and CYP2C10 ($K_i = 4.3 \mu\text{M}$ for CYP2C10)

sEH Inhibitors and Reagents

Item No.	Product Name	Description
16568	<i>trans</i> -AUCB	A very potent inhibitor of sEH ($\text{IC}_{50} = 0.5 \text{ nM}$) with high oral bioavailability
10007927	AUDA	Inhibits mouse and human sEH (IC_{50} s = 18 and 69 nM, respectively) with oral bioavailability
10642	CAY10640	Inhibits recombinant human and mouse sEH ($\text{IC}_{50} = 0.4 \text{ nM}$); suppresses pain <i>in vivo</i>
10007923	CUDA	Inhibits mouse and human sEH (IC_{50} s = 11.1 and 112 nM, respectively)
10004971	N,N'-Dicyclohexylurea	A selective inhibitor of recombinant human and mouse sEH (IC_{50} s = 160 and 90 nM, respectively)
10008609	S-NEPC	A colorimetric substrate used to measure sEH activity
10009134	PHOME	A fluorogenic substrate for human sEH
11120	TPPU	A potent inhibitor of both human and mouse sEH (IC_{50} s = 3.7 and 2.8 nM, respectively)

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