

Ferroptosis Research Tools

Ferroptosis is an iron-dependent form of cell death characterized by the formation of reactive oxygen species (ROS) and accumulation of lipid peroxides. Cayman offers a comprehensive tool kit to study this process.



Identify Novel Inducers of Ferroptosis

GPX4 Inhibitor Screening Assay Kit

Item No. 701880

- Includes recombinant human GPX4 and positive control GPX4 inhibitor ML-162
- Assay 45 samples in duplicate or 29 samples in triplicate
- Plate-based colorimetric measurement (340 nm)

FSP1 Fluorescent Inhibitor Screening Assay Kit

Item No. 701900

- Includes recombinant human FSP1 and positive control FSP1 inhibitor iFSP1
- Assay samples in 96- or 384-well plates
- Plate-based fluorometric measurement (590 nm)

GPX Detection

Item No.	Product Name
703102	Glutathione Peroxidase Assay Kit
26906	GPX4 (human, recombinant; His-tagged); selenocysteine incorporation confirmed by MS
10005258	GPX4 Polyclonal Antibody

Glutathione (GSH) Assays

Item No.	Product Name
703002	Glutathione Assay Kit
600360	Glutathione Cell-Based Detection Kit (Blue Fluorescence)

GSH Redox Assays

Item No.	Product Name
703202	Glutathione Reductase Assay Kit
703302	Glutathione S-Transferase Assay Kit

FSP1 Detection

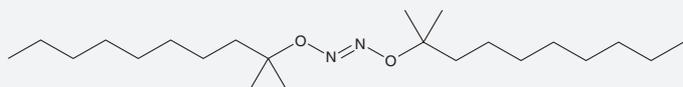
Item No.	Product Name
29611	FSP1 (human, recombinant)
29554	Coumarin-Quinone Conjugate

New Assay

Cystine Uptake Assay Kit - Item No. 42921

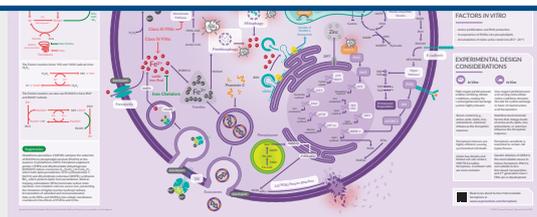
- A fluorometric, plate-based assay used to measure cystine uptake by cultured cells
- Utilizes selenocystine, a non-bulky cystine analog
- Includes erastin, an xCT inhibitor

Featured Compound



DTUN - Item No. 32742

Lipophilic radical initiator used to develop ferroptosis inhibitors and study antioxidants in lipid membranes.



Request a Ferroptosis Wall Poster

www.caymanchem.com/ferroptosis-poster

Ferroptosis Inducers (FINs)

Class I FINs

These inducers interfere with GSH production by limiting cystine uptake.

Item No.	Product Name
17754	Erastin
27087	Erastin2
40499	FA16
27088	Imidazole Ketone Erastin (IKE)
36934	Piperazine Erastin
10009644	Sorafenib
15025	Sulfasalazine

Class II FINs

These inducers suppress GPX4 activity, allowing lipid peroxides to accumulate.

Item No.	Product Name	Item No.	Product Name
38428	GPX4 24	20455	ML-162
35408	GPX4 Inhibitor 26a	23282	ML-210
30784	JKE-1674	19288	(1S,3R)-RSL3
30786	JKE-1716		

Class III FIN

This inducer negatively regulates GPX4 protein levels and activates squalene synthase (SQS).

Item No.	Product Name
25180	FIN56

Class IV FINs

These endoperoxides trigger ferroptosis by oxidizing Fe²⁺, which promotes lipid ROS.

Item No.	Product Name
28788	Chlorido[N,N'-disalicylidene-1,2-phenylenediamine] iron(III)
25096	FINO ₂

GSH Depleters & Redox Modulators

These compounds decrease intracellular GSH levels and increase the accumulation of ROS.

Item No.	Product Name
14484	L-Buthionine-(S,R)-Sulfoximine (BSO)
16115	N-Acetyl-4-benzoquinone imine (NAPQI)
31769	QD-394

FSP1 Inhibitors

Inhibition of FSP1 prevents the reduction of CoQ₁₀, preventing its antioxidant function.

Item No.	Product Name
38025	FSEN1
29483	iFSP1
39927	viFSP1

Iron Uptake

Iron is transported into the cell through the transferrin receptor. Increased iron uptake contributes to ROS and oxidized lipid production.

Item No.	Product Name
36621	Ferristatin II
32030	Transferrin (human, recombinant)
32031	Transferrin Receptor Protein 1/CD71 Extracellular Domain (human, recombinant)
32311	Transferrin Receptor Protein 1/CD71 Rabbit Monoclonal Antibody (Clone RM384)
36655	Transferrin Receptor Protein 1/CD71 Monoclonal Antibody (Clone 3F3-FMA)

Fluorescent Iron Probes

Iron catalyzes the Fenton reaction, driving radical formation that promotes lipid peroxidation.

Item No.	Product Name
41725	FerroOrange
21467	Liperfluo
41726	Mito-FerroGreen
41727	MitoPeDPP

Ferroptosis Inhibitors

Radical-Trapping Antioxidants

Antioxidants protect phospholipids from peroxidation by terminating radical-driven propagation.

Item No.	Product Name
89910	BHT
17122	Cu-ATSM
70530	Ebselen
17729	Ferrostatin-1
41822	Ferroptosis Inhibitor D1
17730	Liproxstatin-1
31407	RC363
42135	NecroX-7
31408	RC574
81880	(6R)-5,6,7,8-tetrahydro-L-Biopterin (hydrochloride)
25985	(±)- α -Tocopherol
26525	UAMC-3203
26819	Vatiquinone
19677	Ubiquinol

View all antioxidants for ferroptosis at www.caymanchem.com

MDM2/MDMX Inhibitors

These compounds prevent the MDM2/MDMX complex from reducing expression of FSP1.

Item No.	Product Name
25667	AMG 232

View all MDM2/MDMX inhibitors at www.caymanchem.com

PPAR α Agonists

The activation of PPAR α enhances the expression of FSP1.

Item No.	Product Name
10009145	Bezafibrate
18515	Ciprofibrate
10005368	Fenofibrate
10011211	GW 9578

See all PPAR α activators at www.caymanchem.com

Iron Chelators

Iron chelation removes excess iron, preventing the formation of highly reactive hydroxyl radicals.

Item No.	Product Name
16021	Ciclopirox
30833	CN128
33318	CP21
16753	Deferasirox
20387	Deferiprone
14595	Deferoxamine (mesylate) (DFO)
20936	Dp44mT

View all iron chelators at www.caymanchem.com

ACSL4 Inhibitors

Inhibiting PUFA remodeling enzymes such as ACSL4 can prevent the enrichment of fatty acids in membrane phospholipids.

Item No.	Product Name
41744	LIBX-A401
32748	PRGL493

LPCAT3 Inhibitor

Inhibiting LPCAT3, an enzyme involved in the synthesis of PUFA phospholipids, can suppress ferroptosis.

Item No.	Product Name
37563	(R)-HTS-3

15-LO Inhibitors

Inhibiting cellular lipoxygenases such as 15-LO can prevent the oxidation of fatty acids enriched in membrane phospholipids.

Item No.	Product Name
27391	BLX3887
16119	ML-351
10010468	15-Lipoxygenase Inhibitor 1

See all lipoxygenase inhibitors at www.caymanchem.com

Detection of Ferroptosis Markers

Cayman provides several convenient methods to detect markers of ferroptosis. This includes assays for direct quantification of lipid hydroperoxides as well as assays that detect peroxidation end products, such as malondialdehyde, 4-hydroxy nonenal (4-HNE), or hyperoxidized peroxiredoxin-3.

Lipid ROS Assay Kits

Item No.	Product Name	Mode of Action
501140	DHN-MA EIA Kit	Measures a metabolite of 4-HNE, a byproduct of lipid peroxidation
705002	Lipid Hydroperoxide (LPO) Assay Kit	Measures hydroperoxides directly using the redox reactions with ferrous ions
601290	ROS Detection Cell-Based Assay Kit (DHE)	Measures superoxide and hydrogen peroxide levels in living cells
10009055	TBARS Assay Kit	Measures malondialdehyde, a byproduct of lipid peroxidation

Lipid ROS Probes

Item No.	Product Name	Description
27086	C11 BODIPY 581/591	Lipid-soluble ratiometric fluorescent indicator of lipid oxidation
62237	DPPP	Fluorescent probe for detection of hydroperoxides

Lipid Peroxidation End Products

Item No.	Product Name	Description
10004413	4-hydroperoxy 2-Nonenal	The hydroperoxide precursor of 4-HNE
32100	4-hydroxy Nonenal	A lipid peroxidation product used as a marker of lipid peroxidation
10185	4-oxo-2-Nonenal	A more recently identified product of lipid peroxidation
10627	4-hydroxy Nonenal Glutathione (trifluoroacetate salt)	A major adduct formed by the reaction of 4-HNE with GSH; prevents the formation of DNA adducts by trapping of 4-HNE
32110	4-hydroxy Nonenal Mercapturic Acid	A urinary metabolite of 4-HNE
38404	HNEJ-1 Monoclonal Antibody (Clone IG10)	For immunochemical detection of 4-HNE

Oxidized Phospholipids

Item No.	Product Name
24383	1-Palmitoyl-2-(±)17(18)-EpETE- <i>sn</i> -glycero-3-PC
62924	PAz-PC
10044	PGPC
10031	POV-PC

Item No.	Product Name
21138	1-Stearoyl-2-15(S)-HETE- <i>sn</i> -glycero-3-PC
21139	1-Stearoyl-2-15(S)-HETE- <i>sn</i> -glycero-3-PE
26531	1-Stearoyl-2-15(S)-HpETE- <i>sn</i> -glycero-3-PC
25856	1-Stearoyl-2-15(S)-HpETE- <i>sn</i> -glycero-3-PE

Featured Product

Hyperoxidized Peroxiredoxin-3 Polyclonal Antibody

Item No. 39806

For immunochemical detection of hyperoxidized Prx3

Lipidomics Services

Cayman's scientific staff has decades of industry expertise in assay and methods development, sample preparation, and analysis. Our targeted panel of phospholipids containing oxidized acyl chains (e.g., 20:4-OH, 20:4-OOH) will help identify hydroperoxy and hydroxy phospholipids in your samples.

www.caymanchem.com/lipidomics