

Products for ALS Research

Amyotrophic lateral sclerosis (ALS)— Lou Gehrig's disease or Charcot disease—is a neurodegenerative disorder involving motor neurons. Cayman offers a select group of assay kits, antibodies, and inhibitors to study many of the targets identified as potential factors leading to the development of ALS.

Superoxide Dismutase

Significant amounts of superoxide dismutase (SOD) in cellular and extracellular environments are crucial for the prevention of diseases linked to oxidative stress. Mutations in SOD account for approximately 20% of familial ALS cases.

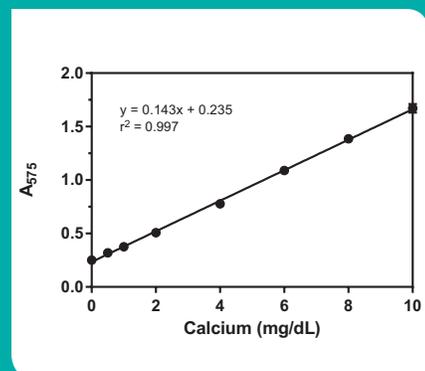
Item No.	Product Name	Summary
10011388	Cu/Zn SOD (human) Polyclonal Antibody	Antigen: human Cu/Zn SOD • Host: rabbit • Species Reactivity: (+) human, bovine, canine, coral, hamster, monkey, mouse, ovine, porcine, rabbit, and rat Cu/Zn SOD (human) • Applications: EIA, IHC, IP, and WB
10011387	Cu/Zn SOD (rat) Polyclonal Antibody	Antigen: rat Cu/Zn SOD • Host: rabbit • Species Reactivity: (+) human, bovine, mouse, and rat Cu/Zn SOD (rat) • Applications: IHC, IP, and WB
75852	Mn(III)TMPyP	A cell-permeable SOD mimic and peroxynitrite decomposition catalyst with increased stability to pH and hydrogen peroxide
16472	Pyrimethamine	Limits the expression of the SOD1 gene, a protein involved in ALS
10009642	SOTS-1 (technical grade)	A chemical source of superoxide radical anion at a constant, controlled rate that allows for study of the effect of superoxide on biologically relevant systems in a controlled environment that closely mimics conditions <i>in vivo</i>
706002	Superoxide Dismutase Assay Kit	of SOD activity (Cu/Zn-, Mn-, and Fe-SOD) from cell lysates, plasma, serum, and tissue homogenates in a convenient 96-well format

Intracellular calcium homeostasis is critical for cell vitality. Membrane-bound calcium pumps, cation exchangers, and calcium-binding proteins modulate calcium levels. Many of these proteins are known to be dysfunctional in motor neurons from ALS patients, resulting in increased intracellular calcium and cell death.

Calcium Assay Kit ITEM No: 701220

Cayman's Calcium Assay provides a quick, reliable method for determining total calcium concentration in a variety of biological samples, as well as tissue homogenates and cell lysates. The assay utilizes an optimized variant of the well-established o-Cresolphthalein-calcium reaction in which a vivid purple complex that absorbs between 560 and 590 nm is formed in the presence of calcium.

- Direct colorimetric assay
- Suitable for serum, plasma, urine, and other biological samples add kit curve
- Linear assay range of 0.25-10 mg/dL



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Prostaglandin D₂

Prostaglandin D₂ (PGD₂) plays a role in inflammation and is thought to be another hallmark of ALS. Motor neurons exposed to PGD₂ dramatically decrease in number, while blocking PGD₂ and receptor activity can increase motor neuron survival.

Item No.	Product Name	Summary
12810	17-phenyl trinor Prostaglandin D ₂	A chemically stable analog of PGD ₂
10009835	MK 0524	A potent, selective DP ₁ receptor antagonist (K _i s = 0.57 nM and 0.75 μM for the DP ₁ and DP ₂ receptors, respectively)
12010	Prostaglandin D ₂	The major eicosanoid product of mast cells released in large quantities during allergic and asthmatic anaphylaxis
512031	Prostaglandin D ₂ EIA Kit	A competitive assay that can be used for quantification of PGD ₂ in cell culture lysates and enzymatic reactions Sensitivity: 80% B/B ₀ : 55 pg/m • Mid-point: 50% B/B ₀ : 240 pg/ml
12850	tetranor-PGDM	A major metabolite of PGD ₂ found in human and mouse urine
501001	tetranor-PGDM EIA Kit	A competitive assay that converts tetranor-PGDM to a stable derivative, tetranor-PGJM, to be easily quantified Sensitivity: 80% B/B ₀ : 40 pg/ml • Mid-point: 50% B/B ₀ : 170 pg/ml

NADPH Oxidase

NADPH oxidases (NOXs) transport electrons across the plasma membrane and generate superoxide and other downstream reactive oxygen species. Increased NOX activity is thought to contribute to a large number of pathologies, including ALS.

Item No.	Product Name	Summary
14321	AEBSF (hydrochloride)	Prevents the activation of NOX
11976	Apocynin	Inhibits the assembly of a functional NOX complex and prevents the production of superoxide in human white blood cells or neutrophilic granulocytes without interfering in other aspects of the immune system
15172	ML-090	The first identified NOX1-specific inhibitor (IC ₅₀ = 360 nM) in HEK293 cells

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