

### 24(S)-Hydroxycholesterol ELISA Kit ab204530

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#### Overview

**Product name** 24(S)-Hydroxycholesterol ELISA Kit

**Detection method** Colorimetric

**Precision**

Intra-assay

Sample	n	Mean	SD	CV%
Buffer 1	24	28.2ng/ml		= 9.3%
Buffer 2	24	9ng/ml		= 5.8%

Inter-assay

Sample	n	Mean	SD	CV%
Buffer 1	10	28.6ng/ml		= 18.4%
Buffer 2	10	11.1ng/ml		= 18.5%

**Sample type** Tissue Culture Media, Tissue Homogenate, Cerebral Spinal Fluid

**Assay type** Competitive

**Sensitivity** = 0.78 ng/ml

**Range** 0.39 ng/ml - 100 ng/ml

**Recovery**

Sample specific recovery

Sample type	Average %	Range
Tissue Culture Media	= 101.7	% - %
Tissue Homogenate	= 98.6	% - %
Cerebral Spinal Fluid	= 99	% - %

**Assay time** 2h 00m

**Assay duration** Multiple steps standard assay

**Product overview** Abcam's 24(S)-Hydroxycholesterol (24-OHC) kit (ab204530) is an in-vitro enzyme-linked

immunosorbent assay (ELISA) for the quantitative measurement of 24-OHC levels in tissue culture media, cerebral spinal fluid and tissue homogenate samples.

The homeostasis and trafficking of cholesterol is an essential component of both the central and peripheral nervous system in the maintenance of neuronal tissues. Disturbances in this homeostasis may be due to the onset of various neurological diseases such as Alzheimer's Disease, Huntington's Disease and multiple sclerosis.

Apolipoprotein E and Cyp46 (also known as 24S-Cholesterol Hydroxylase) are both important in the homeostasis of cerebral cholesterol<sup>6</sup> and thus are of clinical interest in understanding the relation of these molecules with the pathogenesis of these, and potentially other, neurodegenerative diseases.

**Notes** 24-OHC, an enzymatically-generated side chain-hydroxylated derivative of cholesterol, is a pivotal marker in the study of cerebral cholesterol homeostasis. Cholesterol is unable to cross the blood-brain barrier however, Cyp46 enzyme converts cholesterol to the more soluble 24-OHC, and this hydroxylated form of cholesterol is able to cross the bloodbrain barrier.<sup>7,8</sup> This conversion allows for the reduction of cholesterol in the brain and the efflux of 24-OHC from the brain into cerebral spinal fluid and blood. The flux of 24-OHC has been observed in patients with a variety of neurodegenerative diseases. In the instance of Alzheimer's disease, the change in 24S-hydroxycholesterol concentrations may be indicative of different pathogenetic mechanisms and/or the progression of the disease.<sup>3</sup> As in the case of multiple sclerosis, concentrations of 24-OHC have been shown to decrease, likely due to the loss of neuronal cells responsible for the synthesis.

**Platform** Pre-coated microplate (12 x 8 well strips)

## Properties

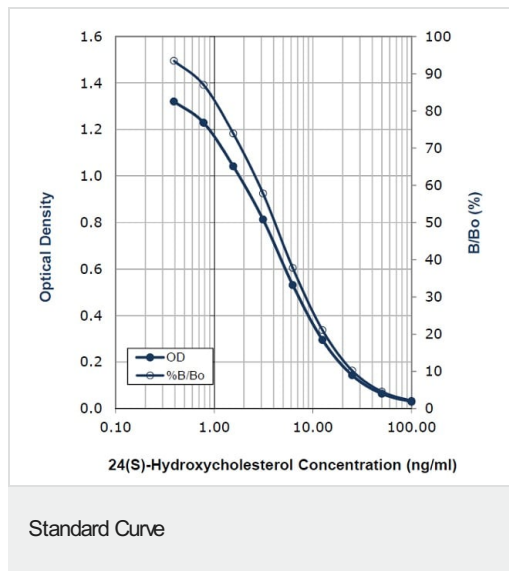
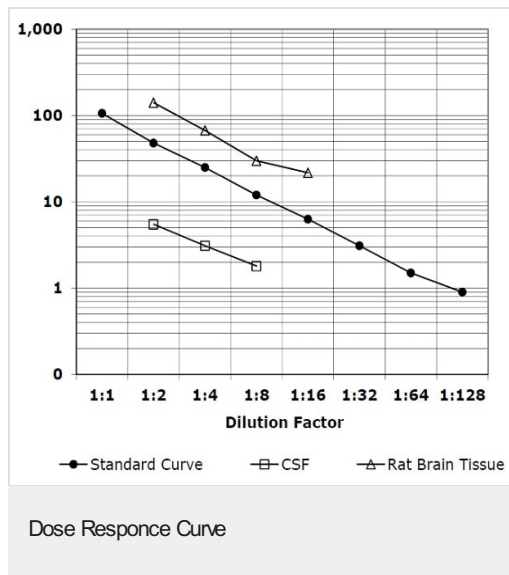
**Storage instructions** Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
24(S)-Hydroxycholesterol Antibody (1X Soln.)	1 x 5ml
24(S)-Hydroxycholesterol Conjugate (100X Conc.)	1 x 70µl
24(S)-Hydroxycholesterol Standard	1 x 70µl
Assay Buffer 40	1 x 50ml
Goat anti-Rabbit IgG coated microplate (12x 8 well strips)	1 unit
Plate Sealer	3 units
Stop Solution (1N Soln.)	1 x 10ml
Streptavidin-HRP (1X Soln.)	1 x 20ml
TMB Substrate	2 x 10ml
Wash Buffer Concentrate (20X Conc.)	1 x 27ml

## Relevance

Cholesterol is a waxy substance that occurs naturally in all parts of the body and that the body needs to function normally. It is present in cell walls or membranes everywhere in the body, including the brain, nerves, muscle, skin, liver, intestines, and heart. The body uses cholesterol to produce many hormones, vitamin D, and the bile acids that help to digest fat. It takes only a small amount of cholesterol in the blood to meet these needs. However, if you have too much cholesterol in your bloodstream, it can lead to atherosclerosis, a condition in which fat and cholesterol are deposited in the walls of the arteries in many parts of the body, including the coronary arteries feeding the heart. In time, narrowing of the coronary arteries by atherosclerosis can produce the signs and symptoms of heart disease, including angina and heart attack.

## Images



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