

Human Lysine-specific Histone Demethylase1 with REST

Human, LSD1 with CoREST

Expressed in *E.Coli*

Cat. No. CBCRY04

Lot. No. (See product label)

BACKGROUND

Histone modifications, such as acetylation and methylation, are important epigenetic marks that regulate diverse biological processes that use chromatin as the template, including transcription. Dysregulation of histone acetylation and methylation leads to the silencing of tumor suppressor genes and contributes to cancer progression. Inhibitors of enzymes that catalyze the addition and removal of these epigenetic marks thus have therapeutic potential for treating cancer. Lysine-specific demethylase 1 (LSD1) is the first discovered histone lysine demethylase and, with the help of its cofactor CoREST, specifically demethylates mono- and dimethylated histone H3 lysine 4 (H3-K4), thus repressing transcription.

MOLECULAR DESCRIPTION

Protein classification: Oxidoreductase/repressor

Structure Weight: 101692.78 Da

Polymer: 1

Molecule: Lysine-specific Histone Demethylase 1

Chains: A

Type: polypeptide (L)

Chain Length: 666 amino acids

Fragment: swirm domain, amine oxidase domain and linker, residues 171-836

Polymer: 2

Molecule: Rest Corepressor 1

Chains: B

Type: polypeptide (L)

Chain Length: 235 amino acids

Fragment: Fragment of sant 1, linker region and sant 2 domain, residues 308-482

CRYSTAL INFORMATION

PDB ID: [2UXX](#) [2UXN](#) [2IW5](#)

MMDB ID: [59741](#) [46805](#) [41237](#)

Source: E.Coli

Method: X-Ray Diffraction

Resolution: 2.74 Å

Ligand Chemical Component: chloride ion; FA9; glycerol

FOR RESEARCH USE ONLY

CRYSTAL STRUCTURE



GENE INFORMATION

Gene Name: [KDM1](#)

Synonyms: RP1-184J9.1; AOF2; BHC110; KIAA0601; LSD1; BRAF35-HDAC complex protein BHC110; FAD-binding protein BRAF35-HDAC complex, 110 kDa subunit; amine oxidase (flavin containing) domain 2; lysine-specific histone demethylase 1; Flavin-containing amine oxidase domain-containing protein 2; lysine (K)-specific demethylase 1; EC 1.-.-.-; fad binding protein braf35 hdac complex 110 kda s; amine oxidase (flavin containing) domain 2

UniProt ID: [O60341](#)

GeneID: [23028](#)

Chromosome Location: 1p36.12

Function: FAD binding; electron carrier activity; oxidoreductase activity; transcription factor activity; transcription factor binding

Gene Name: [RCOR1](#)

Synonyms: COREST; KIAA0071; RCOR; protein CoREST; REST corepressor; REST corepressor 1

UniProt ID: [Q9UKL0](#)

GeneID: [23186](#)

Chromosome Location: 14q32.31-q32.32

Function: DNA binding; protein binding

PRIMARY CITATION

Yang, M., Culhane, J.C., Szewczuk, L.M., Jalili, P., Ball, H.L., Machius, M., Cole, P.A., Yu, H. Structural Basis for the Inhibition of the Lsd1 Histone Demethylase by the Antidepressant Trans-2-Phenyl-cyclopro-pylamine. *Biochemistry*, 2007,46: 8058-8065

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