



Code No.KAL-KH025-01

For research use only

**Advanced Glycation End Products (AGEs)
Anti CEL Monoclonal Antibody (Clone No. KNH-30)
Biotin conjugated**

Reaction of protein amino groups with glucose leads, through the early products such as a Schiff base and Amadori rearrangement products, to the formation of advanced glycation end products (AGEs). Recent immunological studies using anti-AGEs antibody (6D12) demonstrated the presence of AGEs-modified proteins in several human tissues: (i) human lens (nondiabetic and noncataractous), (ii) renal proximal tubules in patients with diabetic nephropathy and chronic renal failure, (iii) diabetic retina, (iv) peripheral nerves of diabetic neuropathy, (v) atherosclerotic lesions of arterial walls, (vi) β_2 -microglobulin forming amyloid fibrils in patients with hemodialysis-related amyloidosis, (vii) senile plaques of patients with Alzheimer's disease, (viii) the peritoneum of CAPD patients, (ix) skin elastin in actinic elastosis, and (x) ceroid/lipofuscin deposits. These results suggest a potential role of AGEs-modification in normal aging as well as age-enhanced disease processes. This antibody named as 6D12 has been used to demonstrate AGEs-modified proteins in these human tissues, indicating potential usefulness of this antibody for histochemical identification and biochemical quantification of AGEs-modified proteins.

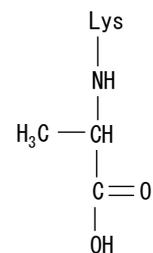
CEL is known to generate from protein modification by methylglyoxal . Mclellan et al. demonstrated that plasma methylglyoxal, which is believed to be generate from Embden-Meyerhof and polyol pathways, concentrations in insulin-dependent diabetic patients were about 7-times higher than those of normal individuals. For examples, CEL was identified in human lens proteins at a concentration similar to that of CML and its accumulation increased with age like CML, indicating that CEL may play an important marker for aging and age-dependent disease such as diabetic complications.

Package Size	50 μ g (200 μ L/vial)
Format	Mouse monoclonal antibody , Biotin conjugated 0.25 mg/mL
Buffer	Block Ace as a stabilizer, containing 0.1% Proclin as a bacteriostat
Storage	Store below -20°C . Once thawed, store at 4°C . Repeated freeze-thaw cycles should be avoided.
Clone No.	KNH-30
Subclass	IgG1
Purification method	The splenic lymphocytes from BALB/c mouse, immunized with CEL-BSA were fused to myeloma P3U1 cells. The cell line (KNH-30) with positive reaction was grown in ascitic fluid of BALB/c mouse, from which the antibody was purified by Protein G affinity chromatography and conjugated.

Working dilution for immunohistochemistry: 5-10 μ g/mL; for ELISA: 1.0 μ g/mL

N^ε— (carboxyethyl) lysine

CEL





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【References】

1. Ahmed MU, Brinkmann E, Degenhardt TP, Thorpe SR, Baynes JW: N^ε-(Carboxyethyl)lysine, a product of the chemical modification of proteins by methylglyoxal, increases with age in human lens proteins. *Biochem J* 324:565-570, 1997
2. Degenhardt TP, Thorpe SR, Baynes JW: Chemical modification of proteins by methylglyoxal. *Cell Mol Biol* 44:1139-1145, 1998
3. Mclellan AC, Thornalley PJ, Benn J, Sonksen PH: Glyoxalase system in clinical diabetes mellitus and correlation with diabetic complications. *Clinical Science* 87: 21-29, 1994

*These references are the background of CEL , and are not this antibody examples

Distributor



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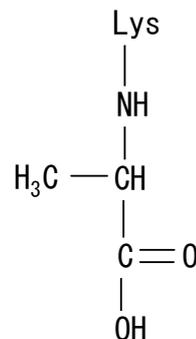
AGEs (Advanced Glycation End Products) は、タンパク質の非酵素的糖付加反応 (メイラード反応) により、シッフ塩基、アマドリ転移生成物 (前期生成物) を経由し、脱水、酸化、縮合などの複雑な反応を受けて形成される最終生成物です。AGEs は、蛍光・褐色・分子架橋形成などの特徴の他、AGEs 受容体により認識されるという生化学的特性を有しています。近年の抗 AGEs 抗体による解析の結果、(1) ヒト水晶体 (加齢に伴う増加)、(2) 糖尿病性腎症や慢性腎不全の患者の腎近位尿細管、(3) 糖尿病患者の網膜、(4) 糖尿病性神経障害患者の末梢神経、(5) 粥状動脈硬化病変部、(6) 透析性アミロイドーシスの $\beta 2$ -マイクログロブリン、(7) アルツハイマー病患者の老人斑、(8) CAPD 患者の腹膜、(9) 弾力線維症の皮膚のエラスチン、(10) セロイドリポフスチンなどに AGEs が蓄積することが分かってきました。これらの知見は、老化自体や老化に伴う慢性疾患に AGEs が深く関与していることを示唆しています。

CEL はメチルグリオキサール由来の AGEs で、メチルグリオキサールは解糖系及びポリオール経路から生成します。McLellan らは I 型糖尿病患者の血液中メチルグリオキサール濃度が健常者に比べて約7倍の高値を示すことを報告しております。ヒトレンズ蛋白における CEL の蓄積量は CML とほぼ同じレベルであり、CEL は加齢や、加齢に伴って発症の増加する糖尿病合併症のマーカーになると期待されます。

容量	50 μ g (200 μ L/vial)
形状	マウスモノクローナル抗体 0.25mg/mL Biotin 標識、凍結品
バッファー	PBS [2%ブロックエース (安定化蛋白)、0.1%proclin 含有]
保管方法	-20 $^{\circ}$ C 以下 抗体を低濃度にて冷蔵保管されますと、失活する恐れがあります。 融解後は 4 $^{\circ}$ C で保存し、お早めにご使用下さい。 凍結融解を繰り返すことは避けて下さい。
クローン番号	KNH-30
サブクラス	IgG1
製造方法	CEL-BSA で免疫した BALB/c マウスの脾臓細胞とマウスミエローマ P3U1 を融合して得たハイブリドーマを BALB/c マウス腹腔内で増殖させ、腹水を採取。採取した腹水より Protein G アフィニティーカラムにて精製、標識。
使用濃度	組織染色: 5~10 μ g/mL ELISA: 約1.0 μ g/mL

$$\text{N}^{\epsilon} - (\text{carboxymethyl})\text{lysine}$$

CEL





人と科学のステキな未来へ

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【参考文献】

1. Ahmed MU, Brinkmann E, Degenhardt TP, Thorpe SR, Baynes JW: N ϵ -(Carboxyethyl)lysine, a product of the chemical modification of proteins by methylglyoxal, increases with age in human lens proteins. *Biochem J* 324:565-570, 1997
2. Degenhardt TP, Thorpe SR, Baynes JW: Chemical modification of proteins by methylglyoxal. *Cell Mol Biol* 44:1139-1145, 1998
3. McLellan AC, Thornalley PJ, Benn J, Sonksen PH: Glyoxalase system in clinical diabetes mellitus and correlation with diabetic complications. *Clinical Science* 87: 21-29, 1994

* 参考文献は CEL の概要であり、本抗体使用例ではありません。



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