



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)  $\beta_2$ -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.

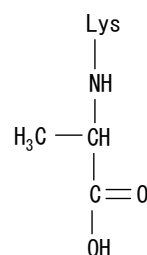
CEL is known to generate from protein modification by methylglyoxal . Mclellan et al. demonstrated that plasma methylglyoxal, which is believed to be generate from Embden-Meyerhof and polyol pathways, concentrations in insulin-dependent diabetic patients were about 7-times higher than those of normal 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 $\mu$ g (200 $\mu$ 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 $-20^{\circ}\text{C}$ . Once thawed, store at $4^{\circ}\text{C}$ . 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  $\mu$ g/mL; for ELISA: 1.0  $\mu$ g/mL

**N<sup>ε</sup>— (carboxyethyl) lysine**

**CEL**





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**【References】**

1. Ahmed MU, Brinkmann E, Degenhardt TP, Thorpe SR, Baynes JW: N<sup>ε</sup>-(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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Inspiration for Life Science

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**抗 CEL モノクローナル抗体 (Clone No. KNH-30)**  
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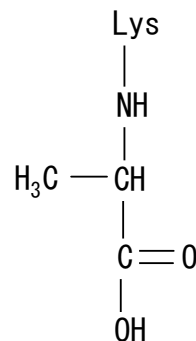
AGEs (Advanced Glycation End Products) は、タンパク質の非酵素的糖付加反応 (メイラード反応) により、シッフ塩基、アマドリ転移生成物 (前期生成物) を経由し、脱水、酸化、縮合などの複雑な反応を受けて形成される最終生成物です。AGEs は、蛍光・褐色・分子架橋形成などの特徴の他、AGEs 受容体により認識されるという生化学的特性を有しています。近年の抗 AGEs 抗体による解析の結果、(1) ヒト水晶体 (加齢に伴う増加)、(2) 糖尿病性腎症や慢性腎不全の患者の腎近位尿細管、(3) 糖尿病患者の網膜、(4) 糖尿病性神経障害患者の末梢神経、(5) 粥状動脈硬化病変部、(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 $\mu$ g (200 $\mu$ 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 $\mu$ g/mL ELISA: 約1.0 $\mu$ 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】

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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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