# hACE2

| | |
|---|---|
| **品系全名** | C57BL/6JSmo-*Ace2*$^{tm3(hACE2\text{-}flag\text{-}Wpre\text{-}pA)Smoc}$ |
| **目录号** | NM-HU-200218 |
| **品系状态** | 胚胎冻存 |

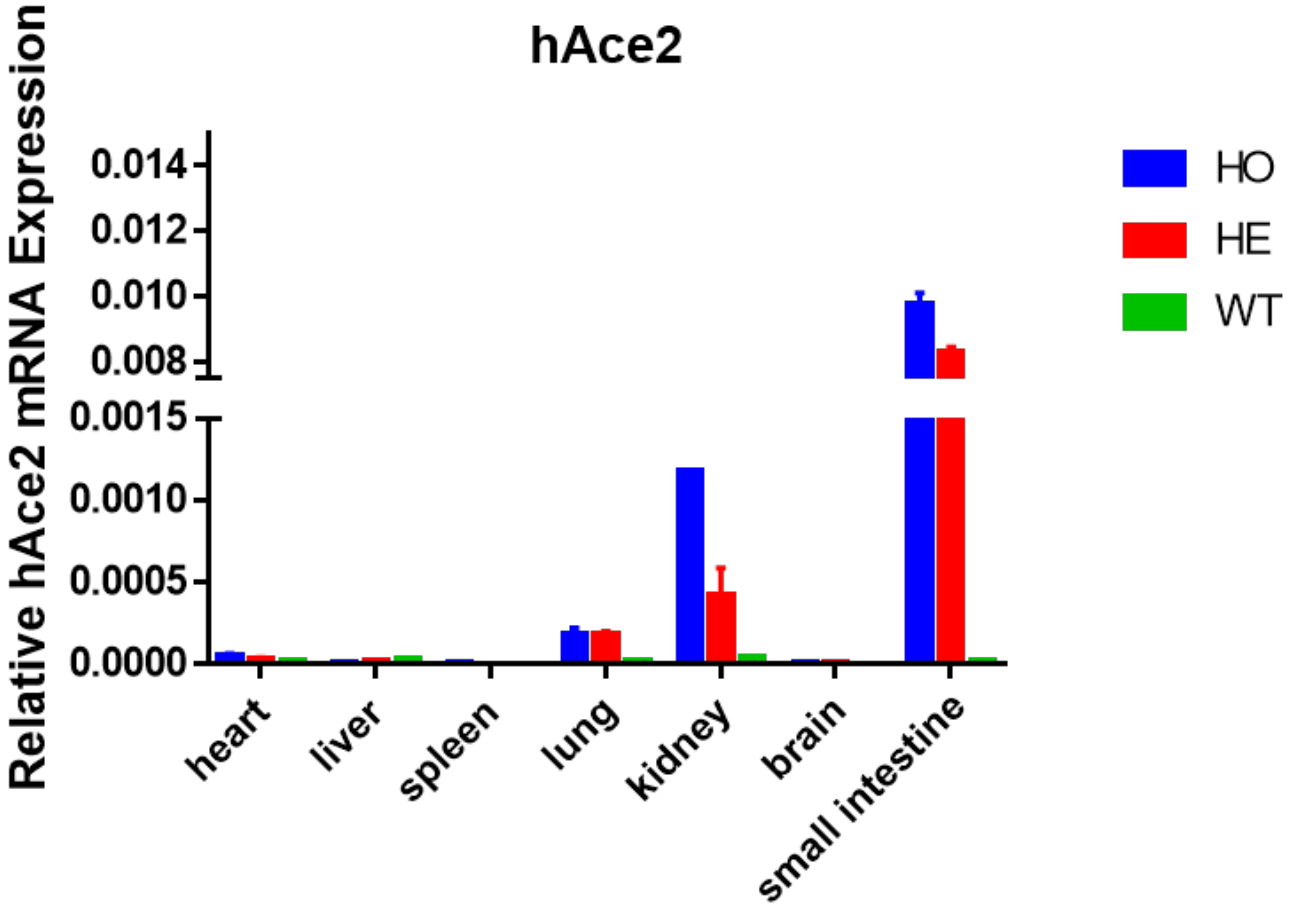
## 基因信息

| | | |
|---|---|---|
| **基因名<br>ACE2** | **基因曾用名** | ACEH |
| | **NCBI ID** | 59272 |
| | **MGI ID** | Null |
| | **Ensembl ID** | ENSG00000130234 |
| | **人类同源基因** | ACE2 |

## 品系描述

利用CRISPR基因编辑技术，将人源ACE2-flag-Wpre-pA共表达结构替换小鼠Ace2基因起始密码子处，从而表达人ACE2蛋白，取代小鼠内源Ace2蛋白的表达。
**应用领域**：新型冠状病毒疾病（COVID-19）等研究
*使用本品系发表的文献需注明: hACE2 mice (Cat. NO. NM-HU-200218) were purchased from Shanghai Model Organisms Center, Inc..

## 验证数据


hAce2
Relative hAce2 mRNA Expression
0.014
0.012
0.010
0.008
0.0015
0.0010
0.0005
0.0000
heart
liver
spleen
lung
kidney
brain
small intestine
HO
HE
WT

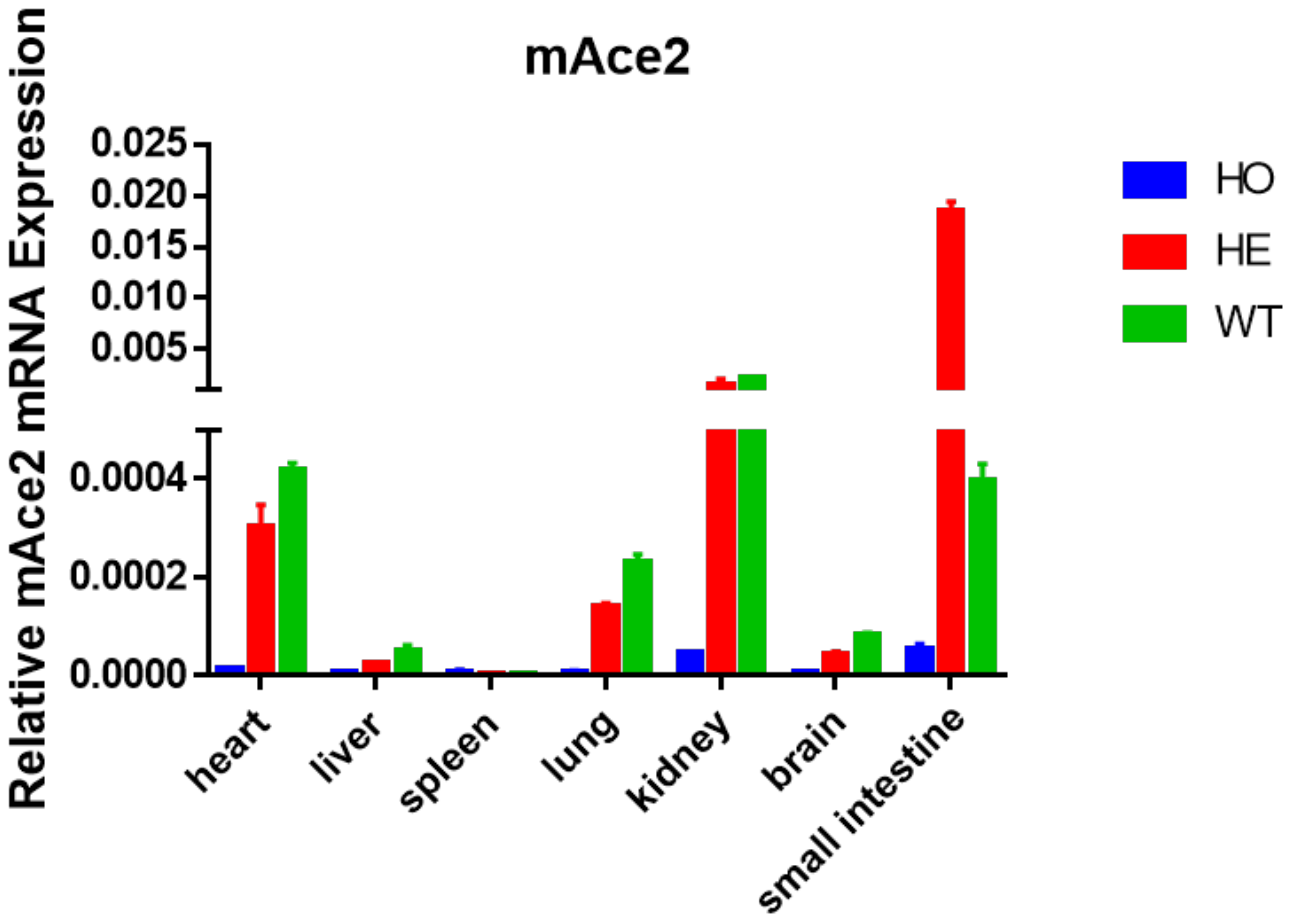



图1. qPCR检测ACE2人源化小鼠各组织中hACE2的表达情况。 结果显示ACE2人源化杂合子和纯合子小鼠中肺、肾、小肠中可以检测到人源ACE2的显著表达；野生型小鼠和杂合子小鼠心、肺、肾、小肠中可以检测到鼠源Ace2的显著表达，纯合子小鼠各组织中均检测不到鼠源Ace2的明显表达。

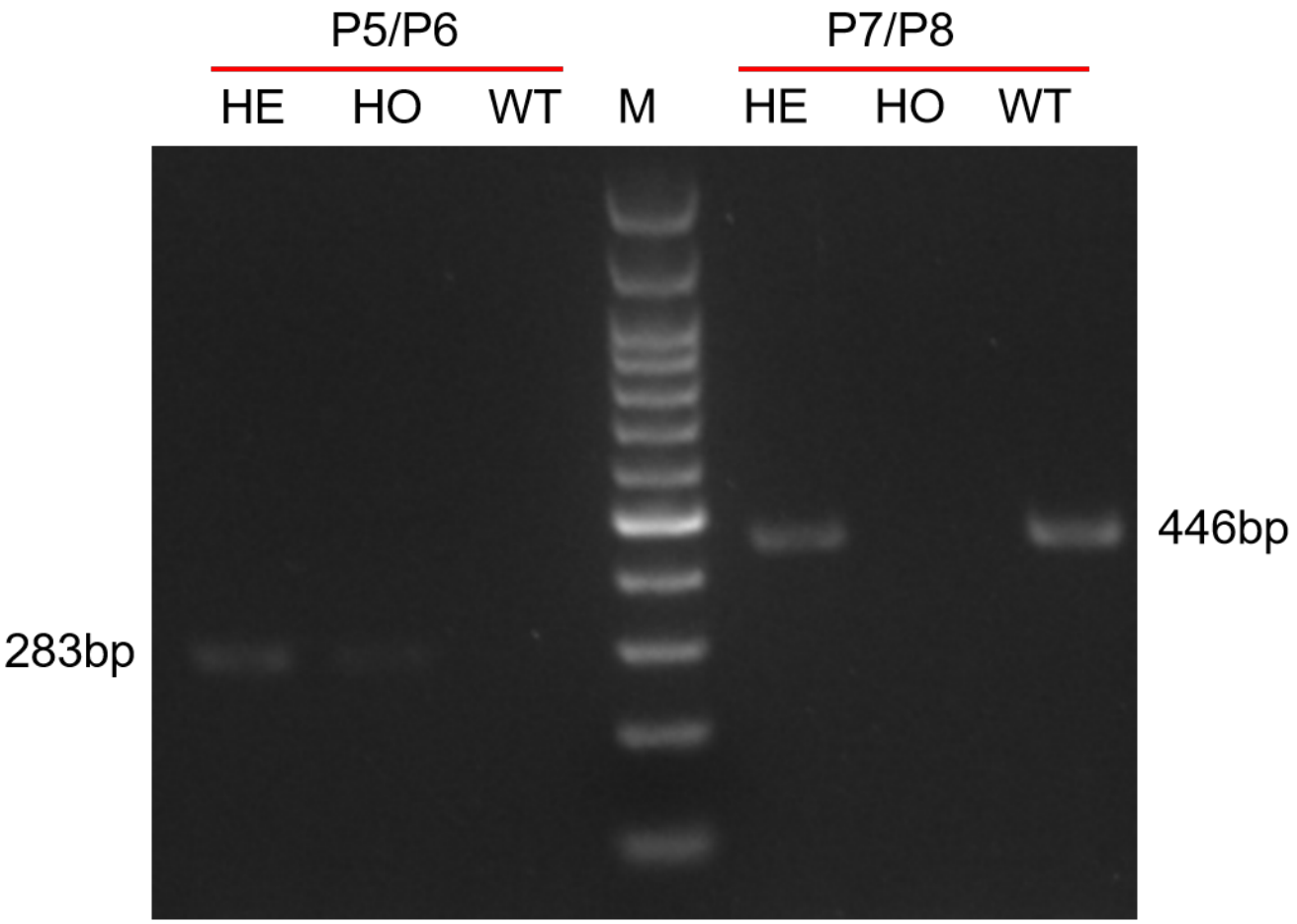



图2. RT-PCR检测ACE2人源化小鼠肺中ACE2的表达情况。引物对P7/8特异针对446bp的鼠源Ace2序列;引物对P5/6特异针对283bp的人源ACE2序列；M:100bp Plus DNA ladder from Transgen (BM311)。结果表明，纯合子小鼠（HO）肺部只表达人源ACE2，杂合子小鼠（HE）肺部同时表达人源ACE2和鼠源Ace2，野生型小鼠（WT）肺部只表达鼠源Ace2。

## 发表文献

SARS-CoV-2 might transmit through the skin while the skin barrier function could be the mediator
来源杂志：MEDICAL HYPOTHESES

A two-adjuvant multiantigen candidate vaccine induces superior protective immune responses against SARS-CoV-2 challenge
来源杂志：Cell Reports

The Abundant Distribution and Duplication of SARS-CoV-2 in the Cerebrum and Lungs Promote a High Mortality Rate in Transgenic hACE2-C57 Mice
来源杂志：International Journal of Molecular Sciences

TRIM28-mediated nucleocapsid protein SUMOylation enhances SARS-CoV-2 virulence
来源杂志：Nature Communications

Specific inhibition of the NLRP3 inflammasome suppresses immune overactivation and alleviates COVID-19 like pathology in mice
来源杂志：EBioMedicine

A SARS-CoV-2-Related Virus from Malayan Pangolin Causes Lung Infection without Severe Disease in Human ACE2-Transgenic Mice
来源杂志：JOURNAL OF VIROLOGY

A spike-targeting bispecific T cell engager strategy provides dual layer protection against SARS-CoV-2 infection in vivo
来源杂志：Communications Biology

A Single Vaccine Protects against SARS-CoV-2 and Influenza Virus in Mice
来源杂志：JOURNAL OF VIROLOGY

Development of a novel adenovirus type 4 vector as a promising respiratory vaccine vehicle
来源杂志：Frontiers in Immunology

Diagnostic value of ACE2 PET in chronic heart failure mice models and the establishment of an imaging protocol on beagle dog
来源杂志：JOURNAL OF RADIOANALYTICAL AND NUCLEAR CHEMISTRY

A multi-antigen vaccinia vaccine broadly protected mice against SARS-CoV-2 and influenza A virus while also targeting SARS-CoV-1 and MERS-CoV
来源杂志：Frontiers in Immunology

An ACE2 PET imaging agent derived from 18F/Cl exchange of MLN-4760 under phase transfer catalysis
来源杂志：EJNMMI Radiopharmacy and Chemistry

A KSHV-targeted small molecule efficiently blocks SARS-CoV-2 infection via inhibiting expression of EGFR and Cyclin A2
来源杂志：Emerging Microbes & Infections