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杭州华安生物技术有限公司

☎ 0571-88062880

☎ 0571-88060400

✉ sales@huabio.cn

📍 杭州市钱塘区白杨街道6号大街452号高科技企业孵化园区2号楼16层



## 神经退行性疾病研究解决方案 Neurodegenerative Disease Research Solutions

• 助力机制解析到靶点发现与生物标志物开发

让研究变得简单

 华安生物  
H U A B I O

## 核心研究领域与解决方案

神经退行性疾病，如阿尔茨海默病（AD）、帕金森病（PD）、肌萎缩侧索硬化症（ALS）和亨廷顿病（HD），给全球公共卫生系统带来了日益严峻的挑战。其发病机制复杂，涉及蛋白质错误折叠与聚集、线粒体功能障碍、氧化应激、神经炎症以及轴突运输异常等多个过程。

## 病理蛋白聚集与通路机制

关键研究靶标：β-Amyloid、Tau、α-Synuclein、TDP-43、C9orf72

## 神经炎症与胶质细胞活化

关键研究靶标：Iba1、CD11b、CD68、P2RY1、GFAP、TREM2、NLRP3

## 神经元死亡与细胞应激

关键研究靶标：Bcl-2家族、Caspase家族、MLKL、GSDMD、LC3B、p62、GRP78

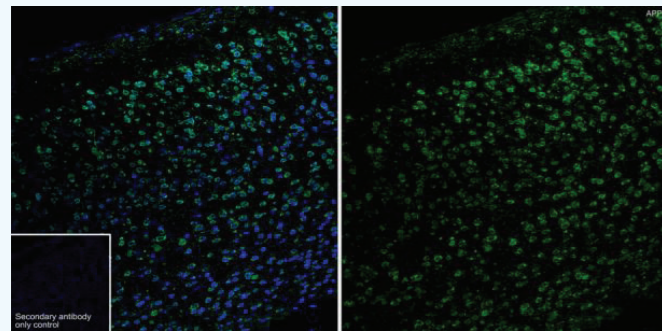
## 生物标志物发现与验证

关键研究靶标：α-Synuclein、Aβ42/40、p-tau(T217, T181等)、NFL、GFAP

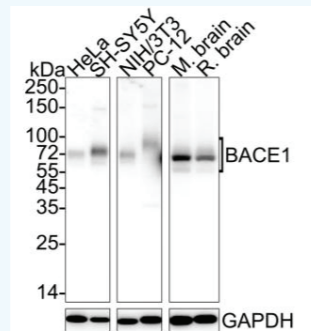
华安生物（HUABIO）致力于为基础和转化医学研究人员提供全面且经过严格验证的产品组合，包括抗体，抗体对、ELISA检测试剂盒及重组蛋白。我们的解决方案覆盖从疾病机制基础研究、生物标志物发现与检测到药物靶点验证与药效评估的全链条，助力加速新型诊断和治疗策略的开发。

## 病理蛋白聚集与通路机制研究

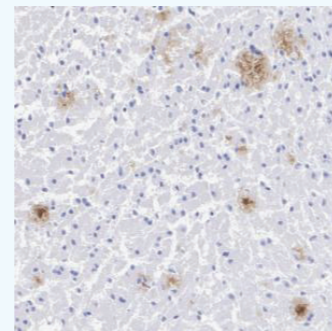
β-淀粉样蛋白（Aβ）通路是阿尔茨海默病（Alzheimer's disease, AD）研究中最经典的病理通路。其核心组分Aβ肽段由淀粉样前体蛋白（APP）经β-和γ-分泌酶顺序切割产生。Aβ42被认为是AD发病机制中的关键毒性物质，在神经元变性过程中起核心作用。



β-Amyloid Rabbit mAb | HA722139  
IHC-Fr staining with mouse cerebral cortex tissue (1/500 dilution)

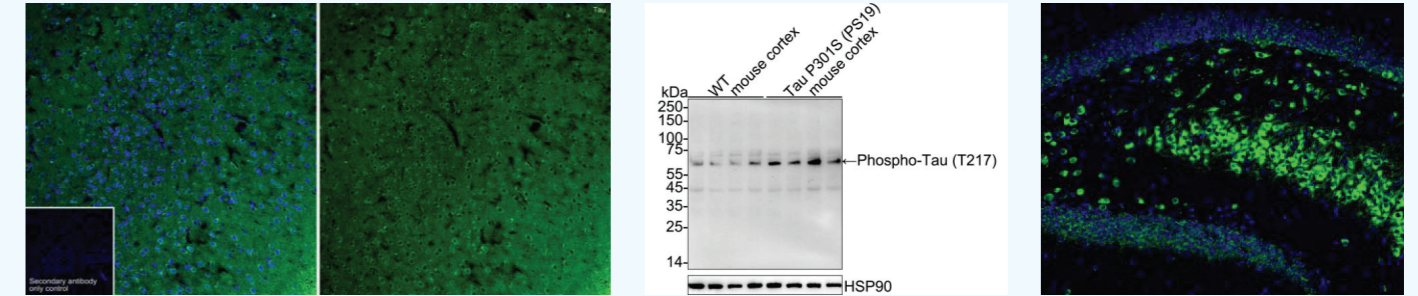


BACE1 Rabbit mAb | HA722244  
WB analysis on different lysates (1/1,000 dilution)



Aβ42 Rabbit mAb | HA721789  
IHC-P staining with brain tissue of AD mouse (1/1,000 dilution)

Tau蛋白是神经退行性疾病中神经原纤维缠结（NFTs）的主要组成部分，其病理形式主要表现为过度磷酸化和异常聚集。在AD和其他tauopathy疾病中，Tau蛋白发生异常翻译后修饰，导致错误折叠和聚集。

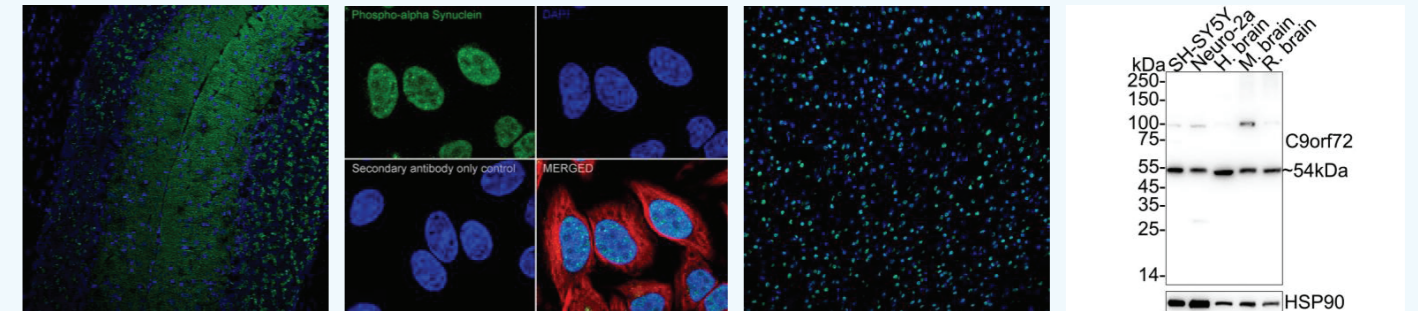


Tau Rabbit mAb | ET1612-44  
IHC-Fr staining with mouse cerebral cortex tissue (1/500 dilution)

Phospho-Tau (T217) Rabbit mAb | HA723091  
WB analysis on different lysates (1/1,000 dilution)

Phospho-Tau (T231) Rabbit mAb | ET1610-31  
IHC-Fr staining with mouse hippocampus tissue (1/200 dilution)

在其他神经退行性疾病（PD, ALS, HD等）的研究中，对病理性蛋白的检测有助于精准定位关键靶点，突破疾病机制的清晰解析。针对这些神经病理蛋白的检测，我们提供全面、经过严格验证的抗体产品，保证研究结果的特异性、灵敏度和可靠性。



Alpha-Synuclein Rabbit mAb | HA723035  
IHC-Fr staining with rat cerebellum tissue (1/500 dilution)

Phospho-alpha Synuclein (S129) Rabbit mAb | ET7107-30  
IF-Cell staining with HeLa cells (1/100 dilution)

TDP43 Rabbit mAb | HA723072  
IHC-Fr staining with mouse cerebral cortex tissue (1/500 dilution)

C9orf72 Rabbit mAb | HA723290  
WB analysis on different lysates (1/5,000 dilution)

## 特色抗体推荐

Alzheimer's disease (AD)				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
ADAM17	ET1703-06	H,Ms,R,Cmk,P	WB,IF-Cell,IF-Tissue,FC,IP,IHC-Fr,IHC-P	Rabbit mAb
Aldolase A/B/C	HA601511	H,Ms,R	IHC-Fr,IHC-P,WB	Mouse mAb
Aldolase A/B/C	HA601512	H,Ms,R	IHC-Fr,IHC-P,WB	Rat mAb
Aldolase A/B/C	HA721733	H,Ms,R,Cmk,P	WB,IHC-P,IHC-Fr,IF-Tissue,IF-Cell	Rabbit mAb
AMPK alpha 1	ET1608-40	H,Ms,R	WB,IF-Cell,IF-Tissue,FC,IP,IHC-Fr,IHC-P	Rabbit mAb

Alzheimer's disease (AD)				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
APC	ET1610-80	H,Ms,R,Cmk,P	WB,IP,IHC-P,IHC-Fr	Rabbit mAb
Apolipoprotein E	HA723216	Ms,R	WB,IHC-Fr,IHC-P	Rabbit mAb
Apolipoprotein E	HA601391	Ms,R	IHC-Fr,IHC-P,WB	Rat mAb
APP/ $\beta$ -Amyloid	HA722139	H,Ms,R,Cmk,P	WB,IHC-P,IF-Tissue,IHC-Fr	Rabbit mAb
BACE1	HA722244	H,Ms,R,Cmk,P	WB,IHC-P,IHC-Fr,IF-Tissue	Rabbit mAb
beta 2 Adrenergic Receptor	ET1703-04	H,Ms,R,Z	WB,IHC-P,IP,IF-Cell,FC,IHC-Fr	Rabbit mAb
beta Amyloid	HA722962	H,Ms	WB,IHC-P,IF-Tissue,Dot Blot	Rabbit mAb
A $\beta$ 40	HA722485	H,Ms	WB,IHC-P,IF-Tissue	Rabbit mAb
A $\beta$ 42	HA721789	H,Ms,Cmk,P	WB,IHC-P,IF-Tissue	Rabbit mAb
CREB	HA723754	H,Ms,R,Mk	WB,IHC-P,IHC-Fr,IF-Cell,FC	Rabbit mAb
Delta-catenin	HA722438	H,Ms,R,Cmk,P	WB,IHC-P,IP,IHC-Fr	Rabbit mAb
GLUT1	HA601521	H,Ms,R	IHC-Fr,IHC-P,IF-Tissue,WB	Rat mAb
GLUT4	HA723175	Ms,R	WB,IHC-Fr	Rabbit mAb
GSK3 beta	ET1607-71	H,Ms,R	WB,IF-Cell,IF-Tissue,IHC-P,FC,IHC-Fr	Rabbit mAb
MCU	HA723563	H,Ms,R,Mk	WB,IHC-Fr,IHC-P,IF-Cell,IP	Rabbit mAb
p75 NGF Receptor	ET1601-22	H,Ms,R	WB,IF-Cell,IF-Tissue,IHC-P,IP,FC,IHC-Fr	Rabbit mAb
p75 NGF Receptor	HA601436	Ms,R	IHC-Fr,WB	Rat mAb
p75 NGF Receptor	HA723532	Ms	IHC-Fr	Rabbit mAb
PEN2	ET7109-26	H,Ms,R	WB,IF-Cell,IHC-P,FC,IHC-Fr,IF-Tissue	Rabbit mAb
Tau	ET1612-44	H,Ms,R,Cmk,P	WB,IF-Cell,IF-Tissue,IHC-P,FC,IHC-Fr	Rabbit mAb
Phospho-Tau (S396)	ET1611-68	Ms,R,H,Cmk,P	WB,IF-Cell,IF-Tissue,IHC-P,IHC-Fr	Rabbit mAb
Phospho-Tau (T181)	HA722271	H,Ms,Cmk	WB,IHC-P	Rabbit mAb
Phospho-Tau (T217)	HA723091	H,Ms,R	WB,IF-Cell,IHC-P,IHC-Fr	Rabbit mAb
Phospho-Tau (T231)	ET1610-31	H,Ms,R,Cmk,P	WB,IHC-P,IP,IF-Tissue,IHC-Fr	Rabbit mAb
Pin1	HA723248	H,Ms,R	WB,IF-Cell,IHC-P,IP	Rabbit mAb
Presenilin 1	HA500219	H,Ms,R	WB,IF-Cell,IHC-P,FC,IHC-Fr,IF-Tissue	Rabbit pAb
Presenilin 1	HA722995	H,Ms,R,Cmk,P	IHC-P,IHC-Fr,IF-Tissue	Rabbit mAb
Presenilin 2	HA723300	H,Ms,R	WB,IF-Cell,FC,IP	Rabbit mAb
Reelin	ET1704-98	H,Ms,R,Cmk,P	WB,IHC-P,IHC-Fr	Rabbit mAb
SCD1	HA723753	Ms,R	WB,IHC-Fr,IHC-P,FC	Rabbit mAb
SIRT2	HA601505	Ms,R	IHC-Fr,IHC-P,WB	Mouse mAb
SIRT2	HA601506	Ms,R	IHC-Fr,IHC-P,WB	Rat mAb

Alzheimer's disease (AD)				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
SV2A	HA723233	H,Ms,R,Cmk,P	WB,IHC-P,IHC-Fr,IP	Rabbit mAb
SV2A	HA601421	Ms,R,Cmk,P	IHC-Fr,IHC-P,WB	Rat mAb
Parkinson's disease (PD)				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
alpha+beta Synuclein	ET1609-66	H,Ms,R	WB,IF-Cell,IF-Tissue,IHC-P,FC	Rabbit mAb
Alpha-Synuclein	HA723035	H,Ms,R,Cmk,P	WB,IHC-P,IHC-Fr,IF-Tissue	Rabbit mAb
Phospho-alpha Synuclein (S129)	ET7107-30	H,Ms,R	WB,IF-Cell,IF-Tissue,IHC-P,FC	Rabbit mAb
ATP13A2	HA722741	H,Ms,R,Cmk	WB,IHC-P,IHC-Fr	Rabbit mAb
DNAJC6	HA722929	H,Ms,R,Cmk,P	WB,IHC-P,IHC-Fr,IF-Tissue	Rabbit mAb
GBA	ET1703-32	H,Ms,R,Cmk,P	WB,IHC-P	Rabbit mAb
LRP1	ET1601-1	H,Ms,R	WB,IF-Tissue,IHC-P,IP,IHC-Fr	Rabbit mAb
LRRK2	HA722932	H,Ms,R,Cmk,P	IHC-P,IF-Tissue,IHC-Fr	Rabbit mAb
LRRK2	HA500574	Ms,R	IHC-Fr	Chicken pAb
PARK7	ET1611-45	H,Ms,R,Cmk,P	WB,IF-Cell,IF-Tissue,IHC-P,IP,FC	Rabbit mAb
Parkin	HA722952	H,Ms,R,Mk,Cmk,P	WB,IHC-P,IF-Tissue,IF-Cell,FC,IP,IHC-Fr	Rabbit mAb
Parkin	ET1702-60	H,Ms,R	WB,IF-Cell,IF-Tissue,IHC-P,IP,FC	Rabbit mAb
PGP9.5	ET1703-22	H,Ms,R,Cmk,P	WB,IF-Cell,IF-Tissue,IHC-P,IP,FC,IHC-Fr	Rabbit mAb
PGP9.5	HA601514	H,Ms,R	IHC-Fr,IF-Tissue,IHC-P,WB,IF-Cell	Mouse mAb
PGP9.5	HA601515	H,Ms,R	IHC-Fr,IF-Tissue,IHC-P,WB,IF-Cell	Rat mAb
Phospho-AMPK alpha 1 (S496)	ET1612-72	H,Ms	WB,IP,IHC-Fr	Rabbit mAb
Phospho-JNK1/2/3 (T183 + T183 + T221)	ET1609-42	H,Ms,R	WB,IF-Cell,IF-Tissue,IHC-P,IP,FC,IHC-Fr	Rabbit mAb
PINK1	HA723021	H,Ms,R,Cmk,P	WB,IHC-P,IHC-Fr	Rabbit mAb
ROR alpha	HA723267	Ms,R	IHC-P,WB	Rabbit mAb
SV2A	HA723233	H,Ms,R,Cmk,P	WB,IHC-P,IHC-Fr,IP	Rabbit mAb
SV2A	HA601421	Ms,R,Cmk,P	IHC-Fr,IHC-P,WB	Rat mAb
TRPV4	HA723855	H,Ms	WB,IHC-Fr,IHC-P	Rabbit mAb
VPS35	ET7107-01	H,Ms,R,Mk,Cmk,P	WB,IHC-P,IF-Cell	Rabbit mAb
Amyotrophic lateral sclerosis (ALS)				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
C9orf72	HA723290	H,Ms,R	WB	Rabbit mAb
CRALBP	HA721483	H,Ms,R	WB,IHC-P,IF-Tissue,IHC-Fr	Rabbit mAb
DCTN1	HA723534	H,Ms,R	WB,IHC-Fr,IHC-P,IF-Cell,FC,IF-Tissue,IP	Rabbit mAb

Amyotrophic lateral sclerosis (ALS)				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
FUS	ET1701-86	H,Ms,Cmk,P	WB,IHC-P,FC,IF-Cell	Rabbit mAb
LAMP1	HA722302	Ms	WB,IF-Cell,IHC-P,FC,IP,IF-Tissue,IHC-Fr	Rabbit mAb
LAMP1	HA722827	H,Ms,R	WB,IHC-P,IF-Tissue,IHC-Fr,IP	Rabbit mAb
SQSTM1 / p62	HA721171	H,Ms,R,Cmk,P	WB,IHC-P,IF-Cell,FC,IF-Tissue,IHC-Fr	Rabbit mAb
Superoxide Dismutase 1	ET1702-36	H,Ms,R,Cmk,P	WB,IF-Cell,IHC-P,FC	Rabbit mAb
TDP43	HA723072	H,Ms,R,Z,Cmk,P	WB,IF-Cell,IHC-P,IHC-Fr,IF-Tissue,FC,IP	Rabbit mAb
TDP43	ET1703-74	H,Ms,R,Z,Cmk,P	WB,IP,IF-Cell,IF-Tissue,IHC-P,FC,IHC-Fr	Rabbit mAb
Huntington's disease (HD)				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
BDNF	HA722912	H,Ms,R,Cmk,P	WB,IF-Cell,IHC-P,IHC-Fr,FC	Rabbit mAb
Hip1	EM1901-04	H,Ms,R	WB,IF-Cell,IHC-P	Mouse mAb
Huntingtin	ET7107-60	H,Ms,R,P	WB,IHC-P,FC,IHC-Fr,IF-Cell,IF-Tissue	Rabbit mAb
IP3 Receptor	ET1704-77	H,Ms,R	WB,IHC-P,IHC-Fr,IF-Tissue	Rabbit mAb
REST	HA720081	H	WB,IF-Cell,IHC-P	Rabbit mAb
Functional markers				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
Arg3.1	HA723231	Ms,R,Cmk,P	WB,IHC-P,IHC-Fr	Rabbit mAb
CaMKII	ET1608-47	H,Ms,R,Cmk,P	WB,IF-Cell,IF-Tissue,IHC-P,IHC-Fr,FC	Rabbit mAb
CaMKII alpha	ET1703-54	H,Ms,R,Cmk,P	WB,IHC-P,IF-Tissue,IHC-Fr,IF-Cell,FC,IP	Rabbit mAb
c-Fos	HA722666	H,Ms,R,Cmk,P	WB,IHC-P,IF-Cell,IHC-Fr,mIHC,IF-Tissue	Rabbit mAb
c-Fos	HA722839	H,Ms,R,Cmk,P	WB,IHC-Fr,IF-Cell,IHC-P,ChIP,IF-Tissue	Rabbit mAb
c-Fos	HA601374	Ms,R,H,Cmk,P	IHC-Fr,WB	Guinea pig mAb
c-Fos	HA601373	H,Ms,R,Cmk,P	IHC-Fr,IHC-P,IF-Tissue,IF-Cell,WB	Rat mAb
c-Fos	HA601440	H,Ms,R,Cmk,P	IHC-Fr,IHC-P,IF-Cell,WB	Mouse mAb
CREB	HA723754	H,Ms,R,Mk	WB,IHC-P,IHC-Fr,IF-Cell,FC	Rabbit mAb
EGR1	ET7111-41	H,Ms,R,Cmk,P	WB,IHC-P	Rabbit mAb
ERK1/2	ET1601-29	H,Ms,R,Z	WB,IF-Cell,IF-Tissue,IP,FC,IHC-P,IHC-Fr	Rabbit mAb
ERK2	ET1603-23	H,Ms,R	WB,IF-Cell,IF-Tissue,IHC-P,IP,FC,IHC-Fr	Rabbit mAb

\*H: Human; Ms: Mouse; R: Rat; Mk: Monkey; Z: Zebrafish; Cmk: Cynomolgus monkey; P: Pig

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“神经退行性疾病研究”产品信息



## 神经炎症与胶质细胞活化

神经炎症是神经系统疾病的核心环节，而小胶质细胞和星形胶质细胞的活化是其关键执行者。理解这些细胞内的信号传导通路，对于揭示疾病机制、发现生物标志物和开发治疗靶点至关重要。

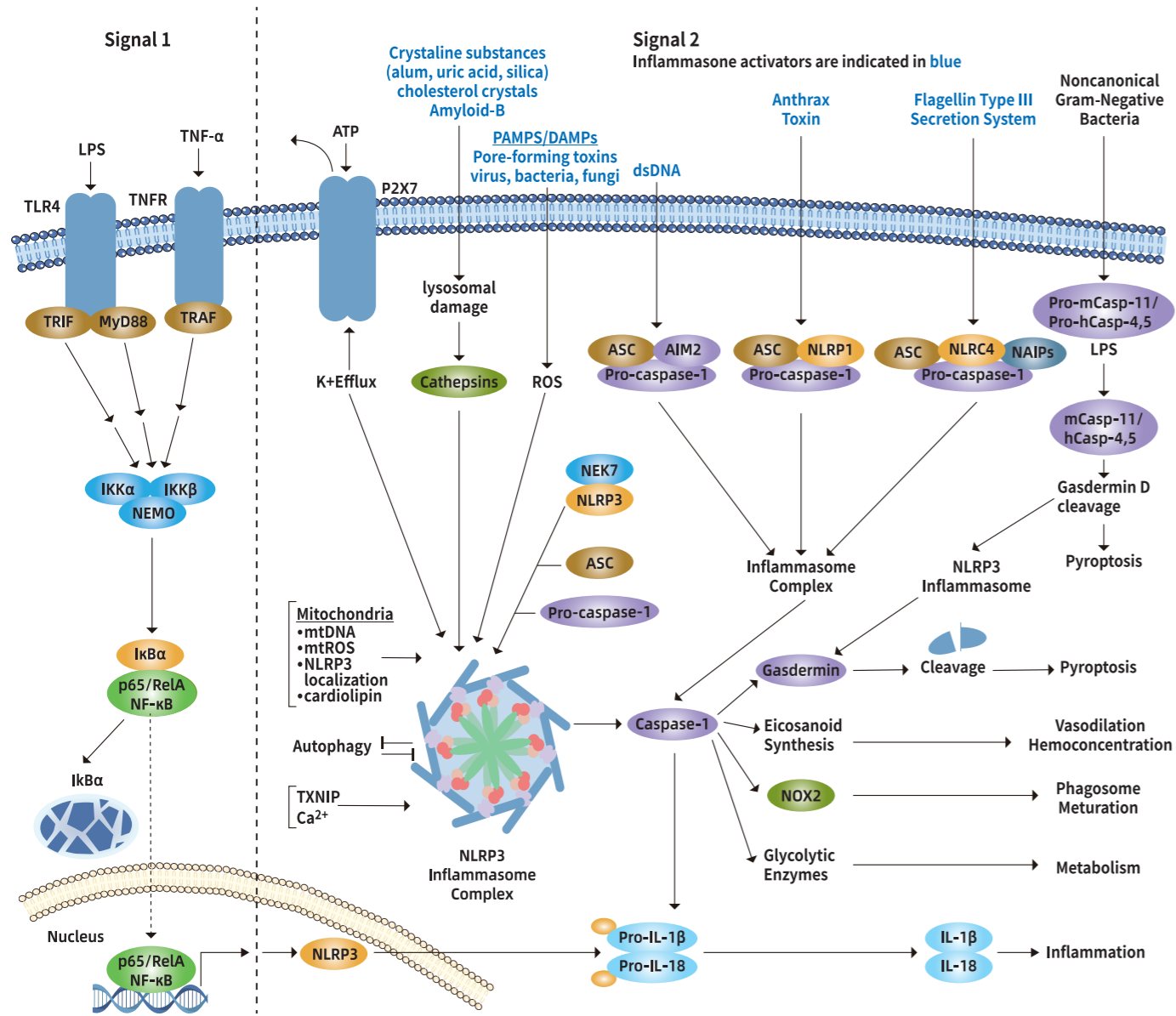
### 神经炎症与免疫调控的关键信号通路及产品推荐

细胞的活化状态	核心信号通路	关键靶标	优质产品推荐
小胶质细胞 经典活化(M1型促炎)	TLR4/NF-κB通路	Phospho-NF-κB p65 (Ser536)、 IκBα、 TLR4、 INOS	NF-κB p65 rabbit mAb   ET1603-12
			Phospho-NF-κB p65 (S536) rabbit mAb   HA723223
			IκB alpha rabbit mAb   ET1603-6
			Phospho-IκB alpha (S32) rabbit mAb   ET1609-78
			TLR4 mouse mAb   RT1666
	iNOS rabbit mAb   HA722031		
	Inflammasome通路	NLRP3、 ASC、 Cleaved Caspase-1、 Mature IL-1β	NLRP3 rabbit mAb   ET1610-93
			TMS1 rabbit mAb   ET1611-62
			Caspase-1 + p10 + p12 rabbit mAb   HA722222
			IL-1 beta mouse mAb   HA601036
Human IL-1β ELISA Kit   EH0006			
Mouse IL-1β ELISA Kit   EM0029			
Rat IL-1β ELISA Kit   ER0001			
小胶质细胞 替代活化(M2型抗炎/修复)	JAK-STAT6通路	Phospho-STAT6 (Tyr641/Tyr705)、 Arginase-1、 CD206	Phospho-STAT3 (Y705) rabbit mAb   ET1603-40
			Phospho-STAT6 (Y641) rabbit mAb   HA722776
			Liver Arginase rabbit mAb   HA723143
			Arginase rabbit mAb   IRS082RB (mIHC抗体)
			CD206 rabbit mAb   HA722892
			CD206 rabbit mAb   IRS049 (mIHC抗体)
星形胶质细胞 反应性活化(A1型神经毒性)	Complement Cascade通路	C3、 GFAP	C3 rabbit mAb   ET1702-99
			GFAP rabbit mAb   ET1601-23
			GFAP mouse mAb   HA601380
			GFAP rat mAb   HA610317
			Mammal GFAP ELISA Kit   HA722234
			Phospho-STAT3 (S727) rabbit mAb   ET1607-39
星形胶质细胞 反应性活化(A2型神经保护)	JAK-STAT3通路	Phospho-STAT3 (Ser727)、 S100A10、 PTX3	S100A10 rabbit mAb   ET1702-38
			Human PTX3 matched antibody pair   HA723387(Cap), HA723390(Det)
			Human Pentraxin 3/PTX3 ELISA Kit   EH0141

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“神经炎症与胶质细胞活化”产品信息



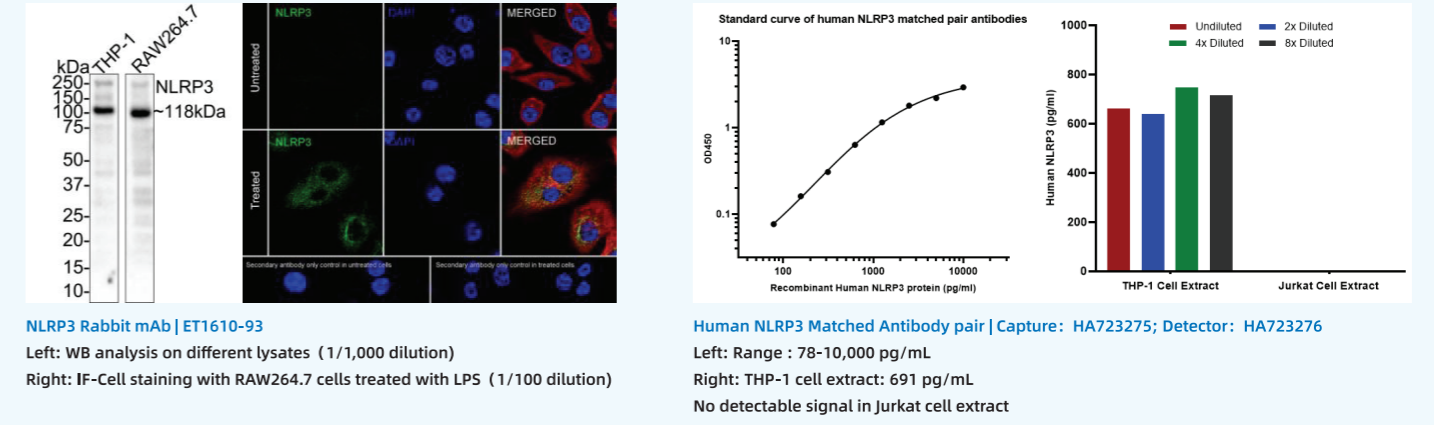
其中，炎症小体信号通路被称为先天免疫的“分子指挥中心”，与多种与神经退行性病变（AD, PD等）的病理进程密切相关。在神经退行性疾病中，病理聚集蛋白会促使炎症小体持续活化导致神经元死亡、突触功能受损，并破坏血脑屏障完整性。最终导致神经病变的“恶性循环”。



Adaptor	Apoptosis or Autophagy regulator	Growth Factor or Cytokine	Kinase
Metabolic Enzyme	Other	Protein Complex	Transcription Factor or Translation Factor
Stimulatory Modification	Inhibitory Modification	Translocation Process	Transcriptional Modification

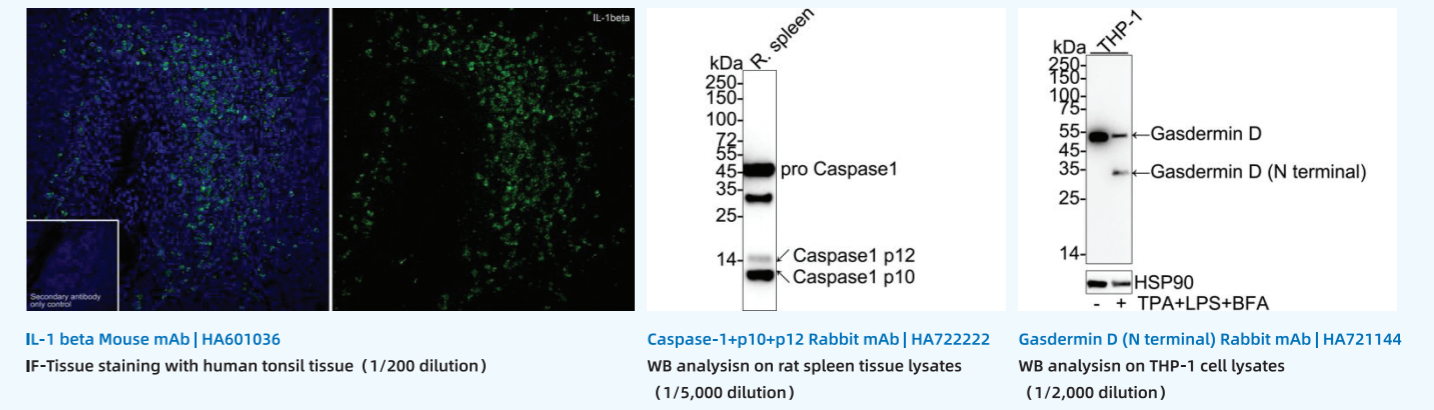
“炎症小体”信号通路图

深入研究这一通路，需要高度特异性和经过验证的工具。华安生物（HUABIO）为您提供覆盖炎症小体激活全程的可靠抗体及检测方案。



**NLRP3 Rabbit mAb | ET1610-93**  
 Left: WB analysis on different lysates (1/1,000 dilution)  
 Right: IF-Cell staining with RAW264.7 cells treated with LPS (1/100 dilution)

**Human NLRP3 Matched Antibody pair | Capture: HA723275; Detector: HA723276**  
 Left: Range: 78-10,000 pg/mL  
 Right: THP-1 cell extract: 691 pg/mL  
 No detectable signal in Jurkat cell extract



**IL-1 beta Mouse mAb | HA601036**  
 IF-Tissue staining with human tonsil tissue (1/200 dilution)

**Caspase-1+p10+p12 Rabbit mAb | HA722222**  
 WB analysis on rat spleen tissue lysates (1/5,000 dilution)

**Gasdermin D (N terminal) Rabbit mAb | HA721144**  
 WB analysis on THP-1 cell lysates (1/2,000 dilution)

扫码了解更多  
 “炎症小体信号通路图”相关产品研究信息



在中枢神经系统（CNS）免疫应答过程中，血脑屏障（BBB）完整性破坏既是神经炎症的结果，也是推动炎症恶性循环的关键原因。在神经退行性病理条件下，炎症因子（TNF-α, IL-1β, MMPs）直接攻击BBB的紧密连接蛋白，增加其通透性。这促使更多免疫细胞在CNS浸润，并释放系列炎症因子，进一步破坏BBB并激活神经炎症反应。作为全球生命科学领域的战略伙伴，我们提供经过最严格验证的抗体、ELISA检测试剂盒，助力科学家在BBB的结构与功能，及其在神经退行性疾病的调控机制研究领域取得新突破。

BBB关键研究靶标及检测产品推荐

靶点分类	靶点名称	主要功能	优质产品推荐
紧密连接蛋白	Claudin-5	形成紧密连接链的主要封堵蛋白，负责选择性屏障功能的主要执行者	Claudin 5 rabbit mAb   ET1703-58
	Occludin	紧密连接的另一个关键跨膜蛋白，更多地参与屏障的动态调节和稳定维持	Occludin rabbit mAb   ET1701-76
	ZO-1	作为细胞内脚手架蛋白，连接跨膜蛋白与肌动蛋白细胞骨架，组织并锚定紧密连接复合体	ZO1 rabbit mAb   HA722797 ZO1 rabbit mAb   IRS217RB (mIHC抗体)
粘附分子	ICAM-1/CD54	内皮细胞活化的经典标志。介导白细胞与内皮细胞的稳固粘附，为后续跨内皮迁移做准备	ICAM1 rabbit mAb   HA723089 Human ICAM-1 ELISA Kit (One step)   EHY0064
	VCAM-1/CD106	介导淋巴细胞、单核细胞等特定白细胞的粘附	VCAM1 rabbit mAb   HA750009 Human VCAM-1 ELISA Kit (One step)   EHY0067
	CD31	血管内皮细胞的标志物，用于标记血管密度和形态；介导白细胞迁移	CD31 Mouse mAb   M1511-8 CD31 rabbit mAb   ET1608-48 CD31 Mouse mAb   IRS023 (mIHC抗体)
转运蛋白	P-gp/MDR1	充当“外排泵”外排疏水性药物和毒素，阻止进入脑实质	P Glycoprotein rabbit mAb   ET1611-30
	GLUT1/SLC2A1	是BBB上葡萄糖的特异性转运体，负责维持大脑至关重要的能量供应	GLUT1 rabbit mAb   ET1601-10 GLUT1 rat mAb   HA601521 GLUT1 rabbit mAb   IRS151RB (mIHC抗体)
	PDGFRβ	周细胞 (Pericyte) 的特异性标志物，调控BBB的发育、稳定性和血管收缩	PDGFR beta rabbit mAb   ET1605-20 Human PDGF-AA ELISA Kit   EH0058 Human PDGF-BB ELISA Kit   EH0068
细胞特异性标志物	GFAP	星形胶质细胞的经典标志物。星形胶质细胞包裹着超过90% BBB表面，形成胶质界膜	GFAP rabbit mAb   ET1601-23 GFAP mouse mAb   HA601380 GFAP rat mAb   HA610317 Mammal GFAP ELISA Kit   HA722234

**Claudin 5 Rabbit mAb | ET1703-58**  
WB analysis on different lysates (1/5,000 dilution)

**ZO1 Rabbit mAb | HA722797**  
IF-Cell staining with MCF7 cells (1/2,000 dilution)

**PDGFR beta Rabbit mAb | ET1605-20**  
IHC-Fr staining with mouse brain tissue (1/200 dilution)

**VCAM1 Rabbit mAb | HA750009**  
IF-Cell staining with C2C12 cells (1/1,000 dilution)

**CD31 Mouse mAb | IRS023**  
mIHC staining with human lung squamous cell carcinoma tissue (1/100 dilution)

**P Glycoprotein Rabbit mAb | ET1611-30**  
WB analysis on different lysates (1/2,000 dilution)

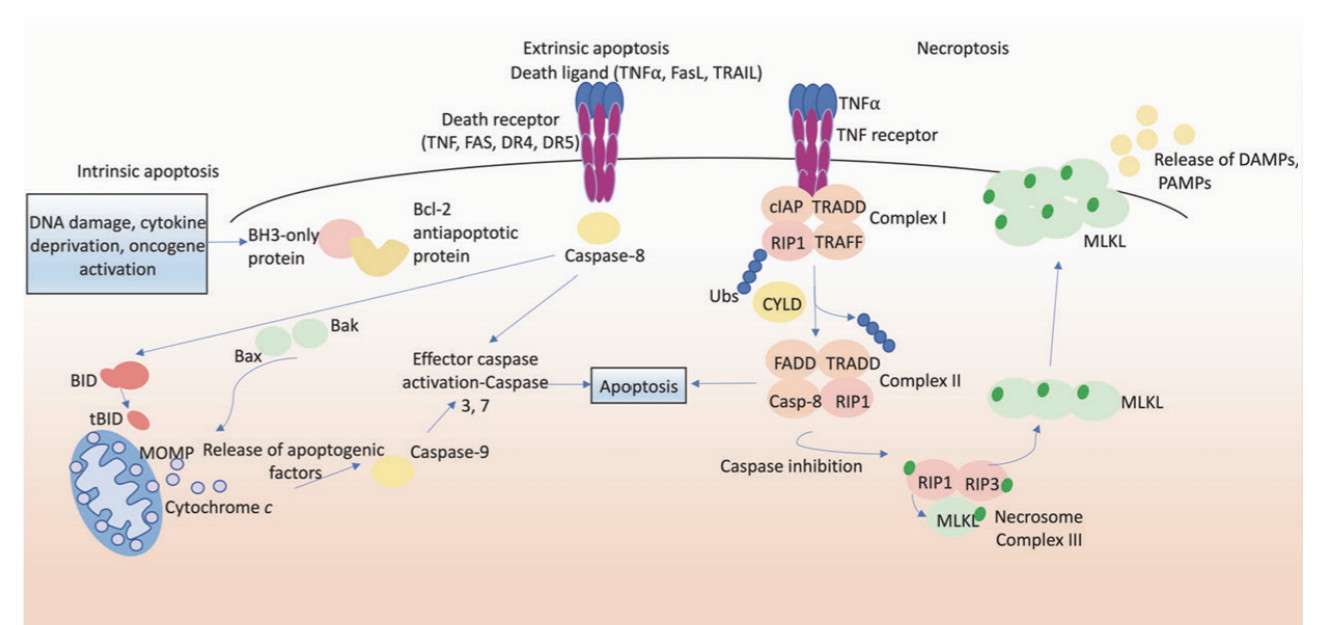
**GLUT1 Rabbit mAb | ET1601-10**  
IF-Tissue staining with human placenta tissue (1/500 dilution)

**GFAP Rat mAb | HA601483**  
IHC-Fr staining with rat cerebellum tissue (1/1,000 dilution, red)  
Anti-GAD65 (HA722750, green)

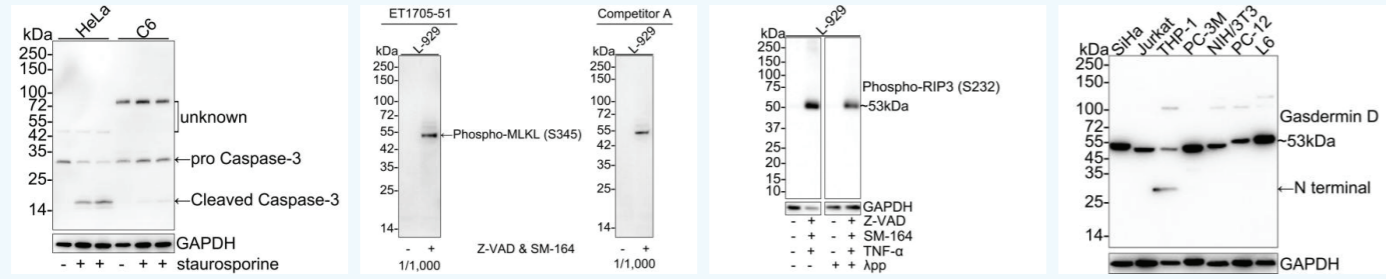
神经元死亡与细胞应激

关键研究靶标: Caspase家族, MLKL, RIPK3, GSDMD, NLRP3, CHOP, GRP78, NOX2, NF-κB信号通路

在神经退行性病变过程中，细胞凋亡、坏死、焦亡等不同形式的神经元死亡，以及内质网应激、氧化应激等过程，会向细胞外释放大量DAMP分子，尤其是一些错误折叠蛋白（如Aβ、α-synuclein、TDP-43聚集等）直接与模式识别受体结合，从而激活中枢神经系统的固有免疫细胞，及其介导的炎症反应。这些炎症因子不仅进一步直接损伤神经元，诱导其死亡或应激，还能破坏血脑屏障，招募外周免疫细胞，形成一个自我延续的炎症-死亡循环，不断放大病理损伤。



神经疾病中细胞凋亡和坏死的分子途径 (PMID: 34099897)

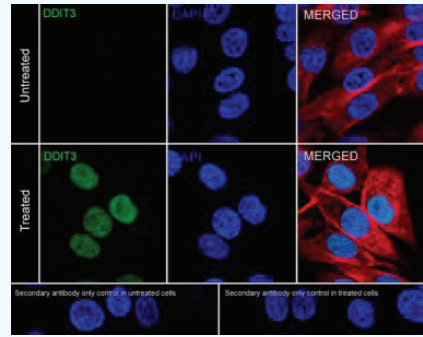


**Cleaved+pro Caspase-3**  
Rabbit mAb | ET1608-64  
WB analysis on different lysates (1/1,000 dilution)

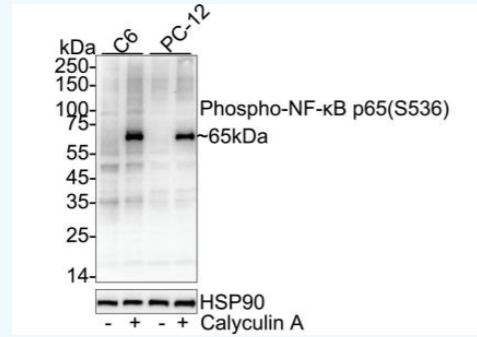
**Phospho-MLKL (S345)**  
Rabbit mAb | ET1705-51  
WB analysis on different lysates (1/1,000 dilution)

**Phospho-RIP3 (S232)**  
Rabbit mAb | HA721428  
WB analysis on different lysates (1/1,000 dilution)

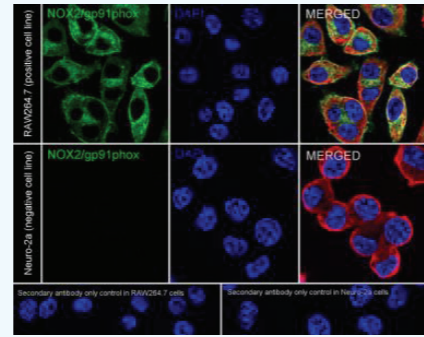
**Gasdermin D (N terminal)**  
Rabbit mAb | HA721144  
WB analysis on different lysates (1/2,000 dilution)



**DDIT3 Rabbit mAb | HA722854**  
IF-Cell staining with C6 cells treated with tunicamycin (1/100 dilution)



**Phospho-NF-κB p65 (S536) Rabbit mAb | HA723223**  
WB analysis on different lysates (1/5,000 dilution)

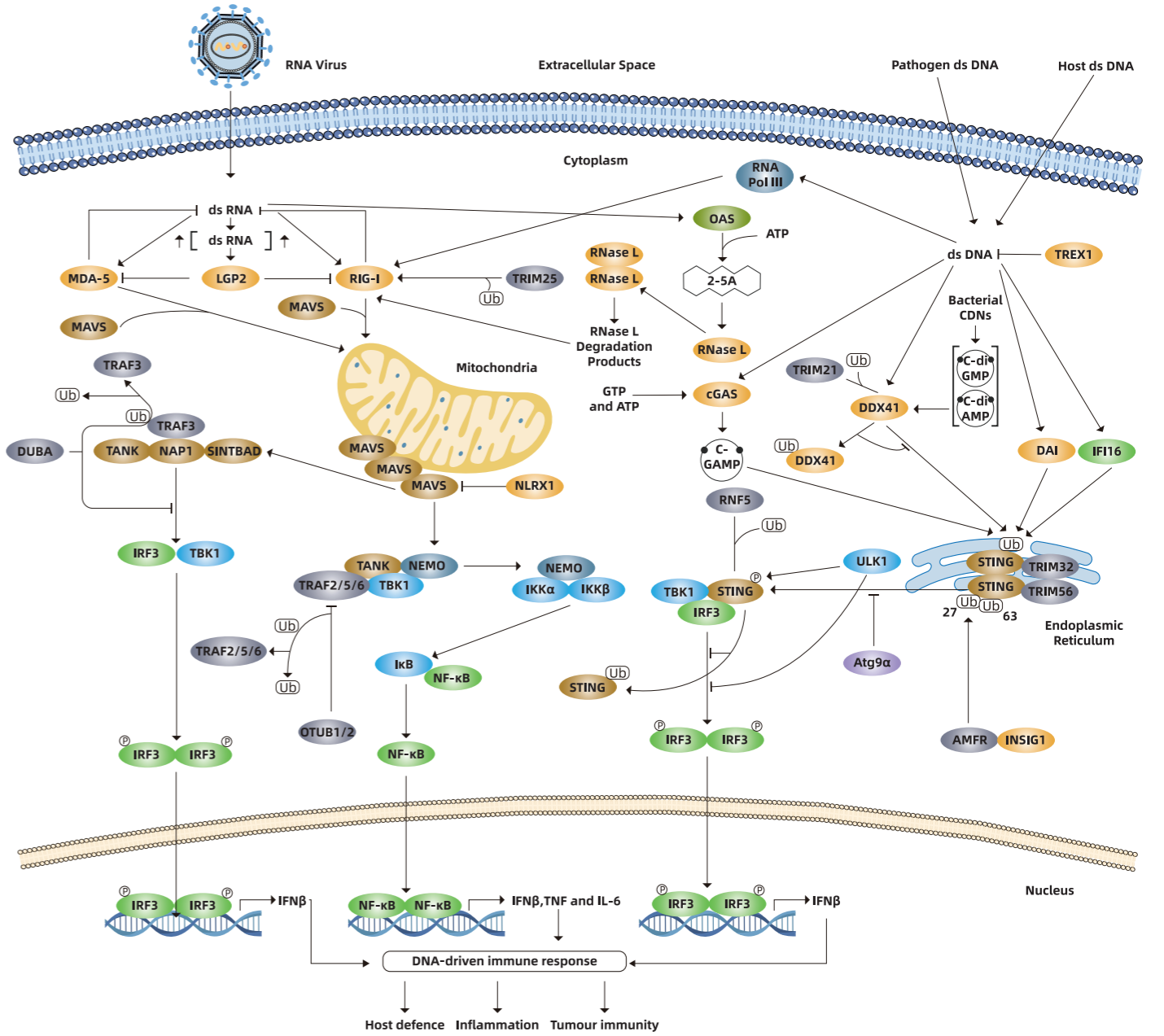


**NOX2 / gp91phox Rabbit mAb | HA723224**  
IF-Cell staining with RAW264.7(positive) and Neuro-2a(negative) cells (1/500 dilution)

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“神经元死亡与细胞应激”产品信息



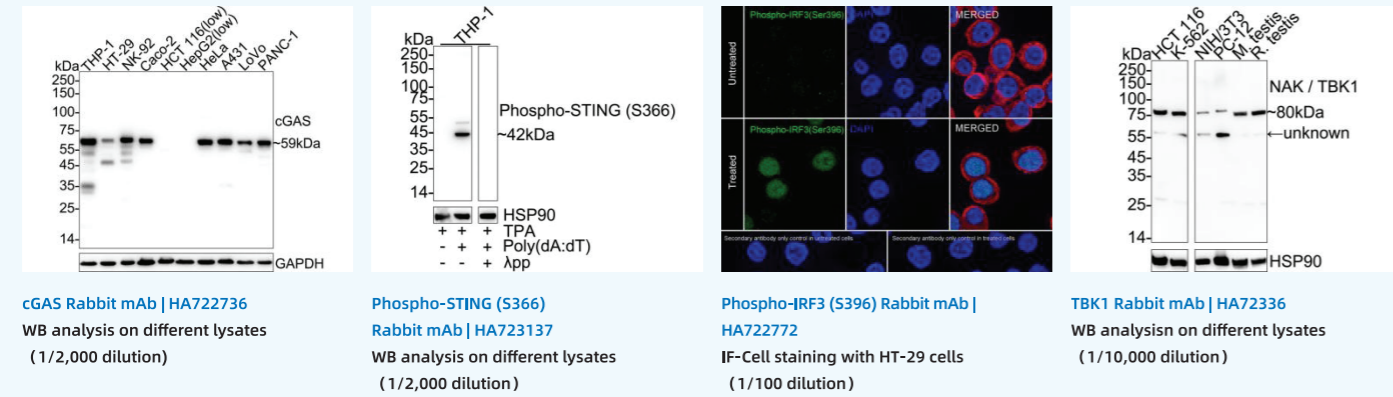
随着对炎症与神经退行性病变之间调控作用的研究日益深入，科学界发现除细胞凋亡与坏死之外，神经元的铁死亡也与神经退行性病变及其伴随的功能障碍密切相关。最新研究表明，在炎症条件下，cGAS-STING 信号通路可在神经元中被激活，进而诱发神经元铁死亡；而靶向抑制神经元中的 STING，能够有效防止炎症所引发的神经退行性病变。



Adaptor	Metabolic Enzyme	Transcription Factor/ Translation Factor or Cell Cycle Regulator	Stimulatory Modification	phosphorylation
Inhibitory protein/Apoptosis or Autophagy regulator	Other	Ubiquitin/SUMO Ligase or Deubiquitinase	Inhibitory Modification	Ubiquitin
Kinase	Protein Complex		Transcriptional Modification	

“cGAS-STING” 信号通路图

深入研究这一通路，需要高度特异性和经过验证的工具。华安生物（HUABIO）为您提供覆盖cGAS-STING通路研究的可靠抗体及检测方案。



生物标志物发现与验证

神经退行性疾病生物标志物检测已经进入“液体活检”时代。通过检测脑脊液（CSF）或血液中的关键标志物（如Aβ42/40比率、p-Tau、t-Tau、Alpha-Synuclein等），结合PET影像，实现疾病的生物学水平诊断。

配对抗体及相应ELISA检测试剂盒是生物体液中低丰度标志物的绝对量化的有效工具。这有助于推动神经退行性疾病早期筛查与干预，实现疾病的精准定义与诊断。

神经退行性疾病的生物标志物

类别	核心生物标志物	配对抗体&ELISA Kits推荐	疾病诊断抗原
淀粉样蛋白病理	Aβ42, Aβ40	Aβ40 matched antibody pair   HA722077 (Cap), HA722078 (Det)	Aβ42 Protein   HA210499
		Aβ40 ELISA Kit   EH0111	
Tau蛋白病理	p-Tau	Aβ42 matched antibody pair   HA722079 (Cap), HA722080 (Det)	Human Tau/Tau441, C-His (isoform 2N4R) Protein   HA210937 Human Tau/Tau758, C-His (isoform PNS-tau) Protein   HA211246
		Non-Phospho-Tau (T217) matched antibody pair   HA723844(Cap), HA723845(Det)	
		Phospho-Tau (T217) matched antibody pair   HA723841(Cap), HA723209(Det)	
神经变性/损伤	NfL	Tau matched antibody pair   HA723850(Cap), HA723851(Det)	Human NFL, Tag Free Protein   HA211087
		Human/Mouse/Rat NF-L matched antibody pair   HA723333(Cap), HA723334(Det)	
神经炎症/胶质激活	GFAP	Mammal NF-L ELISA Kit   EH0154	Human Neurogranin, Tag Free Protein   HA211156
		Human Neurogranin matched antibody pair   HA725191(Cap), HA725192(Det)	
神经炎症/胶质激活	GFAP	GFAP matched antibody pair   HA722234(Cap), HA601342(Det)	Human GFAP, Tag Free Protein   HA210990
		Mammal GFAP ELISA Kit   EH0178	

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“cGAS-STING信号通路图”相关研究产品信息

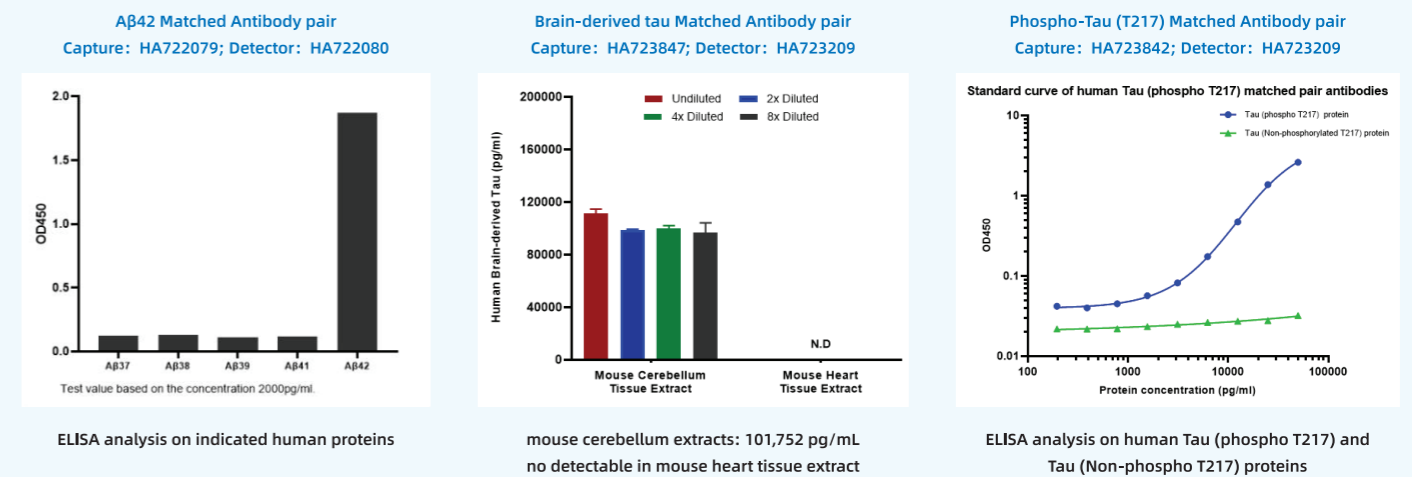


神经退行性疾病的生物标志物

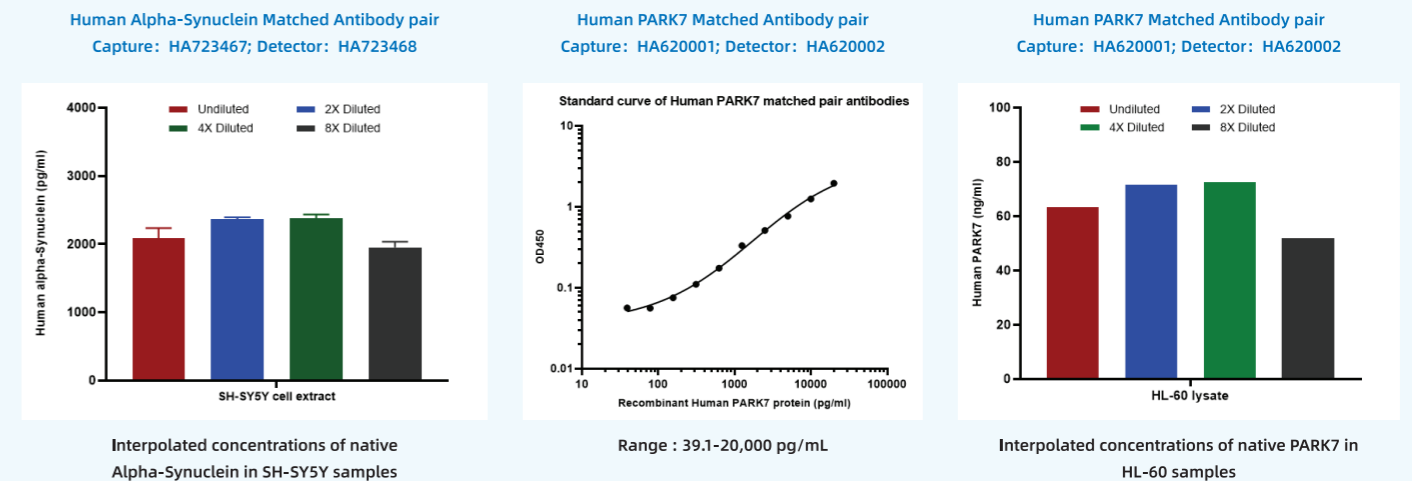
类别	核心生物标志物	配对抗体&ELISA Kits推荐	疾病诊断抗原
神经炎症/胶质激活	sTREM2	Human TREM2 matched antibody pair   HA723149(Cap), HA723151(Det)	Human TREM2, N-Strep II, C-His Tag Protein   HA210647 Mouse TREM2, Tag Free (ECD) Protein   HA211061
		Human TREM2 ELISA Kit (One step)   EHY0122	
		Mouse TREM2 matched antibody pair   HA721760(Cap), HA721761(Det)	
α-突触核蛋白病理	α-Synuclein	Mouse TREM2 ELISA Kit   EM0039	Human alpha-Synuclein, C-His Tag Protein   HA211150
		Human Alpha-Synuclein matched antibody pair   HA723467(Cap), HA723468(Det)	
多巴胺功能障碍	DJ-1 / PARK7	Human PARK7 matched antibody pair   HA620001(Cap), HA620002(Det)	Human PARK7/DJ-1, Tag Free Protein   HA211158

检测数据精选

• AD生物标志物: Aβ42, Tau, p-Tau (T217)



• PD生物标志物: α-Synuclein (S129), DJ-1 (PARK7)



## 特色产品推荐

配对抗体				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
beta Amyloid 1-40	HA722077	H,Ms	ELISA(Cap)	Rabbit mAb
beta Amyloid 1-40	HA722078	H,Ms	ELISA(Det)	Rabbit mAb
beta Amyloid 1-42	HA722079	H	ELISA(Cap)	Rabbit mAb
beta Amyloid 1-42	HA722080	H	ELISA(Det)	Rabbit mAb
Brain-derived tau/BD-tau	HA723847	H,Ms,R	ELISA(Cap)	Rabbit mAb
Brain-derived tau/BD-tau	HA723848	H	ELISA(Det)	Rabbit mAb
Human BACE1	HA725171	H	ELISA(Cap)	Rabbit mAb
Human BACE1	HA725172	H	ELISA(Det)	Rabbit mAb
Human/Mouse/Rat NF-L	HA723330	H,Ms,R	ELISA(Cap)	Rabbit mAb
Human/Mouse/Rat NF-L	HA723331	H,Ms,R	ELISA(Det)	Rabbit mAb
Human/Mouse/Rat NF-L	HA723333	H,Ms,R	ELISA(Cap)	Rabbit mAb
Human/Mouse/Rat NF-L	HA723334	H,Ms,R	ELISA(Det)	Rabbit mAb
Non-Phospho-Tau (T217)	HA723843	H,Ms,R	ELISA(Cap)	Rabbit mAb
Tau	HA723209	H,Ms,R	ELISA(Det)	Rabbit mAb
Non-Phospho-Tau (T217)	HA723844	H	ELISA(Cap)	Rabbit mAb
Non-Phospho-Tau (T217)	HA723845	H	ELISA(Det)	Rabbit mAb
Phospho-Tau (T217)	HA723841	H,Ms	ELISA(Cap)	Rabbit mAb
Tau	HA723209	H,Ms,R	ELISA(Det)	Rabbit mAb
Phospho-Tau (T217)	HA723842	H	ELISA(Cap)	Rabbit mAb
Tau	HA723898	H	ELISA(Det)	Rabbit mAb
Tau	HA723850	H,Ms,R	ELISA(Cap)	Rabbit mAb
Tau	HA723209	H,Ms,R	ELISA(Det)	Rabbit mAb
Tau	HA723851	H	ELISA(Det)	Rabbit mAb
Human Alpha-Synuclein	HA723467	H	ELISA(Cap)	Rabbit mAb
Human Alpha-Synuclein	HA723468	H	ELISA(Det)	Rabbit mAb
Human PARK7	HA620001	H	ELISA(Cap)	Mouse mAb
Human PARK7	HA620002	H	ELISA(Det)	Mouse mAb
Human Neuropilin-1	HA725112	H	ELISA(Cap)	Rabbit mAb
Human Neuropilin-1	HA725113	H	ELISA(Det)	Rabbit mAb
GFAP	HA601342	H,Ms,R	ELISA(Det)	Mouse mAb
GFAP	HA722234	H,Ms,R	ELISA(Cap)	Rabbit mAb

配对抗体				
Product name	Catalog#	Reactivity	Tested applications	Antibody type
Human TREM2	HA723149	H	ELISA(Cap),ELISA(Det)	Rabbit mAb
Human TREM2	HA723150	H	ELISA(Cap)	Rabbit mAb
Human TREM2	HA723151	H	ELISA(Det)	Rabbit mAb
Mouse TREM2	HA721760	Ms	ELISA(Cap)	Rabbit mAb
Mouse TREM2	HA721761	Ms	ELISA(Det)	Rabbit mAb
S100B	HA723728	H,Ms,R	ELISA(Cap)	Rabbit mAb
S100B	HA723729	H,Ms,R	ELISA(Det)	Rabbit mAb

ELISA Kits				
Product name	Catalog#	Size	Sensitivity	Type
Human beta Amyloid 1-40 ELISA Kit	EH0111	96T	2.92 pg/ml (50 µl); 8.40 pg/ml (10 µl)	完全即用型
Human beta-NGF ELISA Kit	EH0065	96T	3.27 pg/ml (50 µl); 1.91 pg/ml (10 µl)	即用型
Human CNTF ELISA Kit	EH0147	96T	0.25 pg/ml (50 µl); 3.77 pg/ml (10 µl)	完全即用型
Human FGF basic/FGF2/bFGF ELISA Kit	EH0024	96T	1.51 pg/ml (50 µl); 9.93 pg/ml (10 µl)	完全即用型
Human Lipocalin-2/NGAL ELISA Kit (一步法)	EHY0166	96T	0.01 ng/ml (50 µl); 0.03 ng/ml (10 µl)	完全即用型
Human NCAM 1/CD56 ELISA Kit	EH0102	96T	3.69 pg/ml (50 µl); 37.50 pg/ml (10 µl)	完全即用型
Human Neuropilin-1/NRP1 ELISA Kit (一步法)	EHY0175	96T	0.02 ng/ml (50 µl); 0.03 ng/ml (10 µl)	即用型
Human Oxytocin-neurophysin 1/OXT ELISA Kit	EH0153	96T	1.02 pg/ml (50 µl); 4.22 pg/ml (10 µl)	完全即用型
Human PDGF-BB ELISA Kit	EH0068	96T	2.79 pg/ml (50 µl); 7.56 pg/ml (10 µl)	完全即用型
Human TREM2 ELISA Kit (一步法)	EHY0122	96T	0.004 ng/ml (50 µl); 0.05 ng/ml (10 µl)	即用型
Human VCAM-1/CD106 ELISA Kit	EH0067	96T	7.07 pg/ml (50 µl)	完全即用型
Human VCAM-1/CD106 ELISA Kit (一步法)	EHY0067	96T	0.04 ng/ml (50 µl); 0.08 ng/ml (10 µl)	完全即用型
Human/Mouse BDNF ELISA Kit	EH0069	96T	1.05 pg/ml (50 µl); 2.53 pg/ml (10 µl)	完全即用型
Mammal GFAP ELISA Kit	EH0178	96T	2.52 pg/ml (50 µl); 17.06 pg/ml (10 µl)	即用型
Mammal NF-L ELISA Kit	EH0154	96T	0.54 pg/ml (50 µl); 1.31 pg/ml (10 µl)	完全即用型
Mouse TREM2 ELISA Kit	EM0039	96T	0.60 pg/ml (10 µl)	完全即用型

\*H: Human; Ms: Mouse; R: Rat

扫码详见更多  
“神经退行性疾病生物标志物研究”产品信息



