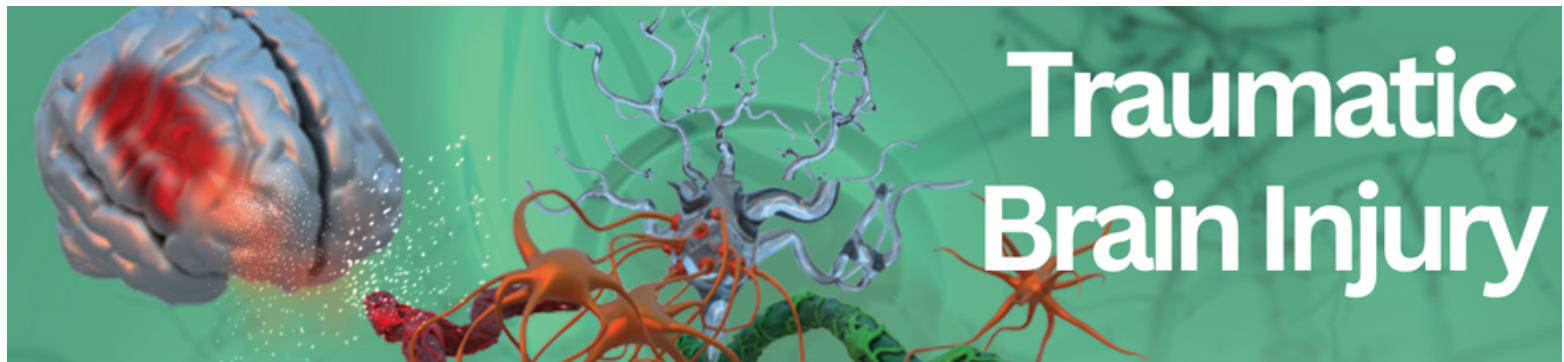
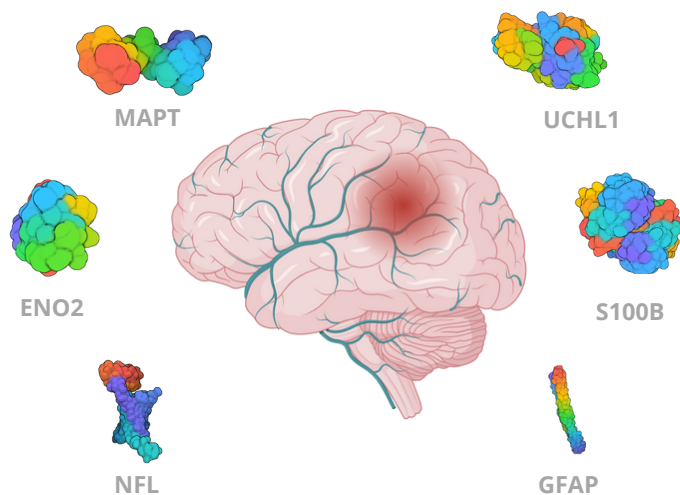


# TBI Research Tools



Traumatic brain injury (TBI) is a significant cause of death and disability worldwide, especially in children and young adults. It occurs when the head violently hits an object or when an object accidentally enters the brain. Currently, there is no good way to reverse the brain damage caused by TBI. But doctors can help stabilize TBI patients and prevent further brain damage. So early detection is critical for the treatment of TBI. Many biomarkers have been associated with the severity of TBI. In 2018, the first blood test was approved by the FDA to evaluate mild TBI in adults. This test measures two protein biomarkers, UCH-L1 and GFAP, in the blood after brain injury. In 2021, the first rapid handheld TBI blood test received clearance from the FDA, which also measures UCH-L1 and GFAP in the blood.

## Key TBI Biomarkers: UCHL1, GFAP, ENO2, S100B, NEFL, MAPT



Marker	Significance
UCHL1	FDA approved differential diagnostic biomarker, distinguishing between normal and abnormal CT findings
GFAP	Found in cells of the CNS, accurate in differentiating mild TBI patients from non-TBI controls
NSE (ENO2)	Found in neurons, erythrocytes; a good biomarker for TBI if used in conjunction with UCHL1 and GFAP
MBP	High serum levels is associated with poor prognostic value, not a popular biomarker
S100B	Expressed in astrocytes, a widely used biomarker for mild TBI screening
NEFL	Positive correlation seen between NFL serum levels and TBI. Also, a biomarker for axonal injury of many neurological diseases
MAPT (TAU)	Positive correlation between Tau protein and severity of brain injury in TBI patients

## Traumatic Brain Injury Antibody Biomarker Panel:

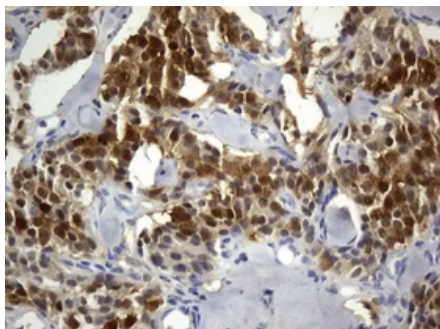
TBI is a multifactorial disease with multiple biomarkers. The TBI biomarker panel is a convenient and cost-effective multi-target analysis method. You can order the entire panel or each marker separately.

Biomarker	NSE (ENO2)	GFAP	MAPT (TAU)	NEFL	S100B	UCHL1
Catalog #	UM870177	TA500338S	TA809201S	TA801110S	TA807235S	UM870136

# TBI Research Tools

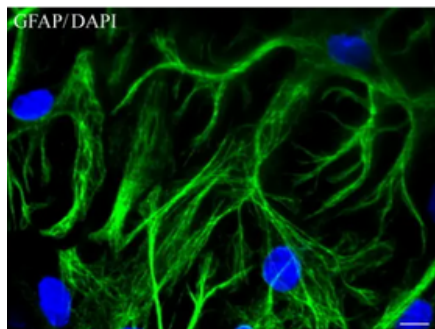
## UltraMAB- Ultraspecific Antibodies for TBI Targets

### UCHL1



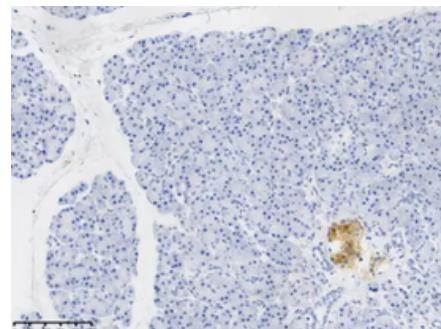
IHC staining of carcinoma of human pancreas tissue using anti-UCHL1  
**UM800136**

### GFAP



Confocal IF image of primary rat neurons labeled with anti-GFAP  
**UM500005**

### ENO2



IHC staining of human pancreas tissue using anti-NSE (ENO2)  
**UM800177**

**Carrier-Free Antibodies for TBI Targets:** OriGene carrier-free antibodies are conjugation-ready and are free of BSA, sodium-azide, and glycerol. These are compatible with various labels, including fluorophores, metals, enzymes, and oligonucleotides.

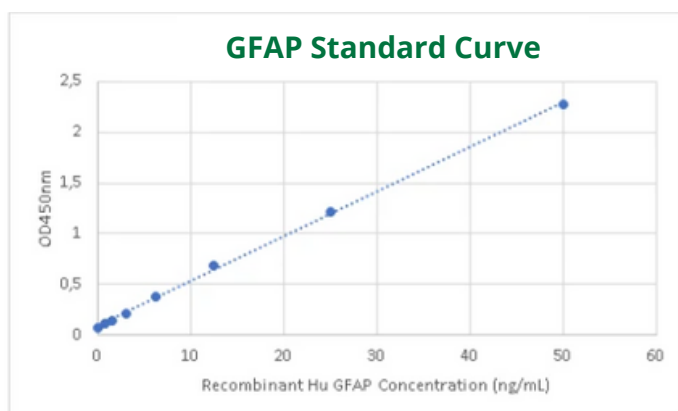
For more carrier-free antibodies, visit us at

<https://www.origene.com/products/antibodies/carrier-free-antibodies>

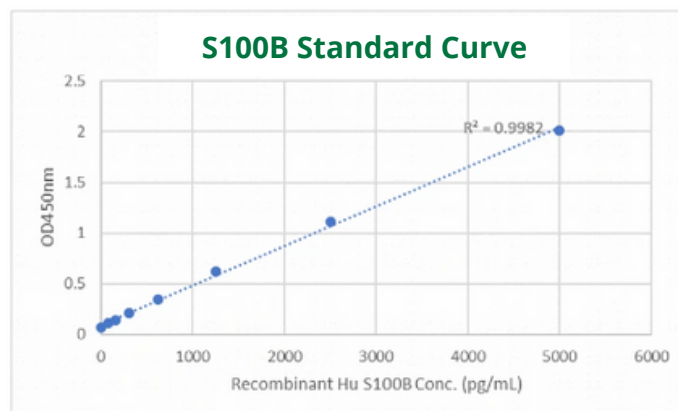
## High-sensitivity ELISA kits for human TBI Biomarkers

Target	Sample	Catalog #	Sensitivity
GFAP	Serum, plasma, other	EA200012	85 pg/ml
S100B	Serum plasma, other	EA200016	23 pg/ml

Target	Catalog #
UCHL1	CF504289
ENO2	CF813801
GFAP	CF500338
MAPT	CF809201
NEFL	CF801110
S100B	CF807235



**EA200012**



**EA200016**

For more details, please visit

[www.origene.com/research-areas/traumatic-brain-injury](http://www.origene.com/research-areas/traumatic-brain-injury)