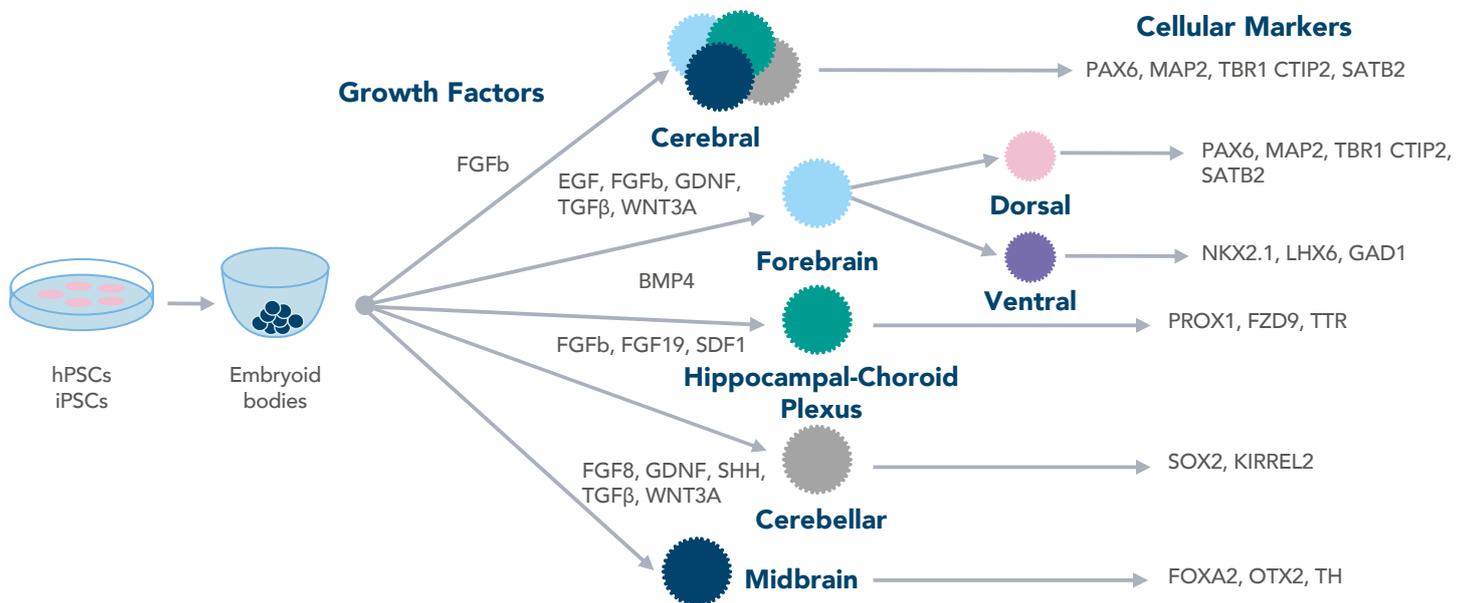


Cerebral Organoids

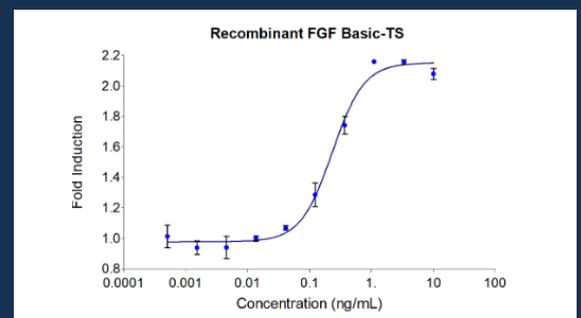
- Cerebral organoids are a powerful tool to study neurodevelopment and implementing drug screening for neurological disorders.
- These structures are generated from induced or human pluripotent stem cells (iPSCs, hPSCs) grown in specialized media with growth factors.
- HumanKine® recombinant cytokines and growth factors are authentic human proteins that are HEK293 cell expressed, and demonstrate greater activity than *E. coli* expressed proteins. They are also tag and endotoxin free.



Don't risk your organoid cultures with poor quality proteins:
Choose **HumanKine** growth factors

Target	Cat No.	Purity	Activity (EC50)	Source	Model Organoid	GMP-grade?
BMP4	HZ-1045	>95%	1.5-9 ng/mL	HEK293	Hippocampal-Choroid Plexus	✓
EGF	HZ-1326	>95%	Active	HEK293	Cortical	
FGFb	HZ-1285	>95%	0.05-0.4 ng/mL	HEK293	Cortical, Cerebellar	✓
FGF8	HZ-1103	>95%	≤ 10 ng/mL	HEK293	Midbrain	
GDNF	HZ-1311	>95%	≤ 10 ng/mL	HEK293	Midbrain, Hypothalamus, Forebrain	
SHH	HZ-1306	>90%	≤ 350 ng/mL	HEK293	Midbrain	
TGFβ	HZ-1011	>95%	≤ 0.5 ng/mL	HEK293	Midbrain, Hypothalamus, Forebrain	✓
WNT3A	HZ-1296	>90%	2-17 ng/mL	HEK293	Midbrain, Hypothalamus, Forebrain	✓

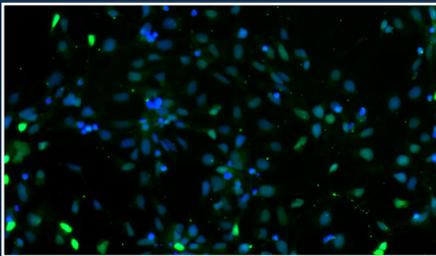
HumanKine® FGFb-TS protein



Recombinant human FGFbasic-TS (HZ-1285) stimulates dose-dependent proliferation of the HDFa human primary fibroblast cell line.

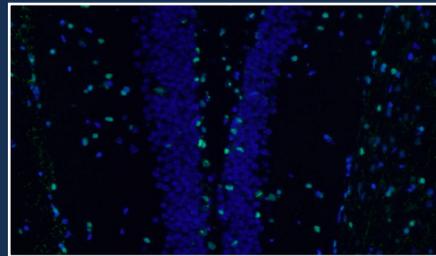
Know your organoids with neuronal and progenitor markers

Pax6 polyclonal antibody



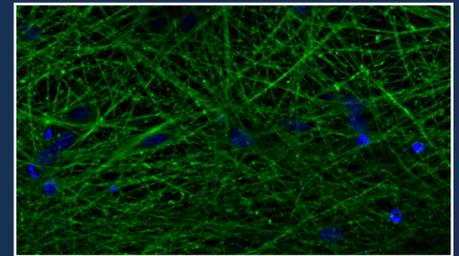
PAX6 (12323-1-AP, green) neuronal precursor cells (NPCs). Blue: DAPI. Provided by BioTalentum Ltd., Hungary.

SOX2 polyclonal antibody



SOX2 (11064-1-AP, green)-positive cells in mouse brain tissue. Blue: DAPI

TUJ1 monoclonal antibody



TUJ1/TUBB3 (66375-1-Ig, green) hiPSC derived neuronal cultures (35 days old). Blue: DAPI. Provided by BioTalentum Ltd., Hungary.

Antibodies for brain organoid characterization

Target	Catalog No.	Reactivity	Host	Application	Cell/Tissue Type
CTIP2/BCL11B	55414-1-AP	Human, Mouse	Rabbit	WB, IP, IF	Deep-layer cortical neurons
DCX	13925-1-AP	Human, Mouse, Rat	Rabbit	WB, IHC, IF, ELISA	Developing neurons
DLX2	26244-1-AP	Human, Mouse	Rabbit	WB, IHC, IF, ELISA	NSCs, forebrain
EMX1	55032-1-AP	Human Mouse, Rat	Rabbit	WB, ELISA	Forebrain NSCs
EOMES/TBR2	28316-1-AP	Human, Mouse, Rat	Rabbit	WB, ELISA	Intermediate progenitors
FOXA2	22474-1-AP	Human, Mouse	Rabbit	WB, IP, IHC, IF, ChIP, ELISA	Midbrain dopaminergic neurons
FOXP1	12764-1-AP	Human, Mouse, Rat	Rabbit	WB, ELISA	Forebrain cells
FZD9	13865-1-AP	Human, Mouse, Rat	Rabbit	WB, IHC, ELISA	Cortical precursors, hippocampal neurons
GAD1	10408-1-AP	Human, Mouse, Rat	Rabbit	WB, IP, IHC, IF, ELISA	Ventral forebrain
KIRREL2	10890-1-AP	Human, Mouse, Rat	Rabbit	WB, ELISA	Cerebellar progenitors
LHX	21516-1-AP	Human	Rabbit	WB, ELISA	Ventral forebrain
NCAD	22018-1-AP	Human, Mouse Rat, Bovine, Canine, Gecko, Horse	Rabbit	WB, IP, IHC, IF, FC, CoIP, ELISA	NSCs, migrating neurons, neural plate
NELL2	11268-1-AP	Human	Rabbit	WB, IHC, IF, ELISA	NSCs, neurons
Nestin	19483-1-AP	Human, Mouse, Rat	Rabbit	WB, IHC, IF, ELISA	NSCs, progenitors GABAergic interneurons, oligodendrocytes,
NKX2.1	21777-1-AP	Human, Mouse, Rat	Rabbit	WB, ELISA	ventral forebrain
OTX2	13497-1-AP	Human, Mouse, Rat, Chicken	Rabbit	WB, IP, IHC, IF, FC, ChIP, ELISA	Midbrain cells
PAX6	12323-1-AP	Human, Mouse, Rat	Rabbit	WB, IHC, IF, FC, ELISA	Radial glia/NSCs
PROX1	11067-2-AP	Human, Mouse, Rat	Rabbit	WB, IF, FC, ChIP, ELISA	Hippocampal neurons
Reelin	20689-1-AP	Human, Mouse	Rabbit	IHC, IF, ELISA	Pre-plate/Cajal-retzius cells
SATB2	21307-1-AP	Human, Mouse, Rat	Rabbit	WB, IHC, ChIP, ELISA	Cortical neurons across corpus callosum
SOX2	11064-1-AP	Human, Mouse Rat, Zebrafish	Rabbit	WB, IHC, IF, FC, ELISA	Radial glia/NSCs
TBR1	20932-1-AP	Human, Mouse, Rat	Rabbit	WB, IP, IHC, IF, ELISA	Pre-plate/Cajal-retzius cells
TH	25859-1-AP	Human, Mouse, Rat, Canine, Gerbil, Zebrafish	Rabbit	WB, IP, IHC, IF, ELISA	Midbrain NSCs
TTR	11891-1-AP	Human, Mouse	Rabbit	WB, IHC, IF, ELISA	Choroid plexus
TUJ1/TUBB3	66375-1-Ig	Human, Mouse, Rat	Mouse	WB, IHC, FC, ELISA	Neurons
VGAT	14471-1-AP	C. elegans, Human, Mouse, Rat	Rabbit	WB, IP, IHC, IF, ELISA	GABAergic and glycinergic neurons
Vimentin	10366-1-AP	Human, Mouse, Rat, Bovine, Deer, Hamster, Pig	Rabbit	WB, IHC, IF, FC, ELISA	Radial glia/NSCs