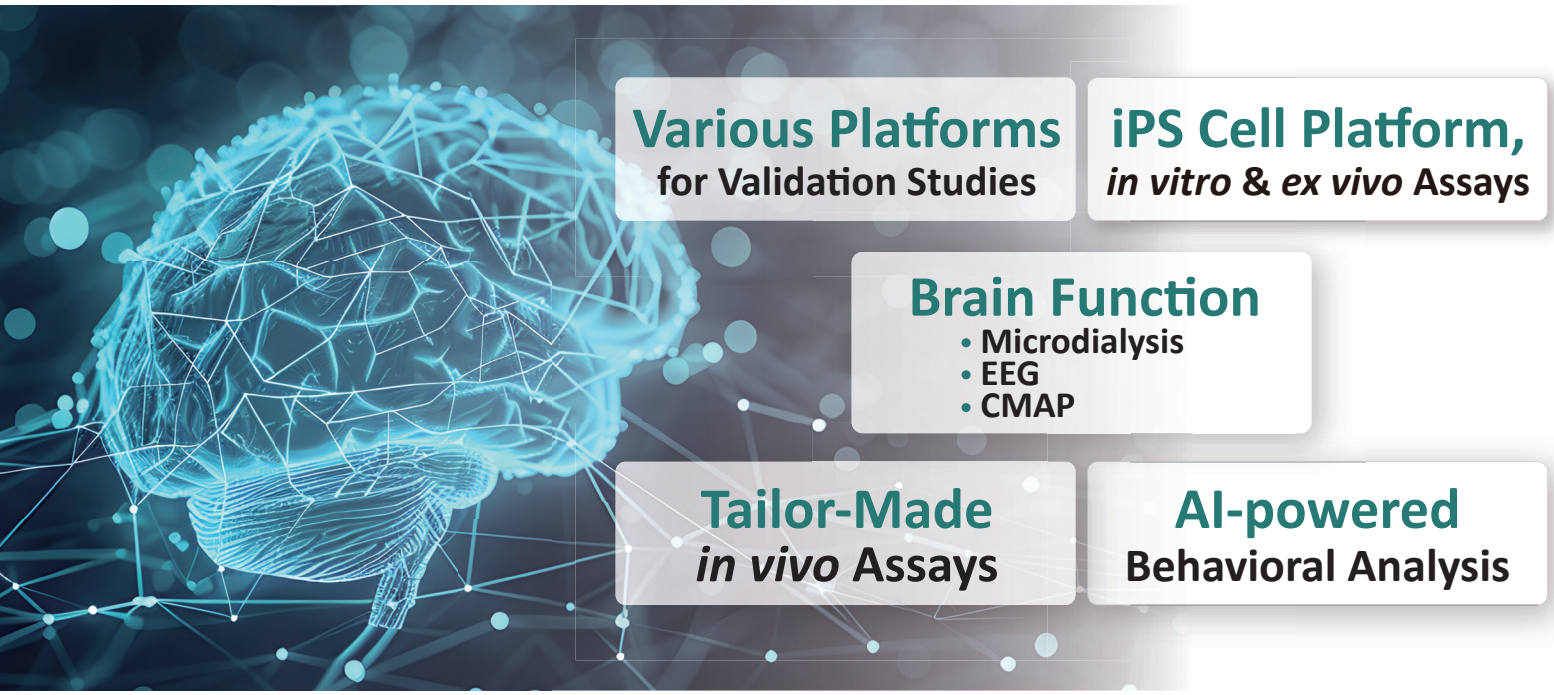
Neuroscience

Advance Your CNS Drug Discovery

Axcelead offers an unparalleled portfolio of services, coupled with deep expertise and cutting-edge platforms, to bring reliable human translational research for your CNS drug discovery endeavors. Our commitment to excellence ensures timely and cost-effective delivery of results.



Various Platform for Validation Studies

Deep-Diving into Brain with Our Advanced Technology

Flow cytometry

- Profiling of specific cells, MoA analysis

Spatial transcriptomics

- Spatial analysis of comprehensive gene expression

Single cell / nuclear RNA-seq

- Gene expression analysis in specific cells / nuclei, MoA analysis

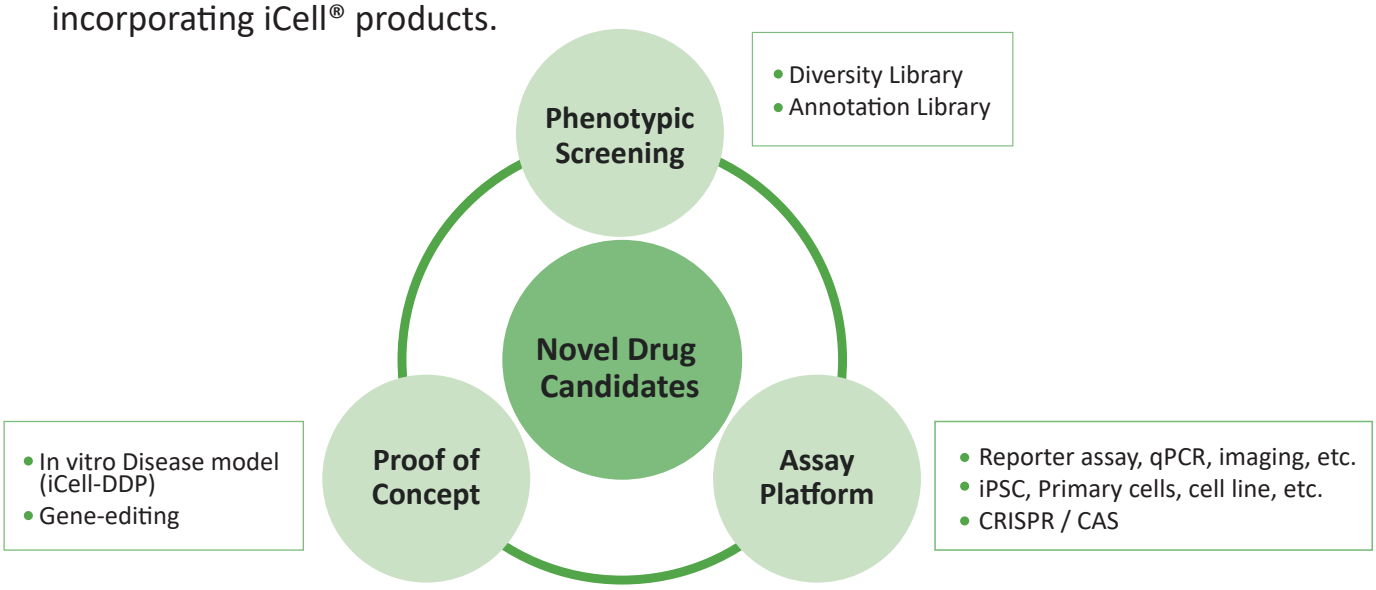
Immuno-histochemistry (IHC)

- Spatial analysis of protein / gene expression

iPS Cell Platform, *in vitro* & *ex vivo* Assay

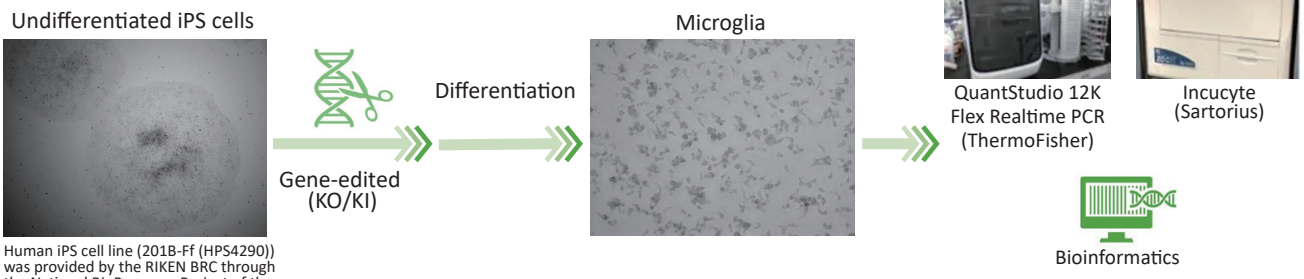
iCell® and iCell-DDP® Cells

Based on the scientific experience of Axcelead DDP and FCDI collaboration, we offer a wide selection of phenotypic screening services and various assay platform incorporating iCell® products.



Gene-edited iPS Cells

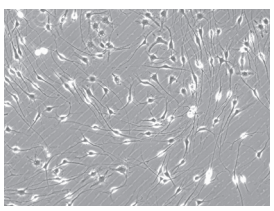
- Exploring correlation between phenotypes and change in genes of interest ⇒ target validation
- Established cells by introduction of gene mutation reported in patients ⇒ cell models

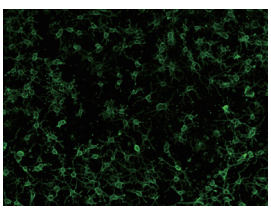


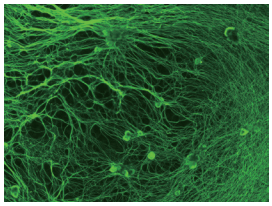
Human iPS cell line (201B-Ff (HPS4290)) was provided by the RIKEN BRC through the National BioResource Project of the MEXT, Japan.

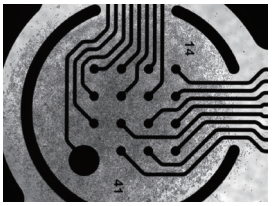
Tailored Assays in Many Cell Types

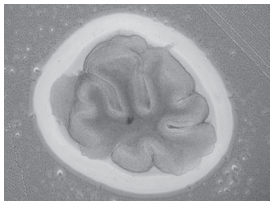
Our neuroscientists can tailor assays in primary cells, cell lines, iPSC derived cells, or organotypic brain slices to support your drug discovery program.

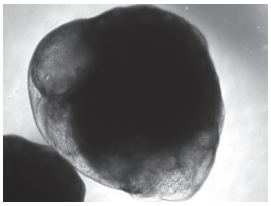

Schwann cell


OPC


DRG


MEA (neuron)


Cerebellum slice culture

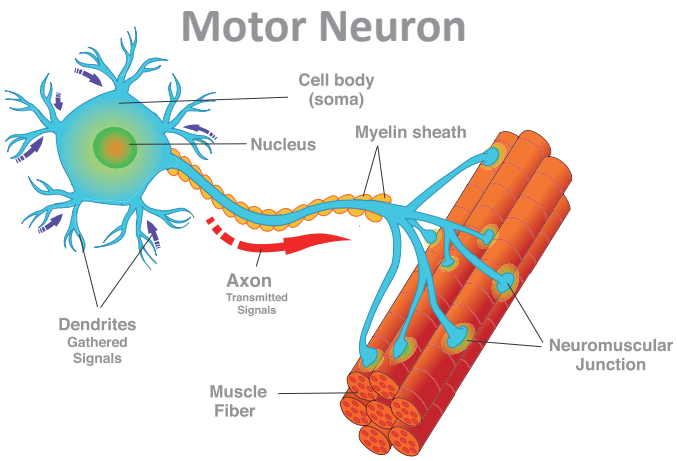

Brain organoid

Brain Function: Functional Recovery, Translational Research

CMAP

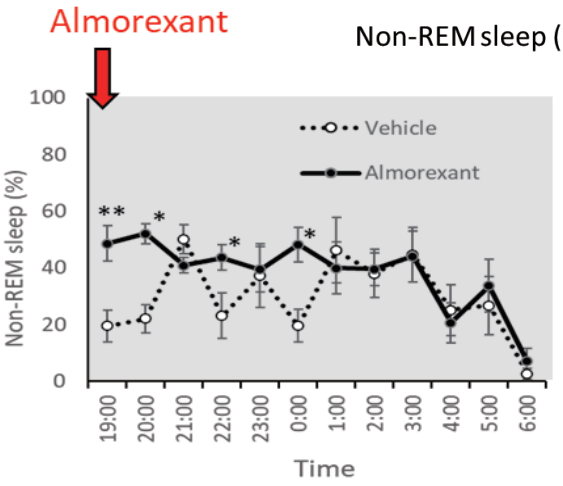
Compound Muscle Action Potential (CMAP) can evaluate the motor neuropathy in the lower motor neurons.

CMAP is used for diagnosis and prognosis in neuromuscular disease such as amyotrophic lateral sclerosis. (ALS)

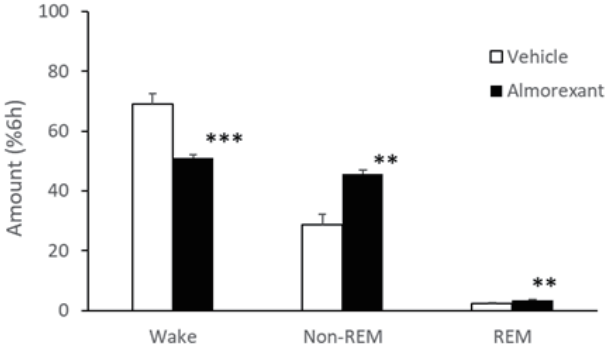


EEG

Electroencephalogram (EEG) can monitor neural activity in real time. (ex, sleep EEG)



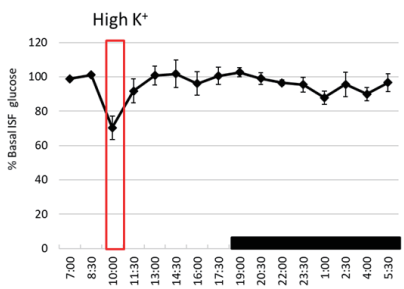
Non-REM sleep (almorexant 100 mg/kg)



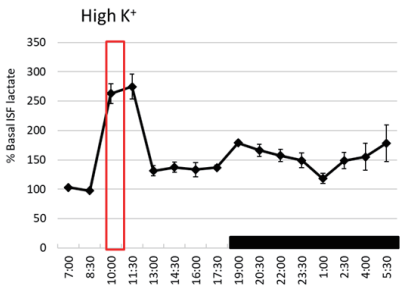
Mean ±S.E.M. (n=6). **p< 0.01, ***p< 0.001, vs Vehicle group by paired t-test.

Microdialysis

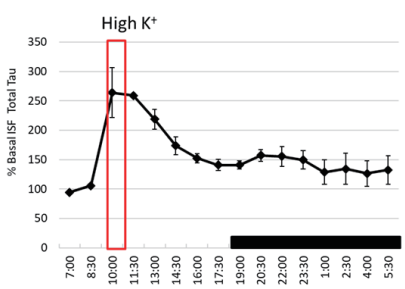
Microdialysis can analyze dynamic change of neurotransmitter, peptide and protein.



Glucose



Lactate



Total Tau

Tailor-Made *in vivo* Assay

Animal model

Schizophrenia, Parkinson, Autism, MS, Cognitive dysfunction model, etc.

Modality

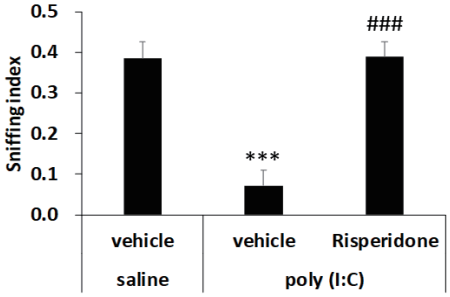
Small molecule, Anti-body, Peptide, Anti-sense oligonucleotide, etc.

Behavioral test

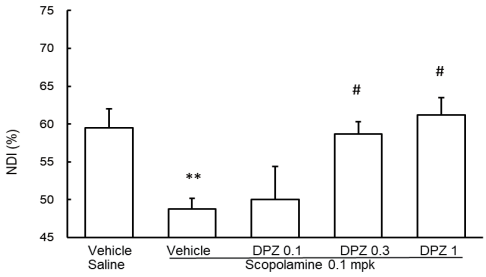
Motor function, Cognitive function, Sociability, epilepsy, etc.

3-chamber Social Interaction test

Mice (poly IC model)



Novel object recognition test (NORT) (mice/rats)

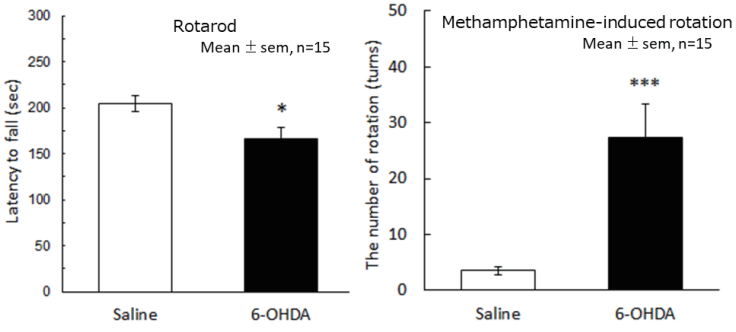


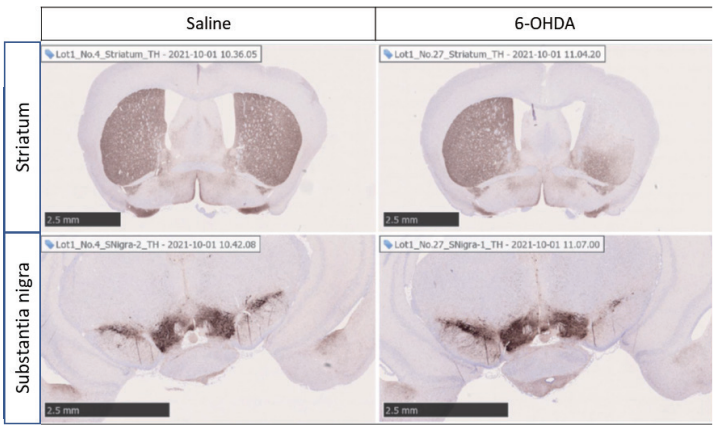
Epilepsy model

- **Chemically-induced**
  Pentylenetetrazole, Kainate, etc.
- **Electrically-induced model**
  6Hz psychomotor seizure (partial seizure model)
  Maximal electroshock seizure (MES; generalized tonic-clonic seizure model)

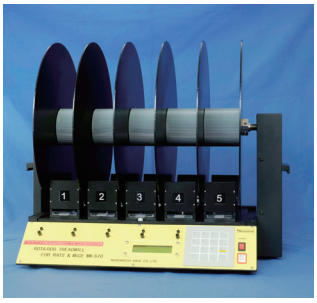
Ugo Basile, #57800

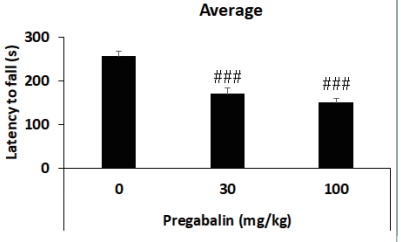
6-OHDA model (mice)



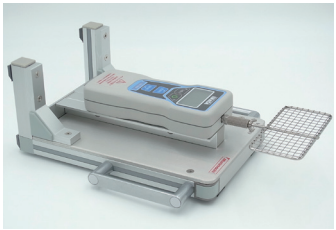


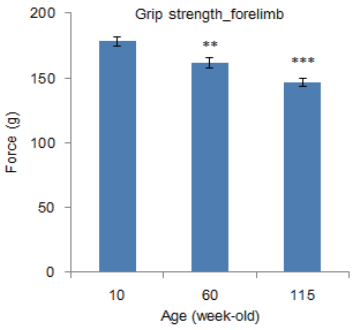
Rotarod (mice/rats)





Grip strength test (mice/rats)





We have experience in developing animal models and assay platform for research projects. We conduct from the establishment of the assay platform to meet the customer's needs.

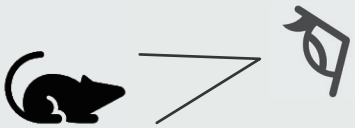
AI-powered Behavioral Analysis

Automatic Analysis

- Grooming*
- Social deficit
- Distance traveled
- Movement speedx
- Localization within test box
- Angle of head swing
- Scratching**
- Gait analysis**

* Possible to analyze separately whether the head or body is being groomed
** under construction

Detection of Hidden Phenotype

	Evaluation	Detected abnormalities	ex. poly (I:C) model
Conventional method		Single phenotype	Social deficit
AI analysis		Multi phenotype	Social deficits Grooming, etc.

Simultaneous detection / evaluation of stereotypy as well as negative symptoms from a single model

Integrated Drug Discovery Solution

Axcelead also offers fully integrated drug discovery services, from target discovery to IND-enabling translational research. Our experience and collaborative team facilitate each stage of your drug discovery project.

IND-Enabling Projects

What is it?

- Axcelead can leverage approximately 1,000 projects from Takeda in multiple therapeutic areas through its spin-out.
- These exciting projects are available for co-creation of drug candidates with our customers.
- The newly generated Intellectual property in the co-creation projects is owned by our customers.

Save Time & Resources

- Offer Ready-to-Go compounds and assays
- Eliminate the initial phases of drug discovery

Expand Your Pipeline

- Extend the opportunities by our curated selection of approximately 1,000 projects
- Customize projects to fit your needs

Go Beyond Provision via Partnership

- Help elevate initial compounds to IND-enabling status, ensuring IP remains excursively yours
- Unleash innovation through the power of synergy

Axcelead Drug Discovery Partners, Inc.
https://www.axcelead-us.com/

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