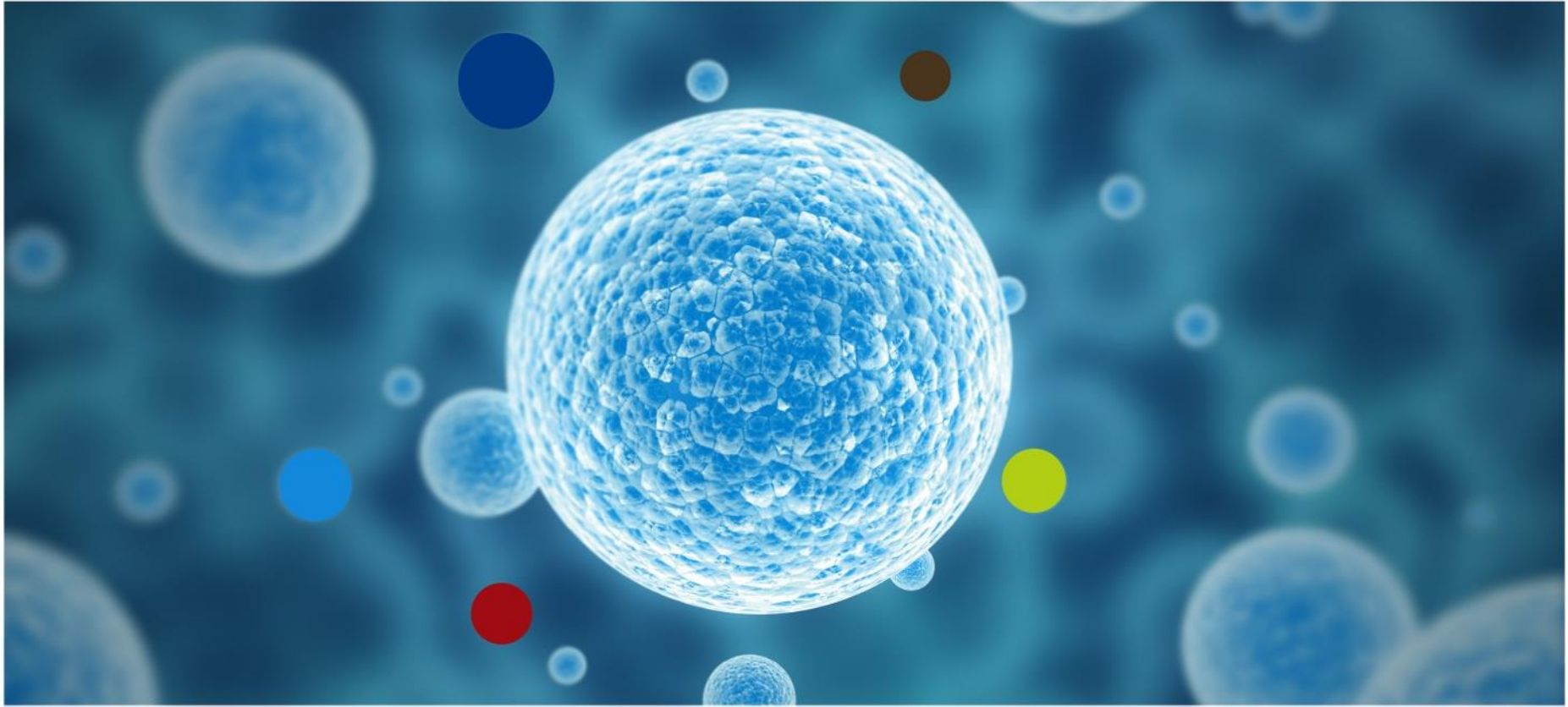


# A sustainable European Bank for induced pluripotent Stem Cells



*The EBISC2 project has received funding from the Innovative Medicines Initiative 2 Joint Undertaking (JU) under grant agreement No 821362. The JU receives support from the European Union's Horizon 2020 research and innovation programme and EFPIA.*



innovative  
medicines  
initiative

# EBiSC: The European Bank of induced Pluripotent Stem Cells



- ❁ **EBiSC1**: A first project phase to establish the bank supported by IMI and EFPIA, active 2014-2017
- ❁ **EBiSC2**: A second project phase supported by IMI and EFPIA, running 2019-2022 developing tools and infrastructure to ensure long term, independent and sustainable operations of the bank.
- ❁ **EBiSC**: The output –an operational iPSC biobank to collect and distribute iPSC lines for research use worldwide, in addition to providing new iPSC derived products and services.

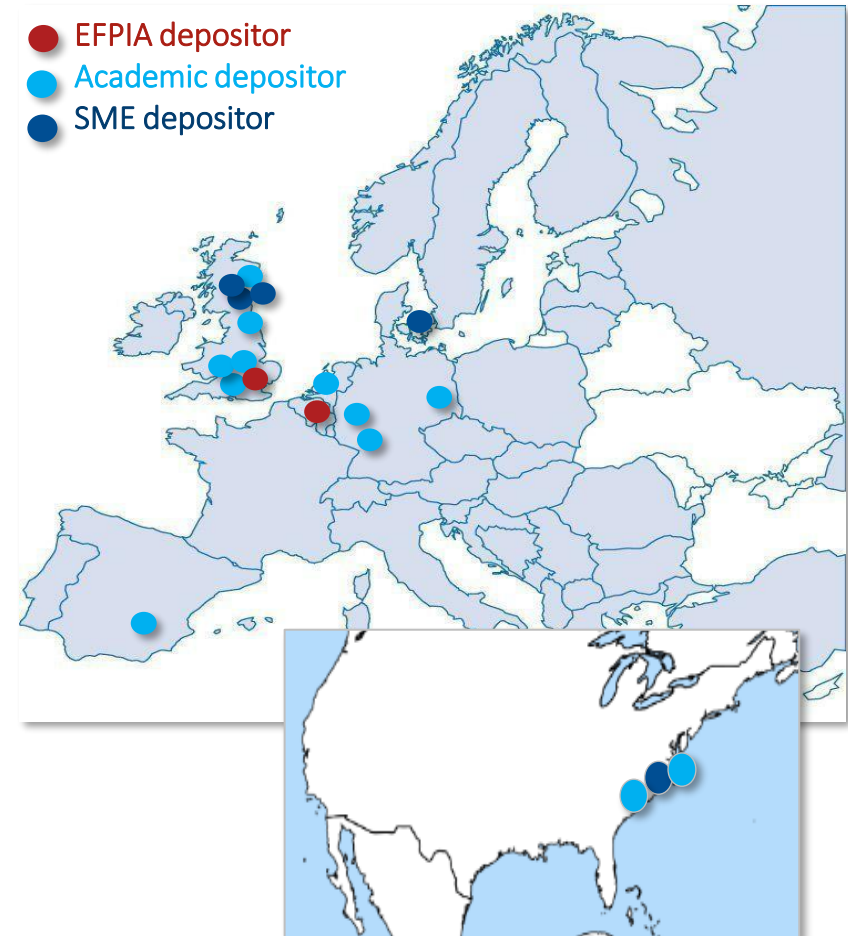
[www.EBiSC.org](http://www.EBiSC.org)

# EBiSC simplifies iPSC research through centrally collecting iPSC lines...



## 🌐 EBiSC iPSC lines deposited by research groups internationally

- >900 iPSC lines
- Samples from >30 different clinical studies
- >20 different depositing institutions
- Academic, SME, biobanks, EFPIA and consortia projects as depositors
- Global deposition welcome



# .. and making them available to researchers via standardised processes

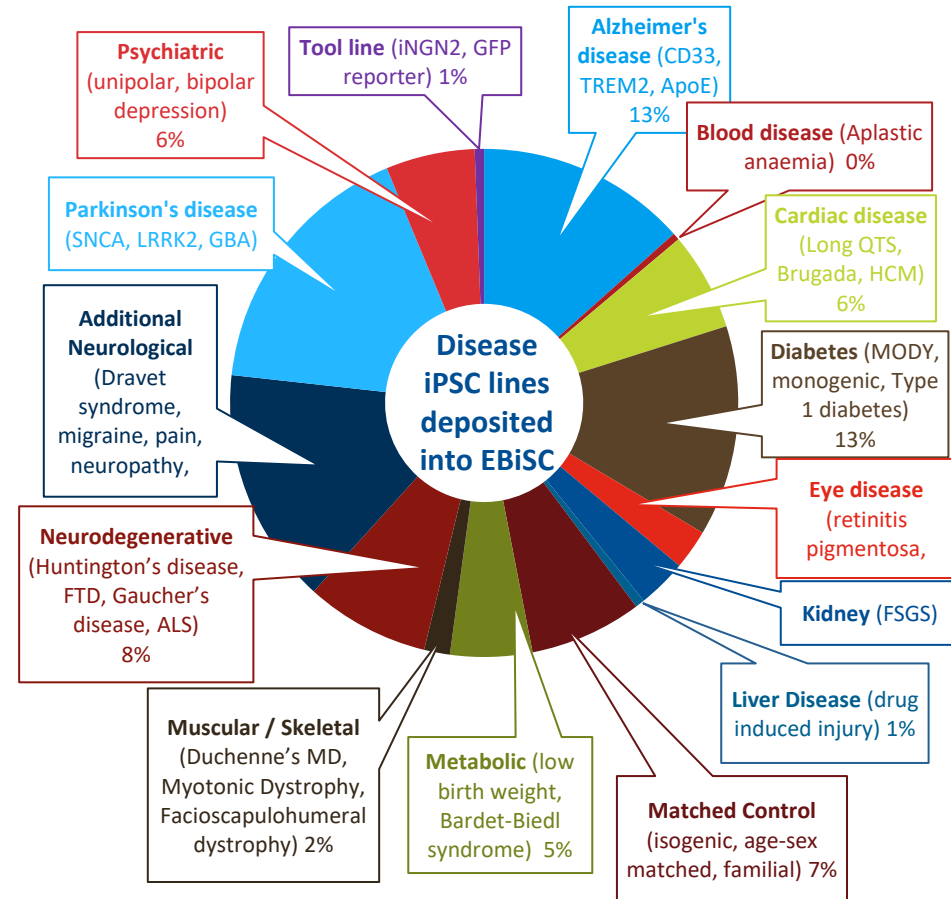


- ❖ **Consent** review
- ❖ Completion of **legal** agreements
- ❖ Shipment of iPSC vials for **secure storage**
- ❖ **Feeder free** and **antibiotic free** culture
- ❖ **High volume** banking
- ❖ **Automation** and **bioreactor** based scalable culture
- ❖ Industry standard **quality control**
- ❖ **Data shared** to depositors and users
- ❖ **Functional /phenotypic** assessment of derived cells
- ❖ General iPSC line data in **hPSCreg** ([www.hPSCreg.eu](http://www.hPSCreg.eu))
- ❖ Data shared via **EBISC catalogue**
- ❖ **Sensitive data** via Data Access Committee archive
- ❖ **iPSCs shared** to non-profit and commercial users
- ❖ **Research use** only
- ❖ **Non-profit** fee per vial
- ❖ **Worldwide** distribution
- ❖ Generation and sharing of **pre-differentiated** cells e.g. **iPSC-neurons**
- ❖ Participation in **external iPSC research projects**

# Key results from the EBiSC2 project

## iPSCs

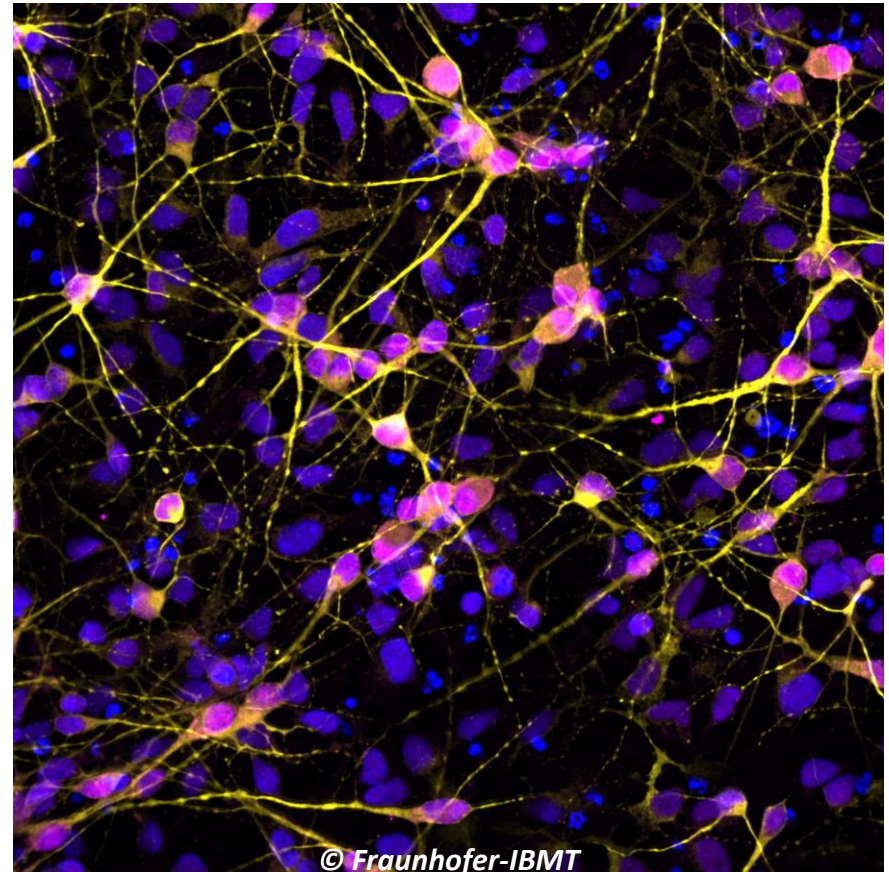
- ❁ Maintenance, security and re-stocking of established collection.
- ❁ New isogenic cells including inserted variants and corrections
- ❁ Modified iPSC lines to drive differentiation and monitor cellular or disease phenotype.
- ❁ >45 diseases
- ❁ Age, ethnicity and sex matched controls
- ❁ See [www.EBiSC.org/search](http://www.EBiSC.org/search)



# Key results from the EBiSC2 project

## iPSC- derived cells

- ❁ Pre-differentiated iPSC neurons and others coming soon.
  - [www.EBiSC.org/EBiSC-NEUR1](http://www.EBiSC.org/EBiSC-NEUR1)
- ❁ Tailored QC panel according to industry standards
- ❁ Functional screening and characterisation
- ❁ High cell concentration cryopreservation.
- ❁ Scaleable differentiation protocols



© Fraunhofer-IBMT

Time: 7 days post-thaw. Magnification: 40x  
 Description: Cryopreserved EBiSC-NEUR1 cells were thawed, cultured on Poly-Ornithine / Laminin and immunostained after 7 days for beta-III-tubulin (TUBB3, magenta) and DAPI (blue). 6

# Key results from the EBiSC2 project

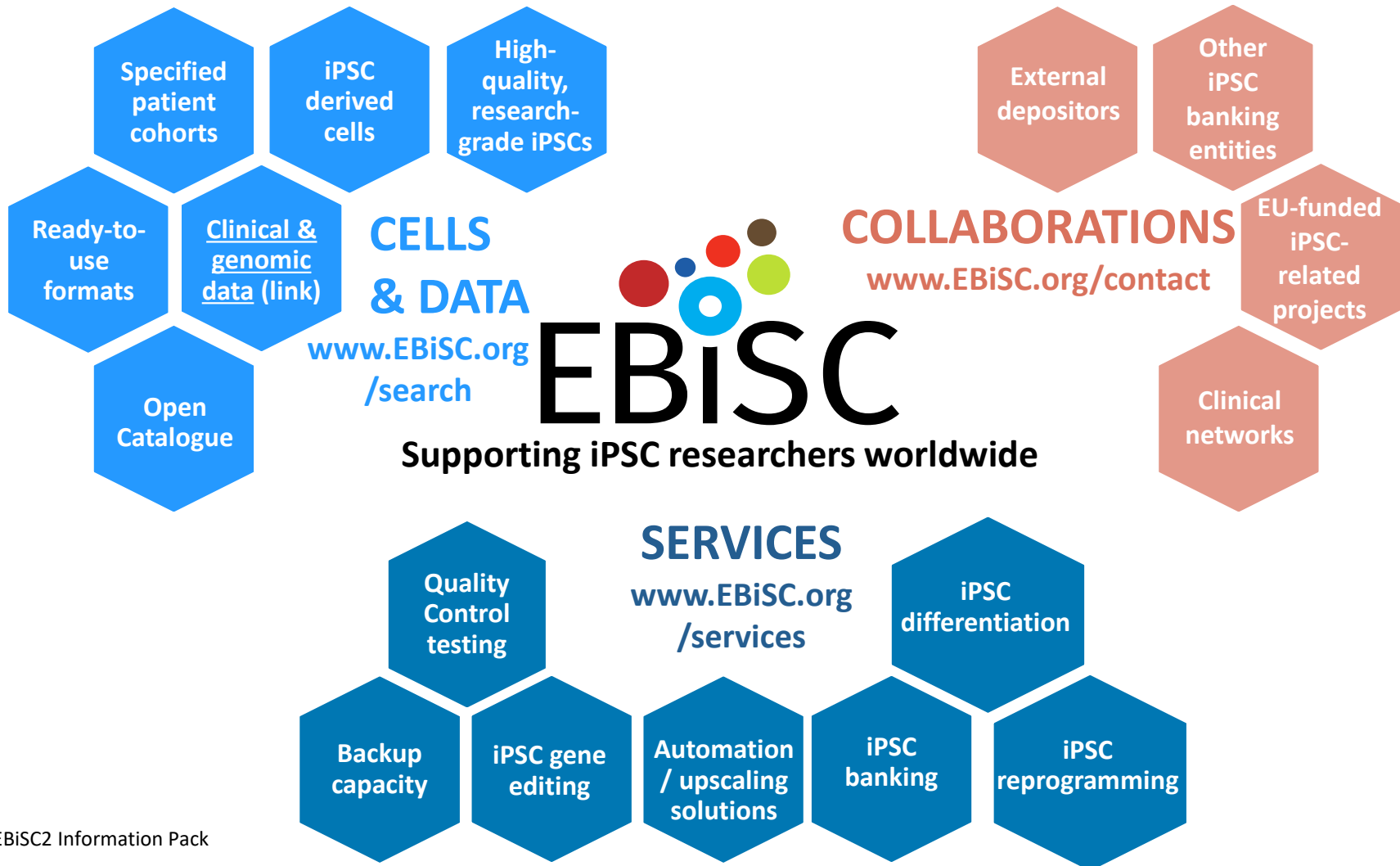
## Scientific developments

- ❁ 16 published open-access publications
  - [www.EBiSC.org/resources/documents](http://www.EBiSC.org/resources/documents)
- ❁ Collaboration with external projects e.g. R2U-Tox and UKDRI-IPMAR
- ❁ Collaboration with patient advocacy groups and disease research charities e.g. Alzheimer Europe
- ❁ Information for patients and the general public:
  - [www.EBiSC.org/information\\_general\\_public/](http://www.EBiSC.org/information_general_public/)
- ❁ Expertise in iPSC cryopreservation, upscaling & differentiation.
- ❁ Seminars, videos, training material & protocols
  - [www.EBiSC.org/resources/videos](http://www.EBiSC.org/resources/videos)
  - [www.EBiSC.org/customer-information/](http://www.EBiSC.org/customer-information/)
- ❁ Expertise and 'lessons learned' through extensive collaboration with many different research groups and projects across 10 years of EBiSC.



[www.EBiSC.org/r2u](http://www.EBiSC.org/r2u)

# Accessing EBiSC2 cells, data and services.





# Accessing EBiSC2 cells, data and services.



[www.EBiSC.org/search](http://www.EBiSC.org/search)



iPSC-neurons

Catalogue

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## Search filters

CSV catalogue export

hide helptexts

### Gene(s) of interest

From hPSCreg@ data

From -omics data

- Gene-edited (63)
- Donor-derived (899)

### Disease(s) of interest

Diseases

Linked by -omic variants

- Donor disease status
- normal (389)

### Genotyping

Sequencing methods(s)

- Isogenic line available (80)

### Availability

Availability

### Advanced filters

Biological sex

<https://ebisc.org>

962 cell lines found.

#### BIHi006-D

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell

#### BIHi007-A

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell

#### BIHi008-A

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell

#### BIHi009-A

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell

#### BIHi010-A

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell

#### BIHi011-A

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell

#### BIHi012-A

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell

#### BIHi015-A

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell

#### BIHi016-A

Patient-derived cell line

Donor disease status:  
focal segmental glomerulosclerosis

Primary cell type:  
peripheral blood mononuclear cell



Access to the EBiSC catalogue

[www.EBiSC.org](http://www.EBiSC.org)

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