

Statement by the international stem cell banking initiative (ISCBI)

A call for implementation of the standard pluripotent stem cell (hPSC) nomenclature in scientific publications.

FAIRification⁽¹⁾ of data associated with hPSC is essential for reproducibility of research and to increase knowledge and utility of available resources and data. The latter are ethically imperative goals. A unique identifier for each hPSC – line is required to identify all data and sources unambiguously to a specific cell line, and thus, implement FAIR data principles. This identifier must be effortlessly generated, centrally registered, and openly accessible. However, this identifier must also be a community standard and its use broadly enforced similarly to standards of other resources such as genes, proteins or other cell types.

A standard nomenclature for hPSC has been developed^(2,3) and an easy to use open source tool implemented in the European Human Pluripotent Stem Cell Registry (hPSCreg)⁽⁴⁾ public database of hPSCs, in order to generate a standard name for each cell line and to automatically register it in a central accessible registry. Today, more than 5000 hPSC – lines are registered already in hPSCreg. Many of them are registered with essential data on their ethical and scientific provenance which is used to certify their suitability for use in European Commission funded research.

However, at the same time many lines are established, published and used, with no standard identifier and the associated data can thus not be FAIRified⁽⁵⁾. Moreover, in some cases the same name has been used for different cell lines⁽³⁾.

The International Stem Cell Banking Initiative (ISCBI) strongly supports the standard nomenclature and registration of hPSC – standard names / identifiers in the central database hPSCreg. Furthermore, it recommends that:

- The standard hPSC identifier should be considered as mandatory in public resources (e.g., journals, registries, catalogues etc.);
- Registration of any hPSC lines in the central register of the European Human Pluripotent Stem Cell Registry (at <https://hpscereg.eu>) be considered best practise;
- A supervisory group be set up by hPSCreg to monitor compliance and provide recommendations to improve identifier utility.

¹ FAIR: Findable, accessible, interoperable, re-usable (<https://www.go-fair.org/fair-principles/>)

² A Standard Nomenclature for Referencing and Authentication of Pluripotent Stem Cells. Stem Cell Reports. 2018 Jan 9;10(1):1-6. doi: 10.1016/j.stemcr.2017.12.002.

³ A call for standardized naming and reporting of human ESC and iPSC lines. Cell Stem Cell. 2011 Apr 8;8(4):357-9. doi: 10.1016/j.stem.2011.03.002.

⁴ human pluripotent stem cell registry (<https://hpscereg.eu>)

⁵ The implemented standard identifier does not exclude other names for the line as these are linked to the standard as synonyms. However, in publications and other open resources, the standard ID must always be used in order to make this link transparent.