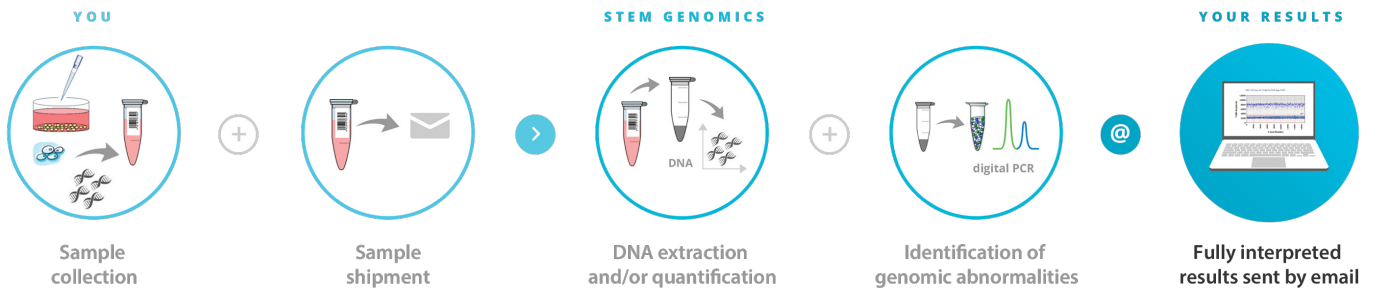


SOLUTION iCS-digital™ MSC

The iCS-digital™ MSC test detects more than 80% of the most frequent genomic abnormalities in human mesenchymal stromal/stem cells (hMSCs).



CELL TYPES	STAGES	SAMPLES	SHIPMENT	COVERAGE	MOSAICISM	TIME
Human MSCs	- After isolation - During cell expansion - Before banking	- gDNA - Cell pellets Cell culture supernatant (under optimization)	- Room temperature - Dry ice	>80%	>20% (depending on sample quality)	2-3 days after sample reception

RATIONALE FOR MSC GENOMIC INTEGRITY SCREENING

In culture, human mesenchymal stromal/stem cells (hMSCs) can acquire genomic instability in both autosomes and sex chromosomes (1-3). These chromosome anomalies may be propagated during cell expansion, raising issues about the safety and clinical applications of such cell lines.

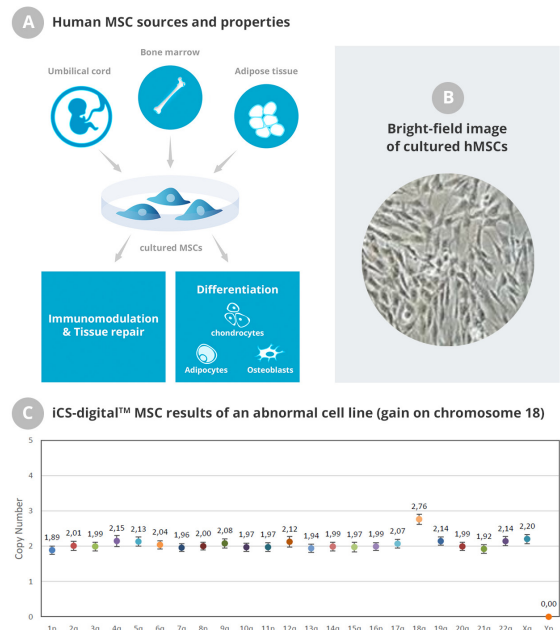
With the ultimate goal of maintaining in culture genetically stable hMSCs, we carried out an exhaustive meta-analysis of genomic abnormalities and referenced about 300 genetic abnormalities in hMSC lines.

We then used these data to develop the iCS-digital™ MSC test. This assay includes a set of 24 specific probes that were designed and optimized to target all human chromosomes and allows detecting, by digital PCR, more than 80% of the most frequent genetic abnormalities in hMSCs.

Thanks to its rapidity, the iCS-digital™ MSC test is a straightforward method for monitoring hMSC lines in culture.

References :

1. Neri, S. Int. J. Mol. Sci. 2019, 20, 2406.
2. Ben-David, U. et al. Cell Stem Cell 2011, 9, 97-102.
3. Kim, S.Y. et al. Stem Cells Dev. 2015, 24, 77-92.



The iCS-digital™ MSC test is a fast and precise method for the routine screening of hMSC lines during culture.