

QGel™ Protocol

How to lower stiffness of QGel™ MT 3D Matrix to accommodate growth of particular cell types in 3D

ABOUT THIS PROTOCOL

This is an example on how to lower the hydrogel stiffness to adapt this characteristic to your cells. Indeed, certain cell types require softer matrices for enhanced activity and proliferation.

Note that this is only a guideline; resuspension volumes should be optimized for your specific application and cell type.

PRODUCT SUPPORT

Brochures, FAQ, additional protocols and videos on: www.qgelbio.com/support

Required chemicals/solutions/kits:

- QGel™ MT 3D Matrix (ref. 1001, 1004 or 1007)
- QGel™ Buffer A

Brief procedure description:

1. Resuspend QGel™ powder by addition of QGel™ Buffer according to the desired final stiffness. Check *Table.1* below for examples of gel stiffness and gelation time (column D and E) obtained with different resuspension volumes (column A).
2. After adding the buffer to the powder, immediately vortex about 10 seconds.
3. Add the cell suspension respecting the ratio 1 : 4 (cell suspension : QGel™ Buffer). See *Table.1* below (column B).
4. Vortex quickly for homogenization.
5. The solution is ready and gel discs can be casted as usual (see QGel™ Protocol "1-page Mixing and Handling").

Table.1: Example of resuspension volumes for QGel MT 3D Matrix, ref. 1004:

	A	B	C	D	E
Stiffness	Resuspension volume of Buffer A	Cell suspension volume	Total volume	Expected gelation time (min) *	Mechanical properties range (shear modulus G')
soft I (standard)	400 µL	100 µL	500 µL	5'00-6'00	800-1000 (Pa)
soft II	480 µL	120 µL	600 µL	7'00-8'00	600-700 (Pa)
soft III	560 µL	140 µL	700 µL	9'30 - 10'30	400-500 (Pa)
soft IV (lower limit)	600 µL	150 µL	750 µL	11'00-12'00	300-350 (Pa)

* Gelation times are indicative and may vary depending on cell concentration and cell culture media used for the cell suspension.

Note: *Table.1* shows data obtained with QGel product ref.1004. Similar ranges of gelation times and mechanical properties are also expected with QGel product ref.1001 and 1007.