REPRODUCIBLY PRODUCE UNIFORM EMBRYOID BODIES

AggreWell™ Plates

Many pluripotent stem cell (PSC) differentiation protocols begin with the formation of 3-dimensional aggregates of cells called embryoid bodies (EBs). EB size directly affects subsequent differentiation trajectories[1-7], but conventional EB formation methods[8,9] result in EBs that are heterogeneous in size and shape, leading to inefficient and uncontrolled differentiation[1].

AggreWell™ plates provide an easy and standardized approach to the production of EBs. Each well contains microwells of defined size, making it easy to produce large numbers of highly uniform EBs and ensure reproducibility of differentiation experiments.

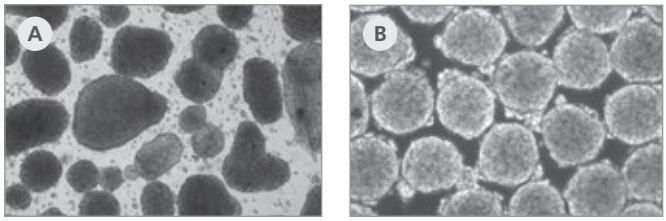


Figure 1. Generate Uniform Embryoid Bodies Using AggreWell™

(A) Human EBs formed using conventional methods are heterogeneous in size and shape resulting in inefficient differentiation. (B) Human EBs formed using AggreWell™ plates are uniform in size and consistently spherical in shape. Shown are EBs generated with 2,000 cells using AggreWell™400.

EBs and other cell aggregates[10-12] generated using AggreWell™ plates are highly uniform in size and shape, and consistent within and between experiments. EB size can be easily modified by adjusting the cell seeding density. EBs formed using AggreWell™ can be efficiently differentiated into a variety of cell types.

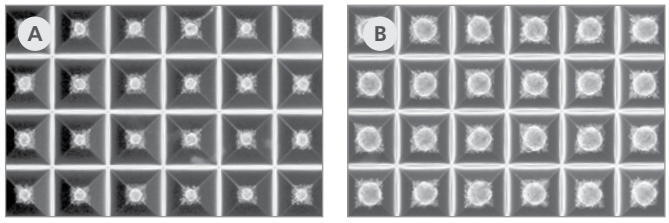


Figure 2. hPSCs Form Embryoid Bodies in AggreWell™ Plates

Starting from a single-cell suspension, hPSCs form uniform EBs after 24 hours in AggreWell™. The size of the EB can be easily modified by adjusting the seeding density. Shown are EBs in AggreWell™400 plates (A) 100 cells per microwell and (B) 1000 cellls per microwell.

Why Use AggreWell™?

EASY TO USE. Simple EB generation.

REPRODUCIBLE. Large numbers of uniform EBs.

CONTROL OF EB SIZE. 50 to 20,000 cells per EB.

CONSIDERATION. Reduces variability in differentiation protocols.

HIGH YIELD. Up to 5,900 EBs per well.

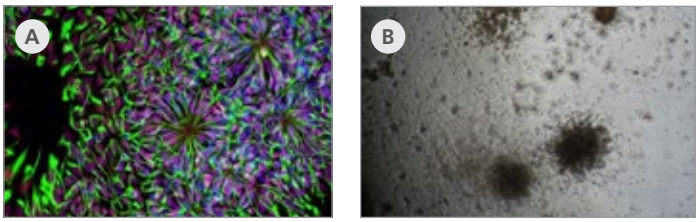
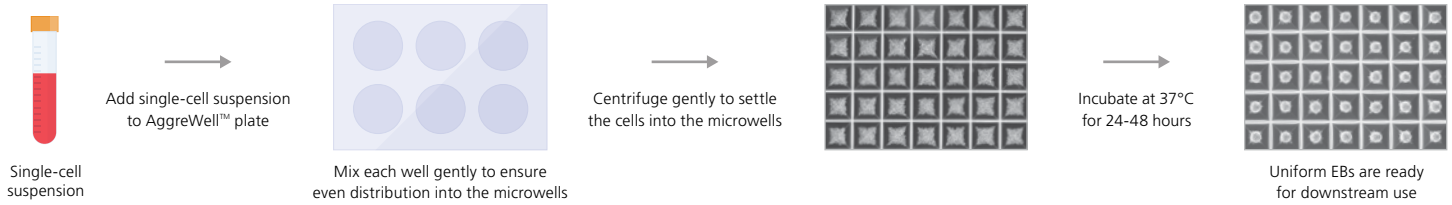


Figure 3. EBs Generated Using AggreWell™ Can Differentiate into Multiple Cell Types

(A) Neural progenitor cells (NPCs) were derived from EBs formed using AggreWell™800 plates and differentiated using STEMdiff™ Neural Induction Medium (Catalog #05835). NPCs express SOX1 (red), Nestin (green) and PAX6 (not shown), but not SOX10 (not shown). Nuclei are counterstained with DAPI. (B)* Hematopoietic progenitor cells were derived from EBs formed using AggreWell™400 plates and differentiated in serum-containing medium in suspension culture. Hematopoietic colony-forming units (CFUs) were detected using MethoCult™ H4435 Enriched (Catalog #04435).

**Data reprinted from Ungrin et al., 2008. See reference for full culture details.*

Formation of EBs in AggreWell™



AggreWell™ Products

Product	Size of Microwell	Plate Format	Size of EB	Number of EBs	Quantity	Catalog #
AggreWell™400	400 µm	24-well plate	50 - 3,000 cells	~ 1,200 per well	1/pack	34411
					5/pack	34415
		6-well plate		~ 5,900 per well	1/pack	34421
					5/pack	34425
AggreWell™800	800 µm	24-well plate	3,000 - 20,000 cells	~ 300 per well	1/pack	34811
					5/pack	34815
		6-well plate		~ 1,500 per well	1/pack	34821
					5/pack	34825
AggreWell™HT	900 µm	96-well plate	50 - 20,000 cells	~32 per well	1/pack	200-0563
					5/pack	200-0570
AggreWell™ EB Formation Medium	Defined, serum-free medium for generation and culture of EBs using AggreWell™ plates				100 mL	05893
AggreWell™ Rinsing Solution†	Rinsing solution for AggreWell™ plates to reduce surface tension and ensure optimal EB formation				100 mL	07010
37 µm Reversible Strainers, Small	37 µm nylon mesh filter, fits standard 14 mL round bottom tubes & 15 mL conical tubes				20/box	27215
37 µm Reversible Strainers, Large	37 µm nylon mesh filter, fits standard 50 mL conical tubes				12/box	27250

† *Required for optimal performance.*

For a complete list of related products for hPSC culture and differentiation, including specialized cell culture and storage media, matrices, antibodies, cytokines, and small molecules, visit **www.stemcell.com/hPSCworkflow** or contact us at **techsupport@stemcell.com**.

References

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