Electronic Supplementary Material (ESI) for RSC Advances

Supplementary information

Inertness of PDMS towards mouse embryo development

Naturally fertilized mouse embryos (B6C3F1xCD1) are cultured in PDMS microwells (diam. 800 µm ; depth ~200 µm) throughout their pre-implantation development, from the 1-cell stage to the blastocyst stage (See Figure S1). Medium is not changed during the whole experiment. In this setting, embryos lie on PDMS and above them is medium exposed to air (i.e., open setting). As a control, Nunc 4-well plates (400 µL) are employed. At the blastocyst stage, the ATP content of the embryos is measured, as an indicator of potential difference in energy metabolism (Table S1), blastocyst rates are determined. These two assays show no impairment of embryo development to the blastocyst stage when utilizing PDMs microwells. Thereafter, birth rates are determined after transplantation of the blastocysts *in vivo*. Again, no difference is observed between PDMS wells and standard dishware, as far as birth rates are concerned.

Figure S1. Mouse embryo culture in PDMS microstructures, from 1-cell to blastocyst. A: microwell chip (wells 800 µm diameter, 200 µm height), inserted into a Nunc 4-well plate; arrows indicate blastocysts.

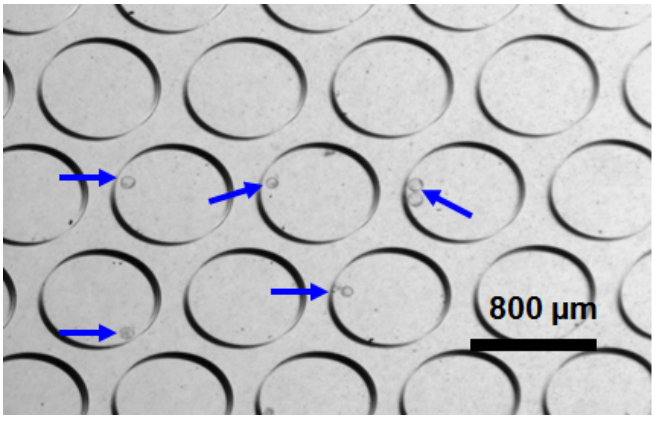

Table S1: Developmental and viability data of *in vivo*-fertilized mouse embryos (B6C3F1×CD1) cultured in different plastic dishware.

	PDMS microwells in Nunc 12-well (n)	**Nunc 4-well (n)**	***p***	**Test**
Blastocyst rate % (1-cell)	79 (43)	71 (65)	0.46	χ^2
ATP pmol/embryo ± SD	1.90 ± 0.63 (30)	1.88 ± 0.15 (40)	0.85	*t*
Embryos transferred *in vivo* (n recipients)	64 (4)	57 (3)		
Pups born n (weight, g ± SD)	24 (1.8 ± 0.2)	18 (2.0 ± 0.3)	0.62	χ^2