PROBETEX
Experimental Pathology Resources™

Data Sheet

1 X 10^6 cells

Lot # W499__

Mouse Ureteric Bud Cells (CMUB-1)

Materials supplied:
This package contains 1.0 X 10^6 cells in 1 ml of cryoprotective medium (Basal Eagle's medium with Hank's BSS, 5% FBS, 7.5% DMSO) plus antibiotic/antimycotic.

Description
Probetex mouse ureteric bud (CMUB-1) cells are derived from ureteric bud at gestational day 11 (Ye et al, Kidney Int. 66:1356-1364,2004). The cells were dissociated and immortalized by transfection with human papilloma virus. The cells were identified and their purity assessed by phase-contrast microscopy showing a stellate shape in low density growth (Figure A) and the immunofluorescence microscopic expression of embryonic epithelial cell marker Endo-A cytokeratin (Figure B), Aquaporin 2, and UB marker *Dolichos biflorus*. The cells are negative for the mesenchymal cell markers vimentin, alpha-smooth muscle actin, and PDGFR-β. The cells form cysts and branching cords in 3-dimensional growth in collagen containing fibronectin (Ye et al.) and form well-defined tubular epithelium when combined with mouse metanephric mesenchymal cells (CMMM-1) in Matrigel® implanted subcutaneously into SCID mice (Velagapudi et al. Am J Pathol 180:819-830, 2012). Conditioned medium derived from CMUB-1 cells induces CMMM-1 cells to migrate (Velagapudi et al.) and has been reported to induce renal lineage cells to produce MM markers (GDNF, WT1 and Cadherin 11) (Nishikawa et al. Biochem Biophys Res Comm 417:897-902, 2012).

Directions for use (Please read carefully before re-animation).
Re-animation: Each stock re-animates with a doubling time of approximately 11 hours. Thaw the cells quickly in a 37°C water bath. Wipe down the outside with 70% ethanol before bringing the vial into your cell culture hood. Transfer the cells to 10 ml of warm growth medium. Centrifuge the cells at ~400 x g for 5 min. Resuspend the cells in a total of 20 ml growth medium (DMEM high glucose, 10% Fetal Bovine Serum, with or without antibiotics) and transfer to a T-75 flask. Incubate at 37°C and 5% CO_2. Replace medium 24-48 hours after re-animation.

Subculturing: Remove the medium from confluent, viable cells. Rinse with Mg^{2+}/Ca^{2+}-free Phosphate-Buffered Saline (PBS). Detach the cells by addition of 0.05% trypsin/EDTA solution and incubate the cells for up to 10 min at 37°C. Add growth medium and collect the cells. Centrifuge the cells at 400 x g for 5 min. Resuspend the cells in fresh growth medium. 10- to 20-fold split ratios are suggested.

Cryopreservation: Treat the cells the same way as for subculturing. Determine the number of viable cells and resuspend them at 2.0 X 10^6 cells/ml in growth medium. Add an equal volume of cryoprotective medium for a recommended final DMSO concentration of 7.5%. The recommended storage condition is liquid nitrogen vapor phase.

Adventitious Agents: Free of bacteria, fungi, and mycoplasma.

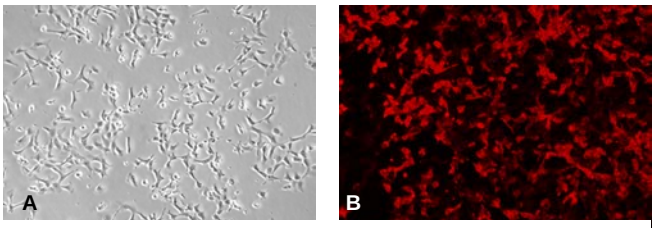

Figure 1. Phase contrast micrograph of CMUB-1 cells showing cells in a stellate shape (A) and displaying an embryonic epithelial cell marker EndoA cytokeratin by fluorescence microscopy (B).

1. Ye P, Habib SL, Ricono JM, Kim N-H, Choudhury GG, Barnes JL, Abboud HE, Arar MY: Fibronectin induces ureteric bud cells branching and cellular cord and tubule formation. Kidney Int. 66:1356-1364, 2004.

2. Velagapudi C, Nilsson R-P, Lee MJ, Burns HS, Ricono JM, Arar M, Barnes VL, Abboud HE, Barnes JL: Reciprocal induction of simple organogenesis by mouse kidney progenitor cells in three-dimensional co-culture. Am J Pathol 180: 819-830, 2012. (See Cover Image, Am J Pathol February issue 2012).

3. Nishikawa M, Yanagawa N, Kojima N, Yuri S, Hauser PV, Jo OD, Yanagawa N: Stepwise renal lineage differentiation of mouse embryonic stem cells tracing in vivo development. Biochem Biophys Res Comm 417:897-902, 2012.

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