

# PRODUCT DATASHEET

## US/VOT-E36 Cell Line Cat. #153625

### Contributor Information

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**Primary citation** Lawoko-Kerali et al. 2004. Dev Dyn. 231(4):801-14. PMID: 1549955

### Tool Details

**Tool Name:** US/VOT-E36 Cell Line

**Alternate names:** Ventral Otocyst-Epithelial cell line number 36; VOT-E36

**Tool type:** Cell Lines

**Tool sub-type:** Continuous

**Organism:** Mouse

**Disease:** Deafness

**Conditional:** Yes

**Conditional description:** Cells derived from C57 Bl6 mice carrying a stable insertion of the conditional immortalising gene H-2Kb-tsA58, which describes a temperature-sensitive variant of the SV40 immortalising gene that encodes the large tumour antigen under the control of the  $\gamma$ -interferon-sensitive MHC Class 1 promoter. The transgenic mouse is called the Immortomouse™ (Jat et al 1991 Proc. Nat. Acad. Sci. USA 88, 5096-5100)

**Application:** Inner ear development studies; Gene expression and function of inner ear-specific genes studies; In vitro screening for gene activation and promoter analysis; Ototoxicity (prescribed drugs and agents that ameliorate their affects) studies; Studies on function of inherited deafness mutations; Functional analysis of ion channels, receptors and signalling pathways in vitro

**Description:** Derived from epithelial cells from the ventral region of the otocyst at embryonic day E10.5 (plug in mouse designated E0.5 and birth at E18-19). At this stage the sensory epithelia have not differentiated and the epithelium is competent to form most of the cells within the cochlear duct, including primary sensory neurons. VOT-E36 has been characterised extensively by timed expression under differentiating conditions in vitro of a combination of gene and protein markers for epithelial cells and for inner ear sensory cells. It has also been screened with Affymetrix mouse Micro-arrays. It forms cells of various cochlear phenotypes under differentiating conditions in vitro and despite being derived from an earlier developmental stage, it produces more advanced states of sensory cell differentiation than occurs with UB/OC-1, UB/OC-2. The cells are also available with a stably incorporated EGFP reporter that has been tested both in vitro and in vivo

**Research area:** Developmental Biology ; Drug Discovery & Development ; Gene Expression

### For Research Use Only

### Handling

**Format:** Frozen

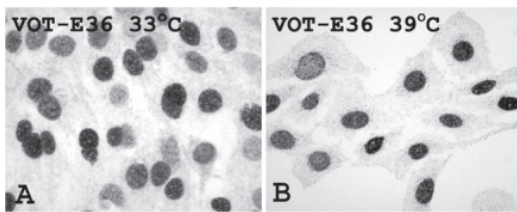
**Growth medium:** MEM with 10% FCS, 50Units/ml  $\gamma$ -IFN, L-glutamine

**Temperature:** 33°C

**Storage conditions:** Liquid Nitrogen

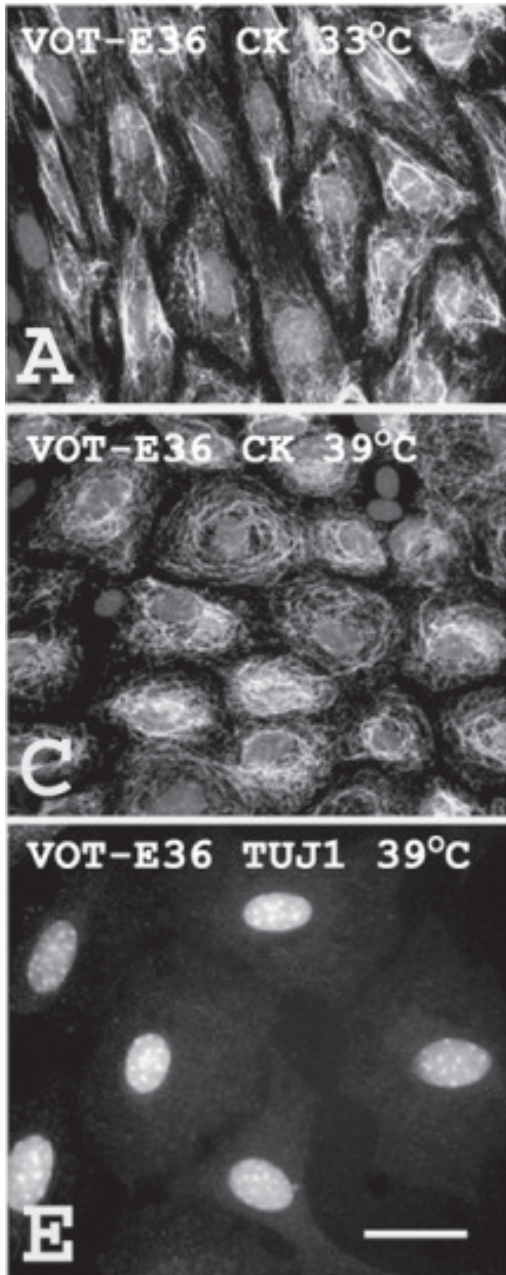
**Shipping conditions:** Dry ice

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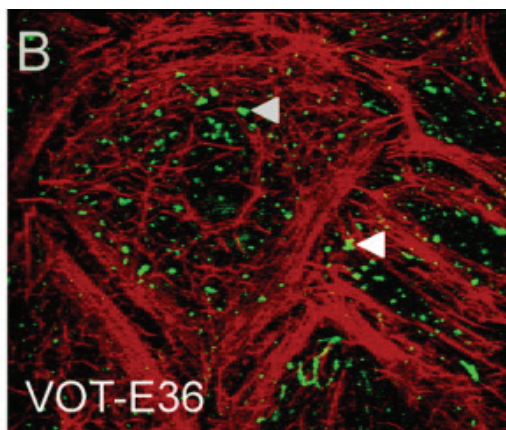
Adapted from Lawoko-Kerali et al. 2004. *Dev Dyn.* 231(4):801-14. PMID: 1549955 (Fig. 2)

GATA3 immunolabeling of VOT-E36 A: VOT-E36 at 33°C. B: VOT-E36 after 14 days at 39°C.



Adapted from Lawoko-Kerali et al. 2004. *Dev Dyn.* 231(4):801-14. PMID: 1549955 (Fig. 3)

Immunolabeling of VOT-E36 with antibodies to cytokeratins (A, C) and TUJ1 (E) after culture at 33°C (A,B) or for 6 days at 39°C (C,E). In VOT-E36, most cells were labeled for cytokeratin, and at 39°C, they had a characteristic epithelial arrangement of filaments around the nuclei. No labeling for TUJ1 was observed in VOT-E36 at 39°C. The nuclei were labeled with 4',6-diamidino-2-phenylidole-dihydrochloride (DAPI) to reveal the presence of cells unlabeled with antibodies to cytokeratin or  $\beta$ 3-tubulin. Scale bar = 40  $\mu$ m in E (applies to A-F).



Adapted from Lawoko-Kerali et al. 2004. *Dev Dyn.* 231(4):801-14. PMID: 1549955 (Fig. 4)

Expression of the  $\beta$ 4 integrin subunit in VOT-E36.  $\beta$ 4 immunolabeling (green) was present in basal puncta in VOT-E36 (B, arrowheads) after 8 days at 39°C. Filamentous actin was labeled with phalloidin (red). These results suggest that VOT-E36 is epithelial

## References

Holley et al. 2007. *Hear Res.* 227(1-2):32-40. PMID: 16797894

Helyer et al. 2007. *Eur J Neurosci.* 25(4):957-73. PMID: 17331193

Liu et al. 2006. *Otol Neurotol.* 27(3):414-21. PMID: 16639283

Lawoko-Kerali et al. 2004. *Dev Dyn.* 231(4):801-14. PMID: 15499550