

MATERIAL SALES OPPORTUNITY: 27008E

DATA SHEET INFORMATION FOR

Cell Line Names:

US/VOT-N33 (University of Sheffield/Ventral Otocyst-Neuroblast cell line number 33)

Host species:

Mouse (C57 Black6)

Phenotype and Useful Applications:

Neuroblast cell line suitable for studies on:

Inner ear development

Gene expression and function of inner ear-specific genes

In vitro screening for gene activation and promoter analysis

Ototoxicity (prescribed drugs and agents that ameliorate their affects)

Function of inherited deafness mutations

Functional analysis of ion channels, receptors and signalling pathways in vitro

Genotype:

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 γ -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)

Characterisation & Specificity of Strain:

Derived from migrating neuroblasts in 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 neuroblasts have not exited the cell cycle and have not differentiated. VOT-N33 has been characterised extensively by timed expression under differentiating conditions in vitro of a combination of gene and protein markers for inner ear neurons. It has also been screened with Affymetrix mouse Microarrays. It forms exclusively bipolar neuronal phenotypes under differentiating conditions in vitro in the presence of FGFs and also following transplantation to the cochlear nerve in vivo. The cells are also available with a stably incorporated EGFP reporter that has been tested both in vitro and in vivo.

Relevant publications involving the strain:

Lawoko-Kerali G, Milo M, Davies D, Halsall A, Helyer R, Johnson CM, Rivolta MN, Tones MA, Holley MC (2004) Ventral otic cell lines as developmental models of auditory epithelial and neural precursors. *Dev Dyn* 231:801-814.

Nicholl AJ, Kneebone A, Davies D, Cacciabue-Rivolta DI, Rivolta MN, Coffey P, Holley MC (2005) Differentiation of an auditory neuronal cell line suitable for cell transplantation. *Eur J Neurosci* 22:343-353.

Sekiya T, Holley MC (joint 1st author), Kojima K, Matsumoto M, Helyer R, Ito J. (2007) Transplantation of conditionally immortal auditory neuroblasts to the auditory nerve. *Eur J Neurosci*. 25:2307-2318.

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