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[Continued on next page]

(54) Title: EFFICIENT STERILIZATION OF FISH BY DISRUPTION OF GERM CELL DEVELOPMENT

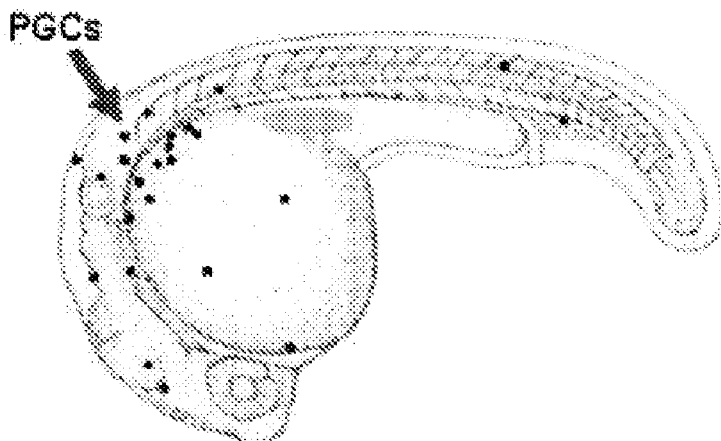


FIG. 1C
Mis-migration of PGCs

(57) Abstract: Methods of disrupting germ cell migration and development in a fish embryo by inducing targeted expression of Sdf-1 a or Lif and disruption of the Sdf-1 a gradient or a Lif signaling pathway in the fish embryo have been developed. Plasmid constructs containing a gene encoding Sdf-1 a or Lif and a gene encoding a signaling sequence for targeted expression of Sdf-1 a or Lif have been generated. The plasmids will be administered to a fish or a population of fish to reproductively sterilize the population with efficacy of up to 100%. Transgenic fish of this invention are reproductively incompetent of genetically contaminating a wild fish population.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/063126**A. CLASSIFICATION OF SUBJECT MATTER***C12N 5/10(2006.01)i, C12N 15/12(2006.01)i, C12N 15/85(2006.01)i, A01K 67/027(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C12N 5/10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: zebrafish, primordial germ cell migration, Sdf-1a, Lif, nanos 3'-UTR, inducible expression system

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DOITSIDOU et al., 'Guidance of primordial germ cell migration by the chemokine SDF-1' Cell, Vol.111, pp.647-659 (27 November 2002) See the whole document, especially p.652, right column, p.657, left column, and figure 4.	1-12,20-26,28-29
A		13-19,27,30-33
A	BLASER et al., 'Migration of zebrafish primordial germ cells: a role for myosin contraction and cytoplasmic flow' Developmental Cell, Vol.11, pp.613-627 (06 November 2006) See the whole document, especially the abstract and figures.	1-33
A	FAN et al., 'Zebrafish primordial germ cell cultures derived from vasa::RFP transgenic embryos' Stem Cells and Development, Vol.17, pp.585-597 (2008) See the whole document, especially the abstract, pp.587, 593, and figure 1.	1-33
A	DUMSTREI et al., 'Signaling pathways controlling primordial germ cell migration in zebrafish' Journal of Cell Science, Vol.117, pp.4787-4795 (2004) See the whole document, especially the abstract and figures.	1-33

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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None