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Data Article

Abnormal number cell division of human thyroid anaplastic carcinoma cell line, SW 1736

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ABSTRACT

Cell division, during which a mother cell usually divides into two daughter cells during one cell cycle, is the most important physiological event of cell biology. We observed one-to-four cell division during imaging of live SW1736 human thyroid anaplastic carcinoma cells transfected with a plasmid expressing the hybrid protein of green fluorescent protein and histone 2B (plasmid eGFP-H2B). Analysis of the images revealed a mother cell divided into four daughter cells. And one of the abnormally divided daughter cells subsequently formed a dinucleate cell.

Specifications Table

Subject area	*Biology*
More specific subject area	*Cell culture*
Type of data	*Image (microscopy)*
How data was acquired	*Microscope*
Data format	*Processed image*
Experimental factors	*Transfection with eGFP-H2B plasmid*
Experimental features	*Abnormal cell division was accidentally and clearly recorded.*
Data source location	*Tokyo, Japan*
Data accessibility	*Data are provided in this article*

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Value of the data

- During live cell imaging, we encountered a one-to-four cell division of the human thyroid anaplastic carcinoma cell line, SW1736.
- All daughter cells of the cell division were viable.
- One of the daughter cells formed a dinucleated cell.

1. Data, experimental design, materials and methods

During live cell imaging, SW 1736 human thyroid anaplastic carcinoma cells transfected with the eGFP-H2B plasmid, was divided from one to four cells as shown in Fig. 1 and supplementary video. All daughter cells were alive during imaging and one of the daughter cells formed a dinucleated cell (Fig. 1F–H and Fig. 2).

Supplementary material related to this article can be found online at http://dx.doi.org/10.1016/j.dib.2015.09.030

1.1. Cell culture, transfection of the eGFP-H2B plasmid

SW 1736 human thyroid anaplastic carcinoma cells (provided by the Memorial Sloan-Kettering Cancer Center, New York, NY, USA), were cultivated as previously described [1–3]. The eGFP-H2B plasmid was constructed by cloning of the human H2B DNA into plasmid pEGFP-C1 (Clontech Laboratories, Inc., Mounain View, CA, USA). The eGFP-H2B plasmid was transfected i\nto SW1736 human thyroid anaplastic carcinoma cells by electroporation with Gene Pulser II Electroporation System (Bio-Rad Laboratories, Inc., Hercules, CA, USA) and the transfected cells were selected with G418 disulfate salt (Sigma-Aldrich Co., St. Louis, MO, USA).

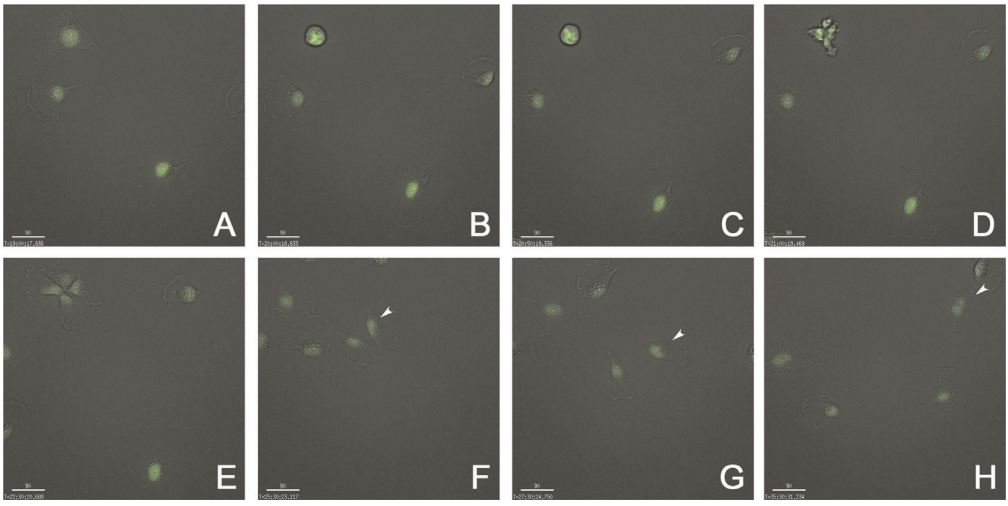

Fig. 1. Time-laps images of SW1736 human thyroid anaplastic carcinoma cells (objective lens: × 20). Image at 19 h (A), 20 h (B), 20 h and 50 min, just before cell division (C), 21 h, just after cell division was started (D), 22 h and 30 min (E), 25 h and 30 min (F), 27 h and 30 min (G), and 35 h and 30 min (H) after acquisition of images had started. Arrowheads in F–H indicate a dinuleated daughter cell. A size bar indicates 90 μm.

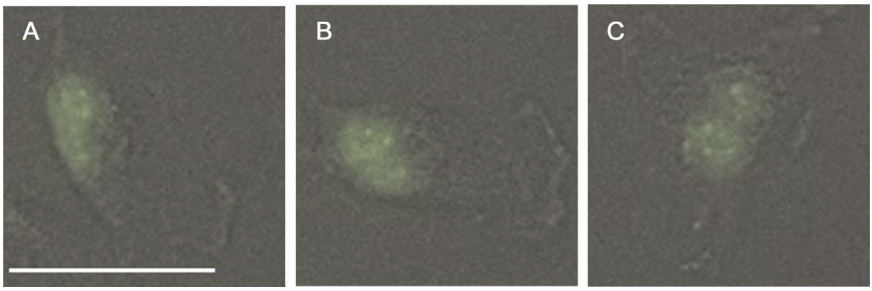

Fig. 2. Digitally-zoomed in image processed by Adobe Photoshop CS5 Extended version 12.0.4x64 software (Adobe Systems, Inc., San Jose, CA, USA) of a daughter cell which was indicated by an arrow head in Fig. 1 and formed a dinucleated cell. A daughter cell at 25 h and 30 min (A), 27 h and 30 min (B), and 35 h and 30 min (C) after acquisition of images had started. A size bar indicates 90 μm.

1.2. Imaging of transfected SW1736 SW 1736 human thyroid anaplastic carcinoma cells

Live cell imaging of transfected SW1736 human thyroid anaplastic carcinoma cells was performed as follows. A 35 mm glass base culture dish containing cells to be imaged was then placed onto the stage of a DeltaVision Core-SP microscope (Berthold Australia Pty Ltd. [Applied Precision], Bundoora, Victoria, Australia) and kept at 37 °C in a humidified 95% (v/v) O_2 containing 5% (v/v) CO_2 gas mixture during imaging. Time-laps Images of the cells were acquired by differential interference contrast and green fluorescent images using a fluorescein isothiocyanate filter set (ex: 490 [20] nm/em: 525 [36] nm) every 10 min. The images obtained were processed and video data were exported by softWoRx version 4.0.0. Release 16 (Berthold Australia Pty Ltd. [Applied Precision]).

Appendix A. Supplementary material

Supplementary data associated with this article can be found in the online version at http://dx.doi.org/10.1016/j.dib.2015.09.030.

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