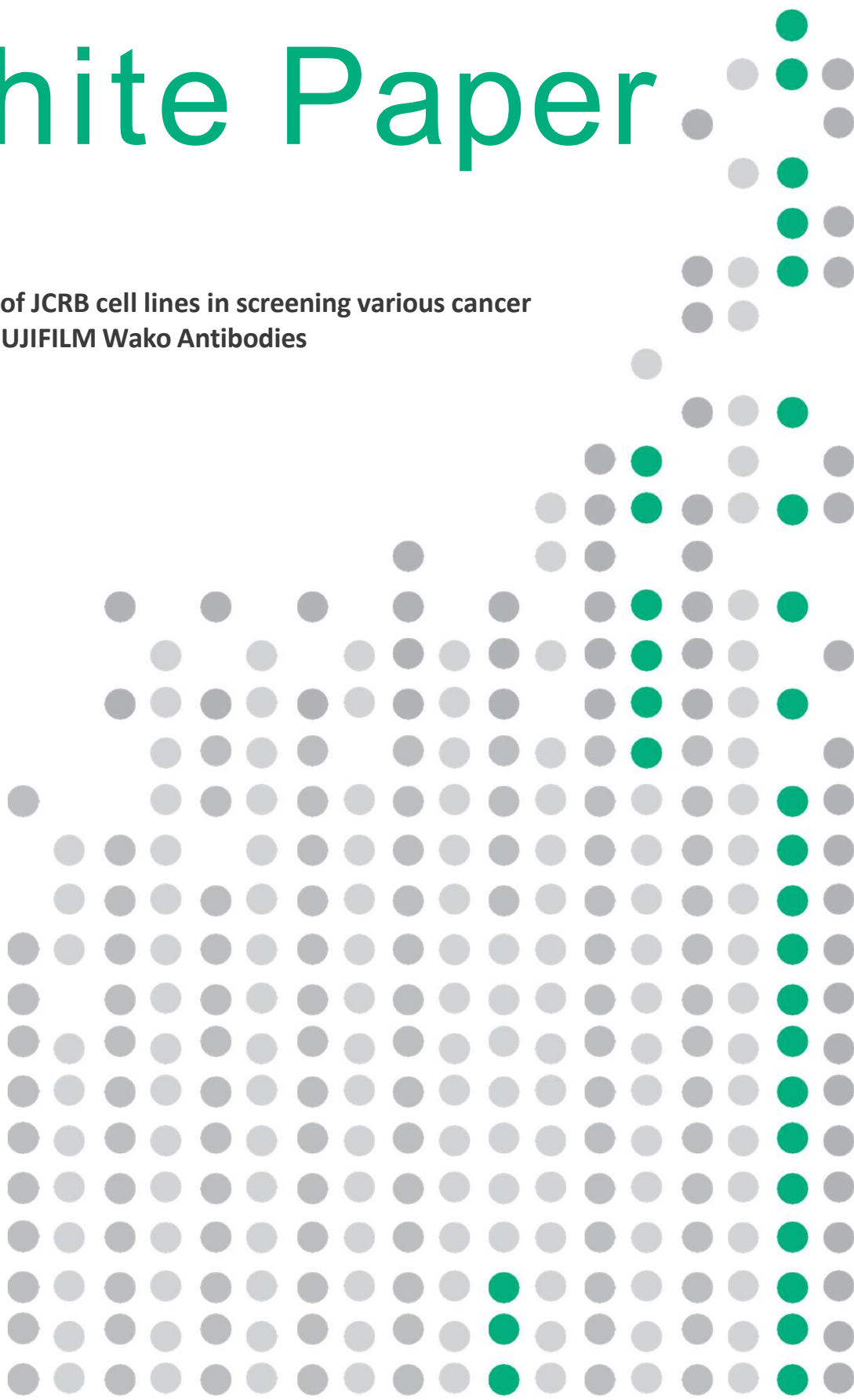


# White Paper

Applications of JCRB cell lines in screening various cancer types using FUJIFILM Wako Antibodies



# Overview

As cancer treatments shift from chemotherapy to personalized therapy using molecular targeted cancer drugs, the scope of molecular biological research on cancer is expanding. Use of antibodies in molecular biological methods have greatly enhanced our understanding of physiological phenomena occurring in cancer cells.

FUJIFILM Wako provides various kind of JCRB cell line products for cancer research.

## JCRB Cell Lines

JCRB (Japanese Collection of Research Biore-sources) is one of the most comprehensive cell banks in the world for pure and applied science, spanning many fields of research across the globe.

FUJIFILM Wako has teamed up with the National Institute of Biomedical Innovation to bring you access to over 1,600 cell lines, including lung and glioma cell lines. In Europe, we are the exclusive distributor of JCRB's comprehensive catalog of cell lines.



## Human Lung Cancer Cell Lines

JCRB No.	Cell-line name	Profile
JCRB0815	ABC-1	Adenocarcinoma
JCRB0820	EBC-1	Squamous cell carcinoma
IFO50358	KNS-62	Bronchial squamous carcinoma, metastasis to brain
JCRB0079	LU65	Human cell line with giant cell carcinoma of lung
JCRB1019	RERF-LC-Sq1	Cell line established from human lung carcinoma tissue

## Human Glioma Cancer Cell Lines

JCRB No.	Cell-line name	Profile
IFO50356	KNS-42	Glioma, GFAP-positive, S-100 and NSE-negative
IFO50436	KS-1	Glioblastoma
JCRB1566	NP 2	Human cell line derived from human glioma
JCRB1578	Onda 8	Human cell line derived from human glioma
JCRB0746	YKG-1	Glioblastoma

# Applications of JCRB cell lines

## 1. Toxicology and Drug Screening

JCRB0134 (MCF-7) cell lines are used as valuable models for toxicology and drug discovery. They retain their genome over time and can be used to perform drug screening and facilitate patient specific drug development.

## 2. Benefit of Variety of Ethnic Background in Patient Targeted Cancer Therapies

JCRB offers a highly representative panel of cell lines in terms of ethnic and gender diversity, which could improve the success rate in identifying effective cancer therapeutics in cell culture models and thereby reduce drug failures in diverse human populations.

JCRB provides a wide variety of cell line products. To see more information or full lineup of cell line products, please refer to the link:

[https://labchem-wako.fujifilm.com/europe/cell\\_bank/index.html](https://labchem-wako.fujifilm.com/europe/cell_bank/index.html)

## JCRB cell lines related antibodies

FUJIFILM Wako offers high-performance antibodies against various molecules that can be used in combination with JCRB cell lines in contributing to the development in cancer research.

### A. Lung cancer related antibodies

#### 1. Anti CPM, Monoclonal Antibody (WK)

Carboxypeptidase M (CPM) is an enzyme expressed on the cell membrane surface. It cleaves arginine and lysine at the C-terminus of peptides and proteins. Recent studies have reported that CPM can be used as a marker of alveolar epithelial progenitor cells, ventral anterior foregut endoderm and liver precursor cells.<sup>1</sup>

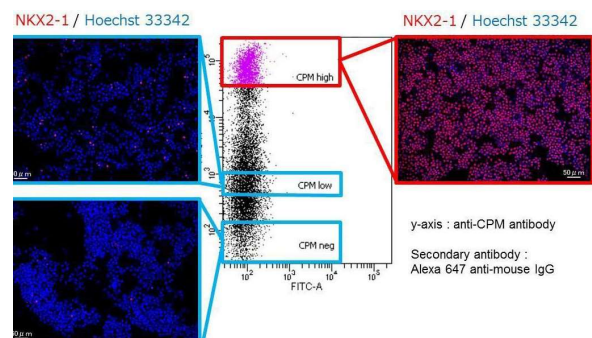


Figure 1 represents isolation of respiratory epithelial stem cells using anti CPM monoclonal antibody (WK). (Data provided by Shimpei Goto, Graduate School of Medicine, Kyoto University)

## 2. Anti CTGF Antibodies & ELISA

Connective Tissue Growth Factor (CTGF) is a secreted protein of approximately 38 kDa produced by umbilical vein and vascular endothelial cells. It is involved in cell adhesion and the proliferation/differentiation of chondrocytes. Some reports showed that CTGF is involved in various diseases such as cancer, renal failure, liver failure and rheumatism.<sup>2</sup>

CTGF contains four domains, modules 1-4. The N-terminal region (modules 1 and 2) is known as a candidate biomarker of lung fibrosis.<sup>3</sup> FUJIFILM Wako has developed ELISA kits for the measurement of the full-length CTGF and full-length + N-terminal region of CTGF, respectively.

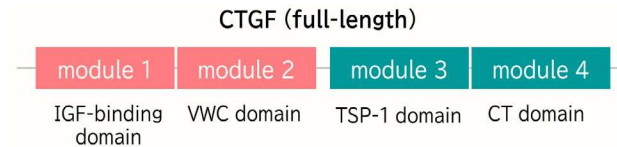


Figure 2 represents various modules of the full-length CTGF

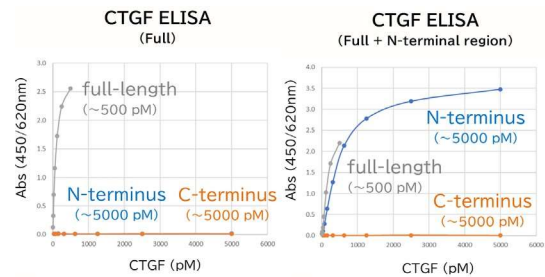


Figure 3 represents the result of Cross-reactivity between the full-length CTGF and N- and C-terminal fragments. CTGF (Full) ELISA Kit *Wako* specifically detected the full-length and CTGF (Full + N-terminal region) ELISA Kit *Wako* specifically detected the full-length and N-terminus.

## Lung cancer related antibodies

Product Code	Product Name	Size
014-27501	Anti CPM, Monoclonal Antibody (WK)	100 µL
290-84701	CTGF (Full) ELISA Kit <i>Wako</i>	96 tests
292-84901	CTGF (Full+N-terminal region) ELISA Kit <i>Wako</i>	96 tests
018-27423	Anti CTGF Module 1, Monoclonal Antibody (30D2)	50 µL
016-27424	Anti CTGF Module 1, Monoclonal Antibody (30D2)	1 mL
015-27433	Anti CTGF Module 2, Monoclonal Antibody (2-3)	50 µL
012-27443	Anti CTGF Module 3, Monoclonal Antibody (3-54)	50 µL
019-27453	Anti CTGF Module 4, Monoclonal Antibody (4-69)	50 µL

## Glioma related antibodies

Glioma is a tumor formed by neuroglial cells, which support neurons. In the revised WHO 2016, molecularly informed classification criteria were included in addition to the traditional morphological diagnosis. Researchers have called attention to *IDH (Isocitrate Dehydrogenase) 1/2* genes, *ATRX* gene, mutation in *TERT promoter*, and 1p/19q co-deletion as factors for molecular diagnosis of glioma.<sup>4</sup> We provide a wide range of monoclonal antibodies appropriate for immunohistochemical staining/western blotting to recognize wild-type/mutant IDH1, IDH2, ATRX, and TERT.

Product Code	Product Name	Size
017-26751	Anti ATRX, Monoclonal Antibody (AMab-6)	100 µg
010-26861	Anti TERT, Monoclonal Antibody (TMab-6)	100 µg
018-24081	Anti IDH1-R132H, Monoclonal Antibody (HMab-1)	100 µg
013-26851	Anti IDH1-R132H, Monoclonal Antibody (HMab-2)	100 µg
015-24091	Anti IDH1-R132S, Monoclonal Antibody (SMab-1)	100 µg
014-24061	Anti IDH1, Monoclonal Antibody (RMab-3)	100 µg
011-24071	Anti IDH2, Monoclonal Antibody (RMab-22)	100 µg
015-25691	Anti Mutated IDH1/2, Monoclonal Antibody (MsMab-1)	100 µg

## Citations

- 1) Gotoh, S. *et al.*: *Stem Cell Reports*, **3**(3),394-403(2014).
- 2) Fu, M. *et al.*: *Acta Pharm. Sin. B*, **12**(4),1740-1760(2022).
- 3) Kono, M. *et al.*: *Clin. Chim. Acta*, **412**(23-24):2211-2215(2011).
- 4) Ogasawara, S. *et al.*: *Monoclon. Antib. Immunodiagn. Immunother.*, **35**(5):254-258(2016).

## Distribution & Enquiries

Listed products are intended for laboratory research use only, and not to be used for drug, food or human use. JCRB Cell Bank is testing the cell lines for viruses pathogenic to humans as extensive as possible. However, there is the problem of detection limit and it is practically impossible to examine "all pathogens" as well as unidentified viruses. Therefore, the cell line should be handled as potentially biohazardous materials. Practically, the handling in accordance to biosafety level 2 is recommended. This does not mean that the cell line produces BSL-2 pathogens but is needed to avoid potential risk./ Please visit our online catalog to search for other products from FUJIFILM Wako; <https://labchem-wako.fujifilm.com> / This leaflet may contain products that can not be exported to your country due to regulations. / Bulk quote requests are welcome. Please contact us.

### FUJIFILM Wako Chemicals Europe GmbH

Fuggerstr. 12 • 41468 Neuss, Germany

Telephone: +49-2131-311-271

Fax: +49-2131-311-110

E-mail: [labchem\\_wkeu@fujifilm.com](mailto:labchem_wkeu@fujifilm.com)

### FUJIFILM Wako Pure Chemical Corporation

1-2, Doshomachi 3-Chome Chuo-Ku, Osaka 540-8605, Japan

Telephone: +81-6-6203-3741

Fax: +81-6-6203-1999

E-mail: [ffwk-cservice@fujifilm.com](mailto:ffwk-cservice@fujifilm.com)



<https://labchem-wako.fujifilm.com>

### FUJIFILM Wako Chemicals U.S.A. Corporation

1600 Bellwood Road Richmond • VA 23237, USA

Telephone: +1-804-714-1920

Fax: +1-804-271-7791

E-mail: [wkuslabchem@fujifilm.com](mailto:wkuslabchem@fujifilm.com)