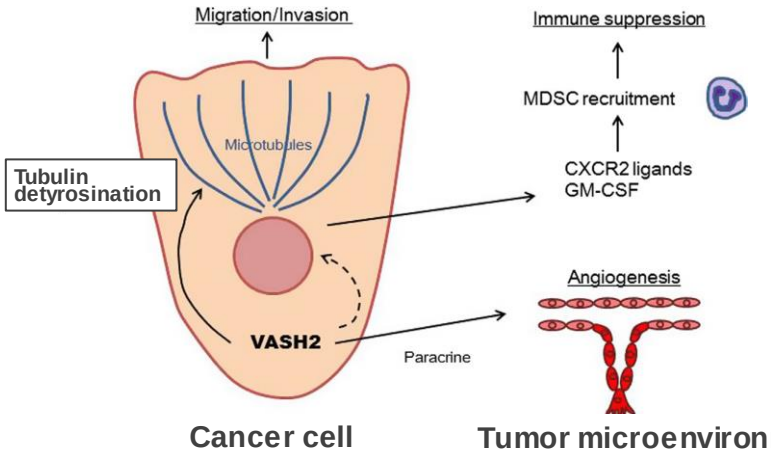
Tohoku Univ. Technology

A novel therapeutic target Vasohibin-2

For the treatment of refractory cancers including pancreatic cancer



Overview

Vasohibin-2 (referred to as VASH2) knockdown significantly reduced metastasis of pancreatic cancer cells (Fig. 1) and prolonged survival period after orthotopic transplantation (Fig.2). The mechanisms of action are;

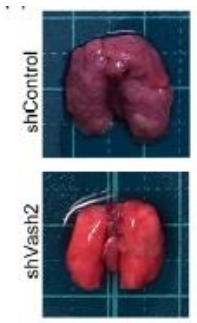
(1)VASH2 knockdown reduces cancer cell invasion through suppressing of tubulin carboxypeptidase activity within the cell.

(2) VASH2 secreted by cancer cells stimulates tumor angiogenesis, so when VASH2 was knocked down, tumor angiogenesis was prevented.

(3) VASH2 regulates the production of inflammatory chemokines and cytokines in cancer cells, which in turn, accelerates the recruitment of MDSC and TAM and prevents the infiltration of cytotoxic T lymphocytes. The inhibition of VASH2 eliminates immune suppression in pancreatic cancer.

Inhibition of Vasohibin-2 expression

Ref. [1]



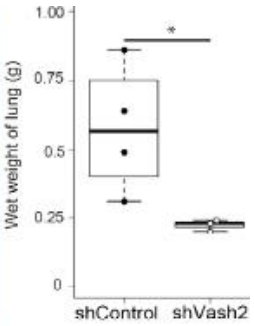


Fig.1
Reduced cancer cell migration

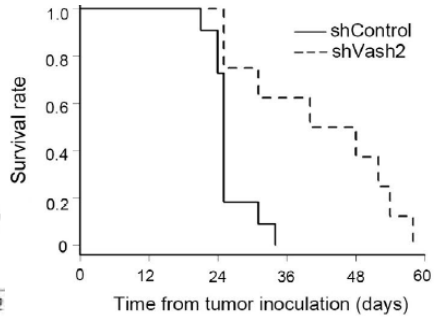


Fig.2
Prolonged survival period

Product Application

- Antibody drug or peptide vaccine targeting VASH2 for the treatment of cancer which highly express VASH-2. (e.g. pancreatic/ovarian/esophageal cancer)

Related Works

[1] Iida - Norita R, Kawamura M, Suzuki Y, et al. Vasohibin - 2 plays an essential role in metastasis of pancreatic ductal adenocarcinoma. Cancer Sci. 2019;110:2296–2308.

IP Data

IP No. : WO2019/045025 WO2014/087810
Inventor : SATO Yasufumi
Admin No. : T18-447(Vaccine Composition)、T12-072(Antibody)

Contact

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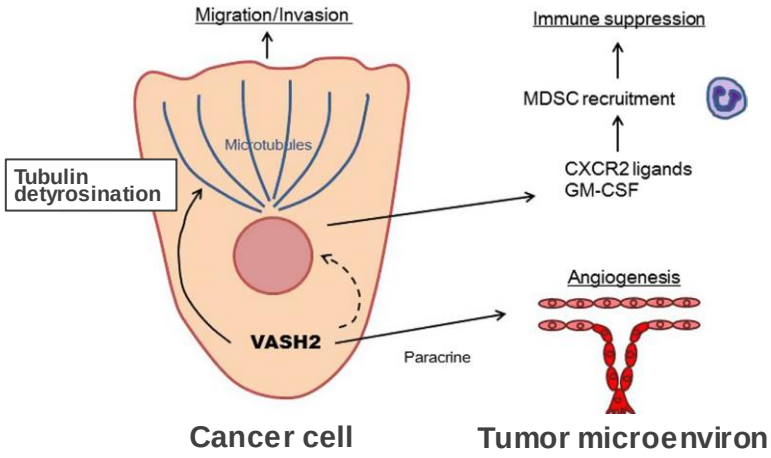
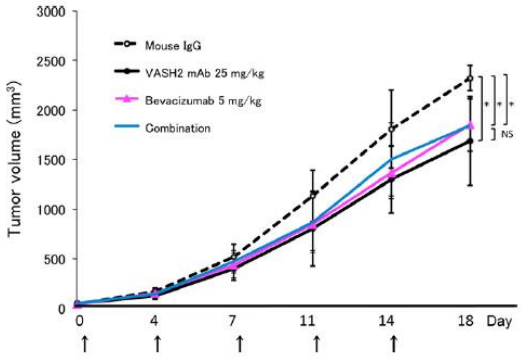


Anti-Vasohibin-2 antibody comparison with bevacizumab

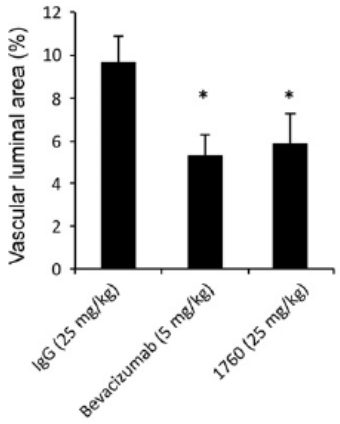
Ref. [1]

Fig.1 Anti-tumor effect
i.p. twice/week

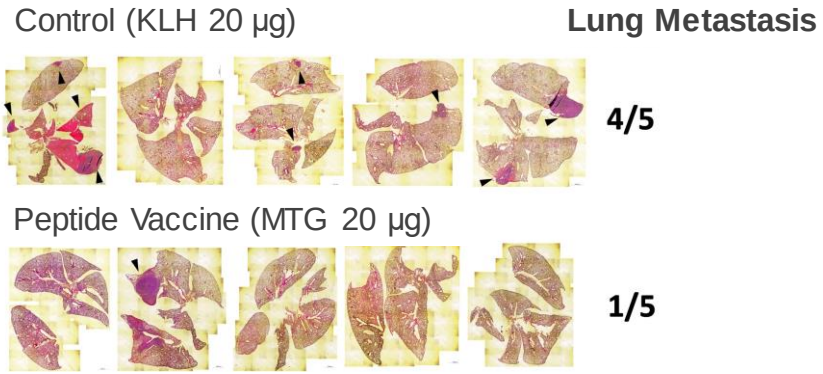


SKOV-3 cellswere injected s.c. into the dorsal flankof BALB/c nude mice

Fig.2 Anti-angiogenic effect
i.p. twice/week for 3 weeks



Peptide Vaccine Ref. [WO2019/045025]



＊After medication with Freund's Adjuvant, i. v. of Lewis pancreatic cancer cells.

Fig.3
Cancer metastasis to lung was suppressed.

Product Application

- Recurrence prevention of VASH2 high expression cancer
- VASH2 high expression cancer metastasis inhibitor

Related Works

[1] Koyanagi T, Suzuki Y, Komori K, et al. Targeting human vasohibin-2 by a neutralizing monoclonal antibody for anti-cancer treatment. Cancer Sci. 2017;108:512–519.

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