

**In vitro tumor cell binding assay to select high-binding antibody and predict therapy response for personalized  $^{64}\text{Cu}$ -intraperitoneal radioimmunotherapy against peritoneal dissemination of pancreatic cancer: A feasibility study**

**Running title: In vitro tumor cell binding assay for personalized  $^{64}\text{Cu}$ -ipRIT**

Fukiko Hihara<sup>1</sup>, Hiroki Matsumoto<sup>1,4</sup>, Mitsuyoshi Yoshimoto<sup>2</sup>, Takashi Masuko<sup>3</sup>, Yuichi Endo<sup>3</sup>, Chika Igarashi<sup>1</sup>, Tomoko Tachibana<sup>1</sup>, Mithuhiro Shinada<sup>1,7</sup>, Ming-Rong Zhang<sup>1</sup>, Gene Kurosawa<sup>4</sup>, Aya Sugyo<sup>1</sup>, Atsushi B. Tsuji<sup>1</sup>, Tatsuya Higashi<sup>1</sup>, Kurihara Hiroaki<sup>4</sup>, Makoto Ueno<sup>5</sup>, Yukie Yoshii<sup>1,4\*</sup>

<sup>1</sup> Department of Molecular Imaging and Theranostics, National Institutes for Quantum Science and Technology, Chiba263-8555, Japan; hihara.fukiko@qst.go.jp (H.F.); matsumoto.hiroki2@qst.go.jp (H.M.); igarashi.chika@qst.go.jp (C.I.); tachibana.tomoko@qst.go.jp (T.T.); shinada.mitsuhiro@qst.go.jp (M. S.), zhang.ming-rong@qst.go.jp (M.R.Z.); sugyo.aya@qst.go.jp (A.S.); tsu-ji.atsushi@qst.go.jp (A.B.T.); higashi.tatsuya@qst.go.jp (T.H.)

<sup>2</sup> Division of Functional Imaging, National Cancer Center Hospital East, Chiba277-8577, Japan; miyoshim@ncc.go.jp(Y.M.)

<sup>3</sup> School of Pharmacy, Kindai University, Osaka577-8502, Japan; masuko@phar.kindai.ac.jp (T.M.);en-dou@phar.kindai.ac.jp (Y.E.)

<sup>4</sup>International Center for Cell and Gene Therapy, Fujita Health University, Aichi 470-1192, Japan; gene@fujita-hu.ac.jp (K.G.)

<sup>5</sup>Department of Diagnostic Radiology, Kanagawa Cancer Center, Kanagawa 241-8515, Japan; h-kurihara@kcch.jp (K.H.)

<sup>6</sup> Department of Gastroenterology, Kanagawa Cancer Center, Kanagawa 241-8515, Japan; uenom@kcch.jp (M.U.)

<sup>7</sup> Faculty of Science, Toho University, Chiba 274-8510, Japan; shinada.mitsuhiro@qst.go.jp (S.M.)

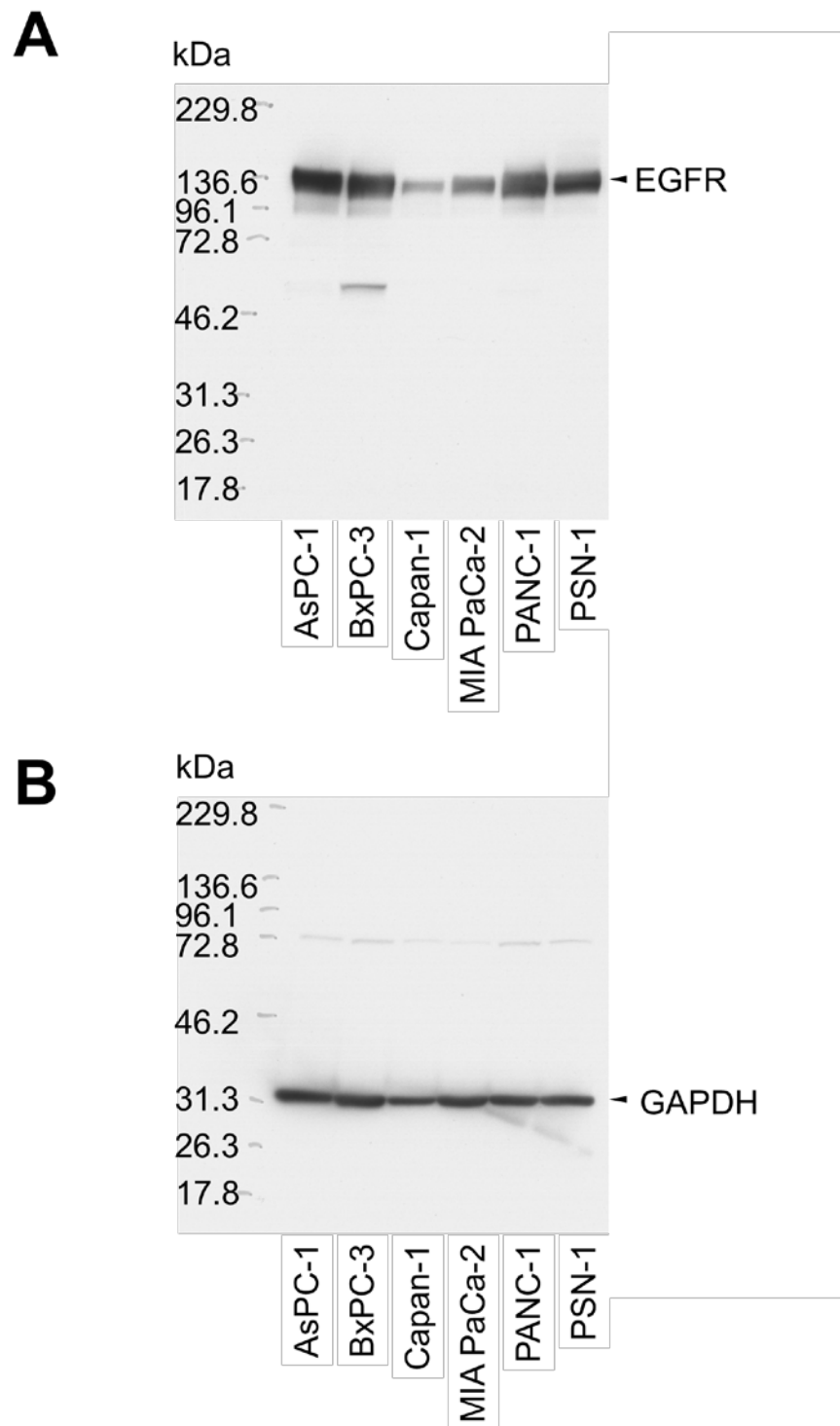
\* Correspondence: yoshii.yukie@qst.go.jp; Tel.: +81-43-206-3426

Correspondence to: Yukie Yoshii, PhD

Department of Molecular Imaging and Theranostics, National Institute of Radiological Sciences, National Institutes for Quantum and Radiological Science and Technology, 4-9-1 Anagawa, Inage, Chiba 263-8555, Japan Tel.: +81-43-206-3426; Fax: +81-43-206-4079; E-mail address: yoshii.yukie@qst.go.jp

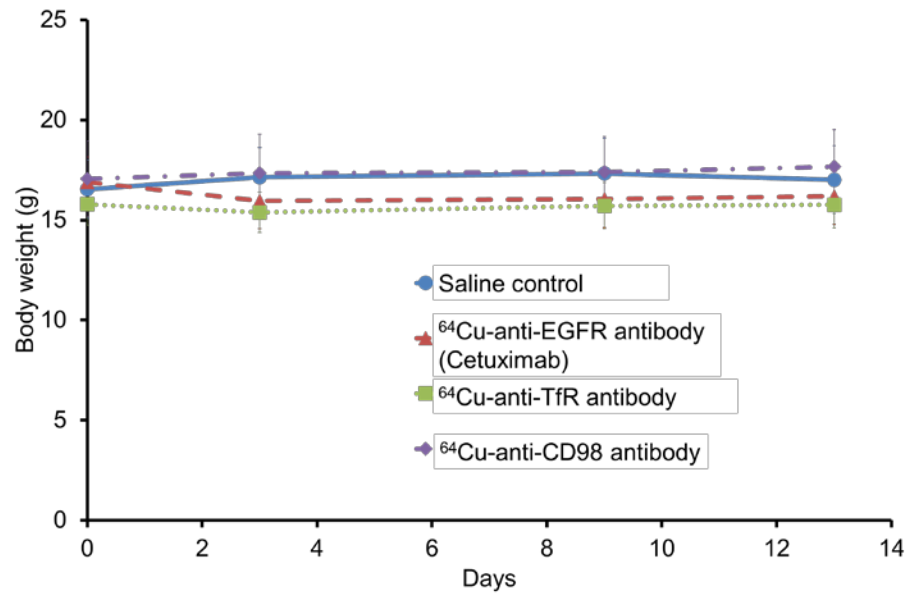
## **Supplemental Data**

**Figure S1. Western blot images shown in Figure 3.**



Whole images of western blots for EGFR and GAPDH expression (A and B, respectively).

**Figure S2. Changes in body weight during in vivo treatment study.**



Data from an in vivo <sup>64</sup>Cu-ipRIT study using the peritoneal-dissemination models of Capan-1 are shown as a representative example. There was no weight loss of more than 20% compared to the initial body weight in any treatment group for all cell line models.