

# ANTICANCER RESEARCH

## International Journal of Cancer Research and Treatment

ISSN: 0250-7005

Volume 43, Number 5, May 2023

### Contents

#### Review

The Clinical Impact of the Tumor Stroma Ratio in Gastrointestinal Cancer Treatment. T. AOYAMA, I. HASHIMOTO, T. OSHIMA (*Yokohama, Japan*) ..... 1877

#### Experimental Studies

The Novel Use of IL-28 as an Effective Radiosensitizer in Pancreatic Cancer. X. CHEN, H.Y. LEE, T.T. TANG, C. QIN, S.A. PRISSEL, C.J. NELSON, L.A. SMITH, H. XIAO, Q. BAI, M.B. NICHOLL, M.R. WAKEFIELD, Y. FANG (*Shenzhen, PR China; Des Moines, IA; Columbia, MO, USA*) ..... 1885

Somatic Variants in DNA Damage Response Genes in Ovarian Cancer Patients Using Whole-exome Sequencing. J. LOPACINSKA-JOERGENSEN, D.V.N.P. OLIVEIRA, T.S. POULSEN, C.K. HOEGDALL, E.V. HOEGDALL (*Herlev; Copenhagen, Denmark*) ..... 1891

Dimethyl Fumarate Suppresses the Proliferation of HTLV-1-infected T Cells by Inhibiting CBM Complex-triggered NF- $\kappa$ B Signaling. T. SATO, T. MAETA, S. ITO (*Yahaba, Japan*) ..... 1901

Reinforcement of the Tumor Suppressing Properties of microRNA-1 by Substitution at the C2' Position of Varying Ribose Residues in Chemically Synthesized microRNA-1 Molecules. H. AHREND, B. APPEL, L. JUNG, S. MÜLLER, M.B. STOPE (*Hamburg; Greifswald; Bonn, Germany*) ..... 1909

Pharmacokinetics and Pharmacodynamics of Glucarpidase Rescue Treatment After High-dose Methotrexate Therapy Based on Modeling and Simulation. T. KIMURA, Y. FUKAYA, Y. HAMADA, K. YOSHIMURA, H. KAWAMOTO (*Tokyo; Hiroshima, Japan*) ..... 1919

Contents continued on the back cover

C4orf47 Contributes to the Induction of Stem-like Properties in Gallbladder Cancer Under Hypoxia. L. NA, S. MASUDA, S. NAGAO, S. MORISAKI, N. IWAMOTO, K. SAKANASHI, H. ONISHI ( <i>Fukuoka, Japan</i> ) .....	1925
Synergistic and Antagonistic Antiproliferative Effects of Ribociclib (Lee011) and Irinotecan (SN38) on Colorectal Cancer Cells. C.-I HUANG, Y.-K. HUANG, H.-M. LEE, J.-H. CHEN, Y.-C. SU, P.-M. LIN ( <i>Kaohsiung, Taiwan, ROC</i> ).....	1933
ATG9B Is a Poor Prognostic Marker Associated With Immune Evasion in Colon Adenocarcinoma. I.S. KIM, S.Y. CHO, M. YANG, S. HAN, K.-H. LEE, J.Y. KIM, J.M. KIM, S. KANG, E.-K. JO, H. RYU ( <i>Daejeon, Republic of Korea</i> ) .....	1943
Anti-cancer Effect of Unique Cartilage Matrix-associated Protein in Breast Cancer Cells Depends on $\gamma$ -Carboxylation. N.R. PARK, Y.-J. LEE, S.-H. LEE, J.-E. KIM ( <i>Daegu, Republic of Korea</i> ) .....	1957
Comparison of the Characteristics of Two Types of Parallel-plate Ionization Chamber Under Small-field Electron Irradiation. Y. YANAGI, H. MONZEN, K. KUBO, J. SUGIYAMA, K. NOMA, T. ITO, Y. SAKAI, K. NAKAMURA, T. KIDA, H. DOI, Y. NISHIMURA ( <i>Osakasayama; Otsu, Japan</i> ) .....	1965
Nebivolol Sensitizes BT-474 Breast Cancer Cells to FGFR Inhibitors. Y.J. KIM, S.-K. JANG, G. KIM, S.-E. HONG, C.S. PARK, M.-K. SEONG, H.-A. KIM, K.S. KIM, C.-H. KIM, K.S. PARK, J. HONG, H.-O. JIN, I.-C. PARK ( <i>Seoul, Republic of Korea</i> ) .....	1973
Itraconazole Modulates Phospholipid Levels in Tumor-associated Macrophages. Y. TAKIMOTO, H. TSUBAMOTO, R. ISONO-TANIGUCHI, T. UEDA, K. SAKATA, K. NAKAGAWA, S. NARITA, Y. WAKIMOTO, H. SHIBAHARA, S. NISHIUMI ( <i>Nishinomiya, Japan</i> ).....	1981
TU-100 Antagonizes the M2 Polarization Phenotype of Macrophages in the Tumor Microenvironment by Suppressing the TLR4/NF- $\kappa$ B/STAT3 Axis. S. CHEN, Y. MORINE, Y. SAITO, S. YAMADA, H. TERAOKU, E. IKEMOTO, M. SHIMADA ( <i>Tokushima, Japan</i> ).....	1985
 <i>Clinical Studies</i> 	
A Phase I/II Investigation of Safety and Efficacy of Nivolumab and <i>nab</i> -Sirolimus in Patients With a Variety of Tumors With Genetic Mutations in the mTOR Pathway. E.M. GORDON, N.L. ANGEL, N. OMELCHENKO, V.S. CHUA-ALCALA, A. MORADKHANI, D. QUON, S. WONG ( <i>Santa Monica, CA, USA</i> ).....	1993
Long-term Outcomes After Moderate Hypofractionated Proton Therapy for Centrally Located Non-small Cell Lung Cancer. M. NAKAMURA, H. ISHIKAWA, K. OHNISHI, K. BABA, T. SUMIYA, M. MURAKAMI, Y. HIROSHIMA, M. MIZUMOTO, T. OKUMURA, H. SAKURAI ( <i>Tsukuba; Chiba; Narita, Japan</i> ) .....	2003
Prognostic Impact of Ras Mutation on Surgical Strategy in Rectal Cancer Patients Undergoing Neoadjuvant Treatment. E. ORLANDI, A. ROMBOLI, C. CITTERIO, S. TRUBINI, S. VECCHIA, M.A. PALLADINO, P. CAPELLI, L. CAVANNA ( <i>Piacenza, Italy</i> ) .....	2015
Nowarta110 Topical <i>Versus</i> Placebo for the Treatment of Plantar Warts: A Phase I/II Randomized Controlled Clinical Trial. M. YOUSEFPOUR, I. ZAMANIAN, F. AKBARPOUR, W.H. FANG, B. HAN, B.X. HOANG ( <i>Fullerton; Irvine; Newport Beach; Pomona; Los Angeles, CA, USA</i> ) .....	2025
Exploring the Patient Perspective of Bone Sarcoma Survivors Who Have Undergone Particle Radiotherapy Abroad. L. FAUSKE, N.L. JEBSEN, H. BONDEVIK, Ø.S. BRULAND ( <i>Oslo; Bergen, Norway</i> ).....	2031
Helical Tomotherapy of Lymph Node-negative Early-stage Breast Cancer After Breast-conserving Surgery: Long-term Results. F. ZWICKER, R. KLEPPER, H. HAUSWALD, S. HOEFEL, L. RAETHER, P.E. HUBER, J. DEBUS, M. SCHEMPP ( <i>Heidelberg; Konstanz, Germany</i> ).....	2041

Survival Benefits of Laparoscopic Gastrectomy in Elderly Patients With Gastric Cancer: Focusing on Preoperative Nutritional and Inflammatory Status. S. ITO, K. OHGAKI, T. KAWAZOE, S. SATO, S. IKEDA, K. KAKIZOE, H. WANG, T. NAKAMURA, S. MAEHARA, E. ADACHI, Y. IKEDA, Y. MAEHARA ( <i>Fukuoka, Japan</i> ) .....	2055
Tumor DNA in Peritoneal Lavage as a Novel Biomarker for Predicting Peritoneal Recurrence in Patients With Gastric Cancer. N. YUKAWA, T. YAMADA, T. AOYAMA, T. WOO, K. UEDA, A. MASTUDA, K. HARA, K. KAZAMA, H. TAMAGAWA, T. SATO, T. OSHIMA, A. SUZUKI, H. ABURATANI, S. ISHIKAWA, A. SAITO, M. MASUDA, H. YOSHIDA, Y. RINO ( <i>Yokohama; Tokyo, Japan</i> ).....	2069
CD8-positive Tumor-infiltrating Lymphocytes and Prognosis in Radiotherapy for Uterine Cervical Squamous Cell Carcinoma. Y. MIYASAKA, Y. YOSHIMOTO, K. ANDO, K. MURATA, D. IRIE, H. SATO, S.-E. NODA, H. IKOTA, T. NAKANO, H. YOKOO, T. OHNO ( <i>Maebashi; Fukushima; Inage-ku; Hidaka, Japan</i> ) .....	2077
Relationship Between Safety and Cumulative Bevacizumab Dose in Patients With Metastatic Colorectal Cancer Who Received Long-term Bevacizumab Treatment. S. FUKUDA, Y. NIISATO, M. TSUJI, S. FUKUDA, Y. HAGIWARA, T. ONODA, H. SUZUKI, Y. TANGE, T. YAMADA, Y. YAMAMOTO, T. MORIWAKI ( <i>Tsukuba, Japan</i> ).....	2085
Comprehensive Genomic Profiling Detects Hereditary Cancers and Confers Survival Advantage in Patients With Gynaecological Cancers. T. UEDA, H. TSUBAMOTO, Y. TAKIMOTO, R. ISONO-TANIGUCHI, S. NARITA, K. NAKAGAWA, Y. WAKIMOTO, Y. NISHIMURA, Y. MUROI, M. NAGAHASHI, S. HIROTA, H. SAWAI, H. SHIBAHARA ( <i>Hyogo, Japan</i> ) .....	2091
Prevalence and Risk Factors of Emotional Distress in Patients With Prostate Cancer Assigned to External-beam Radiotherapy With or Without High-dose Rate Brachytherapy. A. AL-SALLOOL, T. SOROR, N.Y. YU, D. RADES ( <i>Lübeck, Germany; Phoenix, AZ, USA</i> ) .....	2103
Prevalence of and Risk Factors for Emotional Distress in Patients Undergoing Radiotherapy for Lung Cancer. D. RADES, A. AL-SALLOOL, S. BOHNET, N.Y. YU ( <i>Lübeck, Germany; Phoenix, AZ, USA</i> ) .....	2111
Efficacy and Tolerability of Second-line Pembrolizumab With Radiation Therapy in Advanced Urothelial Carcinoma. T. SANO, R. AIZAWA, K. ITO, K. NAKAMURA, T. OGATA, M. TAKEDA, A. HAMADA, T. MATSUOKA, J. KONO, Y. KITA, K. MASUI, T. GOTO, A. SAWADA, S. AKAMATSU, O. OGAWA, T. MIZOWAKI, T. KOBAYASHI ( <i>Kyoto, Japan</i> ) .....	2119
Clinical Benefits of LigaSure™ for Surgical Amputation Without Tourniquet Use in Patients With Musculoskeletal Tumor. M.L.S. BANGCOY, S. MIWA, N. YAMAMOTO, K. HAYASHI, A. TAKEUCHI, K. IGARASHI, Y. TANIGUCHI, S. MORINAGA, Y. ASANO, H. TSUCHIYA ( <i>Kanazawa, Japan; Manila, Philippines</i> ) .....	2127
Vacuum-assisted Evacuation (VAEv) of Symptomatic and/or Voluminous Breast Haematomas Following Surgeries and Percutaneous Procedures. R. MEUCCI, O.C. BUONOMO, T. PERRETTA, G. MANENTI, G. VANNI, E. LOMBARDO, M.L. SERIO, F. DI PIETRO, M. PELLICCIARO, F. MONTESANTO, C. PALOMBI, F. RUFÌ, M. MATERAZZO, C.A. PISTOLESE ( <i>Rome, Italy</i> ) .....	2135
Clinical Significance of Cancer Stem Cell Markers in Primary and Metastatic Tissues in Patients With Breast Cancer. T. YAMANAKA, T. OSHIMA, D. MURAYAMA, S. OKAMOTO, A. MATSUI, M. YASUKAWA, Y. MATSUBARA, S. TODA, Y. HIROSHIMA, T. AOYAMA, N. SUGANUMA, Y. RINO, A. SAITO, Y. MIYAGI, H. IWASAKI, T. YAMASHITA ( <i>Yokohama, Japan</i> ).....	2145
Moderately Hypofractionated Radio(chemo)therapy With Simultaneous Integrated Boost for Recurrent, Previously Irradiated, High-grade Glioma. P. GRAEN, H. CHRISTIANSEN, M. POLEMIKOS, C. HEETFELD, F. FEUERHAKE, B. WIESE, R. MERTEN ( <i>Hannover, Germany</i> ) .....	2155
Reducing the Use of Frozen Section for Sentinel Node Biopsy in Breast Carcinoma: Feasibility and Outcome. T. SUSINI, I. NESI, I. RENDA, M. GIANI, J. NORI, E. VANZI, S. BIANCHI ( <i>Florence, Italy</i> ).....	2161

Dorsal Subcutaneous Fat Thickness as a Risk Factor for Pancreatic Fistula After Gastric Cancer Surgery. H. MIYAMOTO, M. YOSHII, H. TANAKA, S. NISHI, S. DEGUCHI, Y. MIKI, T. TAMURA, T. TOYOKAWA, S. LEE, K. MAEDA ( <i>Osaka, Japan</i> ) .....	2171
New Scale Predicting Distant Recurrence in Locally Advanced Lower Rectal Cancer Patients After Neoadjuvant Chemoradiotherapy. R. NAKAGAWA, T. KUMAMOTO, F. MAEDA, K. TANI, H. KONDO, K. KOSHINO, Y. KANEKO, Y. BAMBA, S. OGAWA, Y. INOUE, M. ITABASHI, S. YAMAGUCHI ( <i>Tokyo, Japan</i> ) .....	2179
Influence of Smoking History on the Effectiveness of Immune-checkpoint Inhibitor Therapy for Non-small Cell Lung Cancer: Analysis of Real-world Data. K. NAKAHAMA, M. IZUMI, N. YOSHIMOTO, M. FUKUI, A. SUGIMOTO, H. NAGAMINE, K. OGAWA, K. SAWA, Y. TANI, H. KANEDA, S. MITSUOKA, T. WATANABE, K. ASAI, T. KAWAGUCHI ( <i>Osaka; Sakai; Higashiosaka, Japan</i> ) .....	2185
The Suppressive Effect of NF-κB Activation After Eicosapentaenoic Acid Intake Before Surgery. H. KUBOTA, T. HIRAI, A. OGO, H. MATSUMOTO, M. HIGASHIDA, S. ENDO, Y. FUJIWARA, T. UENO ( <i>Kurashiki; Onomichi, Japan</i> ) .....	2199
Clinical Impact of Laparoscopic Surgery on the Long-term Survival of Advanced Gastric Cancer Patients With Regard to Facilitating Doublet Adjuvant Chemotherapy. K. MORINO, M. YAMAMOTO, R. YAMANAKA, Y. IWASAKI, N. NAKANISHI, T. GOTO, H. TANAKA, R. MATSUSUE, T. MACHIMOTO ( <i>Tenri, Japan</i> ) .....	2203
Transanal Total Mesorectal Excision for Extended Surgery in the Early Stage After Introduction. S. RYU, T. KITAGAWA, K. GOTO, A. NAGASHIMA, T. KOBAYASHI, J. SHIMADA, R. ITO, Y. NAKABAYASHI ( <i>Kawaguchi, Japan</i> ) .....	2211
N2 Lymph Node Metastasis Is a Useful Predictor of Recurrence in Patients With Stage III Rectal Cancer Undergoing Adjuvant Chemotherapy Using Tegafur–uracil/leucovorin. S. MIYASHITA, T. SHIMIZU, M. ISHIZUKA, M. NIKI, Y. NISHI, N. SHIBUYA, H. HACHIYA, T. MATSUMOTO, Y. SAKURAOKA, T. SHIRAKI, S. MORI, Y. ISO, A. IRISAWA, T. AOKI ( <i>Mibu, Japan</i> ) .....	2219
Emotional Distress in Head-and-neck Cancer Patients Scheduled for Chemoradiation or Radiotherapy Alone. A. AL-SALLOOL, T. SOROR, N.Y. YU, C. IDEL, K.L. BRUCHHAGE, S.G. HAKIM, D. RADES ( <i>Lübeck; Schwerin, Germany; Phoenix, AZ, USA</i> ) .....	2227
Breast Cancer and SARS-Cov2: Lessons from a Pandemic. M. GOSSET, J. GAL, R. SCHIAPPA, C. HELWIG, I. BONOMO, Y. DELPECH, E. BARRANGER ( <i>Nice, France</i> ).....	2235
Clinical Outcomes Beyond 1L <i>EGFR</i> -TKI Progression in mNSCLC: Final Results of the Real-World Study ‘LUNGFUL’. G. MOUNTZIOS, A. KOUMARIANOU, H. LINARDOU, A. BOUTIS, D. MAVROUDIS, E. SAMANTAS, I. KORANTZIS, E. ATHANASIADIS, E.G. FERGADIS, S. LAMPAKI, V. GEORGOULIAS, S. BAKA, M.V. KARAMOUZIS, I. BOUKOVINAS, C. ANDREADIS, A. RAPTI, N. KOULOURIS, G. PENTHEROUDAKIS, M.E. FROUDARAKIS, A. SOMARAKIS, E. ANASTASOPOULOU, A. KARADIMOU, F. PAPAGEORGIOU, Z. PAPAREPA, A. NIKOLAOU, C. PAPISTA, K.N. SYRIGOS ( <i>Athens; Thessaloniki; Heraklion; Piraeus; Ioannina; Alexandroupolis, Greece</i> ).....	2243
<i>In Vivo</i> Dosimetry in the Urethra During Prostate Carbon Ion Radiotherapy. S. MATSUMOTO, N. MATSUFUJI, Y. KOBAYASHI, H. TSUJI ( <i>Chiba, Japan</i> ) .....	2259
Effectiveness of Spacers in Brachytherapy With <sup>198</sup> Au Grains for Patients With Buccal Mucosa Cancer. M. KONISHI, J. HIROKAWA, S. MIYOSHI, T. KATSUTA, N. IMANO, I. NISHIBUCHI, Y. MURAKAMI, K. SHIMABUKURO, T. NAKASHIMA, Y. TAKEUCHI, N. KAKIMOTO, Y. NAGATA ( <i>Hiroshima; Yonago, Japan</i> ) .....	2265
Laparoscopic Liver Resection Procedure Attenuates Organ-space Surgical Site Infection Compared With Open Procedure: A Propensity Score-matched Analysis. K. ARAKI, N. HARIMOTO, A. WATANABE, M.	

TSUKAGOSHI, N. ISHII, K. HAGIWARA, R. MURANUSHI, K. HOSHINO, T. SEKI, K. SHIRABE ( <i>Gunma, Japan</i> ).....	2273
Epithelial-mesenchymal Transition Factor and Its Association With Mammographic Density and Breast Cancer Prognosis. E.Y. KIM, S. AHN ( <i>Seoul, Republic of Korea</i> ) .....	2281
Efficacy and Cost-effectiveness of Pegfilgrastim for Preventing Febrile Neutropenia During Docetaxel, Cisplatin, and 5-Fluorouracil Therapy for Esophageal Cancer. T. KUROGOCHI, A. MATSUMOTO, Y. NYUMURA, Y. TANISHIMA, T. NAKAYOSHI, T. OKAMOTO, F. YANO, K. ETO ( <i>Tokyo, Japan</i> ) .....	2293
Prognostic Impact of Malnutrition Diagnosed by the GLIM Criteria for Resected Extrahepatic Cholangiocarcinoma. Y. OKAZOE, H. YANAGIMOTO, D. TSUGAWA, M. AKITA, R. ASAKURA, S. OMIYA, T. URADE, Y. NANNO, K. FUKUSHIMA, H. GON, S. KOMATSU, K. KURAMITSU, T. GOTO, S. ASARI, H. TOYAMA, M. KIDO, T. AJIKI, T. FUKUMOTO ( <i>Kobe, Japan</i> ) .....	2299
Poor Renal Function and a High Modified Glasgow Prognostic Score Are Predictive Factors for Nedaplatin/5- Fluorouracil Combination Therapy-induced Febrile Neutropenia. J. HASHIZUME, M. NAMBU, H. NAKAGAWA, H. HARASAWA, Y. KODAMA ( <i>Nagasaki, Japan</i> ).....	2309
Does Multidisciplinary Therapy at a Sarcoma Center Improve the Prognosis of Patients With Soft Tissue Sarcoma? A Retrospective Case Study at a Single Institute. T. YONEMOTO, H. KAMODA, Y. HAGIWARA, H. KINOSHITA ( <i>Chiba, Japan</i> ).....	2317
Clinicopathological Significance and Predictive Value of High Intratumoral Tumor Budding in Patients With Breast Carcinoma Treated With Neoadjuvant Chemotherapy. J. CHU, H.-S. KIM, S.-I. DO ( <i>Seoul, Republic of Korea</i> ) .....	2323
Elevated Preoperative Serum Vascular Endothelial Growth Factor Does Not Predict Poor Outcomes in Curatively Resected Non-metastatic Colorectal Cancer Treated Without Neoadjuvant Therapy. N. NAKAI, A. MAEDA, T. YANAGITA, T. SUZUKI, Y. MAEDA, T. HIROKAWA, K. SHIGA, M. HARA, H. TAKAHASHI, R. OGAWA, Y. MATSUO, S. TAKIGUCHI ( <i>Nagoya; Toyokawa, Japan</i> ) .....	2333
Dual Biomarker Combining DNA Damage Repair Gene Mutations and PD-L1 Expression for Immune Checkpoint Inhibitors in Non-small Cell Lung Cancer. H. KIM, D.H. LIM, Y.S. KWON, M.A. KIM, K.U. PARK ( <i>Daegu, Republic of Korea</i> ) .....	2343
Emetogenicity and Risk Factors of Nausea and Vomiting in Patients With Metastatic Colorectal Cancer Receiving Trifluridine/Tipiracil and Bevacizumab Chemotherapy. S. MATSUOKA, H. FUJII, H. IIHARA, K. OHATA, C. HIROSE, D. WATANABE, S. SADAKA, S. KIYAMA, A. MAKIYAMA, T. TAKAHASHI, R. KOBAYASHI, N. MATSUHASHI, A. SUZUKI ( <i>Gifu, Japan</i> ) .....	2351
Liver Metastases of Unknown Primary Renal Cell Carcinoma Treated With Immune Checkpoint Inhibitors Plus Tyrosine Kinase Inhibitors: A Case Report and Literature Review. D. BIMBATTI, N. CAVASIN, F. GALUPPINI, A. RAGO, G. RAMONDO, E. LAI, M. DIONESE, E. ERBETTA, U. BASSO, M. MARUZZO ( <i>Padua, Italy</i> ) .....	2359
Metastatic Adenocarcinoma of the Lung Presenting as a Presternal Cutaneous Mass: Case Report and Brief Literature Review. H. KERROUCH, M. DANSET, N. HJIRA, J. KANITAKIS ( <i>Lyon; Pierre Bénite, France; Rabat, Morocco</i> ).....	2367
Successful Prevention of Tumour Lysis Syndrome in HER2-positive Breast Cancer: Case Report and Literature Review. S. OMORI, T. SHIGECHI, K. KAWAGUCHI, H. IJICHI, E. OKI, T. YOSHIKUMI ( <i>Fukuoka, Japan</i> ).....	2371
Addendum.....	2379
Corrigendum .....	2381