

Center for Gene & Cell Therapy

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To improve the safety and efficacy of gene and cell therapies, we are developing Good Manufacturing Practice (GMP)-based production systems for high-quality viral vectors and cell products. Our primary focuses include oncolytic virotherapy; gene therapy and vaccine development using adeno-associated virus (AAV) vectors; genetically modified T-cell therapy; T-cell therapy for viral infections following hematopoietic stem cell transplantation; and mesenchymal stromal cell (MSC) therapy.

Construction of large-scale viral vector purification systems

Parvovirus-based vectors, including adeno-associated virus (AAV) vectors, are regarded as one of the most promising modalities for gene therapy and vaccine development, as they enable efficient delivery of therapeutic genes to a wide range of tissues while minimizing adverse effects. However, gene therapy products based on AAV vectors that have been approved in recent years have reached record-high prices, raising concerns about the financial burden on healthcare insurance systems and posing a significant societal challenge. This issue largely stems from the complexity and labor-intensive nature of AAV vector manufacturing processes.

The production of AAV vectors can be broadly divided into three stages: (i) upstream processes, including cell culture and AAV production; (ii) downstream processes, involving purification and separation of crude viral preparations; and (iii) quality control (QC) processes, which determine the final quality of the vectors. To address these challenges, the Okada Laboratory has been developing a range of efficient and high-quality AAV vector manufacturing and quality control technologies at each stage of the production pipeline, as outlined below.

(i) Upstream processes: development of original, novel AAV vector-producing cell lines; development of novel plasmids that enhance AAV vector yield and increase the proportion of full capsids; and development of novel nonwoven scaffold materials for cell culture.

(ii) Downstream processes: development of a novel ultracentrifugation-based technology that enables rapid purification of large quantities of AAV vectors (zonal ultracentrifugation); and development of a novel AAV vector purification method using surfactants and hollow-fiber systems.

(iii) QC processes: development of a novel method for discriminating full AAV particles using solid-state nanopores.

Development of an oncolytic virus therapy using third-generation herpesvirus G47D

G47Δ is a third-generation oncolytic herpes simplex virus type 1 (HSV-1) developed for cancer therapy. It is a triple-mutant virus engineered to enhance tumor-selective replication and improve safety. The development of G47Δ represents a major advance in the field of oncolytic virotherapy. Three genetic modifications introduced into the HSV-1 genome significantly improve its safety profile compared with earlier

er oncolytic viruses, enabling selective replication in cancer cells while sparing normal tissues and inducing both innate and adaptive antitumor immune responses. G47 Δ has demonstrated promising efficacy across multiple cancer types, including glioblastoma, prostate cancer, and malignant melanoma. In a Phase II clinical trial involving patients with residual or recurrent glioblastoma, G47 Δ achieved a 1-year survival rate of 84.2% and a median overall survival of 20.2 months. Preclinical studies further demonstrated robust antitumor activity in both subcutaneous and orthotopic tumor models. Combination strategies have also highlighted the therapeutic potential of G47 Δ . When administered together with immune checkpoint inhibitors, G47 Δ induced complete tumor regression in more than two-thirds of mice in a melanoma model, underscoring its capacity to enhance antitumor immunity. Importantly, the development of G47 Δ represents a successful academic-led translational effort, spanning discovery, preclinical validation, and clinical application. Its safety and efficacy were confirmed in an investigator-initiated clinical trial conducted at IMSUT Hospital in patients with malignant glioma. Based on these results, an application for manufacturing and marketing approval was submitted in 2020, and G47 Δ was approved in 2021 as a regenerative medical product (teserpaturev; Deltyact) for the treatment of malignant glioma. As research progresses, G47 Δ and other oncolytic viruses are expected to become integral components of multimodal cancer treatment strategies.

Development of a treatment for Duchenne muscular dystrophy (DMD) using MSCs

One promising therapeutic approach for Duchenne

muscular dystrophy (DMD) involves cell therapy using mesenchymal stromal cells (MSCs). Repeated systemic administration of MSCs, leveraging their immunomodulatory properties, can effectively regulate chronic inflammation in dystrophic muscle, leading to improvements in motor and cardiac function. These findings suggest that MSC therapy has the potential to delay disease progression in patients with DMD. While MSC therapy shows promise for the treatment of DMD, further research is needed to fully elucidate its characteristics and potential long-term effects. As the field of regenerative medicine continues to advance, MSC therapy may offer new hope for improving the quality of life of patients with DMD.

Enhancement of CAR-T cell therapy via interleukin (IL)-7 and chemokine (C-C motif) ligand 19 (CCL19) production

IL-7/CCL19-expressing CAR-T cells (7 $\times$ 19 CAR-T cells) have demonstrated promising therapeutic efficacy in preclinical models of refractory solid tumors, including glioblastoma and pancreatic cancer. This enhanced efficacy is attributed to early T-cell activation mediated by IL-7 and increased migratory capacity driven by CCL19. However, sustained IL-7-mediated activation may induce mid- to long-term CAR-T cell exhaustion, potentially increasing the risk of clinical relapse. In our research, we aim to develop a next-generation CAR-T cell therapy that maintains prolonged antitumor efficacy by incorporating strategies to mitigate T-cell exhaustion in 7 $\times$ 19 CAR-T cells. This approach represents a novel effort to extend the therapeutic benefits of CAR-T cell therapy to a broader population of patients with refractory malignancies.

Publications

- Andoh S, Kato S, Ooi J, Monna-Oiwa M, Kuroda J, Ichimura H, Kondo K, Nannya Y, Takahashi S, Konuma T. Elevation of White Blood Cell Count after G-CSF-Combined Conditioning Predicts Relapse and Disease-Free Survival Following Single-Unit Cord Blood Transplantation for Myeloid Malignancies: WBC Elevation with G-CSF Conditioning Predicts Relapse after CBT. *Transplant Cell Ther.* 2025 Nov 12:S2666-6367(25)01593-3. doi: 10.1016/j.jtct.2025.11.018. Epub ahead of print. PMID: 41238192.
- Fujii T, Sakurai M, Shimizu H, Izumi A, Kimura K, Shono K, Tanoue S, Okada Y, Kako S, Matsui S, Sakaida E, Jinguji A, Ouchi F, Najima Y, Kobayashi T, Tachibana T, Tanaka M, Iwata S, Onizuka M, Yano S, Hatano K, Hagihara M, Aotsuka N, Fujisawa S, Takahashi S, Kobayashi N, Kikuchi T, Tanaka K, Kataoka K, Kanda Y. Impact of prior solid tumors and their treatment modality on outcomes after allogeneic hematopoietic stem cell transplantation. *Bone Marrow Transplant.* 2025 Sep 15. doi: 10.1038/s41409-025-02718-8. Epub ahead of print. PMID: 40954246.
- Fujita K, Ikeguchi R, Aoyama T, Noguchi T, Yoshimoto K, Sakamoto D, Iwai T, Miyamoto T, Miyazaki Y, Akieda S, Nagamura-Inoue T, Nagamura F, Nakayama K, Matsuda S. Efficacy and safety of Bio 3D conduits composed of human umbilical cord-derived mesenchymal stromal cells: A proof-of-concept study in a canine ulnar nerve defect model. *Cell Transplant.* 2025 Jan-Dec;34:9636897251361711. doi: 10.1177/09636897251361711. Epub 2025 Aug 3. PMID: 40754895
- Honda Y, Nagao S, Kinoh H, Liu X, Matsudaira N, Dirisala A, Nitta-Matsumoto S, Nomoto T, Hayashita-Kinoh H, Miura Y, Okada T, Nishiyama N. Adeno-Associated Virus Self-Assembled with Tannic Acid and Phenylboronic Acid-Polymers to Evade

- Neutralizing Antibodies and Reduce Adverse Events. *ACS Nano* 2025 Mar 4;19(8):7690-7706. doi: 10.1021/acsnano.4c11085. Epub 2025 Feb 3.
- Ichimura H, Kato S, Monna-Oiwa M, Andoh S, Kuroda J, Kondo K, Nannya Y, Takahashi S, Konuma T. Comparative analysis of the acute myeloid leukemia-composite model and treatment-related mortality score in single-unit cord blood transplantation. *Leuk Lymphoma*. 2025 Oct 31;1-4. doi: 10.1080/10428194.2025.2571201. Epub ahead of print. PMID: 41173474.
- Jing Y, Kobayashi M, Shoulkamy MI, Zhou M, Vu HT, Arakawa H, Sabit H, Iwabuchi S, Vu CQ, Kasahara A, Ueno M, Tadokoro Y, Kurayoshi K, Chen X, Yan Y, Arai S, Hashimoto S, Soga T, Todo T, Nakada M, Hirao A. Lysine-arginine imbalance overcomes therapeutic tolerance governed by the transcription factor E3-lysosome axis in glioblastoma. *Nat Commun*. 2025 Apr 1;16(1):2876. doi: 10.1038/s41467-025-56946-z.
- Kanayama S, Watanabe K, Tanaka M, Takita J, Todo T. Epithelial-Mesenchymal Transition and Genetically Driven Early Tumor Seedings in Extraneural Metastasis of Glioblastoma. *Cancer Sci*. 2025 Sep; 116(9): 2607-2612. doi: 10.1111/cas.70126. Epub 2025 Jun 20. PMID: 40539386
- Kato S, Monna-Oiwa M, Andoh S, Oda Y, Nannya Y, Takahashi S, Konuma T. The Composite Health Risk Assessment Model (CHARM) Predicts Overall Mortality and Relapse, But Not Non-Relapse Mortality, in Adults Following Unrelated Single-Unit Cord Blood Transplantation. *Turk J Haematol*. 2025 Aug 29; 42(3): 181-195. doi: 10.4274/tjh.galenos.2024.2025.0125. Epub 2025 Jun 11. PMID: 40497704; PMCID: PMC12400884.
- Kato A, Harima H, Tsunekawa Y, Igarashi M, Kitamura K, Wakae K, Nishiyama T, Morimoto S, Suzuki T, Kozuka-Hata H, Oyama M, Motooka D, Watanabe M, Takeshima K, Maruzuru Y, Koyanagi N, Okano H, Inada T, Okada T, Muramatsu M, Kawaguchi Y. Herpes simplex virus-1 evades APOBEC1-mediated immunity via its uracil DNA glycosylase in mice. *Nat Microbiol*. 2025 Jul;10(7):1758-1774. doi: 10.1038/s41564-025-02026-3. Epub 2025 Jun 3.
- Kawase T, Kanda J, Onizuka M, Morishima S, Morishima Y, Uchida N, Uehara Y, Takahashi S, Eto T, Kobayashi H, Matsuhashi Y, Kawakita T, Onishi Y, Doki N, Tanaka M, Ichinohe T, Atsuta Y, Murata M; JSTCT HLA Working Group. High-Risk Human Leukocyte Antigen Mismatch Combinations Responsible for Severe Acute Graft-Versus-Host Disease in Cord Blood Transplantation. *Transplant Cell Ther*. 2025 Oct 3;S2666-6367(25)01481-2. doi: 10.1016/j.jtct.2025.09.045. Epub ahead of print. PMID: 41047125.
- Konuma T, Hamatani-Asakura M, Monna-Oiwa M, Kato S, Andoh S, Ichimura H, Yokoyama K, Nannya Y, Takahashi S. Clinical impact of glucocorticoid responsiveness-related gene polymorphism on graft-versus-host disease and survival after single-unit cord blood transplantation. *Int J Hematol*. 2025 Nov 20. doi: 10.1007/s12185-025-04112-y. Epub ahead of print. PMID: 41264074.
- Konuma T, Hamatani-Asakura M, Nagai E, Kato S, Andoh S, Adachi E, Monna-Oiwa M, Takahashi S, Yotsuyanagi H, Nannya Y. Assessment of cellular and humoral immunity against varicella-zoster virus in adult allogeneic hematopoietic cell transplant recipients: a cross-sectional study assessing cellular immunity after administration of an adjuvanted recombinant zoster vaccine. *J Infect Chemother*. 2025 Nov 6;31(12):102857. doi: 10.1016/j.jiac.2025.102857. Epub ahead of print. PMID: 41205809.
- Konuma T, Hamatani-Asakura M, Kato S, Andoh S, Ichimura H, Kuroda J, Kondo K, Yokoyama K, Monna-Oiwa M, Nannya Y, Takahashi S. Toll-Like Receptor Polymorphisms Influence Graft-Versus-Host Disease and Infection Risk After Single-Unit Cord Blood Transplantation for Adults. *Eur J Haematol*. 2025 Sep 25. doi: 10.1111/ejh.70039. Epub ahead of print. PMID: 40996108.
- Konuma T, Hamatani-Asakura M, Monna-Oiwa M, Kato S, Isobe M, Yokoyama K, Nannya Y, Takahashi S. Higher relapse and worse overall survival in recipients with CTLA-4 AA genotype of rs231775 following single-unit cord blood transplantation in adults. *Leuk Lymphoma*. 2025 Apr;66(4):733-743. doi: 10.1080/10428194.2024.2434925. Epub 2024 Dec 2. PMID: 39618318.
- Konuma T, Hamatani-Asakura M, Monna-Oiwa M, Kato S, Andoh S, Oda Y, Yokoyama K, Nannya Y, Takahashi S. Risk of acute graft-versus-host disease in recipients with IL-10 promoter polymorphism rs1800872, but not IL-10 receptor β polymorphism rs2834167, after single-unit cord blood transplantation. *Hum Immunol*. 2025 Jul;86(4):111322. doi: 10.1016/j.humimm.2025.111322. Epub 2025 Apr 28. PMID: 40300933.
- Konuma T, Kanda J, Uchida N, Tanaka M, Kimura F, Nakasone H, Uehara Y, Tokunaga M, Toyosaki M, Miyakoshi S, Doki N, Ishiwata K, Kobayashi H, Onishi Y, Kozai Y, Kato K, Ishimaru F, Fukuda T, Atsuta Y, Takahashi S. Has early mortality following single-unit unrelated cord blood transplantation improved in recent years? A nationwide registry data analysis from 2003 to 2022 in Japan. *Br J Haematol*. 2025 Nov;207(5):2026-2040. doi: 10.1111/bjh.70099. Epub 2025 Aug 16. PMID: 40817823; PMCID: PMC12624182.
- Konuma T, Monna-Oiwa M, Kato S, Isobe M, Takahashi S, Nannya Y. Prognostic Value of the Pre-transplant Fibrosis-4 Index on Non-Relapse and Overall Mortality following Unrelated Single-Unit Cord Blood Transplantation in Adults. *Acta Haematol*. 2025;148(3):258-268. doi: 10.1159/000541157. Epub 2024 Aug 28. PMID: 39197423; PMCID: PMC12112890.

- Kuraoka M, Watanabe K, Kawashima T, Nitahara-Kasahara Y, Tachimori H, Takeda S, Minegishi K, Aoki Y. Digital Outcome Measures for Gait and Spontaneous Locomotor Activity in Dystrophic Dogs. *Methods Mol Biol.* 2026; 2963: 213-223. doi: 10.1007/978-1-0716-4738-7_16.
- Makiyama J, Ohno N, Jimbo K, Kawamata T, Yokoyama K, Konuma T, Kato S, Takemura T, Ito A, Tanaka T, Inamoto Y, Fuji S, Imai Y, Takahashi S, Nannya Y, Tojo A, Fukuda T, Uchimar K. Outcomes of patients aged 70 years or younger with aggressive ATL at core hospitals for ATL treatment in Tokyo. *Int J Hematol.* 2025 Sep 2. doi: 10.1007/s12185-025-04057-2. Epub ahead of print. PMID: 40897990.
- Miyazaki R, Aibara K, Isse H, Kashiwai F, Takahashi M, Onodera A, Tsunekawa Y, Yamauchi Y, Yoshimi K, Mashimo T, Komiya K, Okada T. A Novel MiRNA Detection System Combining TWJ-SDA, Multi-step L-TEAM, and CRISPR-Cas3. *bioRxiv [Preprint]*. 2025; doi: <https://doi.org/10.1101/2025.09.25.678453>
- Nakamura N, Liao J, Soda Y, Takahashi M, Koder H, Kobari Y, Hirai Y, Takaori-Kondo A, Okada T. Optimizing activation and culture conditions for the production of cord blood-derived CAR-T and natural killer cells. *Br J Haematol.* 2025 Nov; 207(5): 1863-1873. doi: 10.1111/bjh.70139. Epub 2025 Sep 30. PMID: 41030086
- Nakamura N, Jo T, Arai Y, Kitawaki T, Nishikori M, Mizumoto C, Kanda J, Yamashita K, Nagao M, Takaori-Kondo A. Increased relative eosinophil counts portend neck oedema after chimeric antigen receptor-T therapy. *Br J Haematol.* 2025 Feb; 206(2): 766-768. doi: 10.1111/bjh.19992. Epub 2025 Jan 6. PMID: 39761673.
- Nakamura N, Jo T, Arai Y, Kitawaki T, Nishikori M, Mizumoto C, Kanda J, Yamashita K, Nagao M, Takaori-Kondo A. Severe cases of local cytokine release syndrome (CRS); craniocervical edema soon after chimeric antigen T-cell (CAR-T) therapy. *Oxf Med Case Reports.* 2025 Jan 18;2025(1):omae164. doi: 10.1093/omcr/omae164. PMID: 39839700; PMCID: PMC11748437.
- Oda Y, Kato S, Monna-Oiwa M, Andoh S, Nannya Y, Takahashi S, Konuma T. G-CSF-combined conditioning in allogeneic transplantation for non-remission acute myeloid leukemia with inv(3)(q21q26.2)/t(3;3)(q21;q26.2). *Blood Cell Ther.* 2025 Feb 25;8(1):181-185. doi: 10.31547/bct-2024-035. PMID: 40061178; PMCID: PMC11883520.
- Ono F, Takahashi Y, Shimada S, Mizumoto S, Miyata S, Nitahara-Kasahara Y, Yamada S, Okada T, Kosho T, Yoshizawa T. Carbohydrate sulfotransferase 14 gene deletion induces dermatan sulfate deficiency and affects collagen structure and bowel contraction. *PLoS One* 2025 May 6;20(5):e0320943. doi: 10.1371/journal.pone.0320943. eCollection 2025.
- Oshima S, Arai Y, Kondo T, Yano S, Hirabayashi S, Uchida N, Onizuka M, Miyakoshi S, Tanaka M, Takahashi S, Hayashi M, Kawakita T, Uehara Y, Ota S, Izumi T, Sawa M, Nishida T, Katayama Y, Nagafuji K, Kato K, Ichinohe T, Atsuta Y, Yanada M. Myeloablative conditioning in cord blood transplantation for acute myeloid leukemia patients is efficacious only until age 55. *Bone Marrow Transplant.* 2025 Apr;60(4):458-466. doi: 10.1038/s41409-025-02508-2. Epub 2025 Jan 21. PMID: 39838078; PMCID: PMC11971039.
- Ozasa T, Nakajima M, Tsunedomi R, Goto S, Adachi K, Takahashi H, Tamada K, Nagano H. Novel immune drug combination induces tumour microenvironment remodelling and reduces the dosage of anti-PD-1 antibody. *Sci Rep.* 2025 Mar 15;15(1):8956. doi: 10.1038/s41598-025-87344-6. PMID: 40089538
- Shimizu T, Arai Y, Kondo T, Yano S, Shimomura Y, Doki N, Fukuda T, Nishida T, Takahashi S, Ota S, Kanda Y, Kuriyama T, Kurita N, Kawakita T, Hasegawa Y, Hiramoto N, Onizuka M, Atsuta Y, Yanada M. Improved post-transplant outcomes for elderly acute myeloid leukemia patients conditioned with FLU/BU4 rather than conventional MAC regimens. *Bone Marrow Transplant.* 2025 Apr 5. doi: 10.1038/s41409-025-02573-7. Epub ahead of print. PMID: 40185936.
- Shiozawa AL, Hosoi Kobayashi M, Shiozawa Y, Ikeda Y, Miyagawa Y, Okamoto F, Sakai M, Okada T, Igarashi T. Identification of coexisting Mfrpr6 and Pde6brd10 mutations causing spontaneous retinal detachment in commercially available rd6 mice. *PLoS One* 2025 Sep 23;20(9):e0332446. doi: 10.1371/journal.pone.0332446. eCollection 2025. PMID: 40986557 doi: 10.1371/journal.pone.0332446
- Skrypnik M, Spahr A, Berkovsky S, Yatsenko T, Xu C, Zuieva O, Osada T, Takahashi S, Hattori N, Takahashi K, Hattori K, Heissig B. Chronic stress and the IL-10-mediated immunoregulatory loop in the pathogenesis of periodontitis. *Clin Sci (Lond).* 2025 Nov 25;139(22):CS20256843. doi: 10.1042/CS20256843. PMID: 41289041.
- Skrypnik M, Yatsenko T, Riabets O, Zuieva O, Rodionova I, Skikevych M, Salama Y, Osada T, Tobita M, Takahashi S, Hattori N, Takahashi K, Hattori K, Heissig B. Potassium Iodide Induces Apoptosis in Salivary Gland Cancer Cells. *Int J Mol Sci.* 2025 May 28;26(11):5199. doi: 10.3390/ijms26115199. PMID: 40508009; PMCID: PMC12155144.
- Takahashi S. HSC "aging" of cord blood during cryopreservation and new strategy for prevention. *Blood Sci.* 2025 Jun 5;7(2):e00238. doi: 10.1097/BS9.0000000000000238. PMID: 40487191; PMCID: PMC12144646.
- Takahashi H, Yamaguchi N, Okayama N, Nishioka M, Mahbub MH, Hase R, Suehiro Y, Yamasaki T, Takahashi S, Tojo A, Tanabe T. Relationship Between an Interleukin 6 SNP and Relapse After Allogeneic

- Bone Marrow Transplantation. *J Clin Med*. 2025 Jan 13;14(2):476. doi: 10.3390/jcm14020476. PMID: 39860482; PMCID: PMC11765773.
- Tsutsui M, Tsunekawa Y, Wada M, Arima A, Onodera A, Nishina M, Nagoya M, Baba Y, Kawai T, Okada T. Enhanced Discriminability of Viral Vectors in Viscous Nanopores. *Small Methods*. 2025 Jan 2:e2401321. doi: 10.1002/smt.202401321. Online ahead of print. PMID: 39743980
- Yamazaki R, Yakushijin K, Yoshihara S, Ikeda K, Ishida A, Kajiwaru M, Kikuta A, Takagi N, Nagamura-Inoue T, Namba N, Haraguchi K, Fujimori Y, Fujiwara SI, Yamada-Fujiwara M, Okuyama Y, Tanosaki R, Ueda Y. Evaluation of peripheral blood stem cell collection in the Japan Marrow Donor Program(JMDP). *Transfusion*. 2025 Dec;65(12):2345-2353. doi: 10.1111/trf.18458. Epub 2025 Nov 1. PMID: 41175001
- Yokoyama H, Fuji S, Murata M, Hirayama M, Wake A, Uchida N, Tanaka M, Onizuka M, Takahashi S, Doki N, Maruyama Y, Ishiwata K, Uehara Y, Nishida T, Sawa M, Kawakita T, Eto T, Ishimaru F, Kato K, Ichinohe T, Atsuta Y, Terakura S, Morishima S. Impact of graft-versus-host disease on outcomes of cord blood transplantation according to HLA disparity and its prophylaxis type. *Ann Hematol*. 2025 May;104(5):2905-2913. doi: 10.1007/s00277-025-06415-w. Epub 2025 May 21. PMID: 40397195; PMCID: PMC12141169.
- Yokoyama K, Yokoyama N, Shinozaki-Ushiku A, Ito M, Takamori H, Takahashi S, Shimizu E, Imoto S, Todo T, Nannya Y. Multihit Somatic Mosaicism of *TP53* Pathogenic Variants in a Patient Mimicking Li-Fraumeni Syndrome. *JCO Precis Oncol*. 2025 Sep;9:e2500392. doi: 10.1200/PO-25-00392. Epub 2025 Sep 2. PMID: 40893053.
- Yoshimura K, Nakasone H, Tamaki M, Hosoi H, Kameda K, Uchida N, Doki N, Fukuda T, Yoshihara S, Mori Y, Nakamae H, Tanaka M, Katayama Y, Eto T, Hasegawa Y, Ota S, Takahashi S, Yoshimitsu M, Ishimaru F, Kanda J, Atsuta Y, Yakushijin K. Impact of Conditioning Intensity on Clinical Outcomes of Second Allogeneic Hematopoietic Cell Transplantation for Relapse After First Transplantation. *Am J Hematol*. 2025 Jul;100(7):1185-1195. doi: 10.1002/ajh.27709. Epub 2025 May 23. PMID: 40407015.
- Yu X, Tsunedomi R, Hazama S, Nakagami Y, Tomochika S, Iida M, Ioka T, Takahashi H, Tamada K, Nagano H. Immunogenicity of Neoantigens in Colorectal Cancer: Potential Influence of Tumor Mutation Burden, Stages, and Metastasis. *Anticancer Res*. 2025 Jun;45(6):2385-2399. doi: 10.21873/anticancer.17611. PMID: 40425356