OncoLifeS

Gezond ouder met kanker

Annual report 2024

Databiobank
Universitair Medisch Centrum Groningen
Rijksuniversiteit van Groningen

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OncoLifeS
OncoLifeS Research

A growing resource for oncological research

Since its inception in 2014, OncoLifeS has evolved into a vital infrastructure for collecting and providing oncological data. As a data biobank, OncoLifeS supports research involving patients with various forms of cancer or an increased risk thereof, both within the University Medical Center Groningen and the wider region.

As of 31 December 2024, OncoLifeS comprised 26 multidisciplinary treatment teams and departments, with over 11,500 patients having provided informed consent for participation. The number of tumour working groups continues to grow steadily. Additionally, OncoLifeS actively collaborates with two national data biobanks: Archipelago and FORCE-NEN.

Historical oncological data files also have a place within OncoLifeS: four collections have already been integrated, with room for further expansion. Since its establishment, 79 data requests have been submitted, underscoring the value and relevance of the biobank.

OncoLifeS complies with all applicable guidelines and quality standards: approved by the METC (no. 2010/109), ISO-certified (9001:2008 Healthcare), registered in the National Trial Register (NL7839), and approved by the Privacy Work Organisation. The biobank applies strict conditions for inclusion, data access, data usage, and FAIR principles, with respect for patient privacy.

For WMO-regulated studies, OncoLifeS offers the WOL facility, which is currently utilised by five studies.

Organisation

The organisation of OncoLifeS is built around a solid structure that ensures quality and continuity. The management team consists of an manager (Prof. Dr. G.H. de Bock) and a coordinator (J. Nagel), a steering committee, and a scientific advisory board. Daily operations are carried out by a dedicated team comprising a data scientist and various project staff. Together, they manage, develop, and support the biobank and its research activities.

Mission & Vision

OncoLifeS supports scientific research into cancer with the aim of improving complex treatment pathways and promoting sustainable, personalised care within oncological networks. By collecting and making available high-quality data, biomaterials, and information on quality of life, OncoLifeS contributes to insights that can enhance care for both current and future patients.

OncoLifeS strives for broad patient participation within the University Medical Center Groningen and the region, to create a representative picture of the oncology population. This provides researchers with valuable information about the entire care pathway — from diagnosis to treatment and aftercare — and contributes to the development of future-proof oncological care, in line with ethical and legal guidelines.

Strategy

Field developments

Oncological care is under pressure due to rising costs, complex treatment pathways, and the need for appropriate care. OncoLifeS plays a crucial role by making data and biomaterials available for research, aiming for better patient selection, new biomarkers, and insights into lifestyle and quality of life. Rare tumours also require targeted attention within the University Medical Center Groningen and the region.

In oncology, maintaining quality, accessibility, and affordability of care is essential, as outlined in the Integrated Care Agreement. This includes providing the right care in the right place, often specific to each tumour group. Key themes include the use of expensive therapies such as immunotherapy, optimisation of patient selection, identification of new diagnostic and prognostic markers, and the role of nutrition and lifestyle. Additionally, optimal diagnostics and treatment of rare tumours remain a significant challenge for the University Medical Center Groningen and the region.

Objectives 2025

For 2025, the focus is on: Migration to a Common Data Model. Improving inclusion, with attention to hard-to-reach groups. Electronic signature of informed consent. Optimisation of database and biomaterial management. Implementation of snap-frozen biopsies and storage of PBMCs. Strengthening communication via website and narrowcasting. Drafting a Data Management Plan.

HIGHLIGHTS OF 2024

In 2024:

- The OncoLifeS 10,000 Symposium was held on 22 January 2024.
- 1,460 new patients were included in OncoLifeS. As of 31-12-2024, a total of 11,487 patients were included.
- 14 applications were approved for access to data and/or biomaterials. Of these, 9 studies utilised biomaterials and 7 studies collaborated with national/international organisations.
- 22 publications were released that made use of OncoLifeS.
- 5 presentations were held, further increasing the visibility and regional engagement of OncoLifeS.
- Two amendments to our biobank regulations were approved by the METC. These included permission to take biopsies without a regular care request and to begin inclusion for Long GUIDE.MRD and brain tumours.
- Migration of OncoLifeS samples to OpenSpecimen was completed.
- The OncoLifeS patient information leaflet was updated; complex terms were clarified, content was adjusted to Dutch B1 level, and an infographic was added for support.
- The core set of biomaterials was revised to reflect the latest research developments. The set now includes Streck tubes for cf-DNA, EDTA for DNA, faeces, and tissue storage. This impacted the collection and processing of Streck tubes for ctDNA, increasing from two to three tubes.
- OncoLifeS celebrated its 10-year anniversary on 11 November 2024 — a decade of innovation in cancer research.

OncoLifeS network

Participating multidisciplinary treatment teams and departments

Multidisciplinary treatment teams at UMCG (tumour working groups)

- Adrenal Tumours
- Colorectal Tumours
- Colorectal Tumours – LYNCH
- Dermatology (patients with cancer post-transplantation)
- Hereditary Breast and Ovarian Cancer (MOC)
- Gynaecological Oncology
- Haemato-oncology
- Hepato-pancreato-biliary Tumours (HPB)
- Head and Neck Oncology – ENT
- Head and Neck Oncology – Oral and Maxillofacial Surgery
- Germ Cell Tumours
- Lung Guide
- Gastric and Oesophageal Cancer

UMCG departments

- Medical Oncology
- Medical Oncology – AYA (Adolescents and Young Adults)
- Medical Oncology – Immunotherapy Patients
- Medical Oncology – Neuro-oncology

Collaboration with national databiobanks

- Archipelago biobank
- FORCE-NEN biobank

Multidisciplinary treatment teams and departments with intent to participate

Peripheral hospitals

- Thoracic Oncology – Martini Hospital
- Thoracic Oncology – Frisius MC
- Thoracic Oncology – Isala
- Academic Breast Centre Groningen

OncoLifeS participation in advisory boards and consultations

- UMCG Research Coordinators Meeting
- UMCG Zenya Core Users Meeting
- Cohort and Biobank Coordination Hub – Advisory Group
- CCC Chain Team – Improving Registration in Epic
- Research Data Community – monthly Meetings
- Cohort and Biobank Coordination Hub – Cohort Quality Working Group

Historical biobanks within OncoLifeS

1. Historical Gynaecological & Gynaecological Oncology Biobank
2. Historical Haematology Biobank (bone marrow and peripheral blood samples)
3. Historical Lung Oncology Biobank – Pathology and Molecular Biology in Lung Cancer
4. Mamma-Ovarian Carcinoma (MOC)

WOL facility

Benefit

Department: Gynaecology

Cohort of patients with BRCA mutation

N-CIA

Department: Medical Oncology

Cohort studying the interaction between immune factors and tumours

Pointing

Department: Medical Oncology

Cohort of patients receiving immunotherapy

COVID-19

Department: Haematology

Data analysis study

GIMICC

ADepartment: Medical Oncology

Cohort collecting gut microbiome samples from patients with metastatic or inoperable colorectal cancer

Structure & governance

Manager

The administrator of OncoLifeS, Prof. Dr G.H. de Bock, manages the initiative in accordance with the document 'OncoLifeS: Description and Regulations', and reports to the Director of the UMC Groningen Cancer Centre.

Steering Committee

The OncoLifeS Steering Committee advises the manager and serves as a think tank and sounding board. It makes decisions on organisational matters and, based on the advice of the OncoLifeS Scientific Committee, on whether to grant requests for the use of clinical data and/or biological material from the data biobank. The committee reports its findings and progress to the Oncology Committee and meets six times per year. The chair, appointed on a rotating basis, is selected from among the members. The manager cannot be a member of the steering committee.

Steering Committee members 2024

👴⚖️ Chairs

- Prof.dr. J.A. Gietema
- Dr. J.H. Maduro

👥 Members

- Dr. A.J. van der Wekken
- Dr. S.A.H.J. de Visscher / Prof.dr. M.J.H. Witjes
- Dr. G.B. Halmos
- Dr. J. Meijer
- R.J. Oostergo
- Dr. B. van der Vegt / J.J. Duker
- Dr. C.M Woolthuis
- Dr. K. Havenga / Dr. B. van Etten

📅 Agenda members

- Prof.dr. M.A.T.M. van Vugt
- Dr. H. Boter
- Prof.dr. J.A. Langendijk

✍️ Secretary

- J. Nagel

Scientific Committee

The OncoLifeS Scientific Committee is composed of members from the Oncology Committee (a maximum of five individuals from tumour working groups or oncology departments), supplemented by representatives from relevant supporting departments such as Pathology, the Multidisciplinary Oncology Laboratory, Genetics, and a secretary. The administrator and members of the OncoLifeS Steering Committee are not eligible to serve on the Scientific Committee. The Scientific Committee advises the OncoLifeS Steering Committee on whether or not to approve requests for the use of biological material from the data biobank and the associated clinical data.

Scientific Committee members 2024

👴⚖️ Chairs

- Prof .Dr. S. de Jong
- Dr. B. Wisman

👥 Members

- Prof.dr. J.J. Schuringa
- Dr. B.A.C. van Dijk
- Dr. A. Cleven
- Dr. M.C.A. Kramer
- Dr. S.F. Oosting
- Dr. B.E.C. Plaat
- Dr. T.J.N. Hiltermann

✍️ Secretary

- J. Nagel

Progress & achievements

OncoLifeS
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Inclusion figures

Multidisciplinary Treatment Teams UMCG	Up to 31 Dec 2019	2020	2021	2022	2023	2024	Total*
Anaplastic Thyroid Cancer	0	8	5	4	10	5	**32**
AYA (Medical Oncology)	2	2	1	0	3	16	**24**
Adrenal Tumours	0	0	0	5	12	13	**30**
CRC	17	32	69	36	24	16	**194**
CRC LYNCH	0	0	0	8	5	1	**14**
Dermatology	3	5	7	43	38	3	**99**
Hereditary Breast and Ovarian Cancer (MOC)	86	56	63	30	26	10	**271**
Gynaecological Oncology	924	192	236	267	256	231	**2106**
Haematology	423	400	338	280	297	342	**2080**
Head and Neck Oncology TNE	1088	200	201	193	213	249	**2144**
Head and Neck Oncology Maxillofacial	429	73	107	94	84	93	**880**
Hepato-pancreato-biliary HPB	0	0	19	37	96	62	**214**
Immunotherapy (Medical Oncology)	94	74	88	80	70	5	**411**
Germ Cell Tumours	108	45	37	37	36	35	**298**
Gastric and Oesophageal Cancer	2	25	35	75	46	1	**184**
Medical Oncology	-	-	-	-	-	93	**93**
NET/NEC Tumours	40	21	48	29	37	41	**216**
Neuro-oncology (Medical Oncology)	11	15	22	46	60	51	**205**
Sarcomas	43	41	71	58	51	64	**328**
Thoracic Oncology	848	123	103	136	238	127	**1575**
Thoracic Oncology OZG	-	-	-	-	1	20	**21**
Thoracic Oncology Treant	0	0	6	20	7	1	**34**
Thoracic Oncology Lung cell culture	13	3	8	11	11	2	**48**
Lung Guide	-	-	-	-	-	14	**14**
Longoncology OZG-GUIDE	-	-	-	-	-	2	**2**
Von hippel-lindau VHL	-	-	-	-	-	1	**1**
Total unique patients	**4131**	**1315**	**1464**	**1489**	**1621**	**1460**	**11487**

* Some patients are included in more tumour groups

Study applications

1. **OLS003-201400252_HNC_Amendement_3_Sarcopenie_Dysphagia**
Automatically delineating the skeletal muscle index in cervical CT and MRI of head and neck cancer patients. A validation of a deep learning algorithm.
Team: Hurtado-Oliva, JA; Halmos, GB; Hoorn, A van der; ten Brink, RSA; Heins, J.I.
Aim: To validate a deep learning model for automatic delineation of skeletal muscle mass at C3 by comparing automatic delineations with manual delineations in cervical CT and MRI scans.

2. **OLS058-202317897-cfDNA in NEN_Amedement 1**
Exploratory study to evaluate the quality and quantity of cfDNA derived from stored plasma samples with advanced, well-differentiated gastro-enteropancreatic neuro endocrine neoplasms (GEP-NEN).
Team: Walenkamp, A.M.E; Schuuring, E.
Aim: Can phenotypic traits be identified in ctDNA of patients , how do methylation patterns in cfDNA correlate with the molecular characteristics of advanced. well-differentiated GEP-NENs and can they provide preliminary Insights for diagnosis.

3. **OLS062-202317402_GUIDE.MRD Amendement 1**
Assessment of minimal residual disease by liquid biopsies in stage III NSCLC
Team: Hiltermann, TJN; L.J. Dijkstra; Schuuring E.
Aim: The overall objective of the study is to confirm that ctDNA detected after standard of care (SOC) intended curative treatment for NSCLC is a marker of residual disease and risk of recurrence, and applicable in clinical practice.

4. **OLS066-202418896-IMORT**
Optimized interaction between chemoradiation and immunotherapy in stage III inoperable non-small cell lung cancer.
Team: Hessels, AC; Hiltermann, T.J.N; De Bock, G.H; Wijsman, R; Langendijk, J.A.
Aim: to develop prediction models for the eligibility criteria for adjuvant immunotherapy and for anaemia and lymphopenia based on three-dimensional radiation dose distributions together with clinical and laboratory parameters.

5. **OLS067-202419233-LinkOncoLifePal**
Lifestyle and co-morbidities related to survival in patients diagnosed with cancer: a linkage between OncoLifeS, Lifelines and PALGA
Team: De Bock, G.H; Vegt, B. van der; Gietema, J.A; Wekken, A.J. van der; Huls, G.A; Hoek, J.G.M. van den; Reyners, A.K.L; Hoogwater, F.J.H; Haveman, J.W; Wijsmuller, A; Ginkel, R.J. van; Dorrius, M.D; Jansen, L; Walenkamp, A.M.E; Jalving, M; Wagemakers, M; Rácz, E; Brouwers, A.
Aim: What is the relation between lifestyle and co-morbidities and survival for patients diagnosed with cancer.

6. **OLS068-202419442 TTV in CART T-cell recipients**
Torque Teno Virus in patients treated with CD19 directed CAR T-cell therapy
Team: Doesum van J.A; Meerten van T; Leer van C.
Aim: Is there an association between TTV load and incidences of infections after CAR T-cell therapy. Is there an association between TTV load and severity of infections. Is there an absolute load of TTV after lymphodepleting therapy associated with poor/improved outcome. Is there a minimum reduction in TTV load after lymphodepleting needed for effective CAR T-cell therapy. Are TTV loads associated with fludarabine levels.

7. OLS069-202419443 CD8 imaging vervolg
Evaluation of cytokine production, CAR T-cell expansion and persistence, and T-cell recovery after CD19 directed CAR T-cell therapy
Team: Doesum van J.A; Meerten van T.
Aim: What is the impact of PPI use on Relapse free survival and overall survival in patients with relapsed large B-cell lymphoma treated with CD19 directed CAR T-cell therapy. Is the microbiome composition of patients treated with CAR T-cell therapy with and without PPI comparable to other published patient series. What is the impact of PPI use on T-cell composition e.g. numbers CD3+, CD4+ and CD8+ cells at apheresis and day +28 after infusion. What is the impact of PPI use on T-cell phenotype e.g. naïve memory T-cells, effector T-cells, exhausted T-cells. What is the impact of PPI use on CAR T-cell expansion.

8. OLS070-202418828-Derma_frailty
Frailty screening in elderly patients with skin cancer – an OncoLifeS study
Team: Racz, E; Holman, L; Festen, S.
Aim: Are all used instruments necessary for the decisions we make? Does the screening lead to less invasive treatments, less appointments, less hospital admissions, less complications? How do patients experience the screening.

9. OLS071- 202419569 BANDOR
Biomarkers in non-smoking And Non-Drinking patients treated for Oral squamous cell caRcinoma.
Team: Aa van der, PJP; Witjes, M.J.H; Schuuring, E; Visscher de, S.J.A.H.
Aim: Are there differences in biomarker expression between OSCC occurring in NSND and SD patients and what is the impact of these biomarkers on tumour characteristics and patient outcome. Secondary endpoints; Can biomarkers explain the higher second primary tumour rate in non-smoking, non-drinking OSCC patients; Which panel of biomarkers has the highest prognostic value for non-smoking, non-drinking OSCC patients on recurrence; Which panel of biomarkers has the highest prognostic value for non-smoking, non-drinking OSCC patients on survival; What panel of biomarkers has the highest prognostic value for non-smoking, non-drinking OSCC patients on metastasis.

10. OLS072-202420006 LiqMETex14
Detection of MET exon 14 skipping mutation by liquid biopsy in Non-Small Cell Lung Cancer (NSCLC) patients
Team: Joosse, S; Bidisha, P; Hiltermann, T.J.N.
Aim: Is it possible to accurately detect METΔex14 RNA in patient blood samples during the early stages of NSCLC.

11. OLS073-202419964-SPOCOS
The characteristics of oral leukoplakia patients with surgically treated oral squamous cell carcinomas.
Team: Aa van der, PJP; Witjes; Tilburg van, P.F.F.
Aim: What are the distinguishing characteristics, outcomes, and time to recurrence in patients who have or develop oral leukoplakia (OL) after surgical treatment of squamous cell carcinoma in the oral cavity (OSCC), compared to surgically treated OSCC patients who do not have OL.

12. OLS074-202419588-MMQoLASCT
Quality of Life and Work & Social participation of multiple myeloma patients treated with autologous stem cell transplantation
Team: Klomberg, K.M; Gelderloos, M; Roeloffzen, W.W.H; Plattel, W.J.
Aim: How does the quality of life develop during the trajectory of high dose therapy and autologous stem cell transplantation for multiple myeloma? 2. How much are multiple myeloma patients able to participate in society and work during and after first line high dose therapy and autologous stem cell transplantation? 3. What problems do patients with multiple myeloma most often face during and after first line high dose therapy and autologous stem cell transplantation?

13. OLS075-202420317-LB-SCLC
Liquid biopsies of Small Cell Lung Cancer
Team: Hiltermann, T.J.N; Zeijst van der, B.A.M.
Aim: Using an ELISA, this project will measure the presence of E18 in serum of SCLC patients. We will compare patients with limited disease and extensive disease, before chemotherapy, in comparison with (healthy) controls. Our hypothesis is that the ELISA signals will reflect the tumor mass.

14. OLS076-202420309-MIMEC-study
Molecular Immune profiling and Machine learning in Endometrial Cancer
Team: Roelofsen, T; de Bruyn, M; Nijman, HW; Fehrmann, RSN; Bart, J; Reyners, AKL; Bijmolt, S.
Aim: Can DL-models trained and/or validated on real-world OncoLifeS data predict clinical outcome and drive patient stratification for EC.

15. OLS077-202420886-ICI-colitis studie
Clinical, endoscopic, histological and/or biochemical features associated with response to first-line immunosuppressive treatment in patients with immune checkpoint inhibitor induced colitis
Team: Visschedijk, M.C; Haan, J.J; Fehrmann, R.S.N; Huitema, J.S.
Aim: What clinicopathological and endoscopic features are associated with response to first-line treatment for patients diagnosed with ICI-colitis.

16. OLS078-2024209 Multicenter retrospective cohort studies in Pancreatic and Small Intestinal Neuroendocrine Tumors using institutional databases/registries: Determining representativeness and FAIRness in a Dutch Nationwide study. 77 REPNet.
Team: Pieterman, dr. C.R.C; Hosson de, LD; Walenkamp, A.M.E.
Aim: Are the combined ENETS CoE cohorts representative of the Dutch population of patients with panNETs and SiNETs? Are individual ENETS CoE cohorts representative of the Dutch population of patients with panNETs and SiNETs? How are case-mixes different between institutional cohorts? Is there a difference in progression free survival (PFS) or time-to-second treatment after first-line therapy between institutional cohorts after correction for case-mix?

17. OLS079-202420880-pharm SCT
DNA medication profile in patients undergoing allogeneic stem cell transplantation for acute leukemia.
Team: Woolthuis, CM; Oude Munnink, TH; Timmann, LPA.
Aim: What is the frequency of pharmacogenetic polymorphisms in patients diagnosed with AML and ALL undergoing alloHSCT? What is the frequency of relevant gene-medication interactions in patients diagnosed with AML and ALL undergoing alloHSCT? How does the frequency of pharmacogenetic polymorphisms in patients diagnosed AML and ALL compare to the frequency observed in healthy controls? Is there a relationship between the presence of pharmacogenetic polymorphisms and treatment effectiveness, toxicity, and complications in patients with AML and ALL.

Results & goals

OncoLifeS
Gezond ouder met kanker

Results 2024

Patient participation

- ✓ Patient feedback incorporated into revised information leaflet (B1 level + explanatory boxes)
- ✓ Infographic added to patient information
- ✓ Symposium 10.000 patients (21 January)

Data & infrastructure

- ✓ Data available via *Euphoria*
- ✓ Template developed with LCR (faster contracting)
- ✓ Expansion of questionnaires: vaping and drug use
- ✓ Historical ZODIAC collection integrated

Biological materials

- ✓ Streck tube protocol updated
- ✓ New basic set of biomaterials
- ↻ Snap-frozen biopsies → 2025

Collaborations

- ✓ IKNL linkage established (tumour types and staging)
- ↻ Lifelines and PALGA linkage → in development
- ✓ Participation in international projects (GUIDE.MRD, Qualitop)
- ↻ Collaboration with HEBON and Academic Breast Centre → 2025

Goals 2025

Direction for 2025

- Roll-out in peripheral hospitals (Martini, Isala, ZGT, Ommelander)
- OncoLifeS data → Common Data Model (OMOP)
- Increase visibility (DOI, catalogue updates)

Internal organisation

- Database optimisation (EDFR scripts, monitoring biomateriaal)
- Patient participation: panel + feedback
- Improve inclusion: strategies for hard-to-reach groups
- Electronic signing of Informed Consent
- Recruitment of data scientist

Biobank & samples

- Migration to OpenSpecimen
- Implementation of snap-frozen biopsies
- Distribution & reintegration of RNA data into freezers
- Storage of PBMCs in nitrogen (CVF)

Communication & visibility

- Update websites (patients & research)
- Display infographic on UMCG narrowcasting screens
- Draft & publish Data Management Plan (DMP)

Publications 2024

*All articles below are clickable links

- 91. **Stearoyl-CoA desaturase inhibition is toxic to acute myeloid leukemia displaying high levels of the de novo fatty acid biosynthesis and desaturation** - Dembitz V, Lawson H, Burt R, Natani S, Philippe C, James SC, Atkinson S, Durko J, Wang LM, Campos J, Magee AMS, Woodley K, Austin MJ, Rio-Machin A, Casado P, Bewicke-Copley F, Rodriguez Blanco G, Pereira-Martins D, Oudejans L, Boet E, von Kriegsheim A, Schwaller J, Finch AJ, Patel B, Sarry JE, Tamburini J, Schuringa JJ, Hazlehurst L, Copland Iii JA, Yuneva M, Peck B, Cutillas P, Fitzgibbon J, Rouault-Pierre K, Kranc K, Gallipoli P - PubMed

- 90. **Bleximenib, the novel menin-KMT2A inhibitor JNJ-75276617, impairs long-term proliferation and immune evasion in acute myeloid leukemia** - Hogeling SM, Lê DM, La Rose N, Kwon MC, Wierenga ATJ, Van den Heuvel FAJ, Van den Boom V, Kuchnio A, Philippar U, Huls G, Schuringa JJ - PubMed

- 89. **Prognostic implications of ΔNp73/TAp73 expression ratio in core-binding factor acute myeloid leukemia** - Salustiano-Bandeira ML, Moreira-Aguiar A, Pereira-Martins DA, Coelho-Silva JL, Weinhäuser I, França-Neto PL, Lima AS, Lima AS, Baccarin AR, Silva FB, de Melo MA, Niemann FS, Nardinelli L, Ortiz Rojas CA, Duarte BK, Araujo AS, Azevedo EA, Morais CN, Figueiredo-Pontes LL, Schuringa JJ, Huls G, Bendit I, Rego EM, Olalla Saad ST, Traina F, Bezerra MA, Lucena-Araujo AR - PubMed

- 88. **Preclinical efficacy of the potent, selective menin-KMT2A inhibitor JNJ-75276617 (bleximenib) in KMT2A- and NPM1-altered leukemias** - Kwon MC, Thuring JW, Querolle O, Dai X, Verhulst T, Pande V, Marien A, Goffin D, Wenge DV, Yue H, Cutler JA, Jin C, Perner F, Hogeling SM, Shaffer PL, Jacobs F, Vinken P, Cai W, Keersmaekers V, Eyassu F, Bhogal B, Verstraeten K, El Ashkar S, Perry JA, Jayaguru P, Barreyro L, Kuchnio A, Darville N, Krosky D, Urbanietz G, Verbist B, Edwards JP, Cowley GS, Kirkpatrick R, Steele R, Ferrante L, Guttke C, Daskalakis N, Pietsch EC, Wilson DM, Attar R, Elsayed Y, Fischer ES, Schuringa JJ, Armstrong SA, Packman K, Philippar U - PubMed

- 87. **Potency and efficacy of pharmacological PIP4K2 inhibitors in acute lymphoblastic leukemia** - Lima K, Nogueira FL, Cipelli M, Carvalho MFL, Pereira-Martins DA, da Silva WF, Cavaglieri RC, Nardinelli L, Leal AM, Velloso EDRP, Bendit I, Câmara NOS, Schuringa JJ, Machado-Neto JA, Rego EM - PubMed

- 86. **A 4-gene prognostic index for enhancing acute myeloid leukaemia survival prediction** - Ortiz Rojas CA, Pereira-Martins DA, Bellido More CC, Sternadt D, Weinhäuser I, Hilberink JR, Coelho-Silva JL, Thomé CH, Ferreira GA, Ammatuna E, Huls G, Valk PJ, Schuringa JJ, Rego EM - PubMed

Publications 2024

*All articles below are clickable links

- 85. **VISTA drives macrophages towards a pro-tumoral phenotype that promotes cancer cell phagocytosis yet down-regulates T cell responses** - Lin Y, Choukrani G, Dubbel L, Rockstein L, Freile JA, Qi Y, Wiersma V, Zhang H, Koch KW, Ammatuna E, Schuringa JJ, van Meerten T, Huls G, Bremer - PubMed

- 84. **Reliability, costs, and radiation dose of dual-energy X-ray absorptiometry in diagnosis of radiologic sarcopenia in surgically menopausal women** - Stuursma A, Stroot IAS, Vermeulen KM, Slart RHJA, Greuter MJW, Mourits MJE, de Bock GH - PubMed

- 83. **Sex and Common Germline Variants Affect the Toxicity Profile and Pharmacokinetics of Alectinib: A Nationwide Cohort Study in Patients With ALK-Positive NSCLC** - Niels Heersche, Daan A.C. Lanser, M. Benthe Muntinghe-Wagenaar, Ma Ida Mohmaed Ali, Ezgi B. Ulas, Tessa M.A. Trooster, Evert de Jonge, Esther Oomen-de Hoop, Marthe S. Paats, Idris Bahce, Sander Croes, Lizza E.L. Hendriks, Anthonie J. van der Wekken, Anne-Marie C. Dingemans, Alwin D.R. Huitema, Ron H.N. van Schaik, Ron H.J. Mathijssen, G.D. Marijn Veerman - PubMed

- 82. **The association of nutritional and inflammatory biomarkers with overall survival in patients with non-small-cell lung cancer treated with immune checkpoint inhibitors** - Horstman IM, Vinke PC, Suazo-Zepeda E, Hiltermann TJN, Heuvelmans MA, Corpeleijn E, de Bock GH - PubMed

- 81. **Non-smoking and Non-drinking Oral Cancer Patients Are at Higher Risk of Second Primary Tumours** - van der Aa, Pepijn JP; Witjes, Max JH; van der Vegt, Bert; Schuuring, Ed; Boeve, Koos Sidorenkov, Grigory; de Bock, Geertruida H; de Visscher, Sebastiaan AHJ - Rijksuniversiteit Groningen

- 80. **Head and neck cancer patients with geriatric deficits are more often non-responders and lost from follow-up in quality of life studies** - de Vries J, Vermue DJ, Sidorenkov G, Festen S, Langendijk JA, de Bock GH, Halmos GB - PubMed

- 79. **Impact of Frailty on Post-Treatment Dysphagia in Patients with Head and Neck Cancer** - Hurtado-Oliva J, van der Laan HP, de Vries J, Steenbakkers RJHM, Halmos GB, Wegner I - PubMed

- 78. **Trends in the prescription of immune checkpoint inhibitors for non-small cell lung cancer in the Netherlands from 2016 to 2020, a national cancer registry analysis** - Suazo-Zepeda E, Maas WJ, Vinke PC, Hiltermann TJN, Aarts MJ, de Bock GH, Heuvelmans MA- PubMed

Publications 2024

*All articles below are clickable links

- 77. **A new computed tomography-based approach to quantify swallowing muscle volume by measuring tongue muscle area in a single slice** - Hurtado-Oliva J, Zwart AT, Vister J, van der Hoorn A, Steenbakkers RJHM, Wegner I, Halmos GB - PubMed

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