

# CURRICULUM VITAE

## JARNO DROST

### PERSONAL DATA

Title PhD  
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### EDUCATION

2003 – 2005 Master's degree Biomedical Sciences (*cum laude*)  
Free University  
Amsterdam, the Netherlands  
1999 – 2003 Bachelor's degree Molecular Biology  
Institute of Life Sciences and Chemistry  
Utrecht, the Netherlands

### CURRENT POSITIONS

Jan 2019 – present Junior Principal Investigator  
Oncode Institute  
Nov 2016 – present Principal Investigator  
Princess Máxima Center for Pediatric Oncology  
Utrecht, the Netherlands

### PAST POSITIONS

Sep 2012 – Nov 2016 Post-doctoral researcher  
Hubrecht Institute (lab of Prof. Dr. H. Clevers)  
Utrecht, the Netherlands.  
Apr 2012 – Aug 2012 Post-doctoral researcher  
Netherlands Cancer Institute (lab of Prof. Dr. R. Agami)  
Amsterdam, the Netherlands.  
Sep 2005 – Apr 2012 PhD student  
Netherlands Cancer Institute (lab of Prof. Dr. R. Agami)  
Amsterdam, the Netherlands.  
Thesis title: "*Identifying novel components of human tumour suppressor networks*".

### CAREER DESCRIPTION

After getting my MSc degree in Biomedical Sciences (*cum laude*) at the Free University in Amsterdam, I started my PhD in the lab of prof. dr. Reuven Agami at the Netherlands Cancer Institute (Amsterdam, the Netherlands). Here, I studied the genetic alterations that are required for the transformation of human primary cells into cancer cells (Drost & Mantovani et al., *Nature Cell Biology* 2010; Melo & Drost et al., *Molecular Cell* 2012). Additionally, I was involved in projects studying the role of non-coding RNAs, mRNA stability and mRNA processing in oncogene-induced senescence and neoplastic transformation

(Voorhoeve et al., Cell 2005; Elkon, Drost & van Haften et al., Genome Biology 2012; Jenal et al., Cell 2012; Loayza-Puch et al., Genome Biology 2013).

To pursue my interest in cancer research and stem cell biology, I undertook postdoctoral training in the lab of prof. dr. Hans Clevers at the Hubrecht Institute (Utrecht, the Netherlands). Here, I exploited intestinal stem cells, which can be expanded in a culture dish as “organoids”, to study tumorigenesis. I set up a colorectal cancer (CRC) progression model by introducing combinations of the most commonly mutated CRC genes in human colonic organoids using CRISPR/Cas9 genome editing (Drost et al., Nature 2015). I demonstrated that mutation of just four defined genes transforms healthy stem cells into invasive adenocarcinomas and I used this model to study the acquirement of chromosome instability (CIN), a hallmark of many CRCs (Drost et al., Nature 2015). I further explored this model to dissect the genetic alterations that are required for tumor cell migration and metastasis (Fumagalli & Drost et al., PNAS 2017), to study mutational signatures in cancer (Drost & Van Boxtel, Science 2017), to study signaling pathways underlying the mesenchymal CRC subtype (Fessler et al., EMBO Molecular Medicine 2016) and to evaluate the effect of RAS pathway inhibition in CRC organoids (Verissimo et al., eLIFE 2016). Moreover, I established organoid cultures from primary prostate tissue (Karthaus et al., Cell 2014) and applied this protocol to establish organoids from metastatic prostate cancer lesions and circulating tumor cells (Drost et al., Nature Protocols 2016). My postdoctoral work was awarded a prestigious Veni career grant from the Netherlands Organization for Scientific Research (NWO) and the Dr. Patrick Hanlo Award for best postdoctoral researcher of the Hubrecht Institute.

In November 2016, I started my independent research group at the Princess Máxima Center for Pediatric Oncology. My group studies the molecular alterations underpinning childhood solid tumorigenesis using representative pre-clinical model systems, including organoids. My lab was the first in the world to apply organoid technology to pediatric tumors (Schutgens et al., Nature Biotechnology 2019). We have now developed culture conditions to grow organoid cultures with high efficiency (>90%) from a wide spectrum of different renal and malignant rhabdoid tumors (Calandrini et al., Nature Communications 2020; Calandrini et al., Cell Reports 2021). We have established organoids from >200 patient-derived tumor tissues, for which pre-clinical models were so far scarce. We use these models to study how childhood cancers develop and to find new therapeutic targets for the treatment of children with cancer. For my research, I received several awards such as the Bas Mulder Young Investigator Award from the Dutch Cancer Society, the very prestigious ERC Starting and NWO-Vidi grants, the Dutch cancer institute “Oncode” membership, and the AACR St. Baldrick’s career development award for emerging leaders in the field of pediatric oncology.

## AWARDS AND PERSONAL GRANTS

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| 2021 | Oncode Technology Development fund  |
| 2021 | NWO-Vidi grant<br><i>Grant part of the Netherlands Organization for Scientific Research (NWO) Talent Programme for experienced researchers performing innovative research</i> |
| 2021 | Achieved tenure at Princess Máxima Center for Pediatric Oncology  |
| 2021 | Foundation Children Cancerfree (KiKa) Research Grant<br><i>Grant funding 4 years of research on metabolic vulnerabilities of childhood solid tumors</i>                       |
| 2020 | AACR St. Baldrick’s career development award<br><i>Inaugural award for emerging leaders in the field of pediatric oncology</i>  |
| 2019 | European Research Council (ERC) Starting Grant<br><i>Prestigious European grant to support excellent junior Principal Investigators</i>                                       |
| 2019 | Foundation Children Cancerfree (KiKa) Pilot Grant<br><i>Grant funding 1,5 years of research on relapsed Wilms tumors</i>  |
| 2019 | Oncode Institute member<br><i>Selected to join Oncode Institute as junior principal investigator</i>  |
| 2018 | Foundation Children Cancerfree (KiKa) Research Grant<br><i>Grant funding 4 years of research on rhabdoid tumors</i>   |
| 2017 | Foundation Children Cancerfree (KiKa) Research Grant<br><i>Grant funding 4 years of research on renal tumor organoid models</i>   |
| 2017 | Dr. Patrick Hanlo Award   |

- 2016 Award for best post-doctoral researcher of the Hubrecht Institute  
Bas Mulder Award from the Dutch Cancer Society (KWF)  
Prestigious national award for talented young researchers
- 2014 NWO-Veni grant  
Grant part of the Netherlands Organization for Scientific Research (NWO) Talent Programme for talented post-doctoral researchers

## SELECTED CONFERENCES AND PRESENTATIONS

- 2021 SIOP (International Society of Pediatric Oncology) - RTSG (Renal Tumor Study Group) annual meeting. **Invited speaker** (virtual).
- 2021 French Society of Immunotherapy annual meeting, Paris, France. **Invited speaker** (virtual).
- 2021 Organoids: Advances and Applications 2021 conference. Wellcome Genome Campus Advanced Courses and Scientific Conferences, Hinxton, UK. **Invited speaker** (virtual).
- 2021 Applications of Organoid Technology Symposium. **Invited speaker** (virtual).
- 2020 International seminar at University of Ghent, Ghent, Belgium. **Invited speaker** (virtual).
- 2020 International seminar at Institut Curie, Paris, France. **Invited speaker**.
- 2019 Oncode - CGC annual conference "Fundamental Cancer Biology", Amsterdam, the Netherlands. **Invited speaker**.
- 2019 German Cancer Consortium (DKTK) mini-retreat "Molecularly Targeted Therapy", Frankfurt, Germany. **Invited speaker**.
- 2019 Société Internationale d'Oncologie Pédiatrique (SIOP) 2019 international congress, Lyon, France. **Invited speaker**.
- 2019 American Association for Cancer Research (AACR) "Advances in Pediatric Cancer Research", Montreal, Canada. **Invited speaker**.
- 2019 Société Internationale d'Oncologie Pédiatrique (SIOP) Europe annual meeting, Prague, Czech Republic. **Invited speaker**.
- 2019 Comprehensive Cancer Center Developmental Biology and Solid Tumor Program, St. Jude Children's Research Hospital, Memphis, US. **Invited speaker**.
- 2018 IRI Life Sciences Colloquium series "Organoids - Life in 3D", Humboldt University, Berlin, Germany. **Invited speaker**.
- 2018 SIOP (International Society of Pediatric Oncology) - RTSG (Renal Tumor Study Group) Committee meeting, Copenhagen, Denmark. **Invited speaker**.
- 2018 Eurolife Summer School "Molecular Mechanisms in Cancer – Translating Discoveries into Personalized Therapies" Leids University Medical Center (LUMC), Leiden, the Netherlands. **Invited speaker**.
- 2018 International Rhabdoid Tumor Meeting. Lake Louise, Canada. **Selected speaker**.
- 2018 2<sup>nd</sup> Precision Cancer Medicine (PreCanMed) project meeting and workshop, Udine, Italy. **Invited speaker**.
- 2018 International seminar at PhD program in Molecular Biomedicine, University of Trieste, Trieste, Italy. **Invited speaker**.
- 2018 ITCC-P4 International Workshop "Improving pediatric oncology drug development through preclinical research", Amsterdam, the Netherlands. **Invited speaker**.
- 2017 National Cancer Research Institute (NCRI) Cancer Conference, Liverpool, United Kingdom. **Invited speaker**.
- 2017 26<sup>th</sup> meeting of the KWF society for Cancer Biology, Lunteren, the Netherlands. **Selected speaker**.
- 2016 Young scientist meeting "Host-Microbial Interactions and Mucosal Immunity", Bern, Switzerland. **Invited speaker**.
- 2016 PhD course "Cancer and Cancer Stem Cells" Karolinska Institutet, Stockholm, Sweden. **Invited speaker**.
- 2015,2016 CancerGenomiCs.nl annual scientific meeting, Utrecht, the Netherlands. **Invited speaker**.
- 2015 Symposium Berlin Institute for Medical Systems Biology, Max Delbrück Center for Molecular Medicine, Berlin, Germany. **Invited speaker**.

2015 EMBO|EMBL Symposium “Frontiers in Stem Cells and Cancer”, Heidelberg, Germany.  
**Selected speaker.**

## REVIEWING ACTIVITIES

- Advisory Board of Review Commons, which provides a new platform offering high-quality peer-review independent of journal submission.
- Reviewer for Cancer Cell, Nature Genetics, Nature Materials, Nature Methods, Nature Protocols, Nature Communications, Cell Reports, PNAS, Nature Reviews Cancer, EMBO reports, European Journal of Cancer.
- Reviewer for national and international funding organizations KWF, NWO, Medical Research Council (UK), French National Cancer Institute (France), Swiss Cancer League (Switzerland).

## MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2018 – 2021 ITCC (Innovative Therapies for Children with Cancer in Europe) Biology group  
2021 – ITCC Solid Tumor Committee  
2019 – Société Internationale d'Oncologie Pédiatrique Europe (SIOPe) Atypical Teratoid Rhabdoid Tumor (ATRT) working group  
2019 – SIOP Renal Tumor Study Group (RTSG) relapsed Wilms Tumor Committee

## PUBLICATIONS

\* Equal contribution, # Corresponding author

1. Groenendijk, A., van Tinteren, H., Jiang, Y., de Krijger, R.R., Vujanic, G.M., Godzinski, J., Rube, C., Schenk, J., Morosi, C., Pritchard-Jones, K., Al-Saadi, R., Vaidya, S.J., Verschuur, A.C., Ramirez-Villar, G.L., Graf, N., de Camargo, B., **Drost, J.**, Perotti, D., van den Heuvel-Eibrink, M.M., Brok, J., Spreafico, F., Mavinkurve-Groothuis, A.M.C. Outcome of SIOP patients with low- or intermediate-risk Wilms tumour relapsing after initial vincristine and actinomycin-D therapy only – the SIOP 93–01 and 2001 protocols.  
*European Journal of Cancer* 2022; doi: 10.1016/j.ejca.2021.12.014
2. Calandrini, C., **Drost, J.#**. Normal and tumor-derived organoids as a drug screening platform for tumor-specific drug vulnerabilities.  
*STAR Protocols* 2022; Jan 10;3(1):101079. doi: 10.1016/j.xpro.2021.101079.
3. Roy, P., van Peer, S.E., de Witte, M.M., Tytgat, G.A.M., Karim-Kos, H.E., van Grotel, M., van de Ven, C.P., Mavinkurve-Groothuis, A.M.C., Merks, J.H.M., Kuiper, R.P., Hol, J.A., Janssens, G.O.R., de Krijger, R.R., Jongmans, M.C.J., **Drost, J.**, van der Steeg, A.F.W., Littooi, A.S., Wijnen, M.H.W.A., van Tinteren, H., van den Heuvel-Eibrink, M.M. Characteristics and outcome of children with renal tumors in the Netherlands: The first five-year's experience of national centralization.  
*PLoS One* 2022; Jan 13;17(1):e0261729. doi: 10.1371/journal.pone.0261729.
4. van Peer, S.E., Hol, J.A., van der Steeg, A.F.W., Grotel, M.V., Tytgat, G.A.M., Mavinkurve-Groothuis, A.M.C., Janssens, G.O.R., Littooi, A.S., de Krijger, R.R., Jongmans, M.C.J., Lillen, M.R., **Drost, J.**, Kuiper, R.P., van Tinteren, H., Wijnen, M.H.W.A., van den Heuvel-Eibrink, M.M. Bilateral Renal Tumors in Children: The First 5 Years' Experience of National Centralization in The Netherlands and a Narrative Review of the Literature.  
*Journal of Clinical Medicine* 2021 Nov 26; 10(23):5558. doi: 10.3390/jcm10235558.
5. van den Boogaard, M.L., Oka, R., Hakkert, A., Schild, L., Ebus, M.E., van Gerven, M.R., Zwijnenburg, D.A., Molenaar, P., Hoyng, L.L., Dolman, M.E.M., Essing, A.H.W., Koopmans, B., Helleday, T., **Drost, J.**, van Boxtel, R., Versteeg, R., Koster, J., Molenaar, J.J. Defects in 8-oxo-guanine repair pathway cause high frequency of C > A substitutions in neuroblastoma.  
*PNAS* 2021 Sep 7; 118(36):e2007898118. doi: 10.1073/pnas.2007898118.
6. Calandrini, C., van Hooff, S.R., Paassen, I., Ayyildiz, D., Derakhshan, S., Dolman, M.E.M., Langenberg, K.P.S., van de Ven, M., de Heus, C., Liv, N., Kool, M., de Krijger, R.R., Tytgat, G.A.M., van den Heuvel-Eibrink, M.M., Molenaar, J.J., **Drost, J.#**. Organoid-based drug screening reveals neddylation as therapeutic target for malignant rhabdoid tumors.

- Cell Reports* 2021 Aug 24; 36(8):109568. doi: 10.1016/j.celrep.2021.109568.
7. Groenendijk, A., Spreafico, F., de Krijger, R.R., **Drost, J.**, Brok, J., Perotti, D., van Tinteren, H., Venkatramani, R., Godziński J., Rübke, C., Geller, J.I., Graf, N., van den Heuvel-Eibrink, M.M., Mavinkurve-Groothuis, A.M.C. Prognostic Factors for Wilms Tumor Recurrence: A Review of the Literature.  
*Cancers (Basel)* 2021; 13(13):3142; doi: 10.3390/cancers13133142
  8. Young, M.D., Mitchell, T.J., Custers, L., Margaritis, T., Morales-Rodriguez, F., Kwakwa, K., Khabirova, E., Kildisiute, G., Oliver, T.R.W., de Krijger, R.R., van den Heuvel-Eibrink, M.M., Comitani, F., Piapi, A., Bugallo-Blanco, E., Thevanesan, C., Burke, C., Prigmore, E., Ambridge, K., Roberts, K., Vieira Braga, F.A., Coorens, T.H.H., Del Valle, I., Wilbrey-Clark, A., Mamanova, L., Stewart, G.D., Gnanapragasam, V.J., Rampling, D., Sebire, N., Coleman, N., Hook, L., Warren, A., Haniffa, M., Kool, M., Pfister, S.M., Achermann, J.C., He, X., Barker, R.A., Shlien, A., Bayraktar, O.A., Teichmann, S., Holstege, F.C., Meyer, K.B., **Drost, J.#**, Straathof, K.#, Behjati, S.#. Single cell derived mRNA signals across human kidney tumors.  
*Nature Communications* 2021 Jun 23; 12(1):3896. doi: 10.1038/s41467-021-23949-5.
  9. Van Ineveld, R.L., Kleinnijenhuis, M., de Blank, S., Barrera Roman, M., van Vliet, E.J., Martínez Mir, C., Johnson, H.R., Bos, F.L., Heukers, R., Chuva de Sousa Lopes, S.M., **Drost, J.**, Dekkers, J.F., Alieva, M., Wehrens, E.J., Rios, A.C. Spatio-phenotypic patterning of millions of cells within tissues.  
*Nature Biotechnology* 2021 Jun 3; doi: 10.1038/s41587-021-00926-3.
  10. Calandrini, C., **Drost, J.#**. Generation of Human Kidney Tubuloids from Tissue and Urine.  
*Journal of Visualized Experiments* 2021 Apr 16; doi: 10.3791/62404.
  11. Van Ineveld, R., Margaritis, T., Kooiman, B., Groenveld, F., Ariese, H.C.R., Lijnzaad, P., Johnson, H.R., Korving, J., Wehrens, E.J., Holstege, F.C., van Rheenen, J., **Drost, J.**, Rios, A.C., Bos, F.L. LGR6 marks multi-potent nephron progenitor cells.  
*Developmental Dynamics* 2021 Apr 13; doi: 10.1002/dvdy.346.
  12. Custers, L., Khabirova, E., Coorens, T.H.H., Oliver, T.R.W., Calandrini, C., Young, M.D., Vieira Braga, F.A., Ellis, P., Mamanova, L., Segers, H., Maat, A., Kool, M., Hoving, E.W., van den Heuvel-Eibrink, M.M., Nicholson, J., Straathof, K., Hook, L., de Krijger, R.R., Trayers, C., Allinson, K., Behjati, S.#, **Drost, J.#**. Somatic mutations and single-cell transcriptomes reveal the root of malignant rhabdoid tumours.  
*Nature Communications* 2021 Mar 3; 12(1):1407. doi: 10.1038/s41467-021-21675-6.
  13. Custers, L., Paassen, I., **Drost, J.#**. In vitro Modeling of Embryonal Tumors.  
*Frontiers in Cell and Developmental Biology* 2021 Feb 26; doi: 10.3389/fcell.2021.640633
  14. Glykofridis, I.E., Knol, J.C., Balk, J.A., Westland, D., Pham, T.V., Piersma, S.R., Loughheed, S.M., Derakhshan, S., Veen, P., Rooimans, M.A., van Mil, S.E., Böttger, F., Poddighe, P.J., van de Beek, I., **Drost, J.**, Zwartkruis, F.J., de Menezes, R.X., Meijers-Heijboer, H.E., Houweling, A.C., Jimenez, C.R., Wolthuis, R.M. Loss of FLCN-FNIP1/2 induces a non-canonical interferon response in human renal tubular epithelial cells.  
*Elife* 2021 Jan 18; 10: e61630. doi: 10.7554/eLife.61630.
  15. Brok, J., Mavinkurve-Groothuis, A.M.C., **Drost, J.**, Perotti, D., Geller, J.I., Walz, A.L., Georger, B., Pasqualini, C., Verschuur, A., Polanco, A., Jones, K.P., van den Heuvel-Eibrink, M., Graf, N., Spreafico, F. Unmet needs for relapsed or refractory Wilms tumour: Mapping the molecular features, exploring organoids and designing early phase trials - A collaborative SIOP-RTSG, COG and ITCC session at the first SIOPE meeting.  
*European Journal of Cancer* 2020 Dec 17; 144:113-122. doi: 10.1016/j.ejca.2020.11.012.
  16. Miao, Y., Ha, A., de Lau, W., Yuki, K., Santos, A.J.M., You, C., Geurts, M.H., Puschhof, J., Pleguezuelos-Manzano, C., Peng, W.C., Senlice, R., Piani, C., Buikema, J.W., Gbenedio, O.M., Vallon, M., Yuan, J., de Haan, S., Hemrika, W., Rösch, K., Dang, L.T., Baker, D., Ott, M., Depeille, P., Wu, S.M., **Drost, J.**, Nusse, R., Roose, J.P., Piehler, J., Boj, S.F., Janda, C.Y., Clevers, H., Kuo, C.J., Garcia, K.C. Next-Generation Surrogate Wnts Support Organoid Growth and Deconvolute Frizzled Pleiotropy In Vivo.  
*Cell Stem Cell* 2020 Aug 14;S1934-5909(20)30358-1. doi: 10.1016/j.stem.2020.07.020.
  17. Van der Beek, J.N., Geller, J.I., de Krijger, R.R., Graf, N., Pritchard-Jones, K., **Drost, J.**, Murphy, D., Ray, S., Spreafico, F., Dzhuma, K., Littooi, A.S., Selle, B., Tytgat, G.A.M., van den Heuvel-

- Eibrink, M.M. Characteristics and Outcome of Children with Renal Cell Carcinoma: A Narrative Review. *Cancers (Basel)* 2020 3; 12(7):1776. doi: 10.3390/cancers12071776.
18. De Jel, D.V.C., Hol, J.A., Ooms, A.H.A.G., de Krijger, R.R., Jongmans, M.C.J., Littooi, A.S., **Drost, J.**, van Grotel, M., van den Heuvel-Eibrink, M.M. Paediatric metanephric tumours: a clinicopathological and molecular characterisation. *Crit. Rev. Oncol. Hematol.* 2020 Jun; 150:102970. doi: 10.1016/j.critrevonc.2020.102970.
  19. Ooms, A.H.A.G., Calandrini, C., de Krijger, R.R., **Drost, J.#**. Organoid models of childhood kidney tumours. *Nature Reviews Urology* 2020 Jun; 17(6):311-313. doi: 10.1038/s41585-020-0315-y.
  20. Calandrini, C.\*, Schutgens, F.\*, Oka, R., Margaritis, T., Candelli, T., Mathijssen, L., Ammerlaan, C., van Ineveld, R.L., Derakhshan, S., de Haan, S., Dolman, E., Lijnzaad, P., Custers, L., Begthel, H., Kerstens, H.H.D., Rookmaker, M., Verhaar, M., Tytgat, G.A.M., Kemmeren, P., de Krijger, R.R., Al-Saadi, R., Pritchard-Jones, K., Kool, M., Rios, A., van den Heuvel-Eibrink, M.M., Molenaar, J., van Boxtel, R., Holstege, F.C.P., Clevers, H., **Drost, J.#**. An organoid biobank for childhood kidney cancers that captures disease and tissue heterogeneity. *Nature Communications* 2020;11(1):1310. doi: 10.1038/s41467-020-15155-6.
  21. Coorens, T.H.H., Treger, T.D., Al-Saadi, R., Moore, L., Tran, M.G.B., Mitchell, T.J., Tugnait, S., Thevanesan, C., Young, M.D., Oliver, T.R.W., Oostveen, M., Collord, G., Tarpey, P.S., Cagan, A., Hooks, Y., Brougham, M., Reynolds, B.C., Barone, G., Anderson, J., Jorgensen, M., Burke, G.A.A., Visser, J., Nicholson, J.C., Smeulders, N., Mushtaq, I., Stewart, G.D., Campbell, P.J., Wedge, D.C., Martincorena, I., Rampling, D., Hook, L., Warren, A.Y., Coleman, N., Chowdhury, T., Sebire, N., **Drost, J.**, Saeb-Parsy, K., Stratton, M.R., Straathof, K., Pritchard-Jones, K., Behjati, S. Embryonal precursors of Wilms tumor. *Science* 2019 Dec 6;366(6470):1247-1251. doi: 10.1126/science.aax1323. PMID: 31806814; PMCID: PMC6914378.
  22. Bleijs, M., van de Wetering, M., Clevers, H., **Drost, J.#**. Xenograft and organoid model systems in cancer research. *EMBO Journal* 2019;38(15):e101654. doi:10.15252/embj.2019101654
  23. Schutgens, F., Rookmaaker, M.B., Margaritis, T., Rios, A., Ammerlaan, C., Jansen, J., Gijzen, L., Vormann, M., Vonk, A., Viveen, M., Yengej, F.Y., Derakhshan, S., de Winter-de Groot, K.M., Artegiani, B., van Boxtel, R., Cuppen, E., Hendrickx, A.P.A., van den Heuvel-Eibrink, M.M., Heitzer, E., Lanz, H., Beekman, J., Murk, J.L., Masereeuw, R., Holstege, F., **Drost, J.**, Verhaar, M.C., Clevers, H. Tubuloids derived from human adult kidney and urine for personalized disease modeling. *Nature Biotechnology* 2019 Mar, 37 (3): 303 – 313.
  24. Kretzschmar, K., Post, Y., Bannier-Hélaouët, M., Mattiotti, A., **Drost, J.**, Basak, O., Li, V.S.W., van den Born, M., Gunst, Q.D., Versteeg, D., Kooijman, L., van der Elst, S., van Es, J.H., van Rooij, E., van den Hoff, M.J.B., Clevers, H. Profiling proliferative cells and their progeny in damaged murine hearts. *PNAS* 2018 Dec 26, 115 (52): E12245 – E12254.
  25. **Drost, J.#**, Clevers, H. Organoids in cancer research. *Nature Reviews Cancer* 2018 Jul, 18(7): 407-418.
  26. Li, L., van Breugel, P.C., Loayza-Puch, F., Pineiro Ugalde, A., Korkmaz, G., Messika-Gold, N., Han, R., Lopes, R., Barbera, E.P., Teunissen, H., de Wit, E., Soares, R.J., Nielsen, B.S., Holmstrøm, K., Martínez-Herrera, D.J., Huarte, M., Louloui, A., **Drost, J.**, Elkon, R., Agami, R. LncRNA-OIS1 regulates DPP4 activation to modulate senescence induced by RAS. *Nucleic Acids Research* 2018 Feb 22. doi: 10.1093/nar/gky087 .
  27. Fumagalli, A., Suijkerbuijk, S.J.E., Begthel, H., Beerling, E., Oost, K.C., Snippert, H.J., van Rheenen, J.#, **Drost, J.#**. A surgical orthotopic organoid transplantation approach in mice to visualize and study colorectal cancer progression. *Nature Protocols* 2018 Feb, 13 (2): 235 – 247.
  28. **Drost, J.\***, van Boxtel, R.\* , Blokzijl, F., Mizutani, T., Sasaki, N., Sasselli, V., de Ligt, J., Behjati, S., Grolleman, J.E., van Wezel, T., Nik-Zainal, S., Kuiper, R.P., Cuppen, E., Clevers, H. Use of CRISPR-modified human stem cell organoids to study the origin of mutational signatures in cancer. *Science* 2017 Oct 13, 358 (6360): 234 – 238.

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30. **Drost, J.**, Clevers, H. Translational applications of adult stem-cell derived organoids. *Development* 2017 Mar 15, 144 (6): 968 – 975.
31. Verissimo, C.S., Overmeer, R.M., Ponsioen, B., **Drost, J.**, Mertens, S., Verlaan-Klink, I., Gerwen, B.V., van der Ven, M., Wetering, M.V., Egan, D.A., Bernards, R., Clevers, H., Bos, J.L., Snippert, H.J. Targeting mutant RAS in patient-derived colorectal cancer organoids by combinatorial drug screening. *Elife* 2016 Nov 15;5. pii: e18489.
32. **Drost, J.\***, Artegiani, B.\* , Clevers, H. The generation of organoids for studying Wnt signaling. *Methods in Molecular Biology* 2016, 1481: 141 – 159 (Book chapter)
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#### **PATENTS**

- WO2016/083613; Culture medium for epithelial stem cells and Organoids comprising said stem cells.
- WO2016/083612; Culture medium for expanding breast epithelial stem cells.