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Forskningsprofil

My research revolves around cancer immunotherapy in pre-clinical mouse tumor models, with focus on utilizing dendritic cells for therapy. My research is divided into two arms, one related to STING-targeted therapy and another related to therapeutic cancer vaccines.

STING has proven to be an interesting target for immunotherapy, especially as combination with immune checkpoint inhibitors (ICI). My current aim is to use cholesterol interfering drugs, to prime the STING-pathway, thus making it more susceptible to stimulation during immunotherapy. In addition, I investigate the possible use of caspase-inhibition, as a mean to activate or prime the STING-pathway.

Cancer vaccines holds the potential to aid antigen-presentation and T cell activation during ICI treatment. We have generated a small recombinant protein vaccine, capable of maturing dendritic cells, thereby inducing activation of tumor-specific T cells. The vaccine carries a nucleotide adjuvant capable of activating dendritic cells through the cGAS/STING-pathway or the TLR3-pathway.

Ansættelse

Lektor
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Institut for Medicin og Sundhedsteknologi
Det Sundhedsvidenskabelige Fakultet
Gistrup, Danmark
1 feb. 2015 → 31 dec. 4712

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1 feb. 2015 → 31 dec. 4712

Medical Microbiology and Immunology
Det Sundhedsvidenskabelige Fakultet
Aalborg, Danmark
1 jan. 2020 → present

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Medical Microbiology and Immunology
Det Sundhedsvidenskabelige Fakultet
Aalborg, Danmark
1 feb. 2015 → 31 dec. 4712

Publikationer

Pembrolizumab followed by irreversible electroporation of a liver metastasis in pancreatic cancer patients

Flak, R. V., Kofod-Olsen, E., Sølvsten, N. D., Naujokaite, G., Agger, R., Stender, M. T., Christensen, S., Shim, S., Poulsen, L. Ø., Detlefsen, S., Thorlasius-Ussing, O. & Ladekarl, M., 18 okt. 2024, I: iScience. 27, 10, 19 s., 111026.

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Bruun, N., Laursen, M. F., Carmelo, R., Christensen, E., Jensen, T. S., Christiansen, G., Birkelund, S., Agger, R. & Kofod-Olsen, E., 19 apr. 2024, I: Vaccine. 42, 11, s. 2909-2918 10 s.

Cholesterol-binding motifs in STING that control endoplasmic reticulum retention mediate anti-tumoral activity of cholesterol-lowering compounds

Zhang, B.-C., Laursen, M. F., Hu, L., Hazrati, H., Narita, R., Jensen, L. S., Hansen, A. S., Huang, J., Zhang, Y., Ding, X., Muyesier, M., Nilsson, E., Banasik, A., Zeiler, C., Mogensen, T. H., Etzerodt, A., Agger, R., Johannsen, M., Kofod-Olsen*, E. & Paludan*, S. R. & 1 flere, Jakobsen*, M. R., 29 mar. 2024, I: Nature Communications. 15, 1 , 2760. *contributed equally.

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Bruun, N., Laursen, M. F., Hansen, C. F., Carmelo, R., Jensen, T. S., Christensen, E., Christiansen, G., Birkelund, S., Agger, R. & Kofod-Olsen, E., 2024.

Cholesterol-inhibition activate dendritic cells leading to anti-tumoral activity and increased efficacy of immunotherapy in mice

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Cholesterol-Inhibition Slow Development of Cancer in CT26 and MC38 Cancer Models

Jensen, T. S., Laursen, M. F., Pedersen, N. M. M., Smodek, A., Jakobsen, M. R. & Kofod-Olsen, E., 2024.

nucleotide-binding vaccine induces maturation of dendritic cells in vitro and a potent immune response in vivo

Bruun, N., Hansen, C. F., Christensen, E., Laursen, M. F., Birkelund, S., Kofod-Olsen, E. & Agger, R., 2023.

Pd-L1 Blockade Followed by Irreversible Electroporation of a Liver Metastasis in Pancreatic Cancer Patients

Flak, R. V., Kofod-Olsen, E., Sølvsten, N. D., Naujokaite, G., Agger, R., Stender, M. T., Christensen, S., Shim, S., Poulsen, L. Ø., Detlefsen, S., Thorlasius-Ussing, O. & Ladekarl, M., 2023, SSRN: Social Science Research Network, 19 s.

Nucleotide-packaging vaccine leads to in vitro immune activation with low toxicity

Bruun, N., Christensen, E., Laursen, M. F., Jensen, T. S., Birkelund, S., Agger, R. & Kofod-Olsen, E., 25 maj 2022.

Development of a dendritic cell-targeting vaccine against cancer

Bruun, N., Laursen, M. F., Kofod-Olsen, E. & Agger, R., 2022.

A phase II-study of electroporation potentiated immunotherapy in liver metastatic pancreatic cancer (EPIC-1)

Flak, R. V., Poulsen, L. Ø., Stender, M. T., Naujokaite, G., Tcacenco, O., Wanders, A., Detlefsen, S., Agger, R., Kofod-Olsen, E., Thorlacius-Ussing, O. & Ladekarl, M., 2021, *Danske Kræftforskningsdage: Abstract Book*. s. 51 40

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CD11c-targeted dendritic cell vaccine

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Generation of a recombinant CD11c-targeted vaccine containing SIINFEKL antigen
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Investigations on a Novel Dendritic Cell-Targeted Adjuvant for Anti-Cancer Therapy
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Laursen, M. F., Christensen, E., Degn, L. L. T., Jönsson, K., Jakobsen, M. R., Agger, R. & Kofod-Olsen, E., 2018, I: Journal of Immunotherapy. 41, 1, s. 9-18 10 s.

Targeting cGAS and STING in human dendritic cells
Laursen, M. F., Agger, R. & Kofod-Olsen, E., 2018, I: European Journal of Immunology. 48, Suppl. 1, s. 162-163 P-249.

Ectodermal dysplasia with immunodeficiency caused by a branch-point mutation in IKBKG/NEMO
Jørgensen, S. E., Böttger, P., Kofod-Olsen, E., Holm, M., Mørk, N., Ørntoft, T. F., Sørensen, U. B. S., Ber nth-Jensen, J. M., Herlin, T., Veirum, J., Larsen, C. S., Østergaard, L., Hartmann, R., Christiansen, M. & Mogensen, T. H., 29 jun. 2016, I: Journal of Allergy and Clinical Immunology.

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The delivery of double-stranded DNA to dendritic cells and its effect on dendritic cell maturation
Laursen, M. F., Kofod-Olsen, E. & Agger, R., 2016, *Danish Society of Immunology, Annual Meeting, 19 April 2016, Copenhagen, Denmark*. Danish Society of Immunology, s. 21 No. 18

Mutations in the TLR3 signaling pathway and beyond in adult patients with herpes simplex encephalitis
Mørk, N., Kofod-Olsen, E., Sørensen, K. B., Bach, E., Ørntoft, T. F., Østergaard, L., Paludan, S. R., Christiansen, M. & Mogensen, T. H., 29 okt. 2015, I: Genes and Immunity.

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Andersen, L. L., Mørk, N., Reinert, L. S., Kofod-Olsen, E., Narita, R., Jørgensen, S. E., Skipper, K. A., Höning, K., Gad, H. H., Østergaard, L., Ørntoft, T. F., Hornung, V., Paludan, S. R., Mikkelsen, J. G., Fujita, T., Christiansen, M., Hartmann, R. & Mogensen, T. H., 27 jul. 2015, I: The Journal of Experimental Medicine.

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Nielsen, J., Kofod-Olsen, E. & Spaun, E., 2015, I: BMJ Case Reports.

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Nissen, S. K., Højlen, J. F., Andersen, K. L. D., Kofod-Olsen, E., Berg, R. K., Paludan, S. R., Østergaard, L., Jacobsen, M. R., Tolstrup, M. & Mogensen, T. H., jul. 2014, I: Clinical and Experimental Immunology. 177, 1, s. 295-309 15 s.

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Schleimann, M. H., Hoberg, S., Hansen, A. S., Bundgaard, B., Witt, C. T., Kofod-Olsen, E. & Höllsberg, P., mar. 2014, I: Virology. 452-453, s. 254-63 10 s.

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Tørring, C., Petersen, C. C., Bjerg, L., Kofod-Olsen, E., Petersen, T. & Höllsberg, P., 15 sep. 2013, I: Journal of Neuroimmunology. 262, 1-2, s. 92-9 8 s.

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Inhibition of p53-dependent, but not p53-independent, Cell Death by U19 Protein from Human Herpesvirus 6B
Kofod-Olsen, E., Møller, J. L. M., Schleimann, M. H., Bundgaard, B., Bak, R. O., Øster, B., Mikkelsen, J. G., Hupp, T. & Höllsberg, P., 2013, I: P L o S One. 8, 3

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Kaspersen, M. D., Larsen, P. B., Ingerslev, H. J., Fedder, J., Bungum, M., Kofod-Olsen, E., Höllsberg, P. & Bonde, J. H., 2013, I: APMIS - Journal of Pathology, Microbiology and Immunology. 121, s. 26-27 2 s.

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Kofod-Olsen, E., Bak, R. O., Jensen, S. B., Dagnæs-Hansen, F., Holm, C. K., Deleuran, B. W. & Höllsberg, P., 2013.

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Kofod-Olsen, E., Ross-Hansen, K., Schleimann, M. H., Jensen, D. K., Møller, J. M. L., Bundgaard, B., Mikkelsen, J. G. & Höllsberg, P., nov. 2012, I: Journal of Virology. 86, 21, s. 11483-92 10 s.

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Kaspersen, M. D., Larsen, P. B., Kofod-Olsen, E., Fedder, J., Bonde, J. & Höllsberg, P., 2012, I: PLOS ONE. 7, 11, s. e48810

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Kofod-Olsen, E., Schleimann, M. H., Jensen, D. K. & Höllsberg, P., 2012.

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Regulation of apoptosis by HHV-6B infection
Kofod-Olsen, E. & Höllsberg, P., 2011.

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Berthelsen, L. B., Pedersen, C. C., Kofod-Olsen, E., Oster, B., Höllsberg, P., Agger, R. & Hokland, M., 2010, I:
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Human herpesvirus 6B U19 protein is a PML-regulated transcriptional activator that localizes to nuclear foci in a PML-independent manner
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Kofod-Olsen, E., Ross-Hansen, K., Mikkelsen, J. G. & Höllsberg, P., 2008.

Restriction of human herpesvirus 6B replication by p53
Oster, B., Kofod-Olsen, E., Bundgaard, B. & Höllsberg, P., 2008, I: Journal of General Virology. 89, Pt 5, s. 1106-13 8 s.

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Øster, B., Kaspersen, M. D., Kofod-Olsen, E., Bundgaard, B. & Höllsberg, P., dec. 2006, I: Journal of Clinical Virology. 37 Suppl 1, s. S63-8

Aktiviteter

Aarhus University (Ekstern organisation)
Kofod-Olsen, E. (Medlem)
18 nov. 2022

Aarhus University (Ekstern organisation)
Kofod-Olsen, E. (Medlem)
17 nov. 2022

Aarhus University (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

1 okt. 2022

Technical University of Denmark (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

1 sep. 2022

Aarhus University (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

30 maj 2022

Institut for Medicin og Sundhedsteknologi (Organisation)

Kofod-Olsen, E. (Forperson)

1 jun. 2021

Technical University of Denmark (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

31 jan. 2021

European Macrophage and Dendritic cell Society (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

2021

Technical University of Denmark (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

4 feb. 2020

Danish Society of Immunology (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

2017

Scandinavian Society of Immunology (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

2017

Danish Society for Flow cytometry (Ekstern organisation)

Kofod-Olsen, E. (Medlem)

2016

Presse/medie

Knæk Cancer på tur til fire danske byer

Kofod-Olsen, E.

11/10/2017

4 elementer af Mediedækning

Regulating cholesterol levels might be the key to improving cancer treatment

Kofod-Olsen, E.

30/04/2024 → 05/05/2024

9 elementer af Mediedækning

Regulering af kolesterolniveauer kan være nøglen til bedre kræftbehandling

Kofod-Olsen, E.

30/04/2024

1 element af Mediedækning

Projekter

EPIC-1: A phase II Study of Electroporation Potentiated Immunotherapy in Liver Metastatic Pancreatic Cancer

Flak, R. V. (Projektkoordinator), Ladekarl, M. (PI (principal investigator)), Poulsen, L. Ø. (Projektkoordinator), Thorlacius-Ussing, O. (Andet), Stender, M. T. (Andet), Detlefsen, S. (Col (co-investigator)), Agger, R. (Col (co-investigator)), Kofod-Olsen, E. (Col (co-investigator)) & Wanders, A. (Col (co-investigator))

01/01/2021 → 09/04/2024

Dendritic cell-targeted vaccination

Kofod-Olsen, E. (PI (principal investigator)) & Agger, R. (PI (principal investigator))

01/09/2016 → ...

Inflammatory cell death and dendritic cell activation in the tumor microenvironment

Kofod-Olsen, E. (PI (principal investigator)) & Jensen, T. S. (PI (principal investigator))

01/09/2017 → ...

STING-targeted immunotherapy

Kofod-Olsen, E. (PI (principal investigator)) & Jensen, T. S. (PI (principal investigator))

01/05/2018 → ...