

Winfried Edelmann, Ph.D.

Positions:

Professor, Department of Cell Biology and Genetics

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Research interests:

DNA mismatch repair and cancer, genetic instability, intestinal stem cells, cancer stem cells in colorectal cancer and their response to anti-cancer treatment.

Current grant funding:

R01 **CA248536** (Edelmann W PI)
(NIH/NCI)

04/01/21 – 03/31/26

Analyzing the Hypersensitivity of MMR-deficient Colorectal Cancers to mTOR Inhibition and the Response of Cancer Stem Cells

RO1 **CA222358** (Augenlicht L & Edelmann W PIs)

07/01/18 – 06/30/23

(NIH/NCI)

Genetic and Dietary Interactions in MMR Deficient Colon Tumorigenesis

RO1 **CA231283** (Lipkin S PI & Edelmann W Co-I)

09/01/18 - 08/31/23

(NIH/NCI)

Adaptive immune and microbial mechanisms regulating Lynch syndrome penetrance

U01**CA233056** (Lipkin S & Vilar E PIs, Edelmann W Co-I)

09/01/18 - 08/31/23

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Neoantigen Vaccination for Lynch Syndrome Immunoprevention

Feinberg Family Foundation (Edelmann W & E. Vilar E PIs)

Chemoprevention and treatment of Lynch syndrome colorectal cancers

Recent publications (selected):

1) Mouse models of DNA mismatch repair in cancer research. Lee K, Tosti E, Edelmann W. **DNA Repair** (Amst). 2016 Feb;38:140-6. doi: 10.1016/j.dnarep.2015.11.015. Epub 2015 Dec 4. Review. PubMed PMID: 26708047.

2) MutLy promotes repeat expansion in a Fragile X mouse model while EXO1 is protective. Zhao X, Zhang Y, Wilkins K, Edelmann W, Usdin K. **PLoS Genet**. 2018 Oct 12;14(10):e1007719. doi:10.1371/journal.pgen.1007719. eCollection 2018 Oct. PMID: 30312299

3) Recurrent Frameshift Neoantigen Vaccine Elicits Protective Immunity With Reduced Tumor Burden and Improved Overall Survival in a Lynch Syndrome Mouse Model. Gebert J, Gelincik O, Oezcan-Wahlbrink M, Marshall JD, Hernandez-Sanchez A, Urban K, Long M, Cortes E, Tosti E, Katzenmaier EM, Song Y, Elsaadi A, Deng N, Vilar E, Fuchs V, Nelius N, Yuan YP, Ahadova A, Sei S, Shoemaker RH, Umar A, Wei L, Liu S, Bork P, Edelmann W, von Knebel Doeberitz M, Lipkin SM, Kloor M. **Gastroenterology**. 2021 Oct;161(4):1288-1302.e13. doi: 10.1053/j.gastro.2021.06.073. Epub 2021 Jul 2. PMID: 34224739

4) Molecular structures and mechanisms of DNA break processing in mouse meiosis. Yamada S, Hinch AG, Kamido H, Zhang Y, Edelmann W, Keeney S. **Genes & Development**. 2020 Jun 1;34(11-12):806-818. doi: 10.1101/gad.336032.119. Epub 2020 Apr 30. PMID: 32354835

5) H1 histones control the epigenetic landscape by local chromatin compaction. Willcockson MA, Heaton SE, Weiss CN, Bartholdy BA, Botbol Y, Mishra LN, Sidhwani DS, Wilson TJ, Pinto HB, Maron MI, Skalina KA, Toro LN, Zhao J, Lee CH, Hou H, Yusufova N, Meydan C, Osunsade A, David Y, Cesarman E, Melnick AM, Sidoli S, Garcia BA, Edelmann W, Macian F, Skoultschi AI. **Nature**. 2021 Jan;589(7841):293-298. doi: 10.1038/s41586-020-3032-z. Epub 2020 Dec 9. PMID: 33299182