

DANSKE KRÆFTFORSKNINGS DAGE 2026

Unlocking Ascites ctDNA as a Liquid Biopsy: Single Duplex Sequencing with CODEC Reveals Homologous Recombination Deficiency in Ovarian Cancer

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Lab Manager

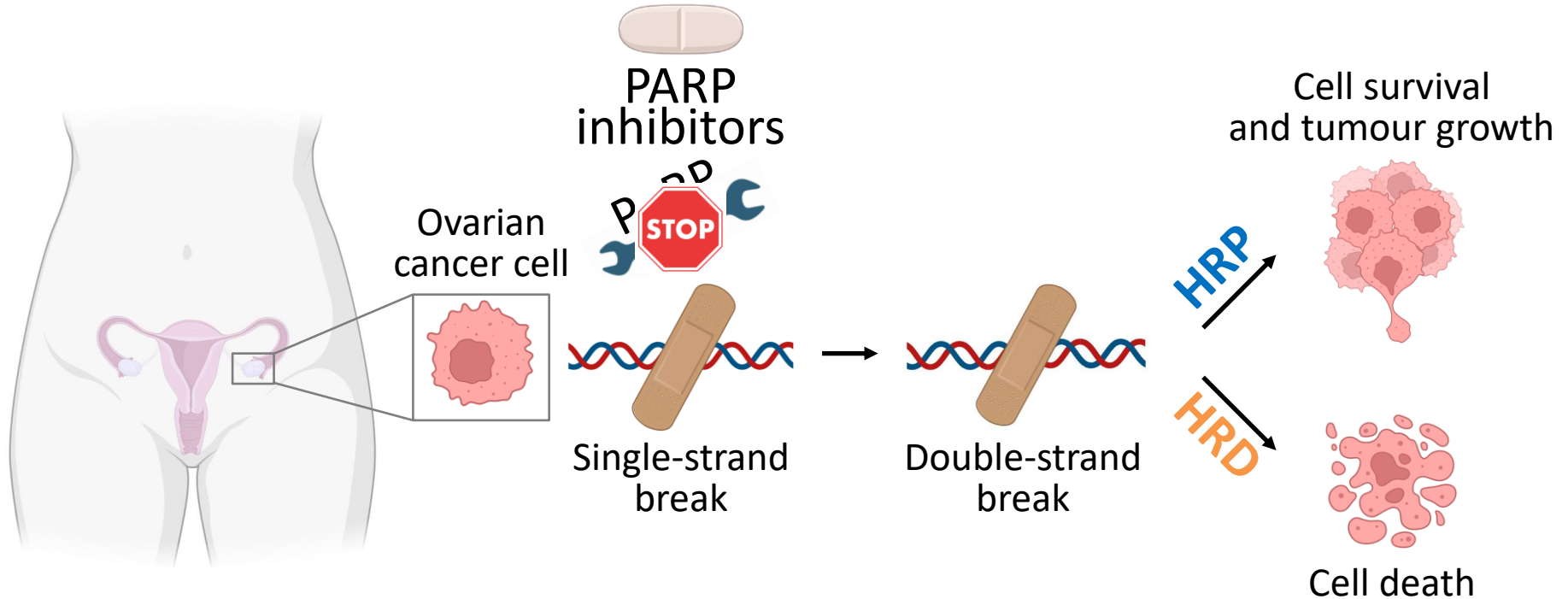
MDxCore, Department of Clinical Biochemistry, Rigshospitalet
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#DKD2026

#SamarbejdeOmKræft

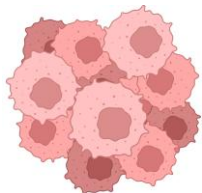
The tumour HR status dictates treatment choice

Homologous Recombination Deficient (HRD) tumours respond well to PARP inhibitors



How to assess HRD?

Tumour biopsy

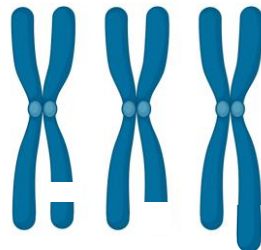


- Invasive
- Not always available
- Spatially and temporally limited profile

Pathogenic
variants
in HRR genes



Genomic scars



LOH TAI LST



HRP or HRD?

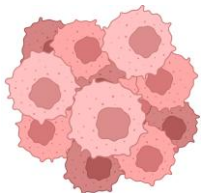


Homologous
Recombination
Repair

Bae et al., Nat Genet. 2023

How to assess HRD?

Tumour biopsy



- Invasive
- Not always available
- Spatially and temporally limited profile

Liquid biopsy



- Less-invasive
- Easily and repeatedly obtained
- Real-time and comprehensive profile

Liquid biopsy



Whole-Genome Sequencing



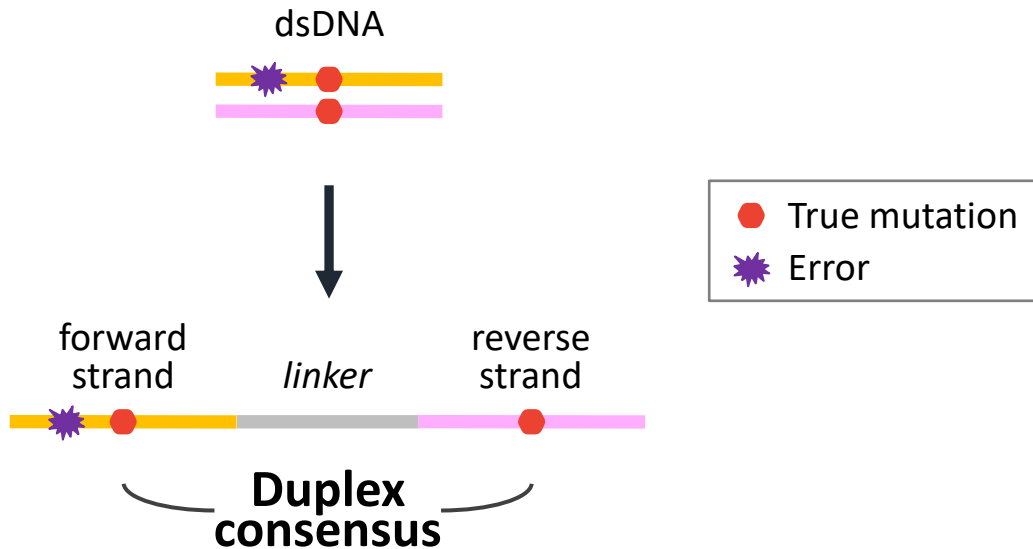
HRP or HRD?



Homologous
Recombination
Repair

How to assess HRD? Try CODEC!

CODEC enables accurate Whole-Genome Sequencing (WGS) on sparse genetic material from liquid biopsies



Bae *et al.*, *Nat Genet.* 2023

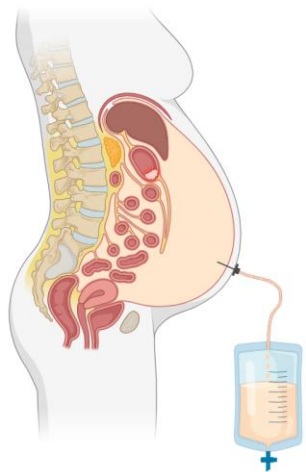
CODEC enables accurate HRD identification

Isolation of
ascitic cfDNA

CODEC WGS

DirectHRD*

duplex depth: 0.98 – 5.57 x



score < 1

HRP

score ≥ 1

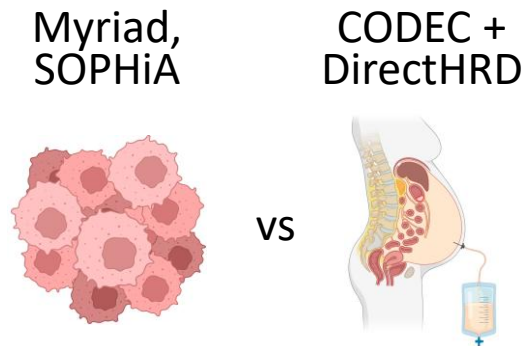
HRD

11 types of
microhomology deletions

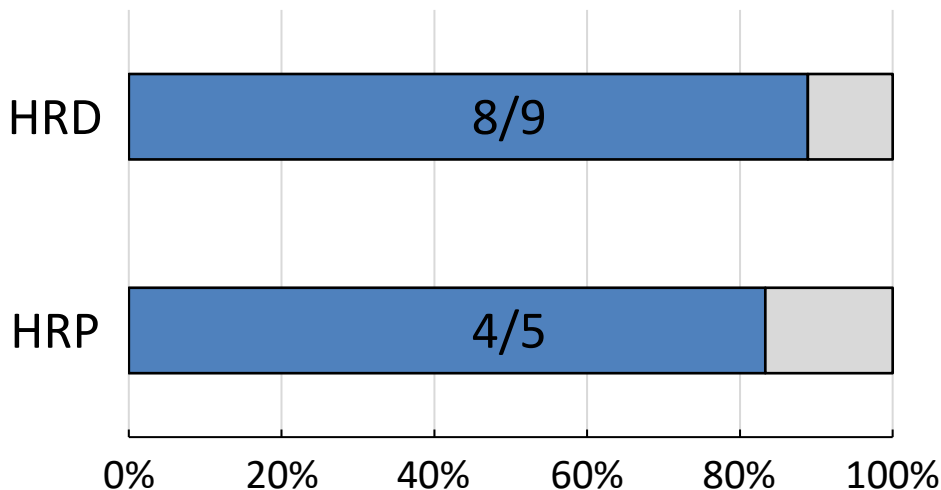
*Liu *et al.*, *Nucleic Acids Res.* 2025

CODEC enables accurate HRD identification

CODEC harnesses ascitic cfDNA to identify patients eligible for PARP inhibitor treatment



Concordance between routinely used HRD tests
and CODEC/DirectHRD



*Liu et al., *Nucleic Acids Res.* 2025



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Thank you for your attention!