



**IKCS: NORTH AMERICA**  
INTERNATIONAL KIDNEY CANCER SYMPOSIUM

# **CD200-Mediated Immune Evasion in Clear Cell Renal Cell Carcinoma**

**Gemma Davies**

European Cancer Stem Cell Research Institute,  
Cardiff University

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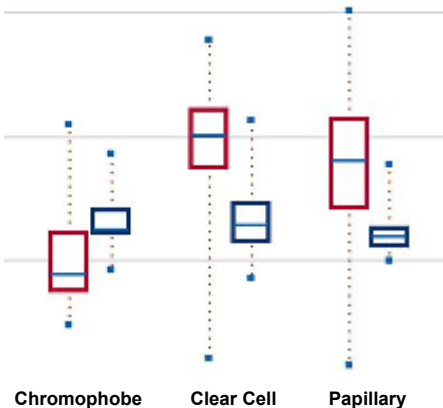
**Session #9: Oral Abstract Session**

#IKCSNA22

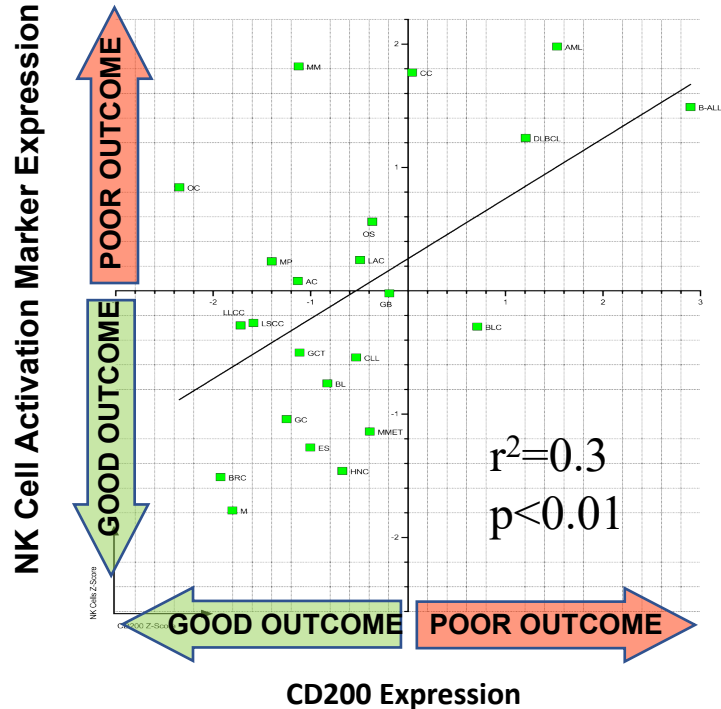


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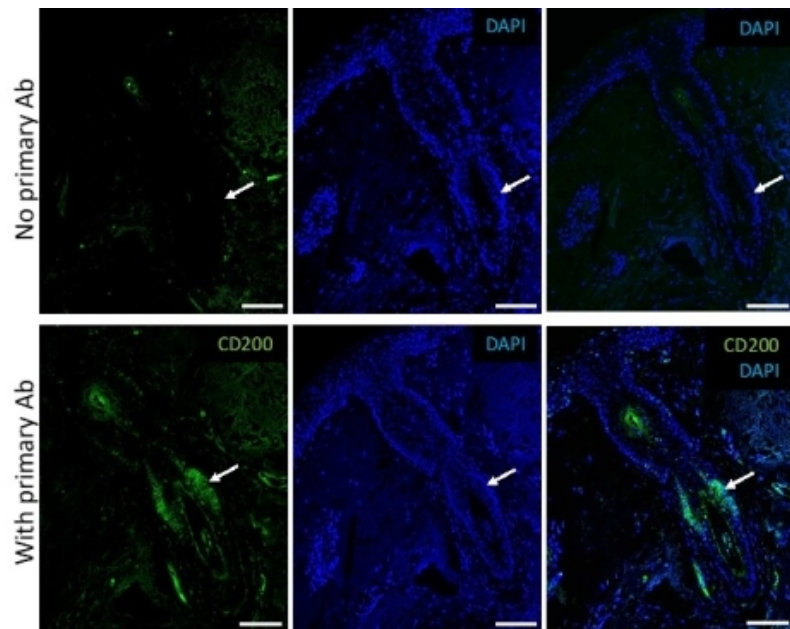
# CD200 a Novel NK Cell Heckpoint



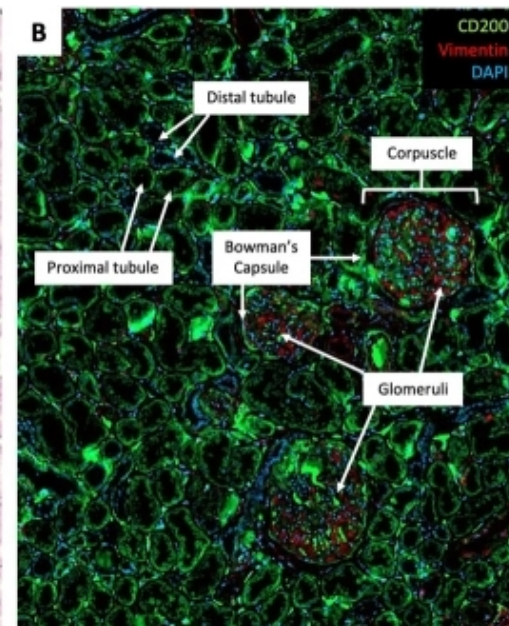
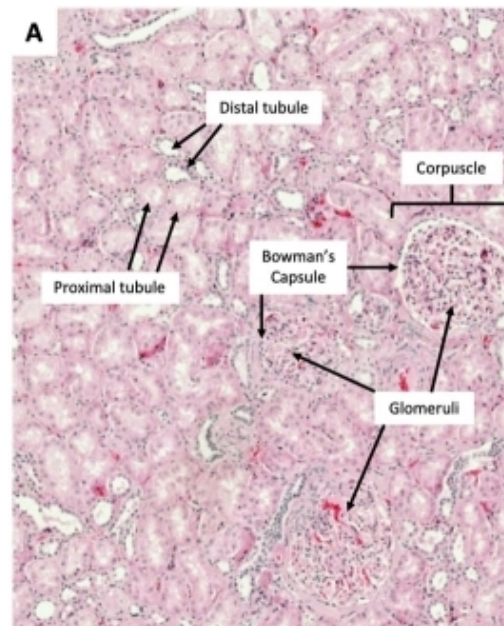
TGCA  
database



# CD200 Expression in Normal Kidney



Hair Follicle



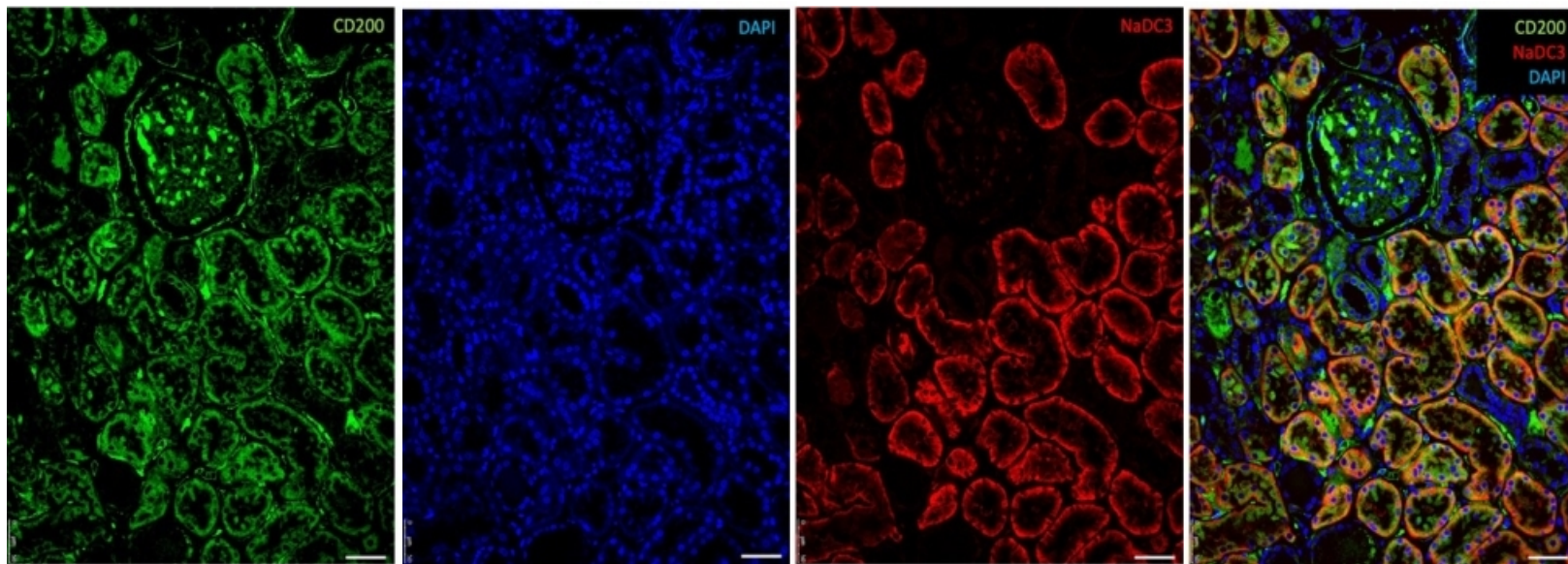
Normal Kidney

# CD200 Expression in Proximal Tubules

CD200

DAPI

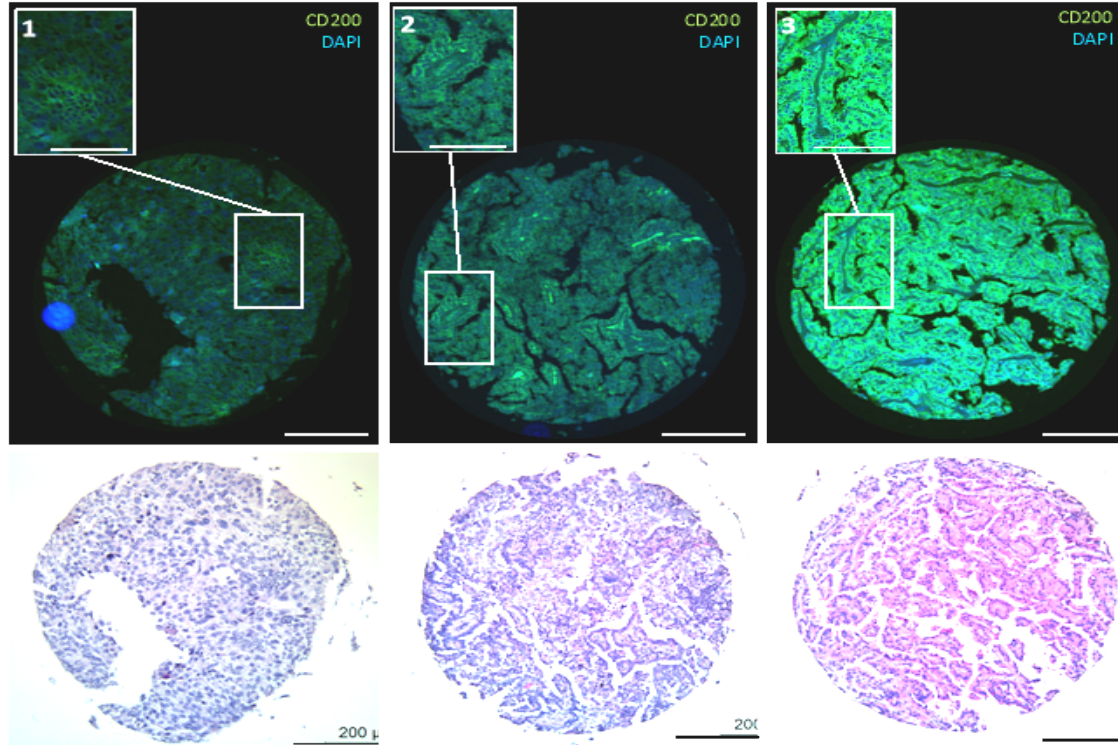
NaDC3



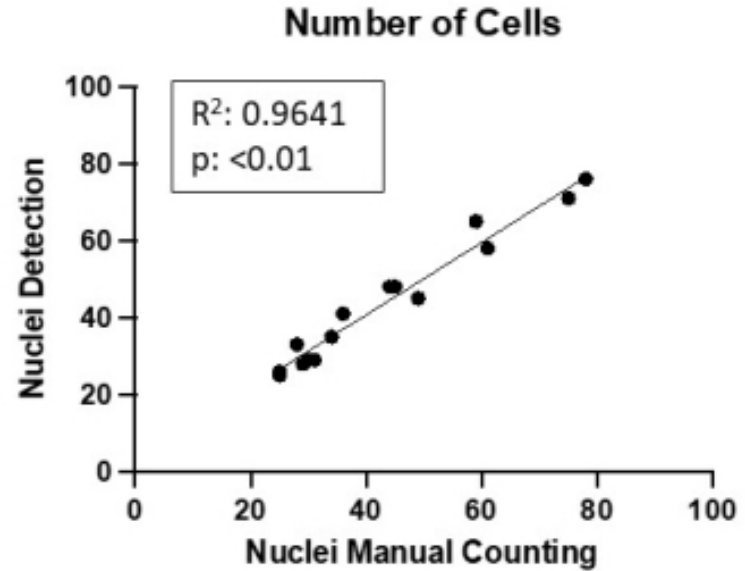
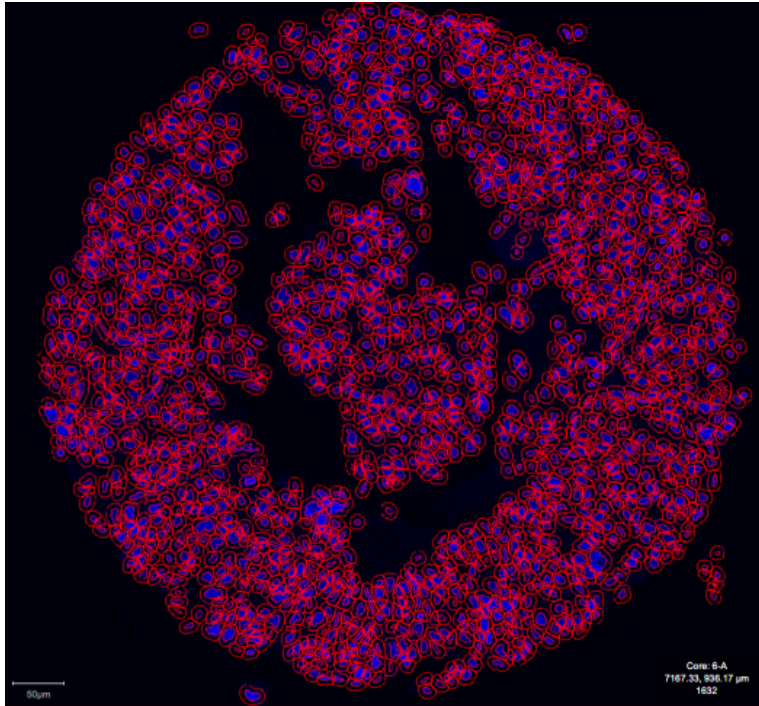
Young MD, *et al. Science*. 2018; 361(6402):594-599



# CD200 Expression in ccRCC

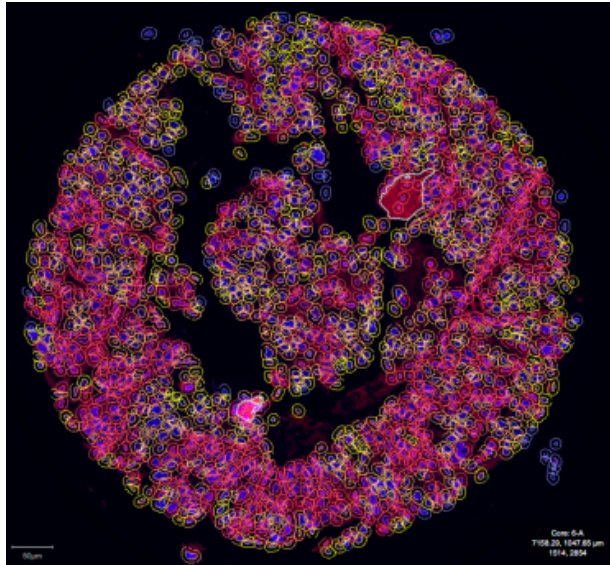


# QuPATH: Tumor Cell Quantification



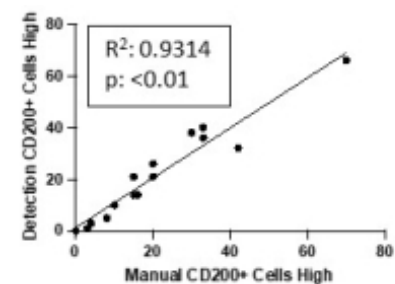
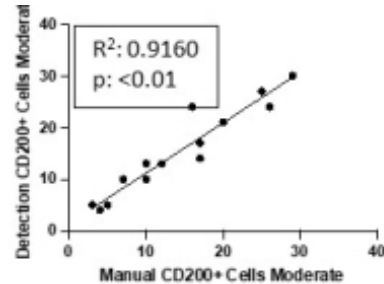
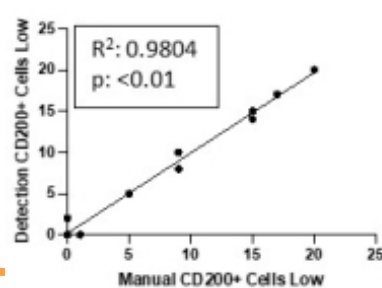
# QuPath CD200 Detection

Low (1+) Moderate (2+) Strong (3+)

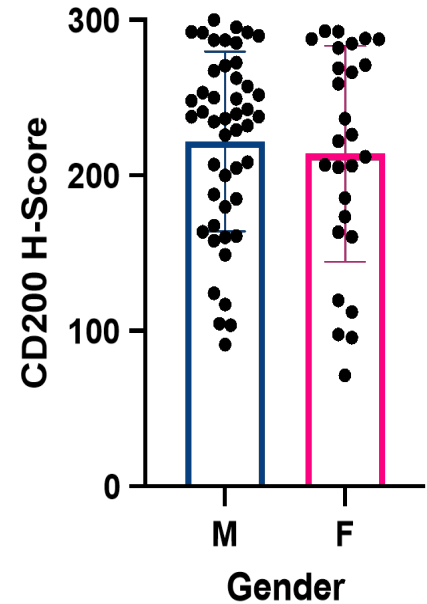
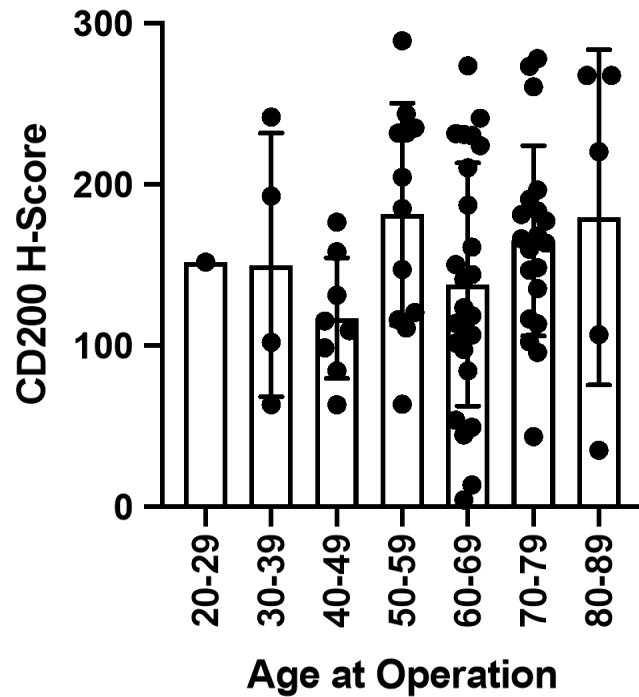
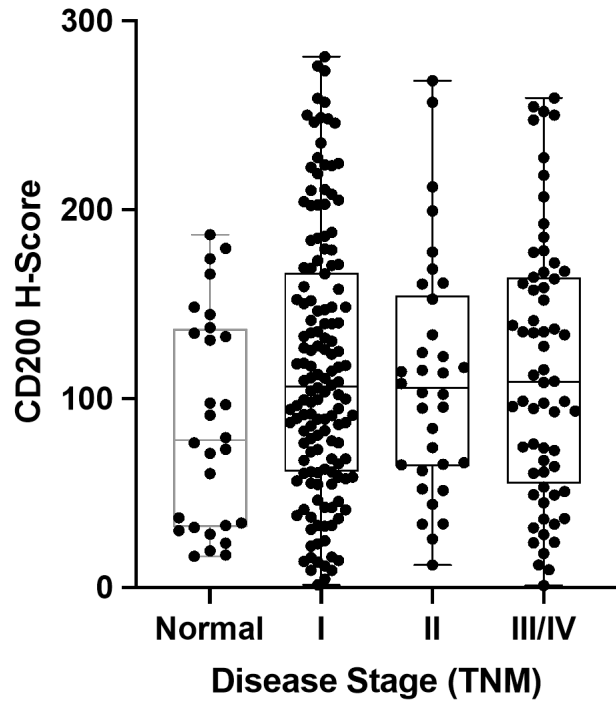


Name	Class	Detections	Num 1+	Num 2+	Num 3+	Num Negative	Positive %	H-score
Ignore*	Ignore*	5	0	0	5	0	100	300
Ignore*	Ignore*	5	0	0	5	0	100	300
Tumor	Tumor	1881	187	752	898	44	97.66	233.12

**H-Score = [1 x (% Cells 1+) + 2 x (% Cells 2+) + 3 x (% Cells 3+)]**



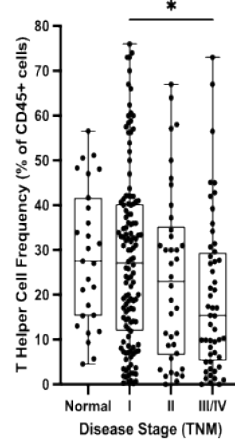
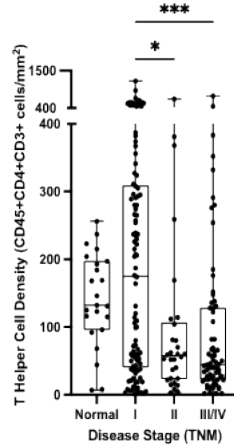
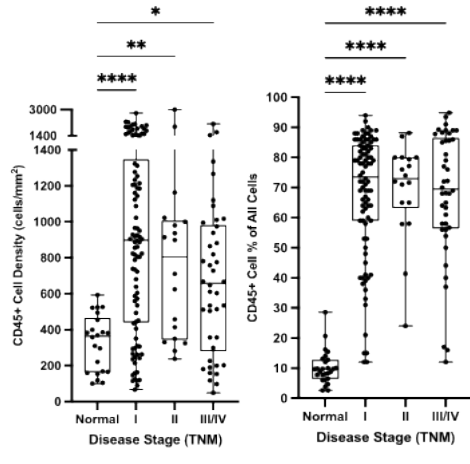
# CD200 Expression in ccRCC



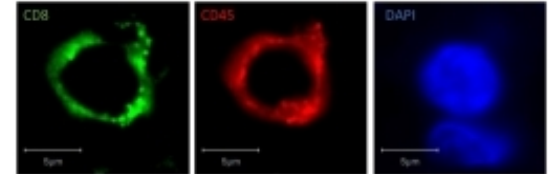
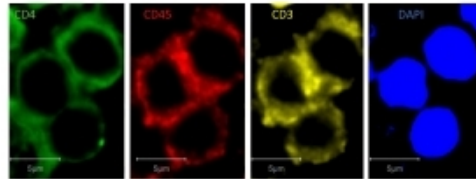
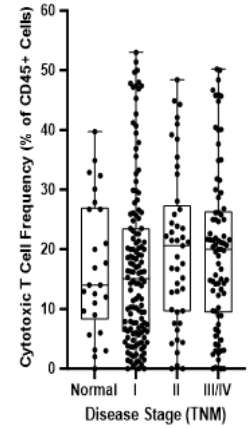
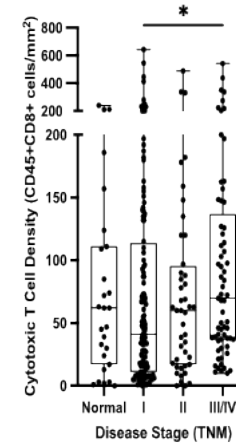


# Immune Infiltrate in ccRCC by Stage

## T-Helper

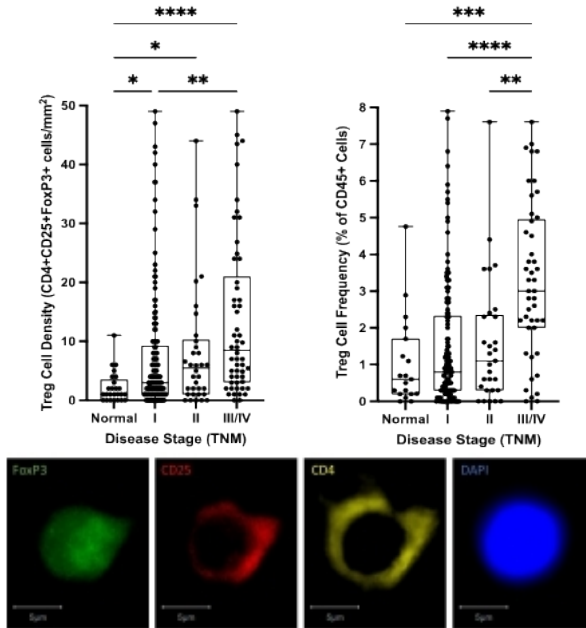


## T-Cytotoxic

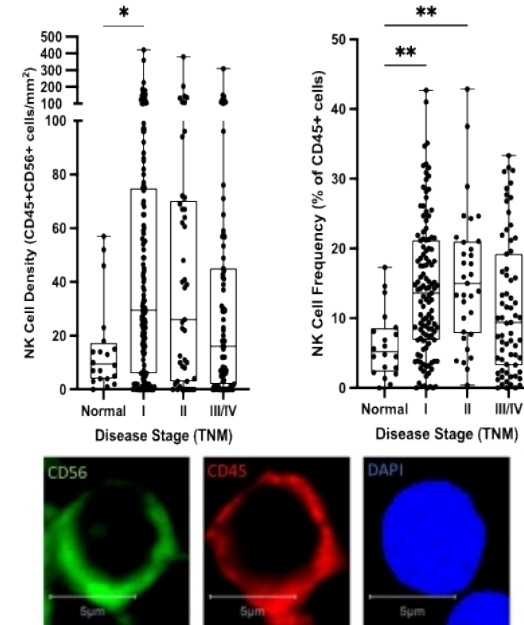


# Immune Infiltrate in ccRCC by Stage

## T-reg



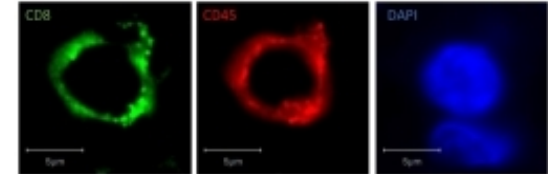
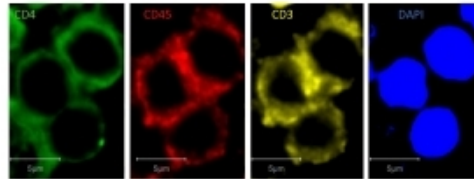
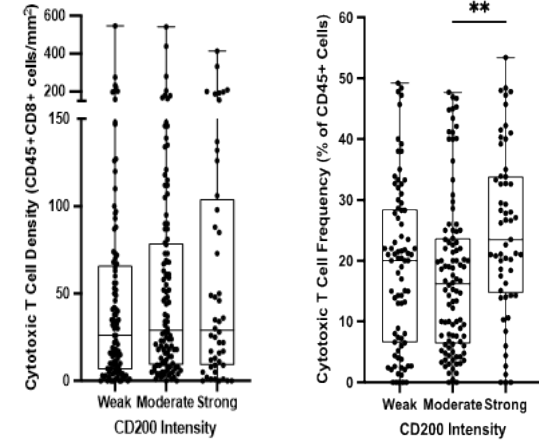
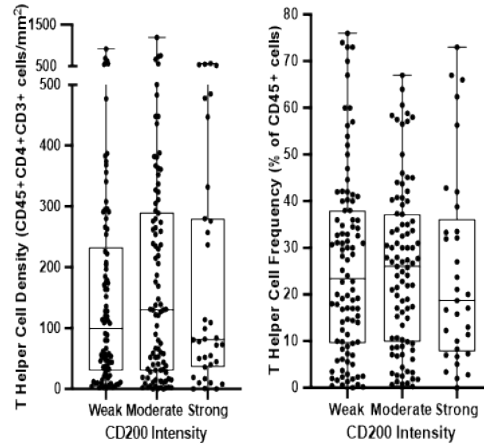
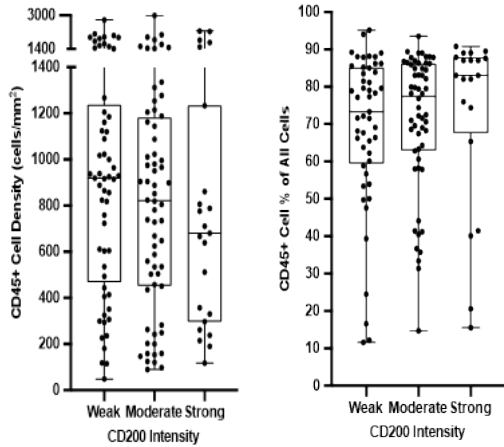
## NK cell



# Immune Infiltrate in ccRCC by CD200

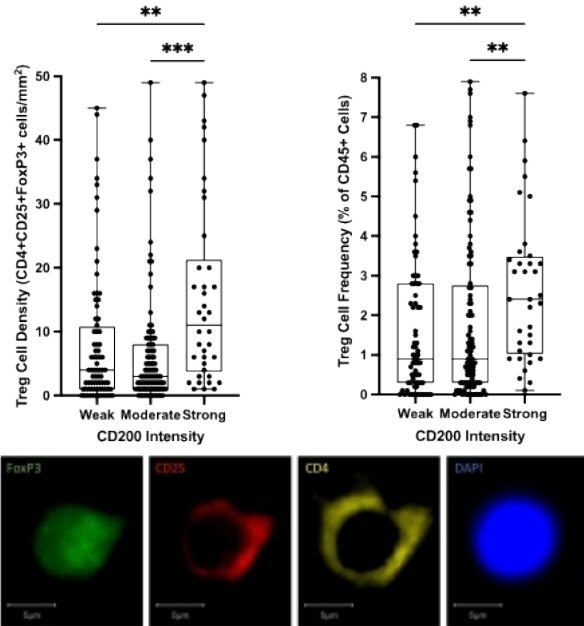
## T-Helper

## T-Cytotoxic

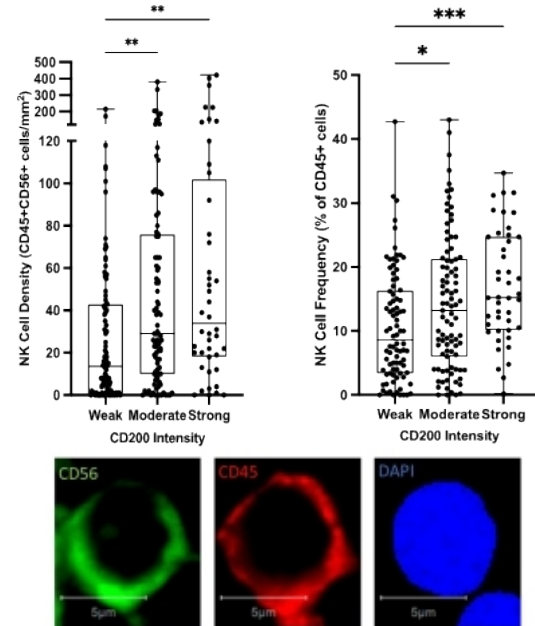


# Immune Infiltrate in ccRCC by CD200

## T-reg

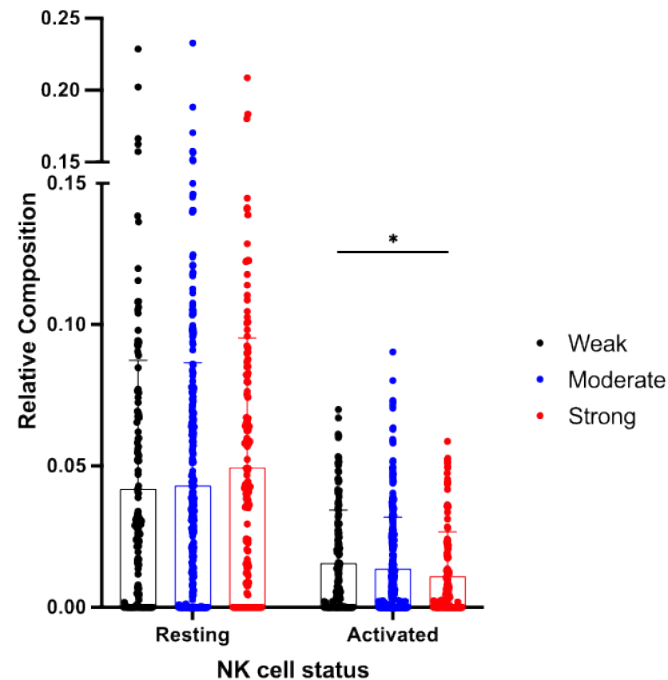
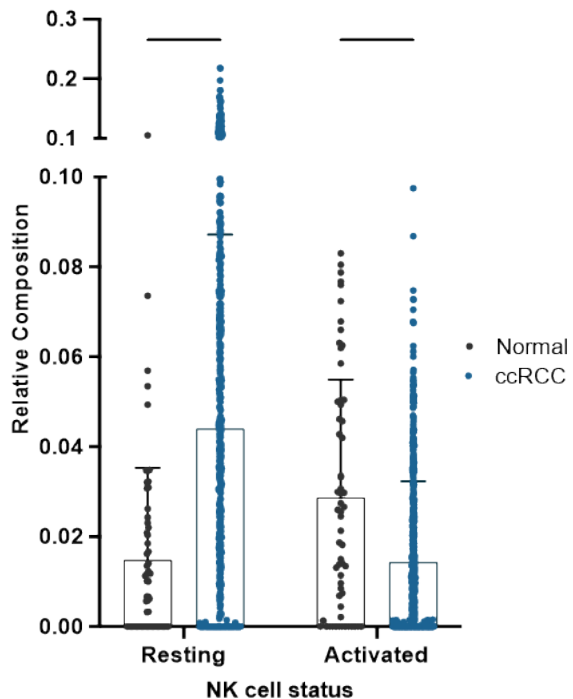


## NK cell

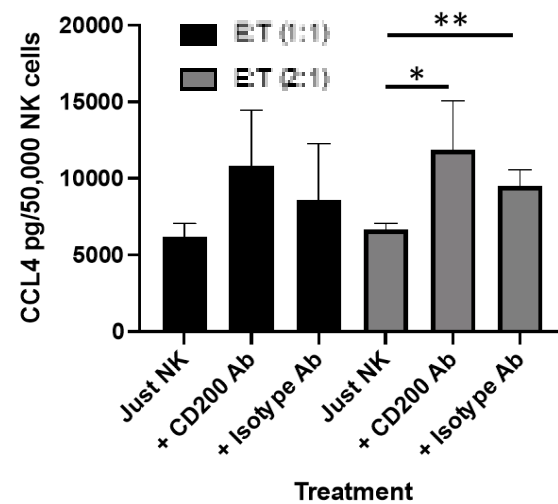
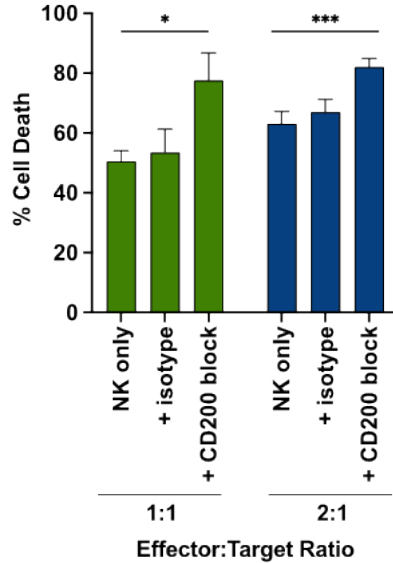
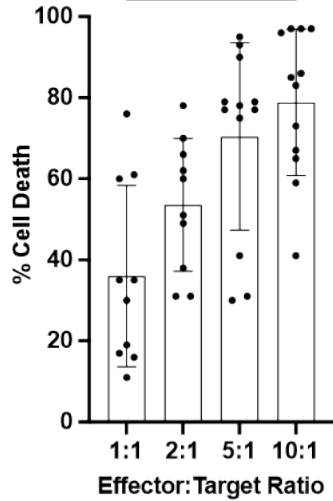




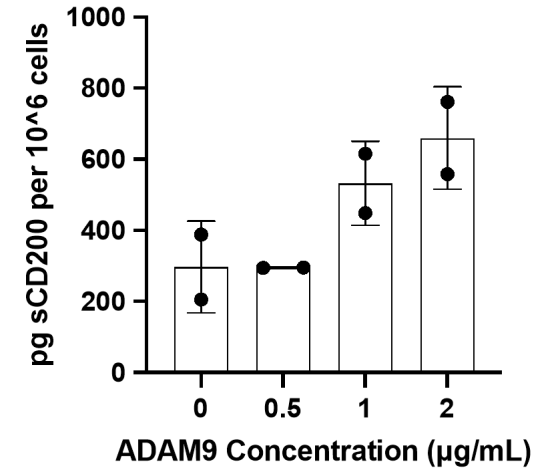
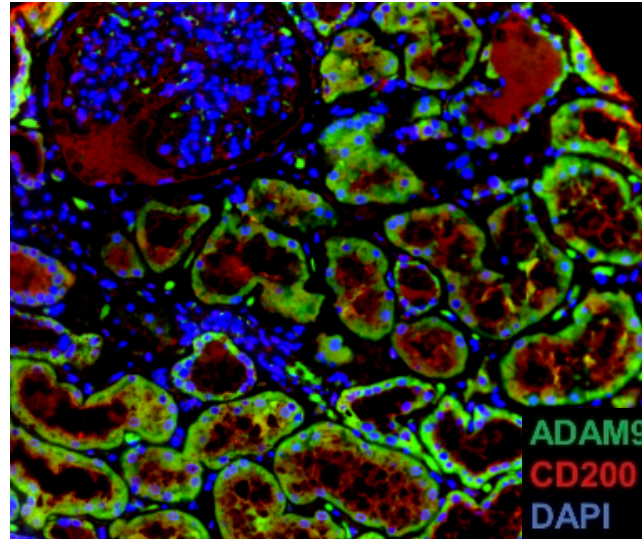
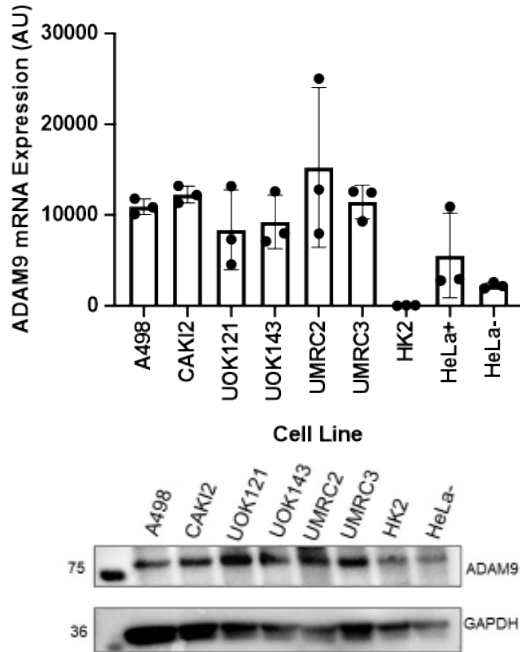
# NK Cell Status in ccRCC by CD200 (Firehose Dataset)



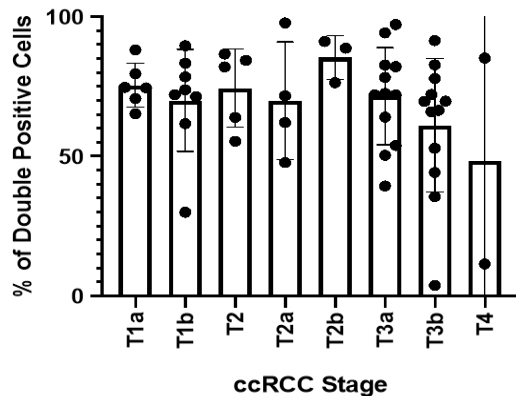
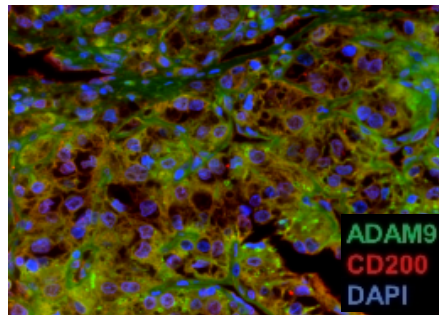
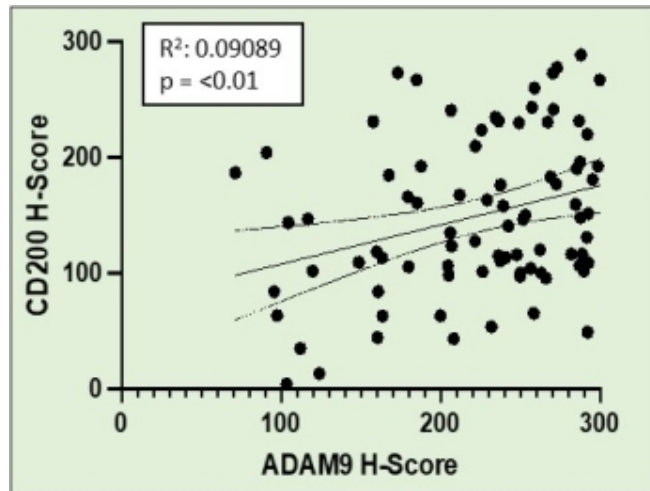
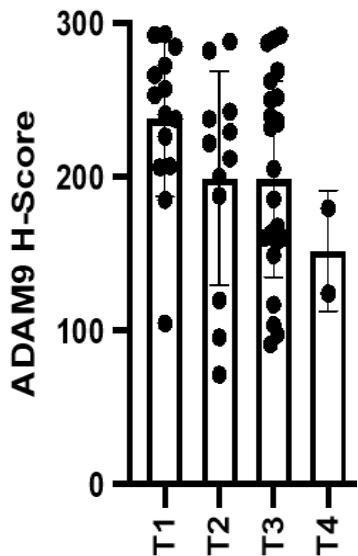
# CD200 Blocks NK Cell Killing



# CD200 Ectodomain Shedding by ADAM 9



# CD200 Ectodomain Shedding by ADAM 9





# Take Home Message

## Take Home Messages:

- What does this mean for my practice on Monday?
- What does this mean for the future of care?

- CD200 is overexpressed in many cancer types, particularly ccRCC
- CD200 increases Tregs and blocks NK cell activation
- CD200 signaling leads to NK cell apoptosis
- CD200 ectodomain shedding in ccRCC maybe mediated by ADAM9
- NK cytotoxic ability is restored by blocking CD200

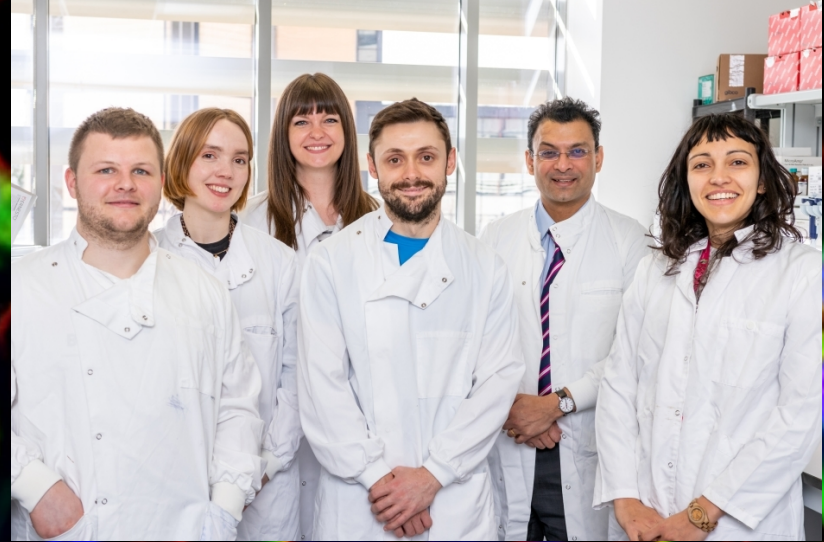
# Thank you!

## Supervisors

- Professor Girish Patel
- Professor Matt Smalley

## GKP Lab

- Dr Huw Morgan
- Dr Boris Shorning
- Charley Lovatt
- Alex Gibbs
- Megan Williams
- Marialuce Avigliano



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Research Institute

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