

# Radboudumc

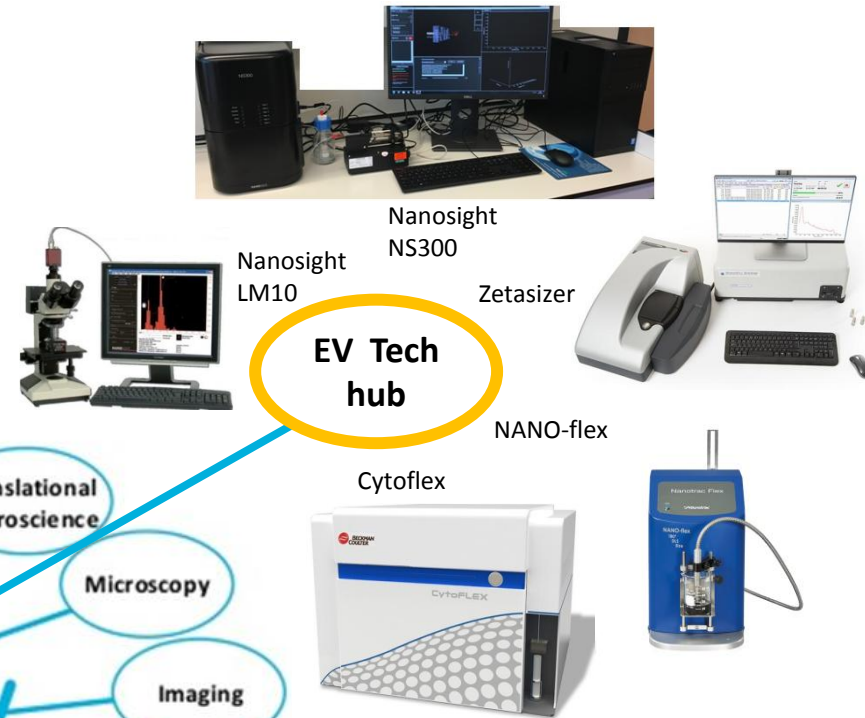
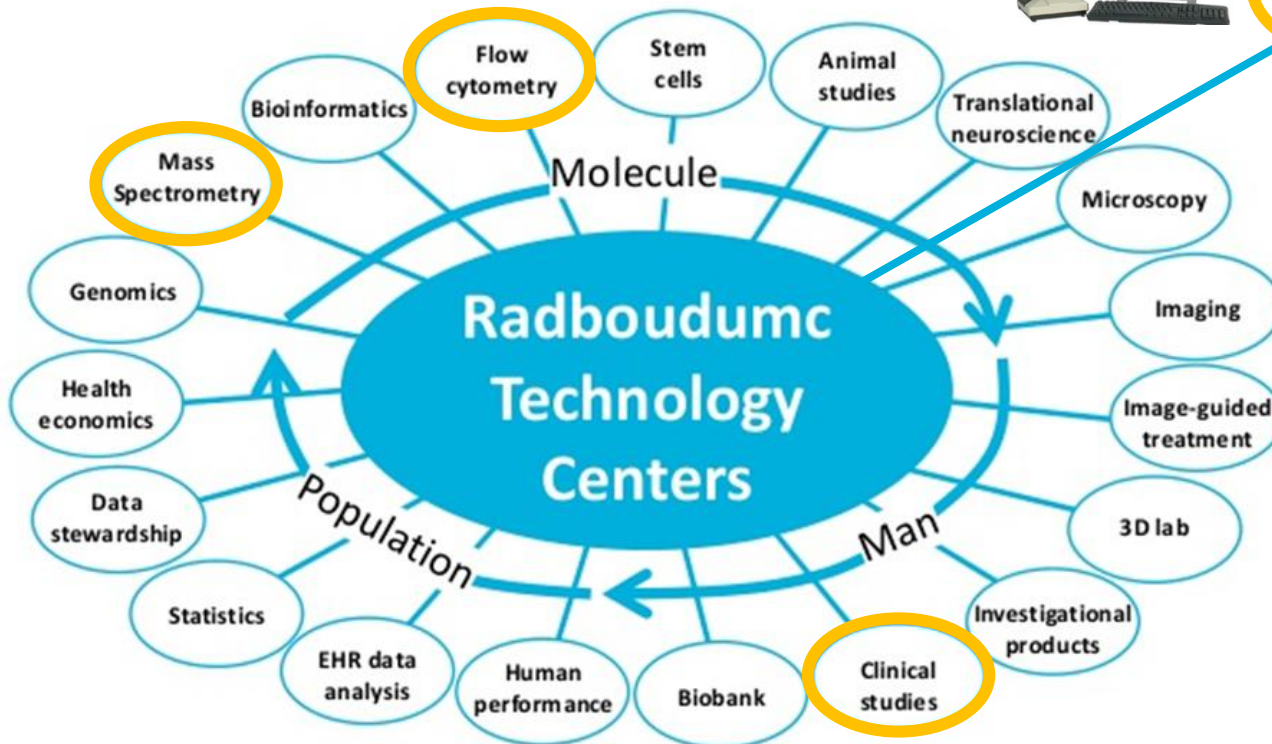
To have a significant impact on healthcare

- through sustainable networks -

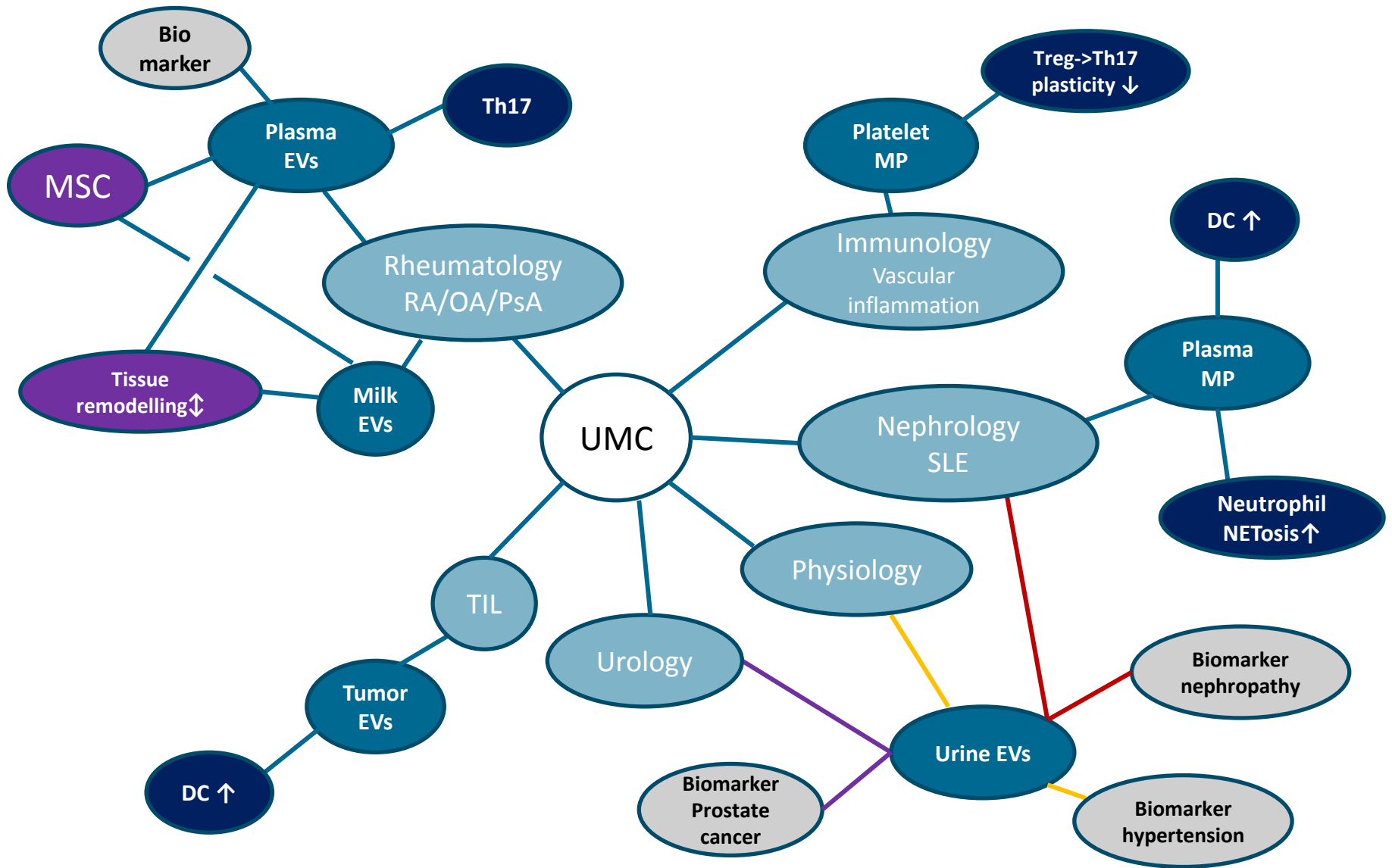
**NLSEV**

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# 19 Radboud Technology Centers +1



# EV research in Radboudumc is diverse

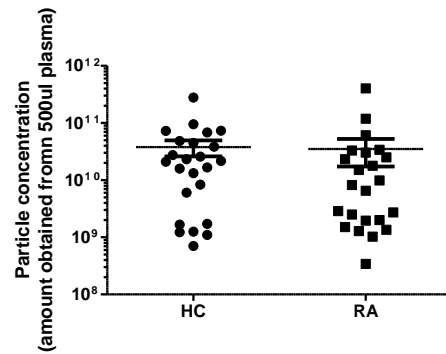


# Joint diseases = biomarker research

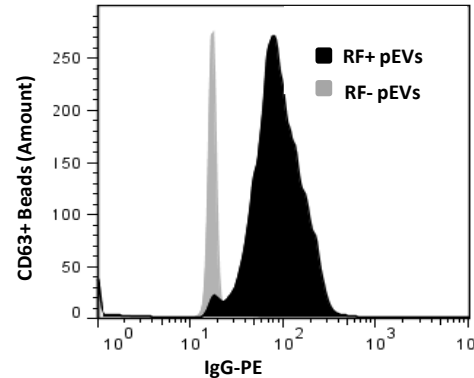
## Rheumatoid arthritis



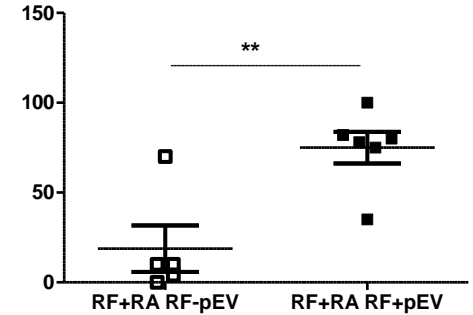
Particle size and amount



EVs carry Rheumatoid factor (autoantibody) recognizing self-Ig



RA patients with RF+ EVs have higher VAS, assessment of global patient health

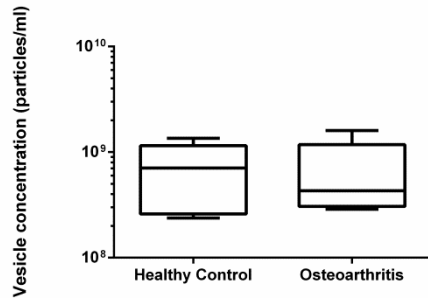


Poster #1 Onno Arntz

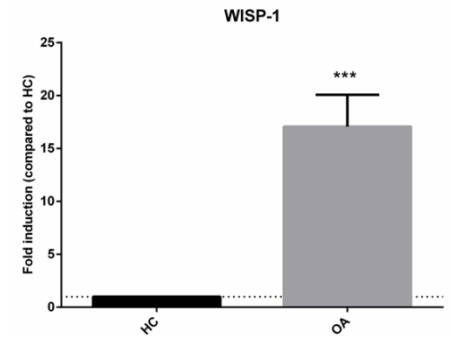
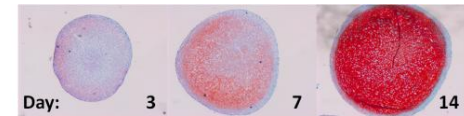
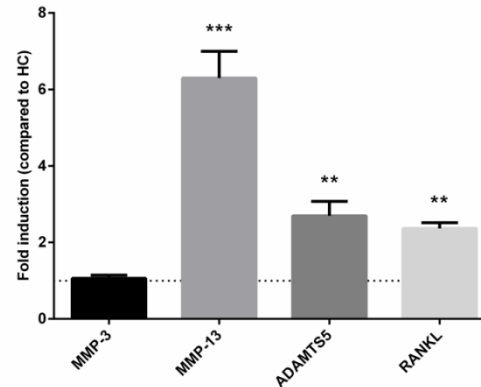
## Osteoarthritis



Particle size and amount

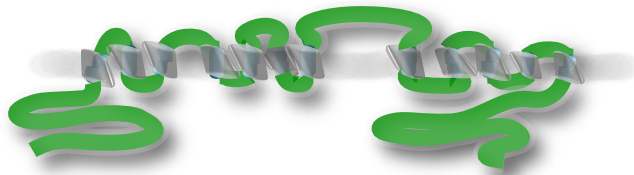


EVs from OA patients induce OA-genes in MSC-derived chondrocytes



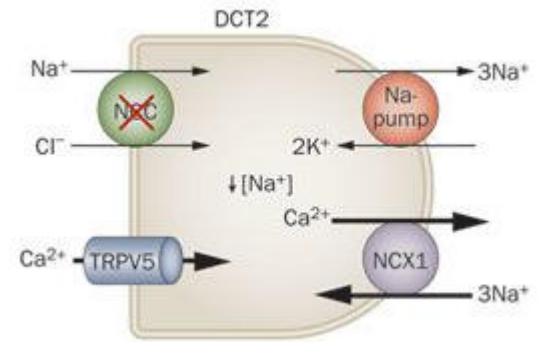
# Hypertension = biomarker research

**Kidney**



NCC Sodium Chloride Cotransporter

Thiazide diurectica



**Urine EVs**



200,000 x g



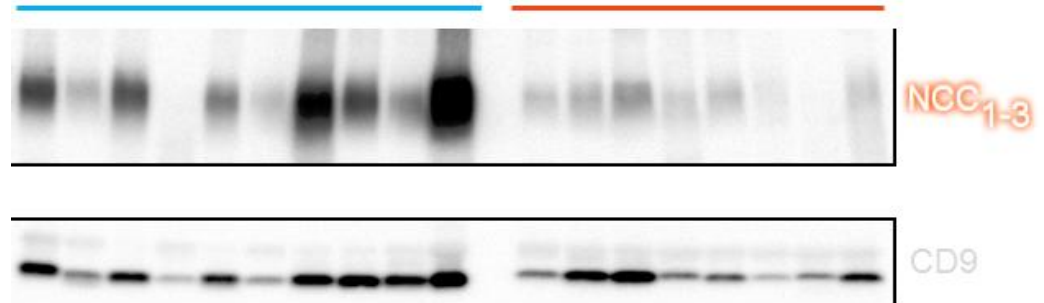
**Exosome pellet**



Responders  
≥ 10 mmHg  
n=10




Non-responders  
0 mmHg  
N=8



Department of **PHYSIOLOGY**

# Radboudumc & academic collaboration

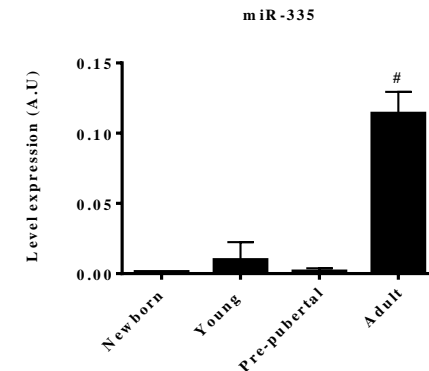
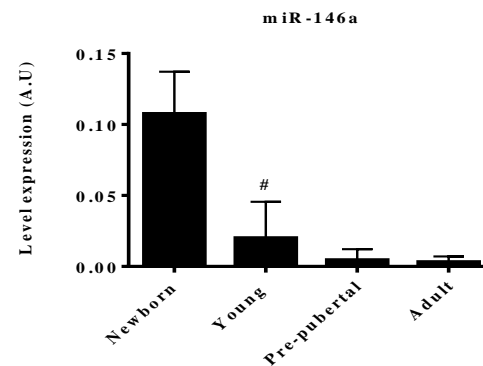
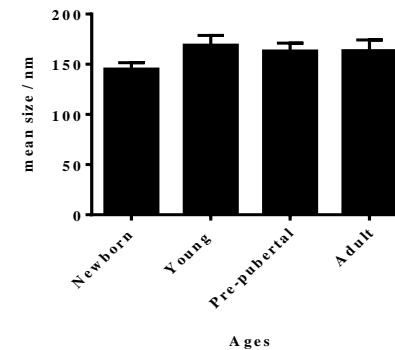
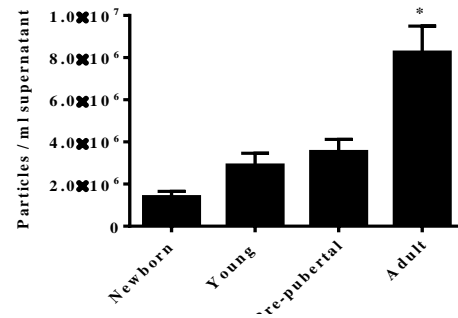
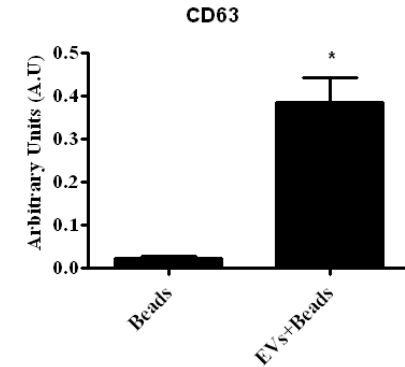
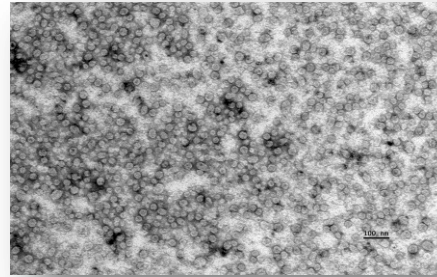
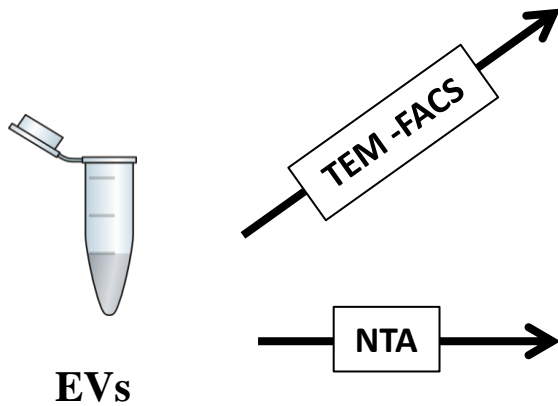
- KWF-Alpe d'HuZes,  \*
- Urinary EVs for Prostate cancer diagnosis & prognosis
  - The number of EVs present in urine
  - Proteins on the outside of the vesicles
  - (non-coding) RNA inside the vesicles
- Comparative analysis of biomarkers in -urinary sediments, -whole urine and -exosomes
  - Dijkstra, S., et al., *Prostate cancer biomarker profiles in urinary sediments and exosomes*. J Urol, 2014. **191**(4): p. 1132-8.
  - Hendriks, R.J., et al., *Comparative analysis of prostate cancer specific biomarkers PCA3 and ERG in whole urine, urinary sediments and exosomes*. Clin Chem Lab Med., 2016. **54**(3): p. 483-92. doi: 10.1515/cclm-2015-0599.

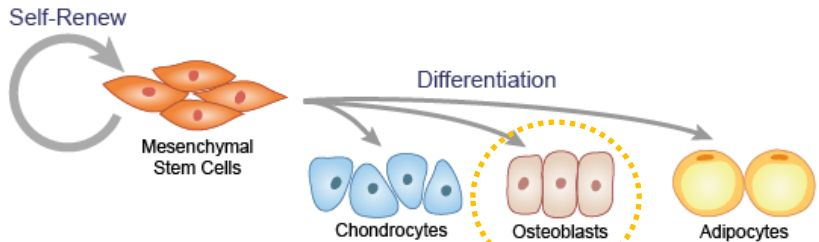
\*, multicenter study:



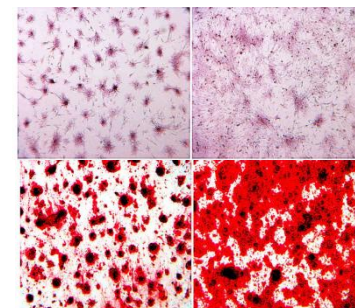
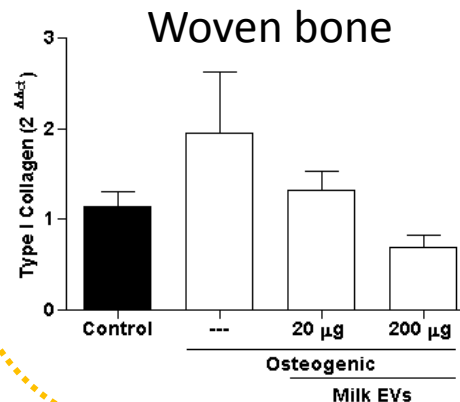
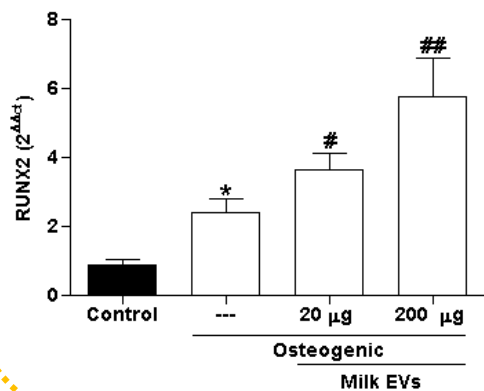
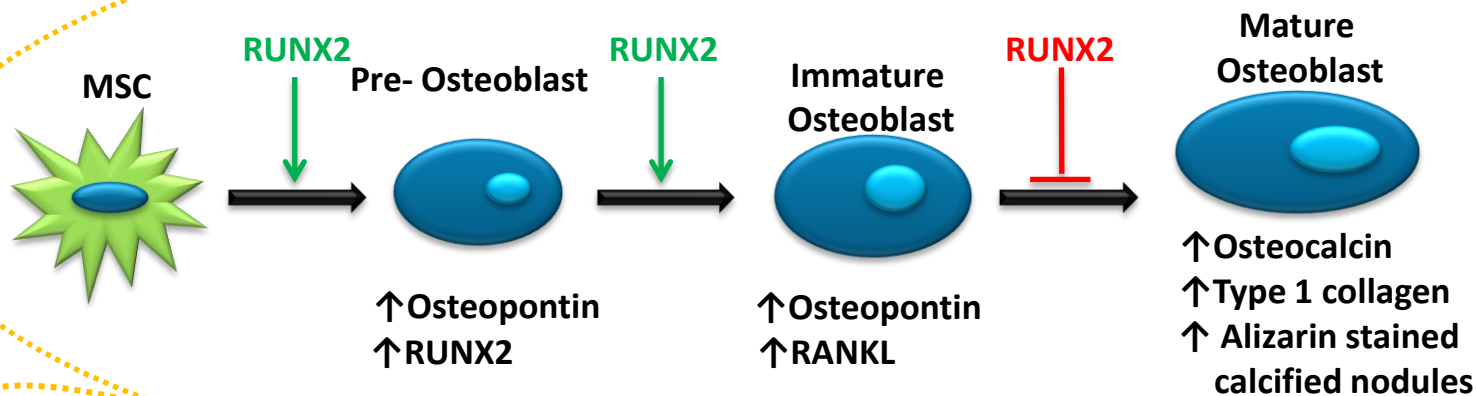


# Radboudumc & academic collaboration





UF *mg* G



## Biological functions of cow milk EVs

## RHEUMATOLOGY



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# Radboud university / medical center

## Future perspective

- Organize Radboud researchers in the EV field (NLSEV-Nijmegen)
- Set up a technology (virtual) facility for extracellular-vesicle research
- Invest in techniques and involve laboratory Medicine (role NLSEV?)
- Invest in academic education and set up an EV course (role NLSEV?)
- Involve industrial partners: Health valley Oost Nederland,

Novio Tech Campus, Pivot park Oss

