Mylonas Group

- Age-related accumulation of **senescent cells (SCs)** is associated with impaired tissue healing and regeneration. SCs are growth arrested yet metabolically active, promoting inflammation/fibrosis via release of senescence associated secretory phenotype (SASP) cytokines.
- **The senolytic (ABT-263)** eliminates SCs and improve kidney repair after injury.
- **Macrophages** are essential for tissue repair (switch to pro-repair) and for clearance of SCs e.g. phagocytic receptor MerTK interacts with PS, an "eat me" signal on SCs.
- We are investigating whether **SCs compromise macrophage-driven repair** after kidney injury, by **promoting inflammatory monocyte** recruitment (1), shifting macrophages **away from a repair** phenotype (2) and **avoiding immune clearance by phagocytosis** (3), which they may do by e.g. causing cleavage of MerTK on macrophages (4) and expressing CD47 that interacts with SIRPα on macrophages (5).
- **The aim is to drive kidney repair through modulation of SCs (using senolytics) and macrophages (drive pro-repair phenotype) (6).**

Senescent cell interactions with monocytes/macrophages