receptors protect heart Cav-3 = recovery Melissa Target each part with drugs most work in young but not Get kATP activation and MPTP MPTP: mito break down ATP inhibition causes prototion in Want kATP promoted and both age groups. MPTP inhibited signalling fidelity and broken effectors (kATP & MPTP)

Tumours can escape immune system: Acquired - during 2. Secrete immunosuppressive factors treatment 3. Inhibit attack by immune cells Genetic variants, 4. Recruit immunosuppressive cell types influences (stroma acts on tumour to cause survival), Cancer II (PDL1): antibody prevent PDL1 acting on receptors on immune cell that cause it to shut down. Will mean it is active. immune system to fight microenvironment cancer - stimulate own immune system or add components

Cancer: overexpression of antioxidant MnSOD suppresses malignant phenotype. Suggests ROS contributes to maintenance. Classical Def.: imbalance of oxidation and antioxidants

New def.: signaling pathways

Mitochondria has free radicals. Reperfusion -> burst of O2 -> swell -> lyse -> Cyt C and ROS is produced.

Diabetes – Ox. Stress lowers insulin sensitivity and injures B cells, modifies signalling pathways causing insulin resistance. Glitzones are antioxidant and protect cells in pancreas. Oxidative Stress

Causes: smoking, UV, pollution, inflammation (trauma, pathogens), obesity

Therapies: Drugs – reduce ROS, block enzymes that produce ROS, add antioxidants Assays Problems:

Specificity is questionable, product measured is not specific product, sensitivity, influenced by external factors, invasive