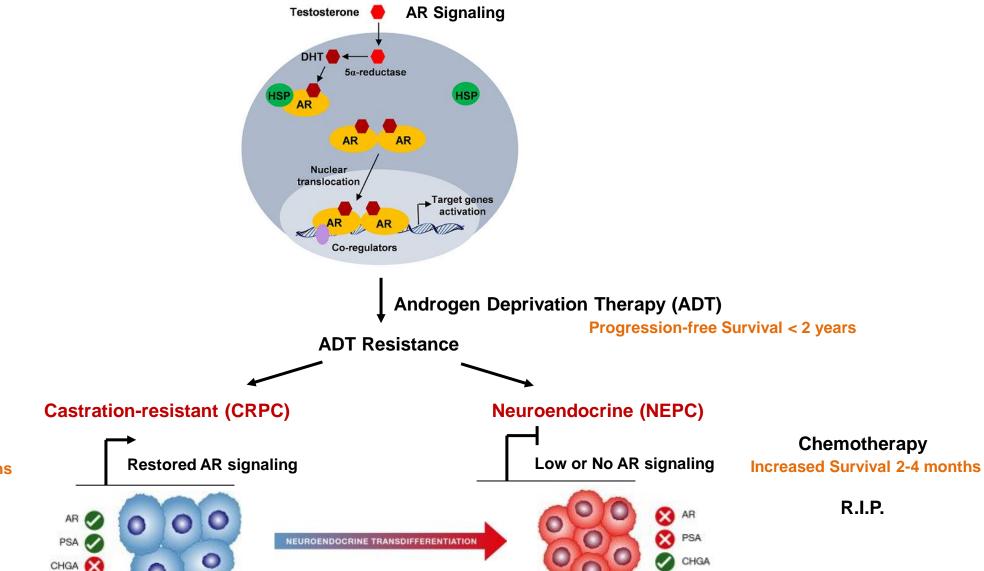
# Androgen Receptor (AR) and Drug Resistance in Advanced Prostate Cancer



20that

**Enzalutamide** 

**Increased Survival 2-8 months** 

Resistance mechanisms
AR mutations
AR-V truncated variants
AR by-pass

# AR Mutational Burden - Adverse Drug Response Prediction

#### **Molecular Structures**

In silico AR LBD mutant protein structures

Docked complexes with native ligand and anti-androgens

Automated extraction of binding region of interest across protein-ligand complexes

## **Molecular Descriptors**

Quantification of protein-ligand interactions

Docking scores

Novel 4D descriptors development (SVL)

### **Machine Learning**

Random Forest

**Support Vector Machines** 

**Artificial Neural Networks** 

### **QSAR Model**

f(Molecular descriptors)

**Binary Classifier** 

Accurate prediction of therapeutic drug responses; MD & experimentally validated



T878G novel activating mutation

