

Ruthenium based Light-activated Anticancer Compounds: Pathways and Performance

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About me...

Biochemistry and Molecular Biology

Third-year bachelor student

Euroscholars

Research Background:

Lipid quantification for *Bombus impatiens*

Colony transportation and gene expression in *Apis mellifera*



MICHIGAN STATE

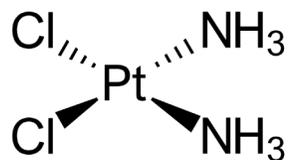
U N I V E R S I T Y

Project Background

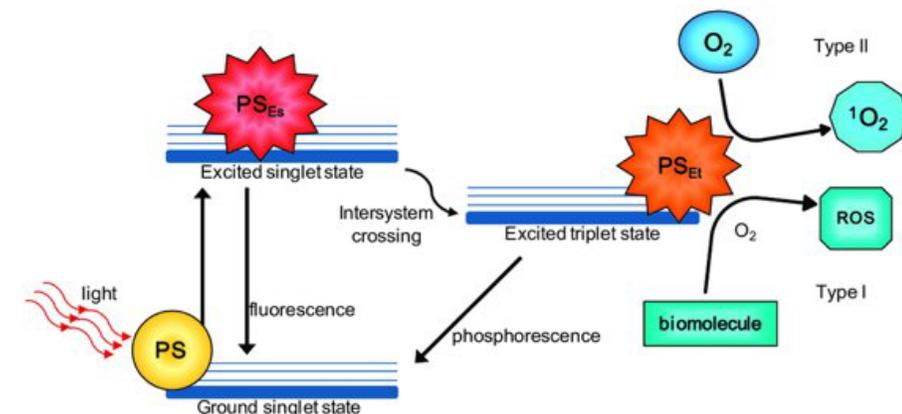
- Benefits of light activation
- Metallocompounds
- Pathways of photoactive treatment
- Why PACT?



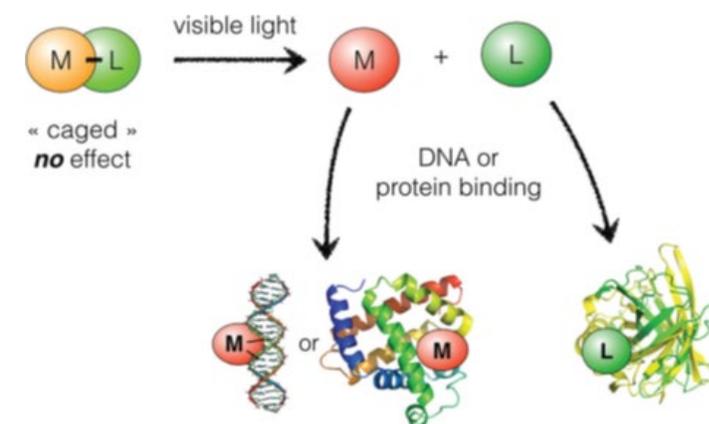
Cisplatin



PDT (Photodynamic Therapy)

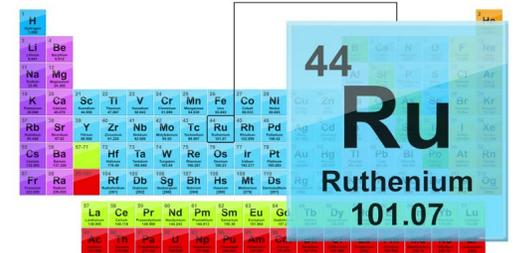


PACT (Photoactivated Chemotherapy)

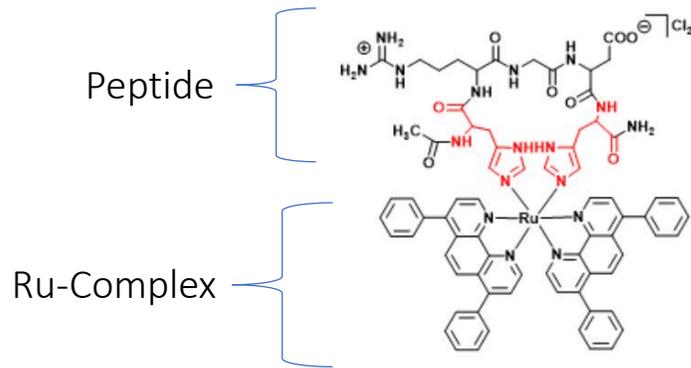


Project Aim:

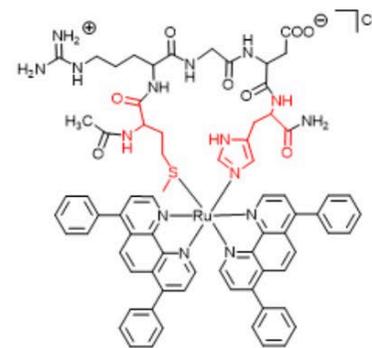
Investigate the differences between PDT and PACT Ru-peptide compounds and their effect on U87MG cancer cells



My Ru-Peptide compounds:

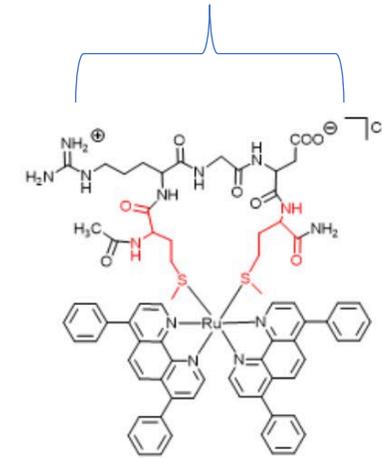


Ru-p(HH)



Ru-p(MH)

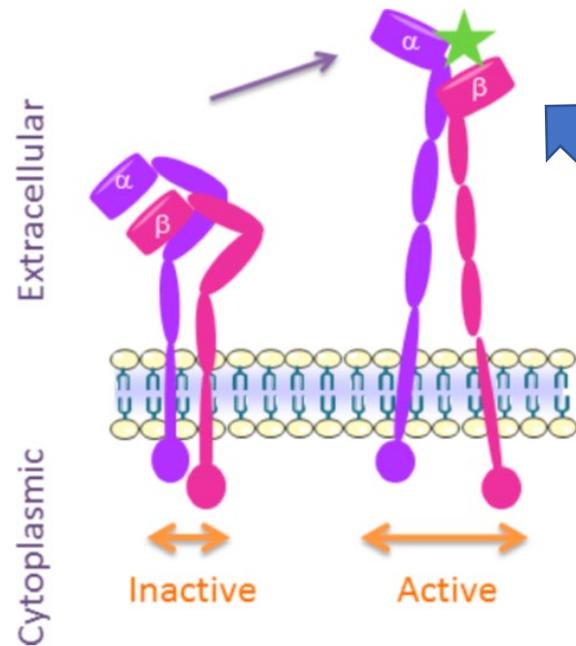
RGD Sequence



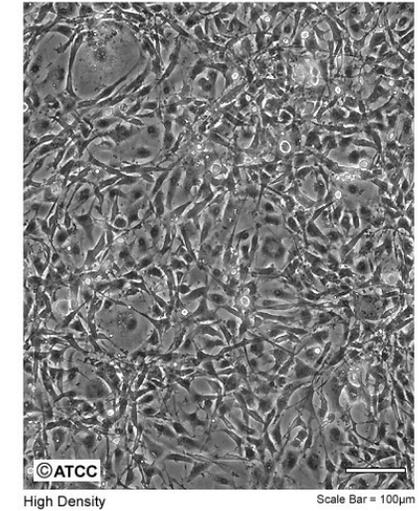
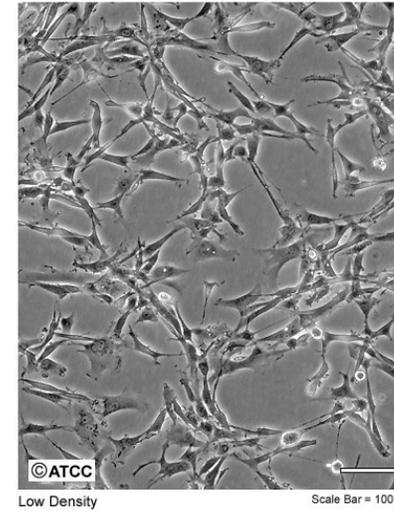
Ru-p(MM)

U87MG: Primary Human Glioblastoma

- Brain tumor
- Integrin positive cell line



ATCC Number: **HTB-14**
Designation: **U-87 MG**



High affinity for RGD!

Project Goals

- Collect cytotoxicity data in multiple conditions (normoxia/hypoxia)
- 3D Tumor spheroid studies
- ROS generation studies
- Apoptosis/mode of cell death
- Uptake mechanisms

Thank You!

Questions?