Examining the photo reactivity and cytotoxicity of Rhenium complexes in HeLa cells

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Can rhenium complexes be toxic to cervical cancer cells?

Are these compounds reactive to UV light?

So why research on this?

- Photodynamic Therapy treatment
- Diagnostic agent
Photodynamic Therapy

1) Application of the drug
2) Incubation period
3) Exposure to light

GOAL: To synthesize other derivatives of the rhenium complex that are cytotoxic and photosensitive

http://portal.faf.cuni.cz/Groups/Azaphthalocyanine-group/Research-Projects/Photodynamic-therapy/
Synthesis of the rhenium complexes
Re\text{\textsubscript{\((CO)\textsubscript{3}(phen)(morph)\)}}
Re (Co)↓₃ (phen) (thiomorph) Is it photo-reactive? NO
Is \( \text{Re(}CO\text{)}_3 \text{(phen)(morph)} \) cytotoxic?

**Stock solution:** 0.0137 g of the sample dissolved in 10 ml of PBS

The different concentrations of \( \text{Re(}CO\text{)}_3 \text{(phen)(morph)} \) were placed in the wells of two different plates which contained hela cells.
Is Re(CO)$_3$(phen)(morp) toxic?
SO WHAT NEXT?

• Testing the other Rhenium complexes
• Testing if higher concentrations of Re\(\text{CO}_3\)\(\text{phen}(\text{morp})\) will cause more cell death?
• Testing the possibility of the compounds being used as diagnostic agents

Take home message:

• Since Re\(\text{CO}_3\)\(\text{dapa}\)\(\text{phen}\) is toxic to HeLa cells, different Rhenium complexes were tested to see if they too were toxic.
• NO, Re\(\text{CO}_3\)\(\text{phen}(\text{morp})\) is not toxic at a concentration of 200 micro molar.
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