

# Innovative Precious Metal Cancer Therapy



**Peter J. Sadler**

THE UNIVERSITY OF  
**WARWICK**



Science Capital  
"Innovative Healthcare:  
from Mechanisms to Medicine"  
Wed 25 September 2013

# Innovative Precious Metal Cancer Therapy

**Platinum** photo-chemotherapy:  
→ Oesophageal cancer

**Organo-Osmium** chemotherapy:  
→ Colorectal cancer

**Organo-Iridium** chemotherapy:  
Promising .....

# Warwick patents

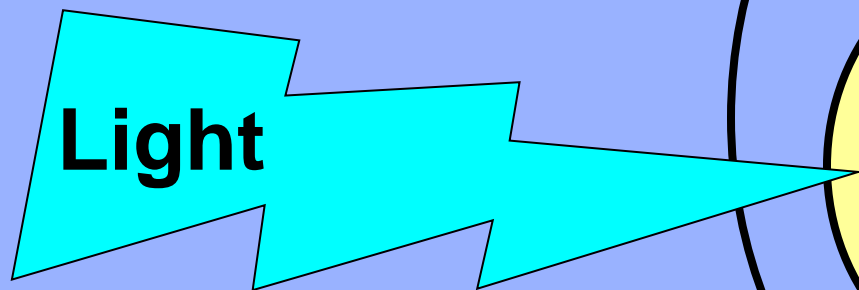
**Platinum:** photoactivated chemotherapy  
PCT/GB2002/003939, 24 Aug 2001  
GB1215498.5, 31 Aug 2012

Organometallic anticancer compounds

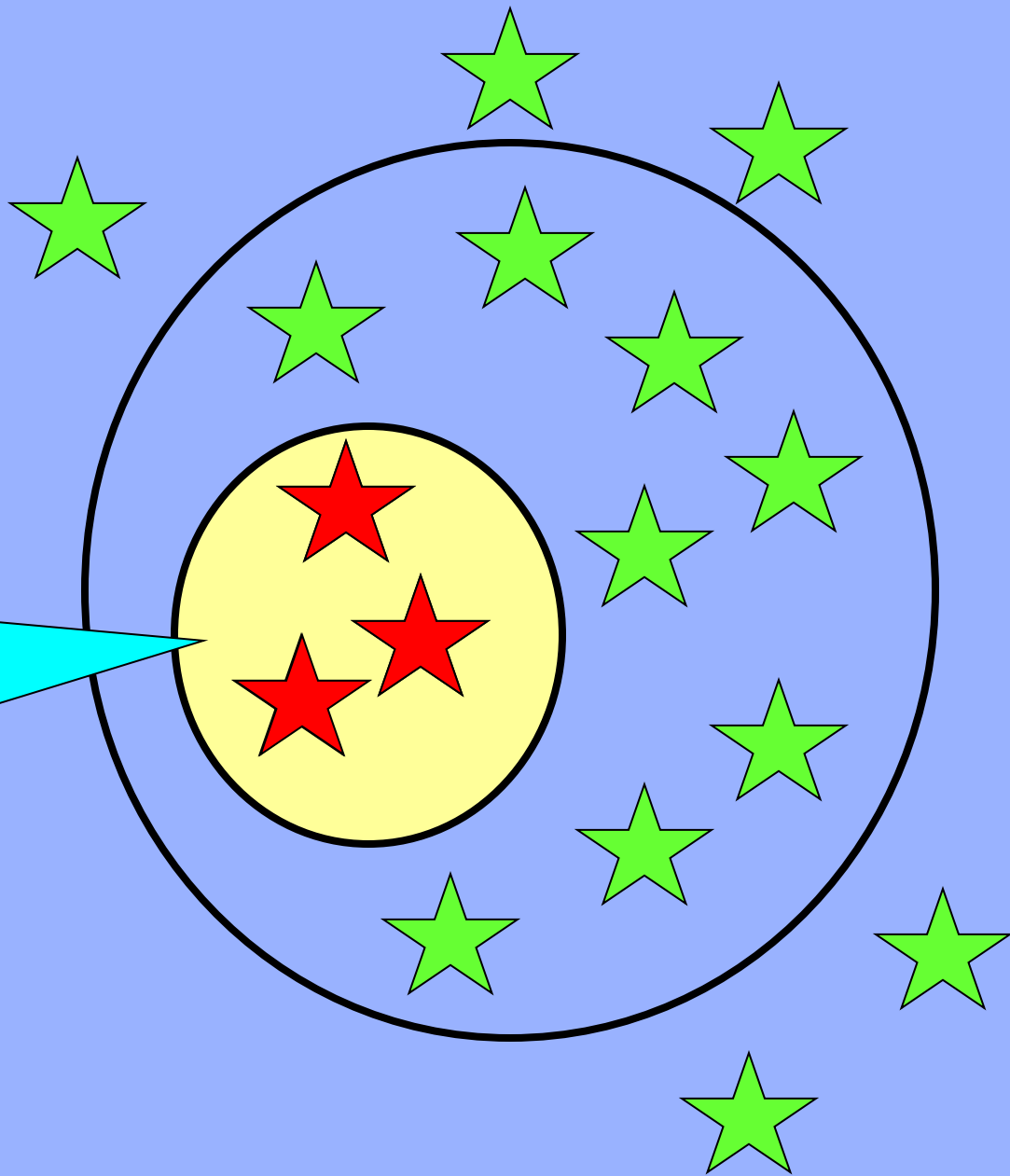
**Osmium:** GB1006762.7, 22 April 2010

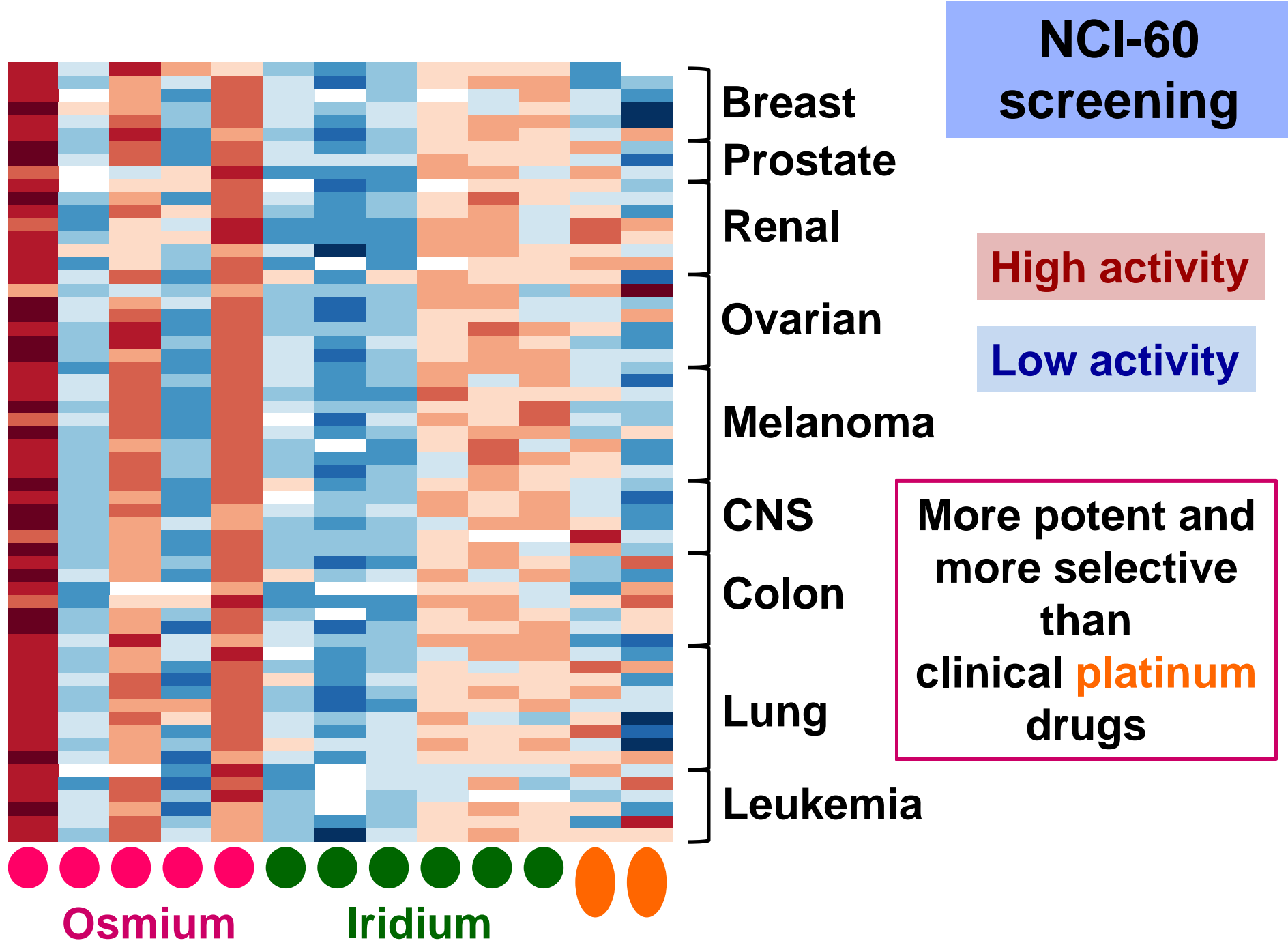
**Iridium:** GB1008584.3, 22 May 2010

**Photo-activated  
chemotherapy**



**Active drug**



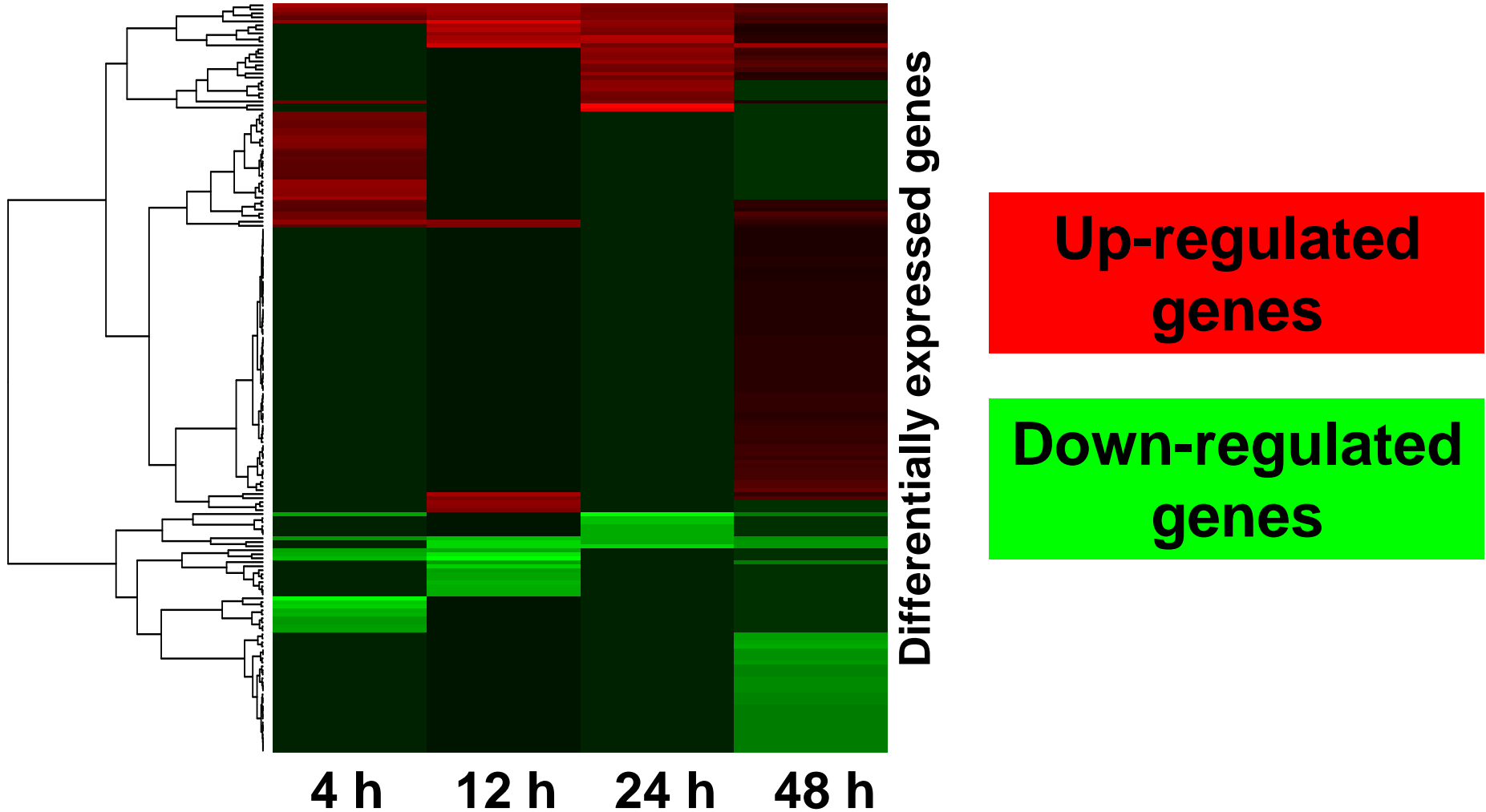


# Cellular Mechanisms of Action

- **Genomics**
- **Transcriptomics**
- **Proteomics**

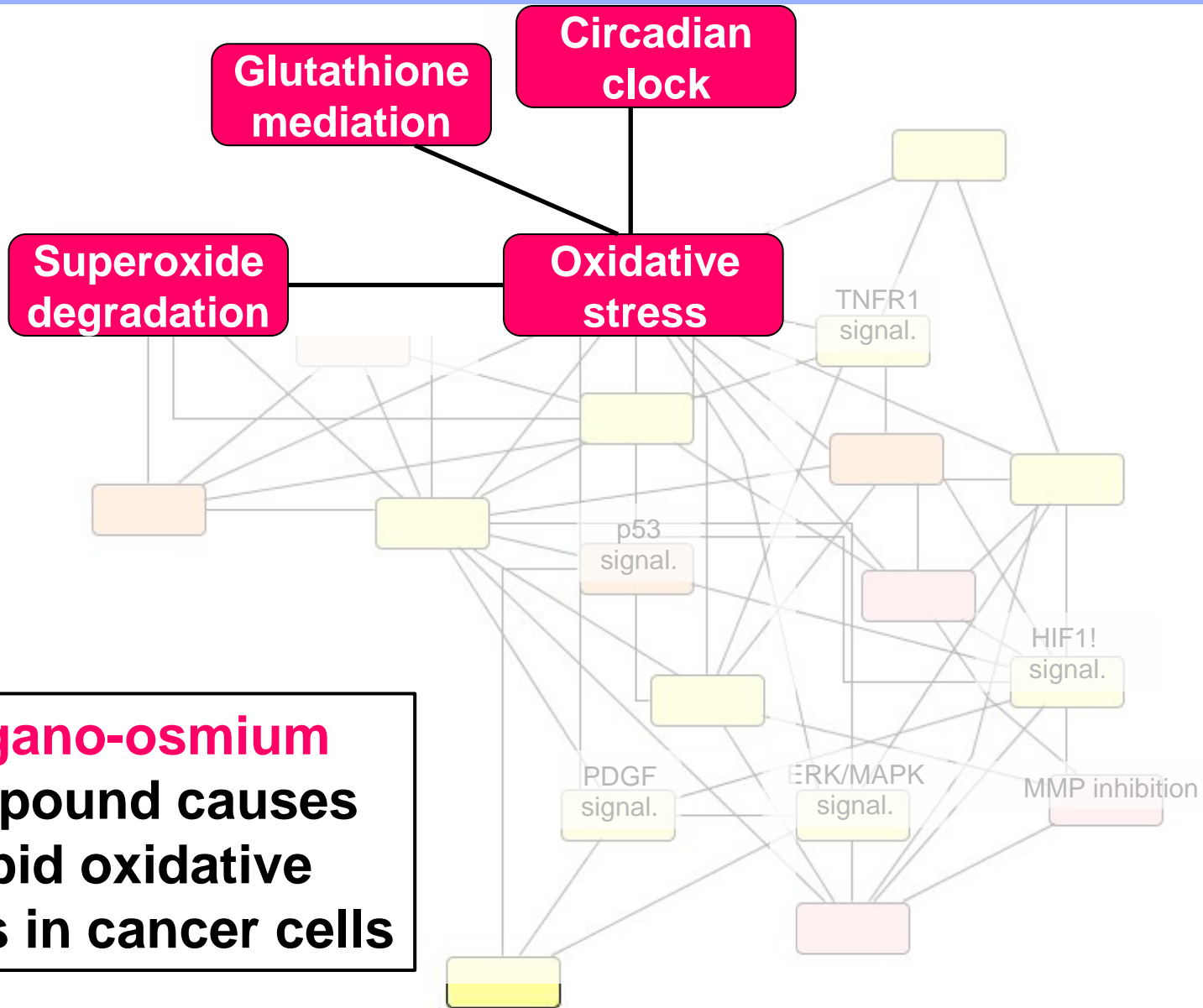
# Transcriptomics

## Differential gene expression



Dynamic response over 48 h exposure to **organo-osmium**

# Pathway analysis of differentially expressed genes at 24 h





# Prospective: Novel mechanisms of action

## **Platinum** photo-chemotherapy:

- Oesophageal, bladder cancer
- Targeted therapy

## **Organo-Osmium** chemotherapy:

- Ovarian cancer
- **Pt** - Resistant ovarian cancers
- p53-mutated colorectal cancers

## **Organo-Iridium** chemotherapy:

- Triple-negative breast cancer?



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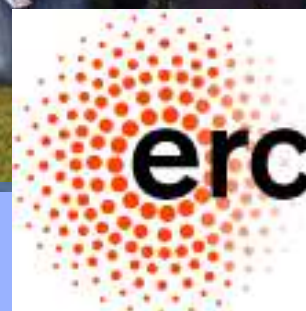


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