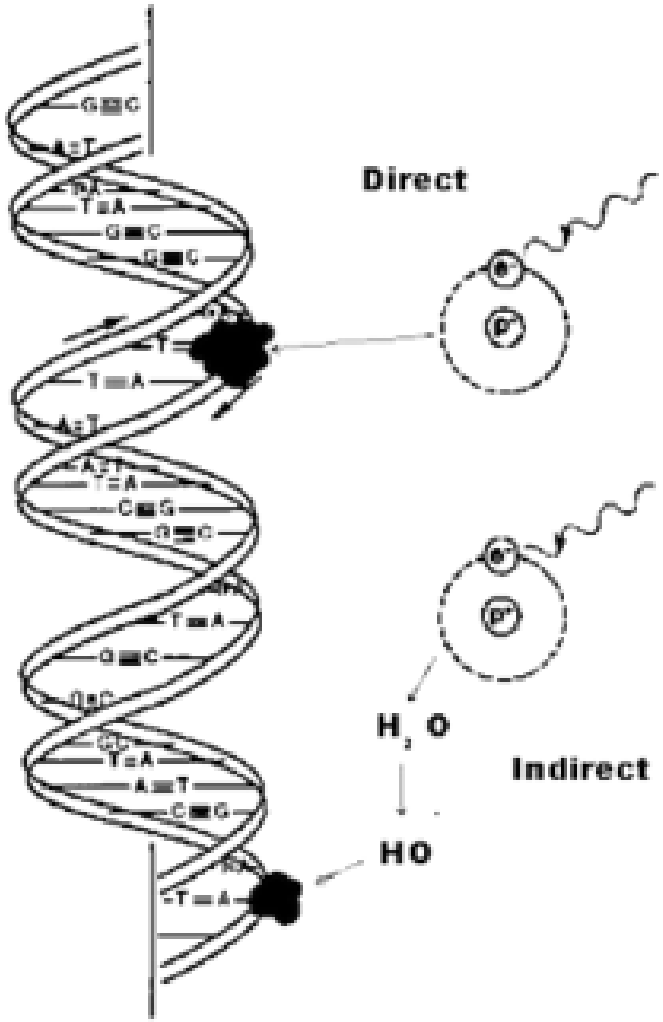
# Title

L. Deceuninck
en H.
Verhoeven

Introduction
Synthesis GNP
    Chemical
    protocol

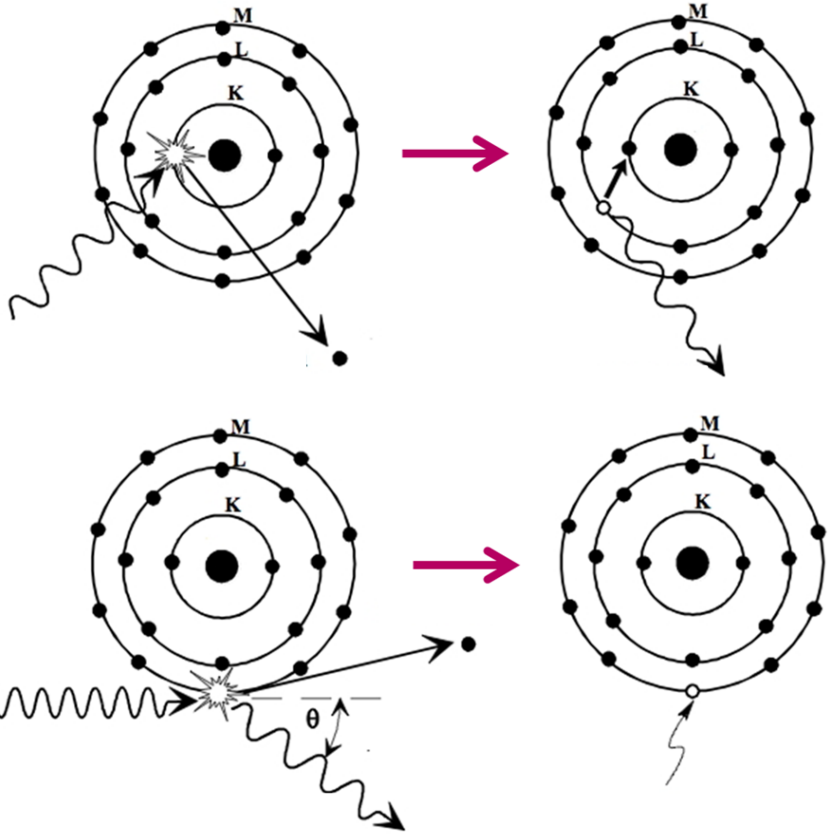
# Cancer treatment

- Chemotherapy
- Surgery
- **Radiation therapy**




Source: https://chem.kuleuven.be/veiligheid/info/ioniserende-st.htm

# Radiosensitization with GNPs




Photoelectric absorption

Compton effect

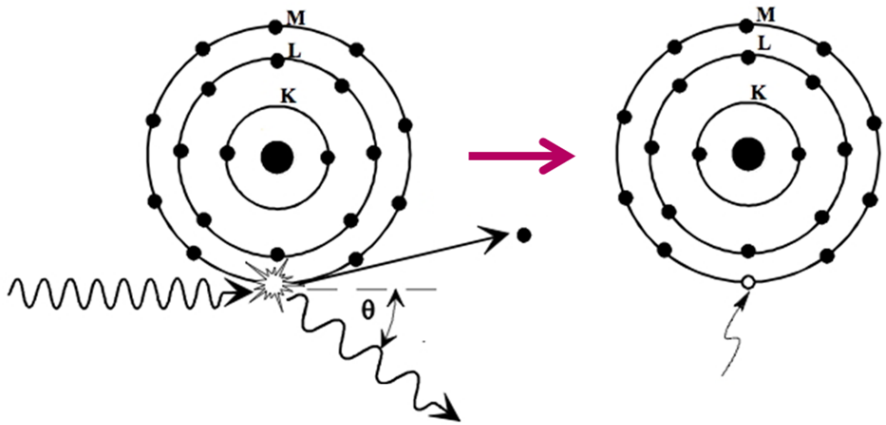
## Why gold?

High atomic number (79)

Bio compatible

# Goal

1. Synthesis
2. Characterization
3. Radiosensitization

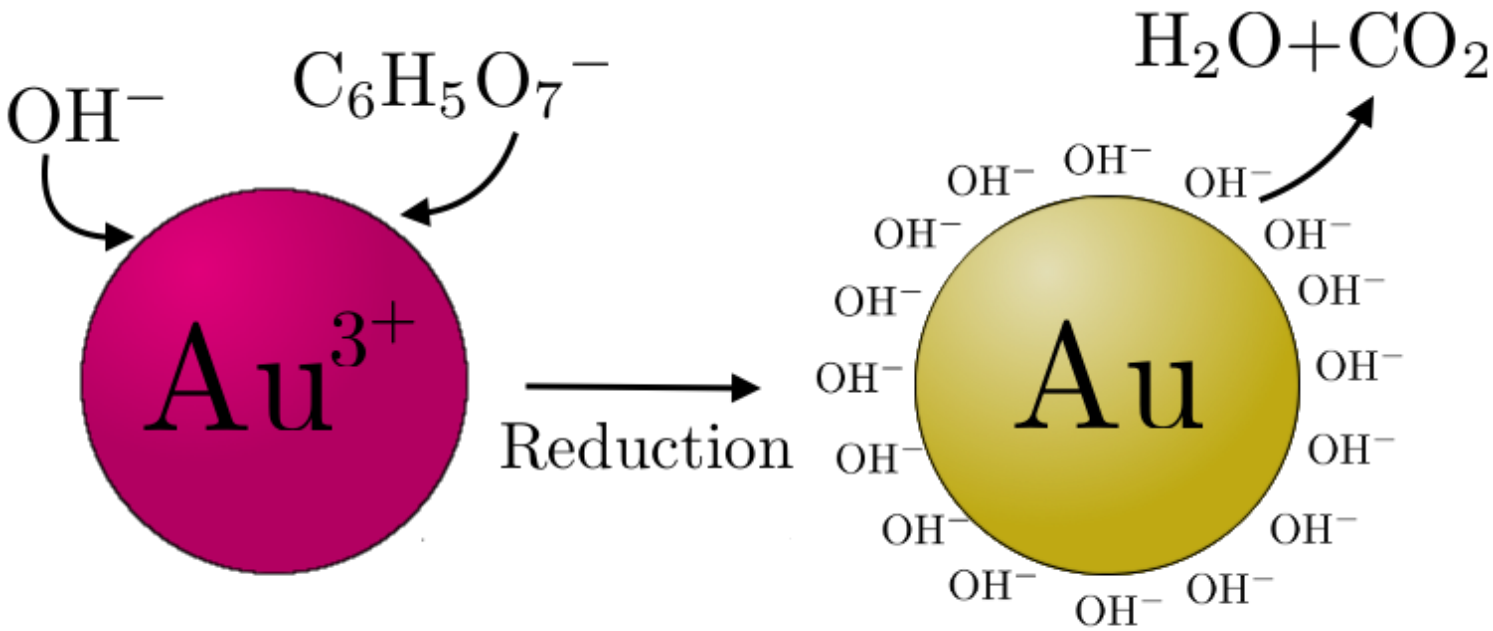


# Chemical protocol


Gold ions: $HAuCl_4$ solution
Reducing agent: $Na_3C_6H_5O_7$

Source:[S. R. Makhsin et all.]

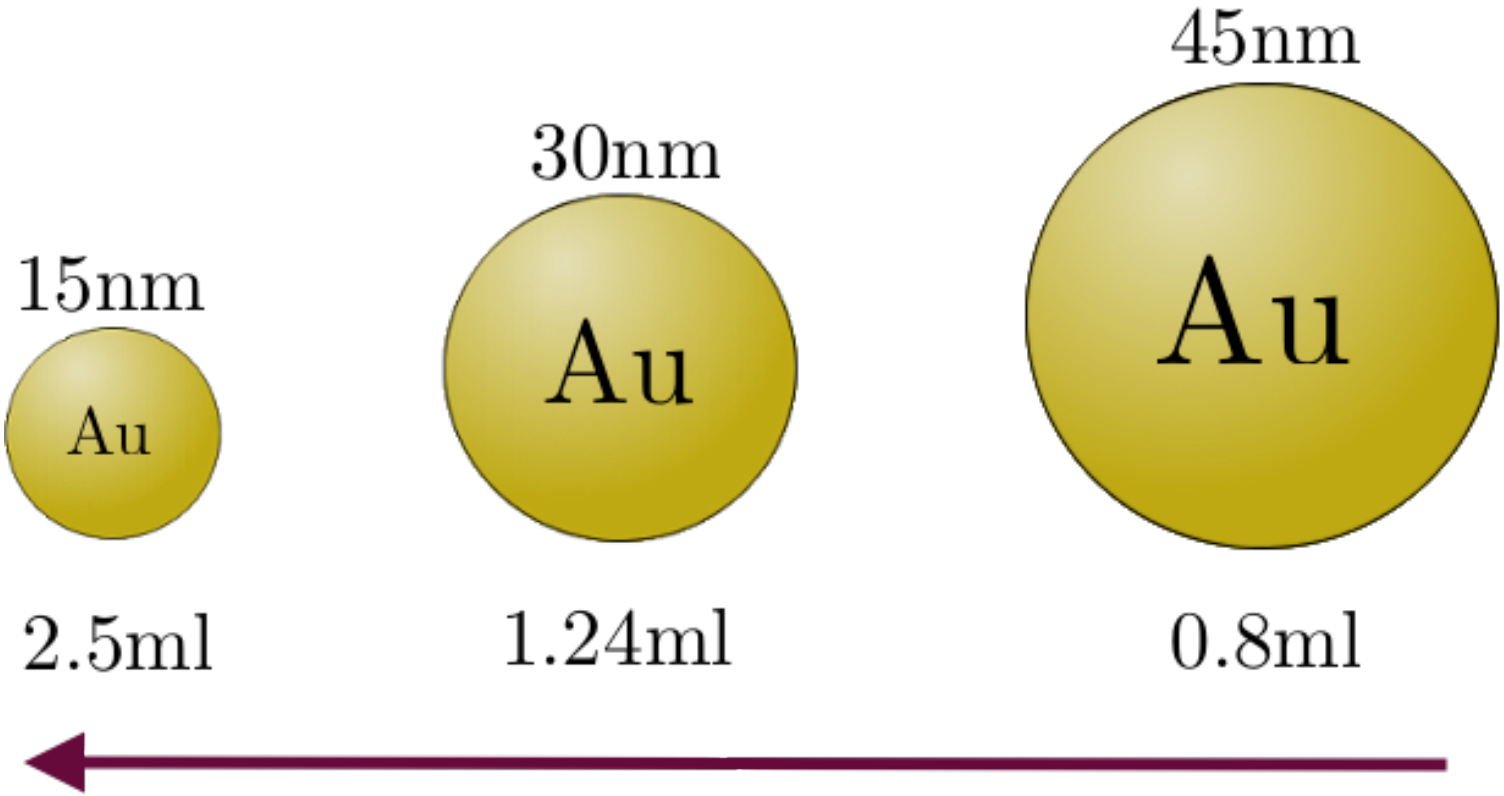
# Chemical protocol




$$6Au^{3+} + C_6H_5O_7^{3-} + 15OH^- \rightarrow Au + 6CO_2 + 10H_2O$$

Source:[S. R. Makhsin et all.]

# Size GNP




Citrate 1%
100ml $HAuCl_4$ 0.01%

# Referenties


(2012) The effects of size and synthesis methods of gold nanoparticle-conjugated MÎśHIgG4 for use in an immunochromatographic strip test to detect brugian filariasis
*S. R. Makhsin, K. A. Razak, R. Noordin, N. D. Zakaria and T. S. Chun*, 2012 November 19
Universiti Sains Malaysia