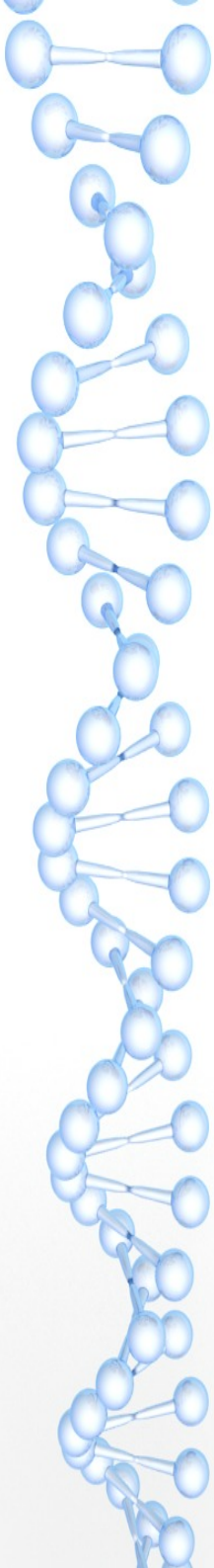
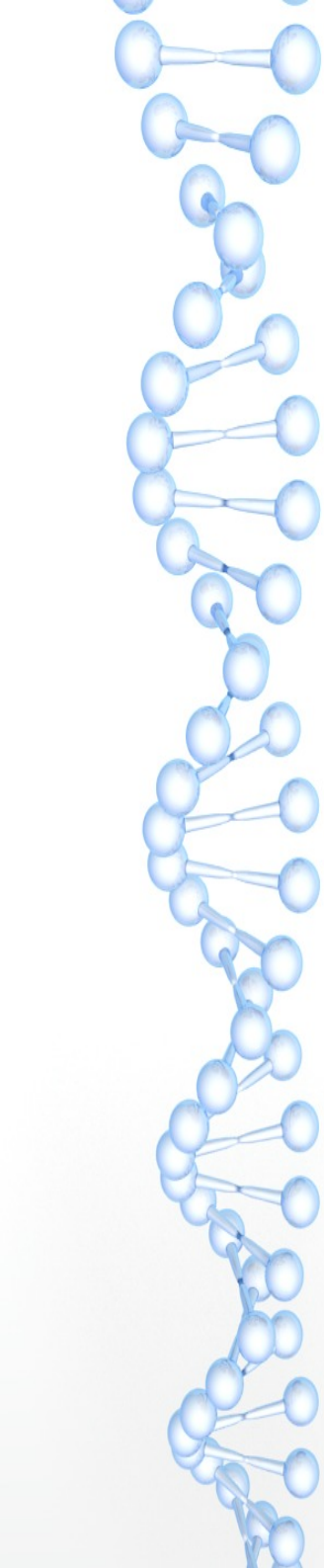


Sekwencjonowanie DNA



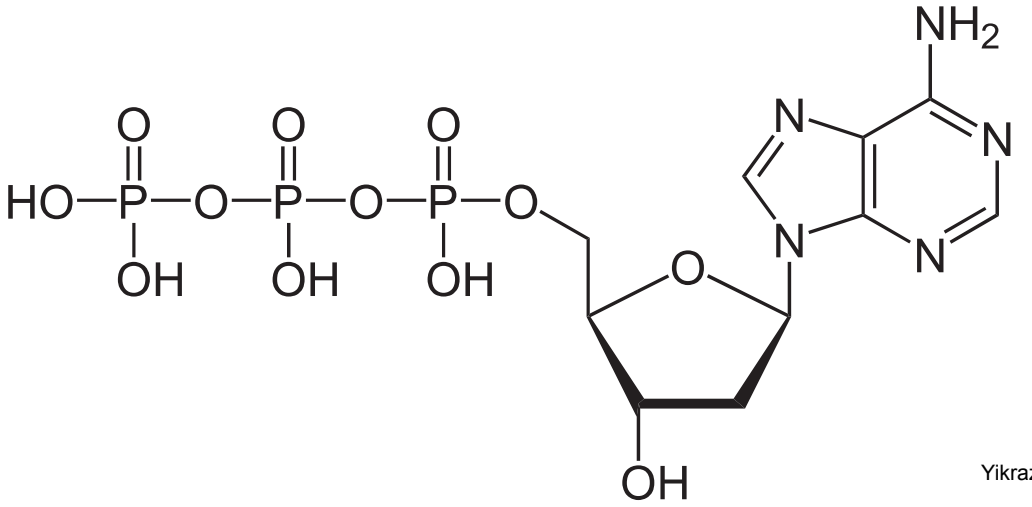
Sekwencjonowanie DNA

- metoda Maxima-Gilberta
- metoda Sangera
- Next Generation Sequencing (NGS)

Metoda Sangera

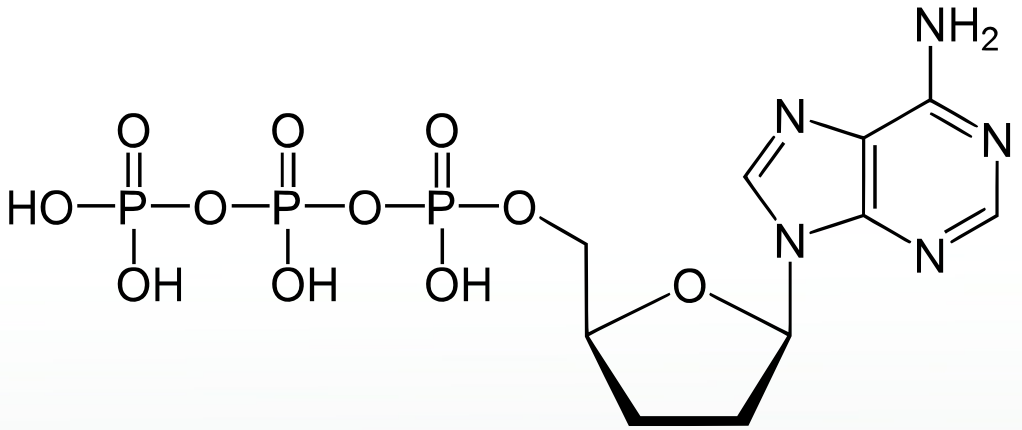
jest oparta na wykorzystaniu 2‘, 3‘-dideoksynukleotydów

dATP



Yikrazuul (wikipedia.org)

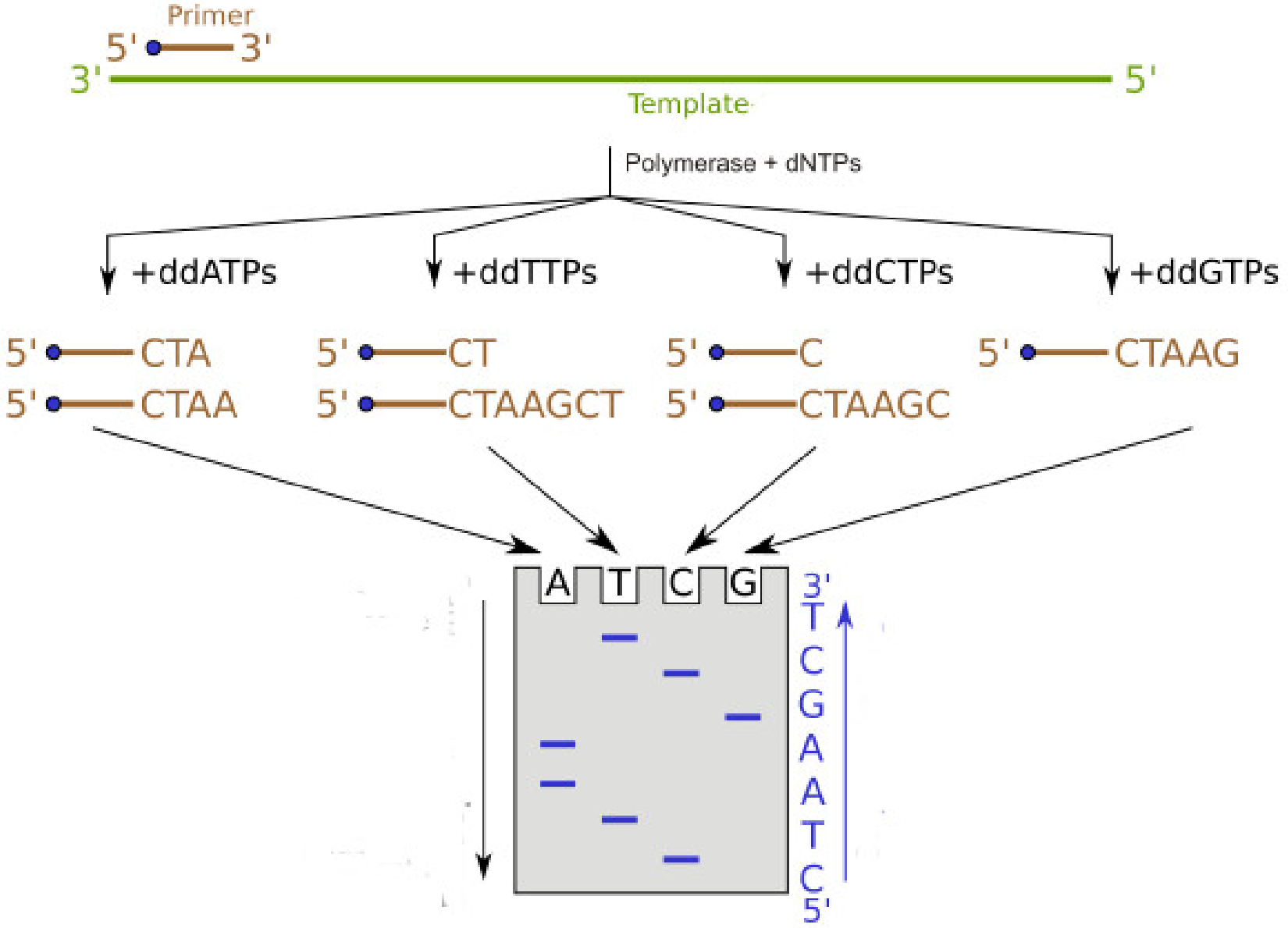
ddATP



NEUROtiker (wikipedia.org)

Dideoksynukleotydy

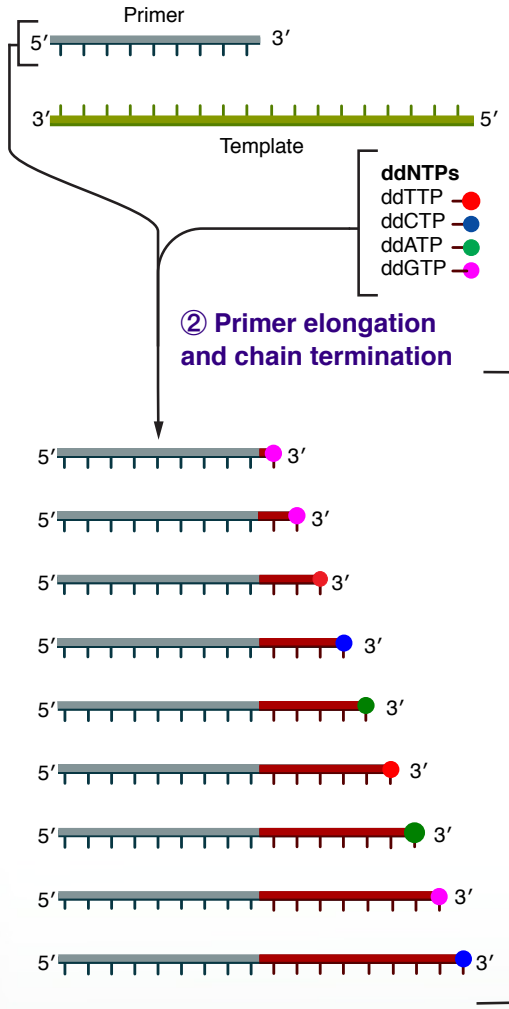
- ddNTP (ddATP, ddTTP, ddCTP, ddGTP)
- polimerazy DNA mogą wbudowywać ddNTP do nowosyntetyzowanej nici
- ddNTP ze wzgledu na brak grupy 3‘-OH powodują terminację syntezy nici DNA



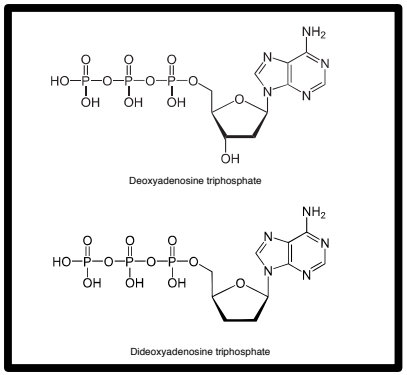
Christoph Goemans (wikipedia.org) - zmienione

① Reaction mixture

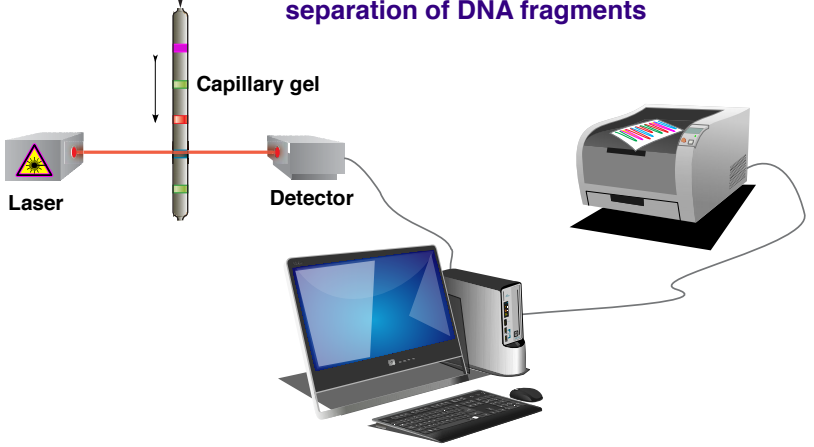
- Primer and DNA template
- DNA polymerase
- ddNTPs with flourochromes
- dNTPs (dATP, dCTP, dGTP, and dTTP)



② Primer elongation and chain termination



③ Capillary gel electrophoresis separation of DNA fragments



Chromatograph

④ Laser detection of flourochromes and computational sequence analysis

Estevezj (wikipedia.org)