

Antimikrobiyal Peptitler

Prof. Dr. Tanıl Kocagöz



ACIBADEM
ÜNİVERSİTESİ

Ortak yanımız nedir?

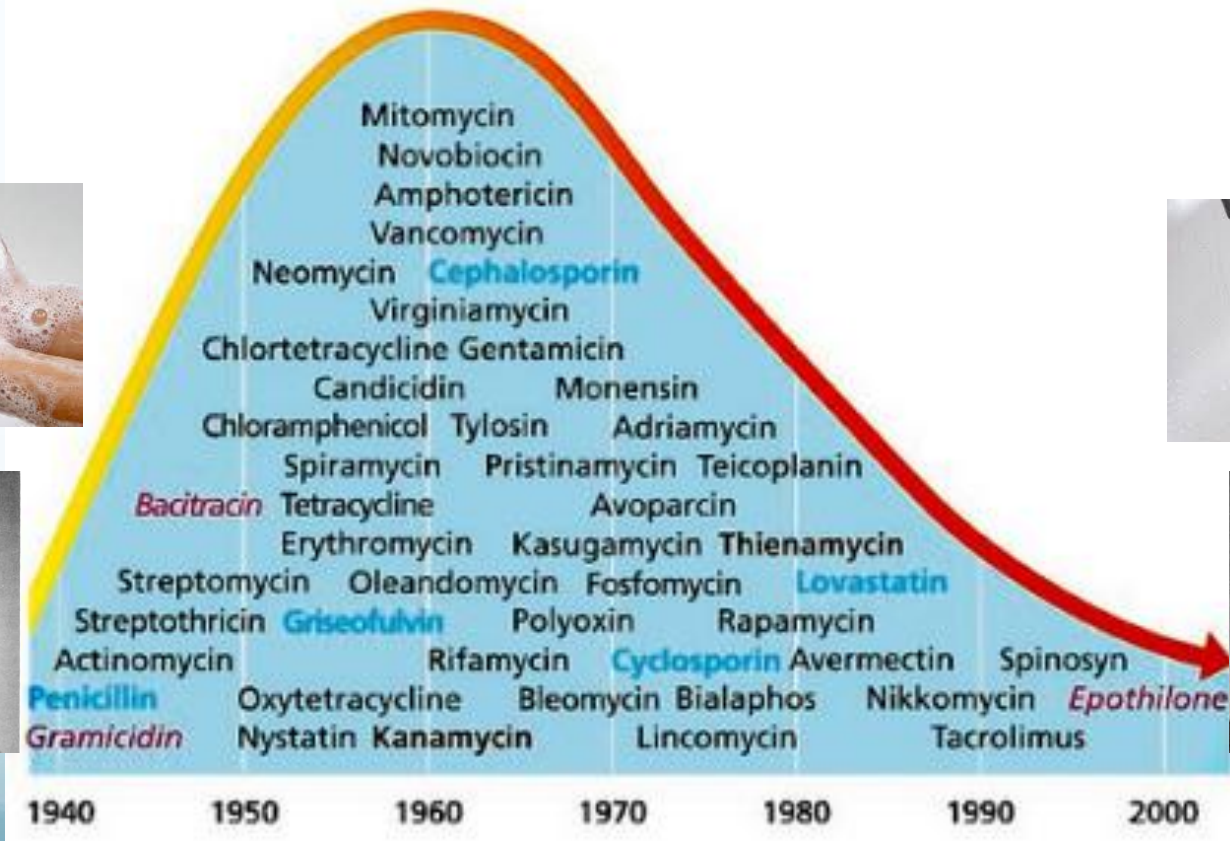
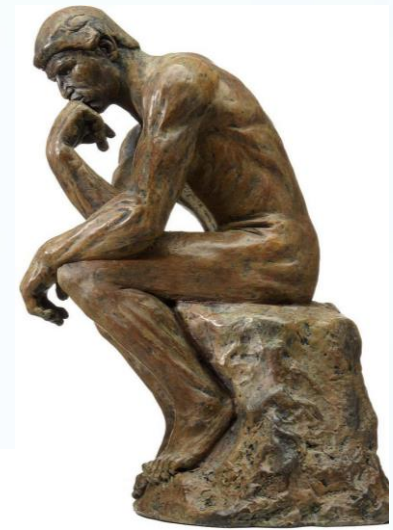


Ortak yanımız nedir?



Peptit antibiyotikler

Semmelweis'dan Semmelweis'a



1940

1950

1960

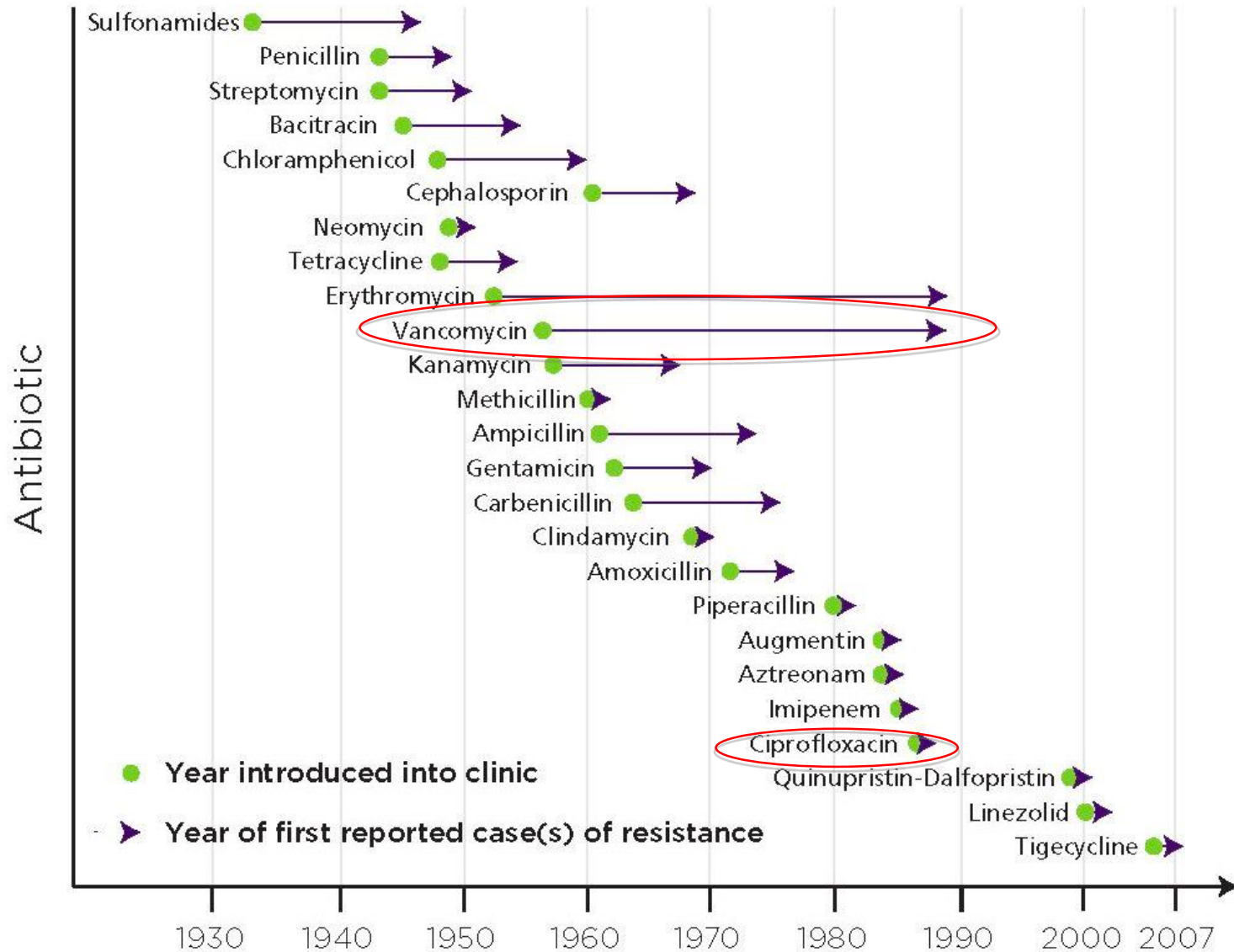
1970

1980

1990

2000

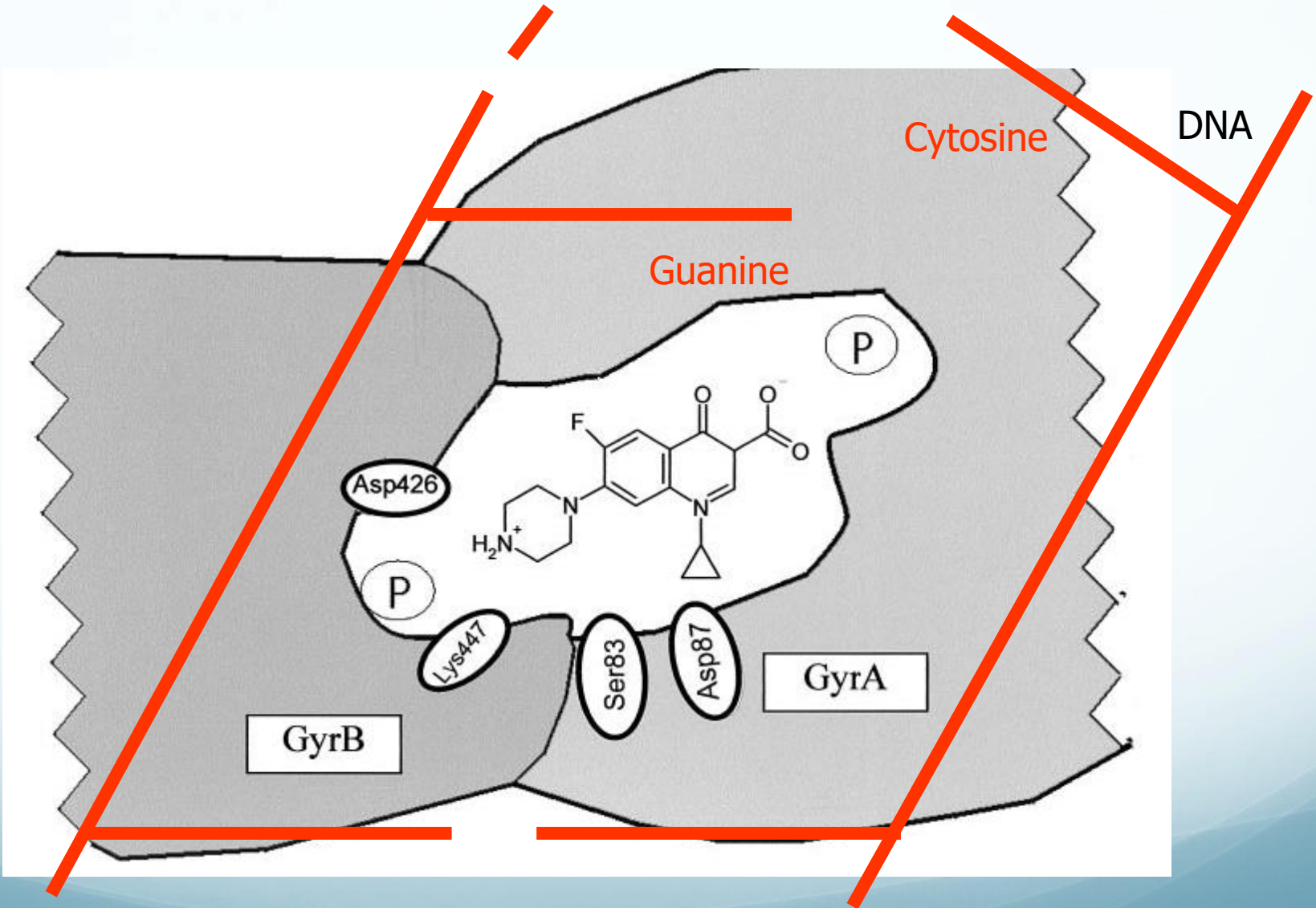
Antibiyotik Kullanımı ve Direnç Gelişme Süreci



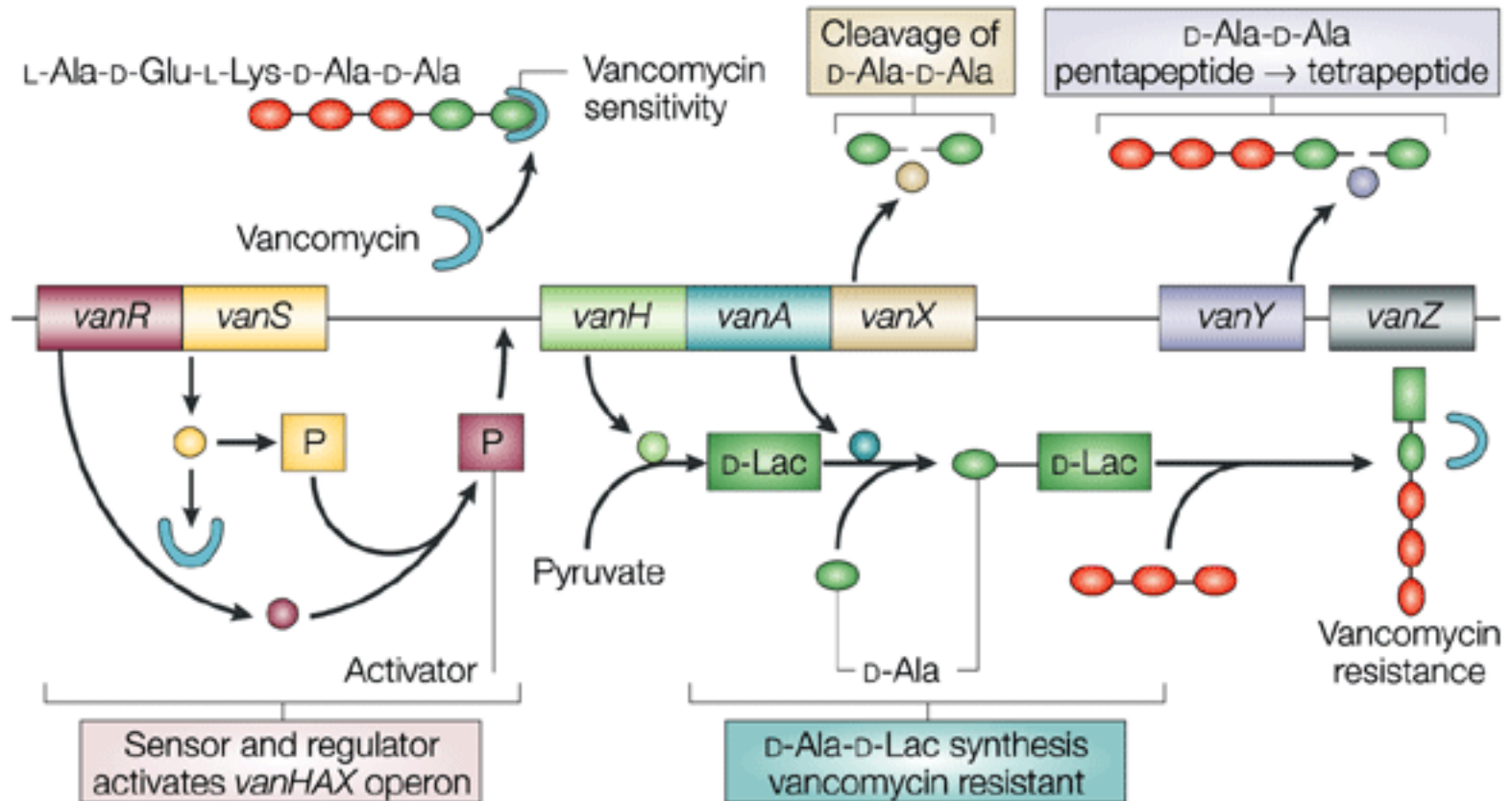
Note: Some of the dates are estimates only.

From: Pray L (Antibiotic R&D.
Cambridge Healthtech Institute, Needham, MA, 2008).

Florokinolon Direnci



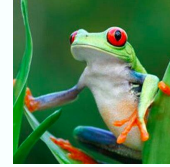
Vancomisin Direnci



Tüm Genom İncelemesi ve Biyoinformatik ile Yeni Antibiyotik Hedeflerinin ve Antibiyotiklerin Belirlenmesi?



Peptit Antibiyotik Genlerinde Türler Arasında Korunmuş Bölgeler



057	-----mrlhhl11tllflvlsag-----sgf-----
058	-----mkiffifaalillaqif-----q-----
059	-----malirktfyflfavffilvqlp-----sgc-qagl--dfsqp
060	-----mrtsylllftlc1llsema-----sgd-----
061	-----mrtflflfvvlffltpak-----n-----
062	-----mr-rlvllltisvlllyqdl-----p-----
063	-----mrtsylllftlc1llmsema-----sgd-----
064	-----mrlhrlllvflmlvp-----pgl-----
065	-----mpgamkiffifaalillaqif-----q-----
066	-----mkiffifaalillaqif-----q-----
067	-----mrtflflfavllffltpak-----n-----
068	-----malirktfyfvfavffilvqqp-----sgc-qagl--efsep
069	-----mr-rlvlllaisllyqdl-----p-----
070	-----mrtsylllftlc1llsema-----sgg-----
071	-----mkl111tlaallv-----
072	-----mrvlffvfgvls1mftvp-----p-----
073	-----malikk1ffflfamffilvqls-----sgc-qagl--dfsqp
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075	-----mktflflfavllfldpak-----n-----



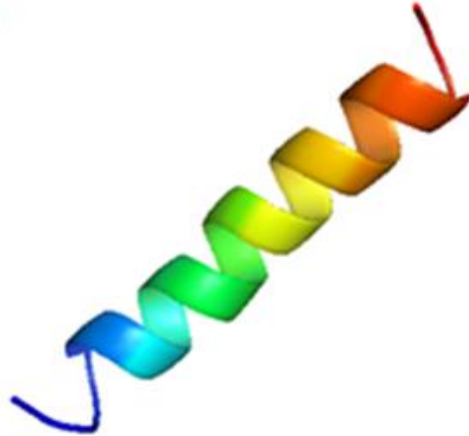
Peptit Antibiyotikler

- Evrim ağacında böcekten insana dek birçok canlıda antimikrobiyal etki gösteren peptit yapıda yüzlerce molekül saptanmış
- Bunları dizgeleyen genler ve yapıları incelendiğinde evrim sürecinde önemli oranda korundukları görülmektedir
- Enzimlerle üretilen ve ribozomda yapılanlar olmak üzere iki grubu vardır
- Enzimlerle üretilen glikopeptitler, basitrasinler, polimiksinler ve gramisidinler geleneksel antibiyotikler arasında yerlerini almıştır
- Ribozomda üretilen peptit antibiyotiklerdir genelde 12 ila 50 aminoasitten oluşan polipeptitlerdir
- Yapıları arginin ve lizin gibi artı yüklü ve nötral hidrofobik yan grupları olan amino asitlerden zengindir

Yapılarına Göre Antimikrobiyal Peptitler

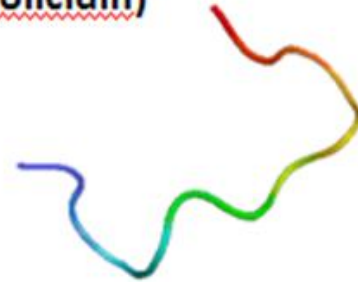
For Educational Use Only

**α -helical
(Magainin)**



For Educational Use Only

**Extended
(Indolicidin)**



For Educational Use Only

**Mixed
(Protegrin-1)**

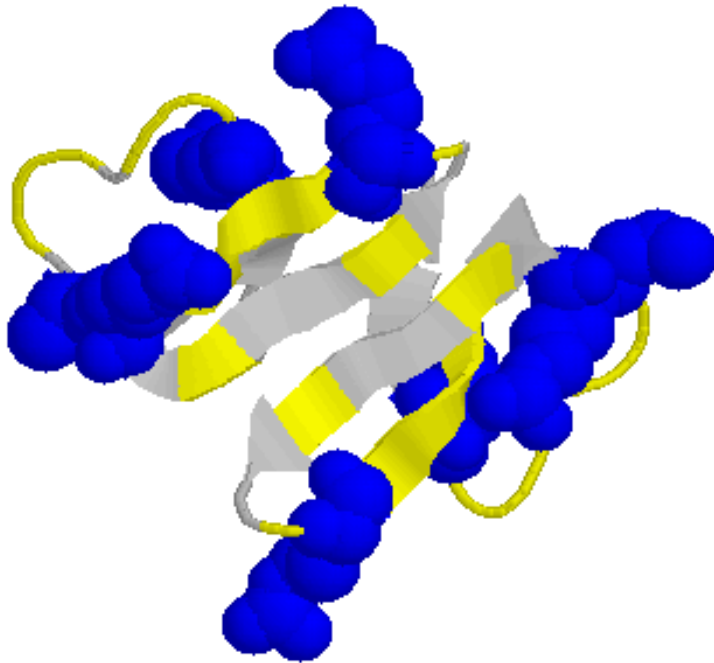


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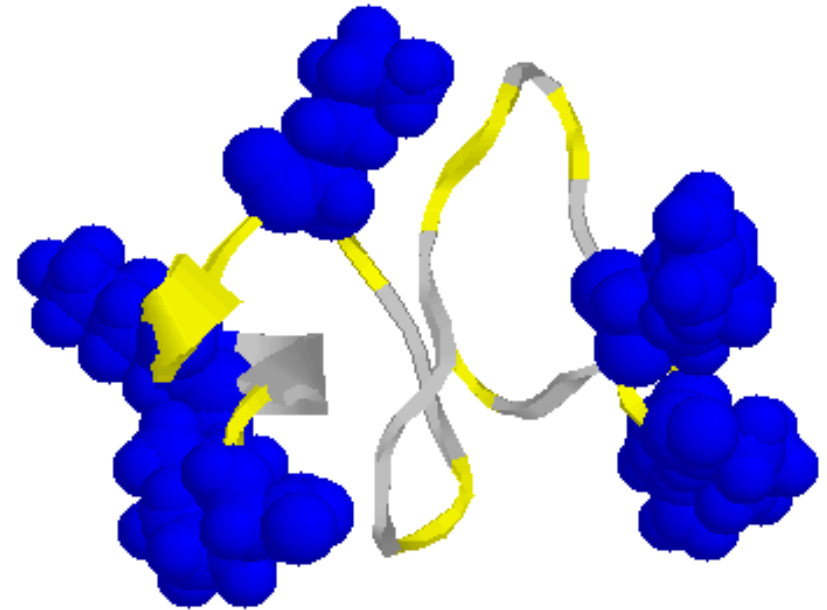
**B-sheet
(defensin.human)**



Defensinler

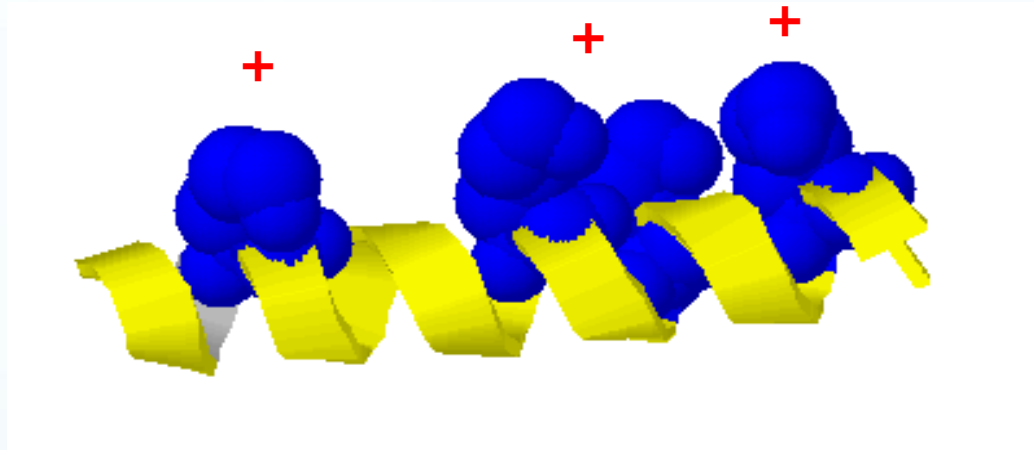


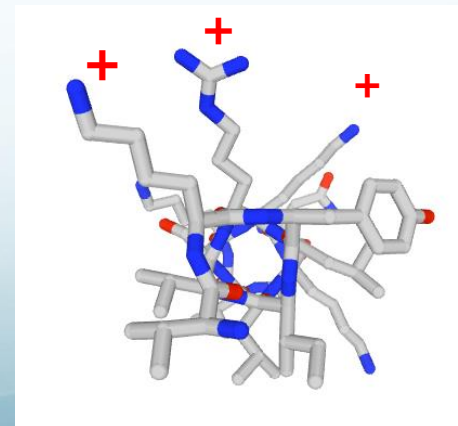
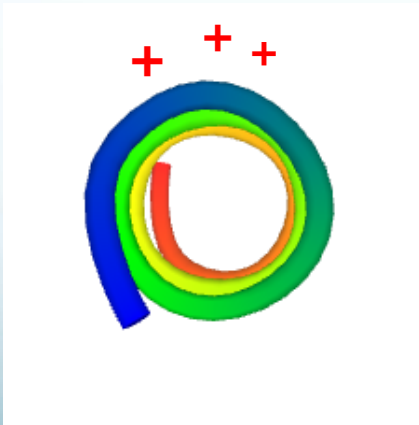
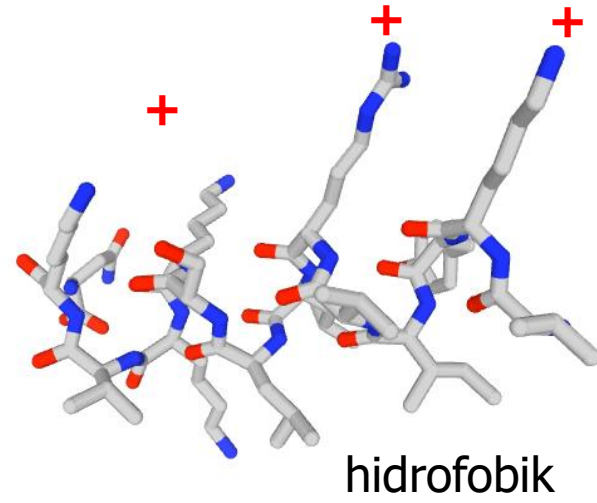
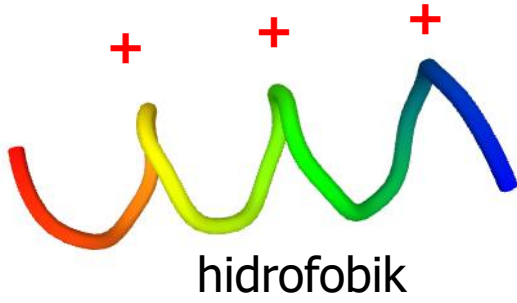
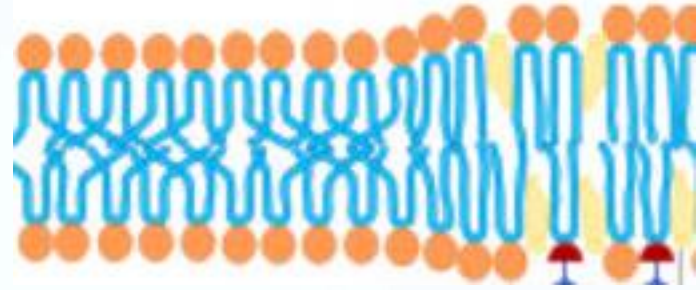
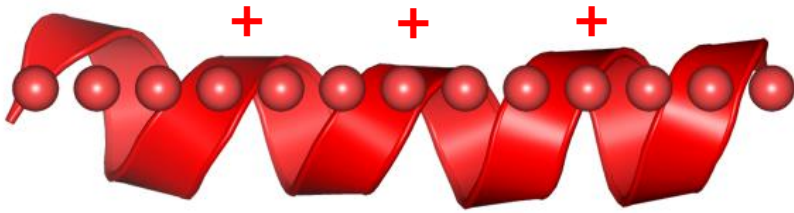
İnsan



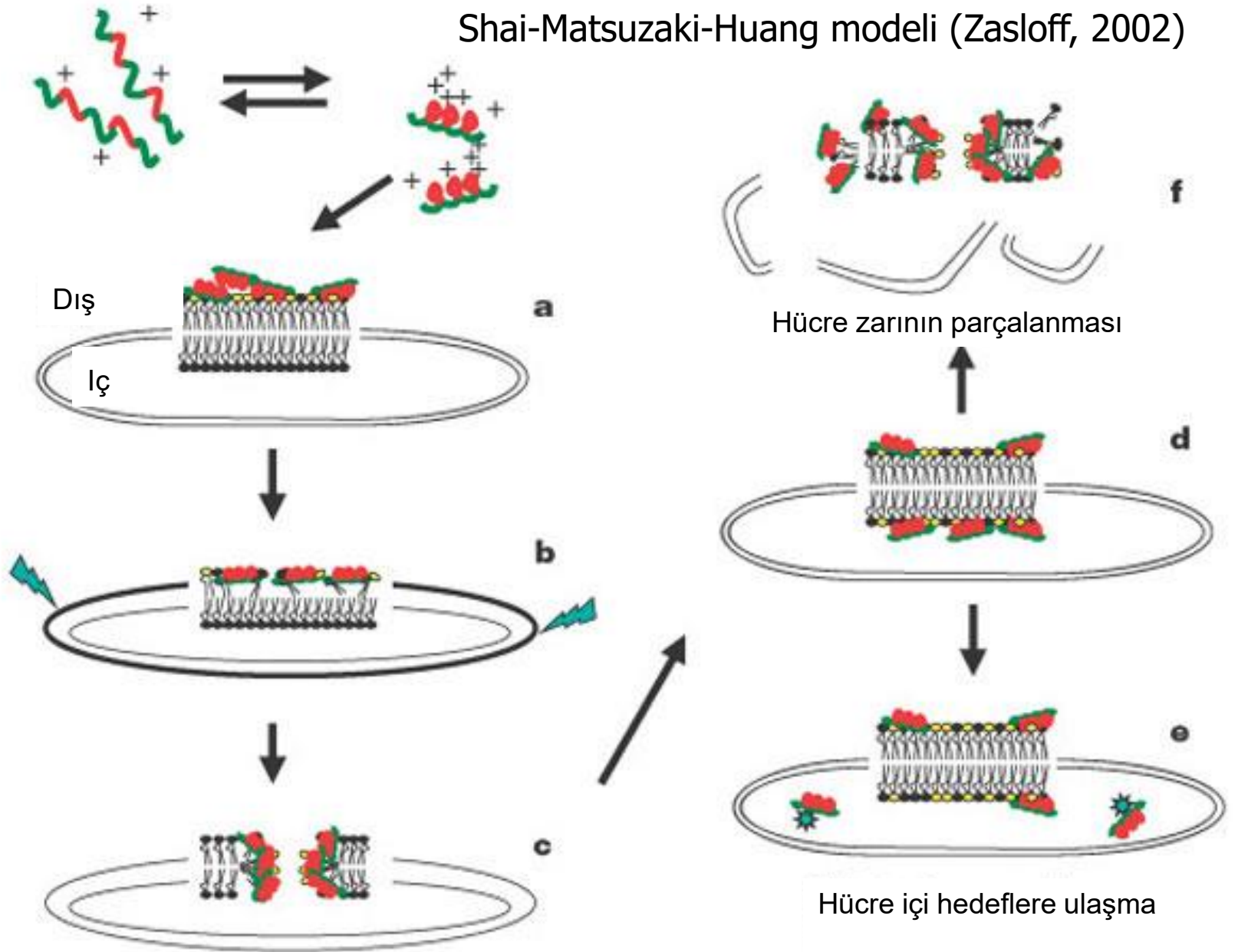
Bitki

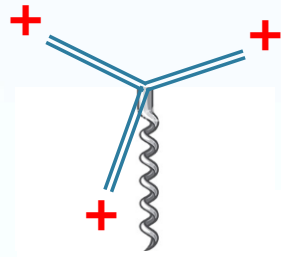
Katelistidinler



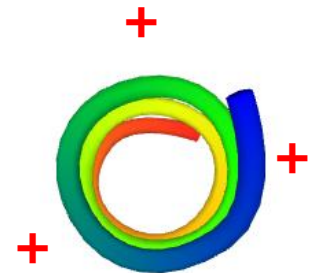
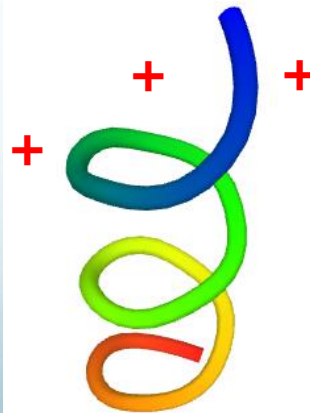
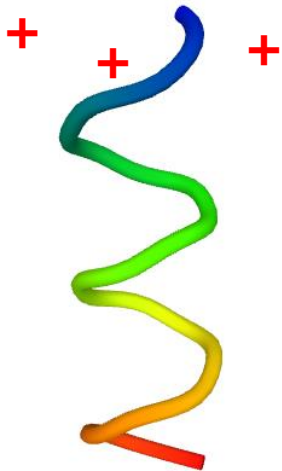
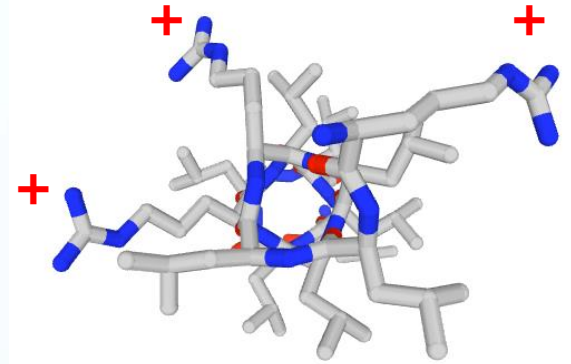
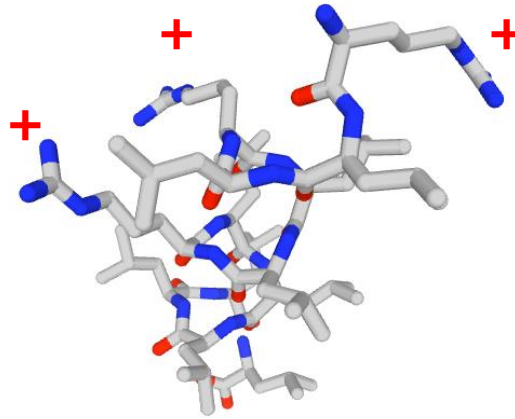
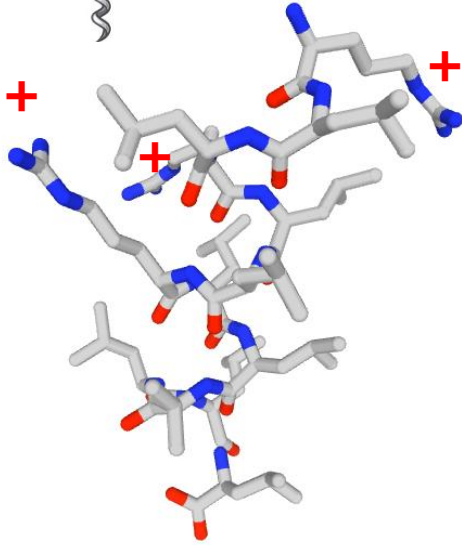


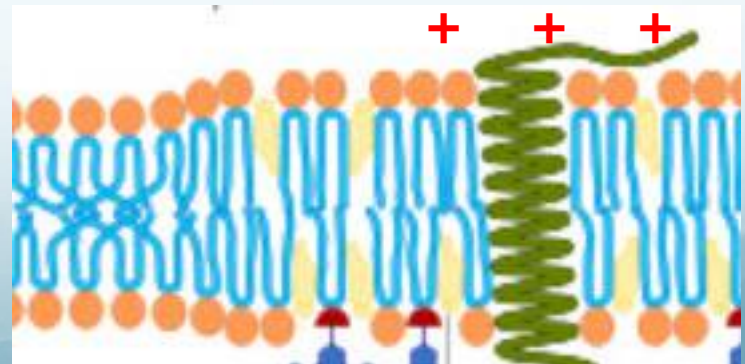
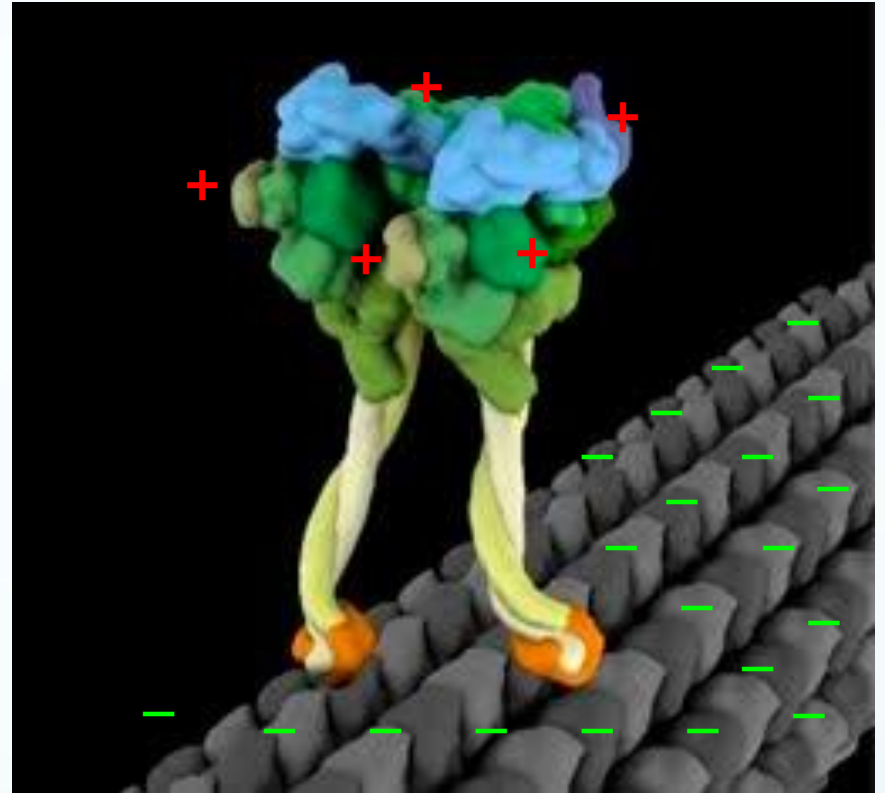
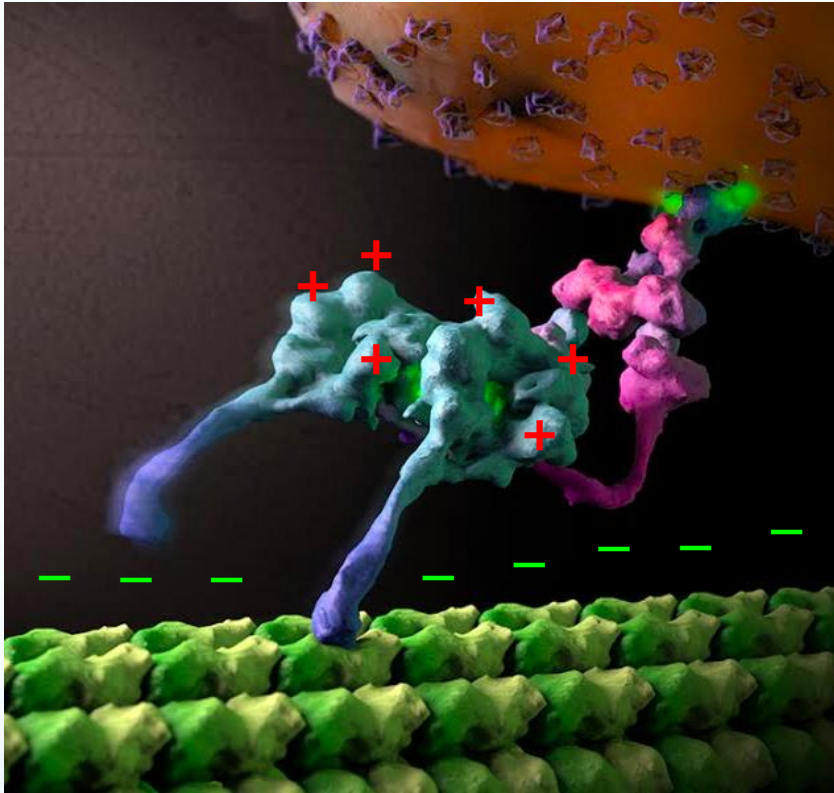
Shai-Matsuzaki-Huang modeli (Zasloff, 2002)



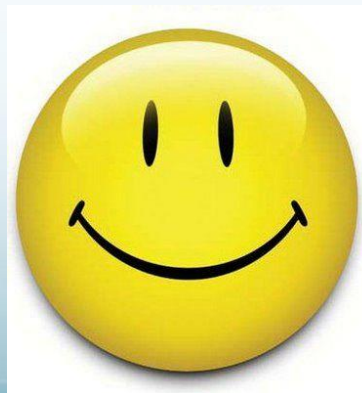
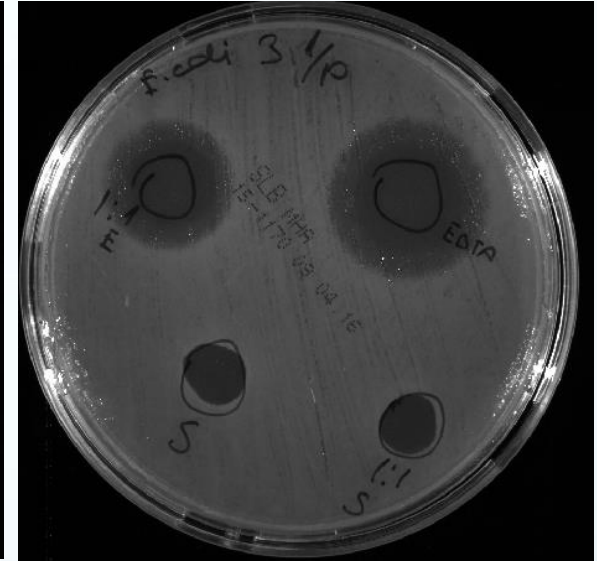
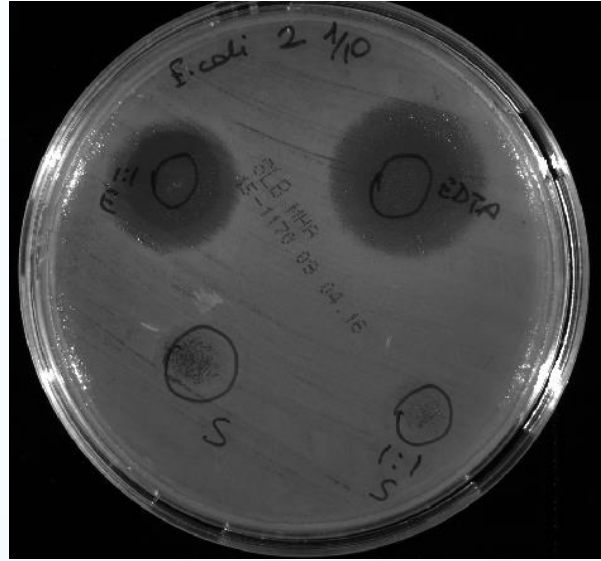
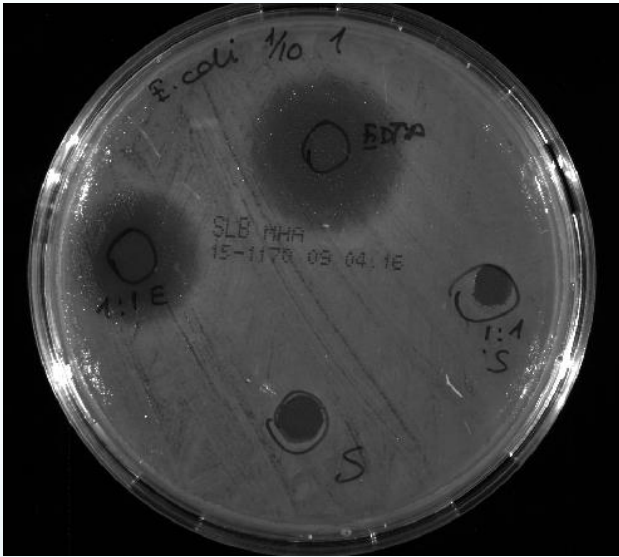


Tirbuşon antibiotik

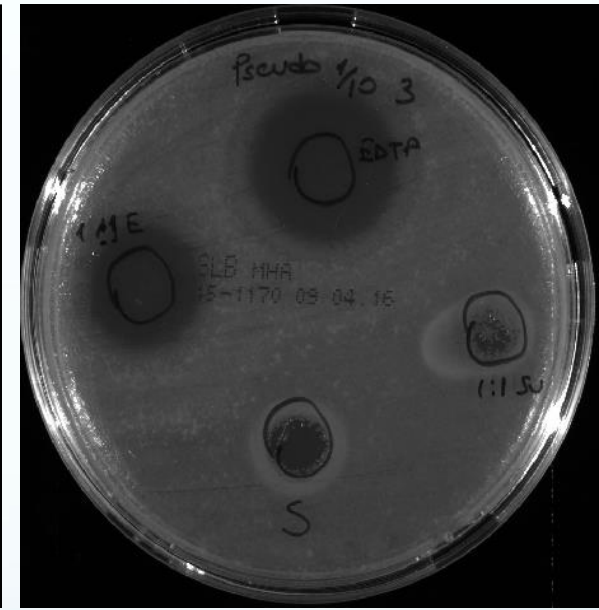
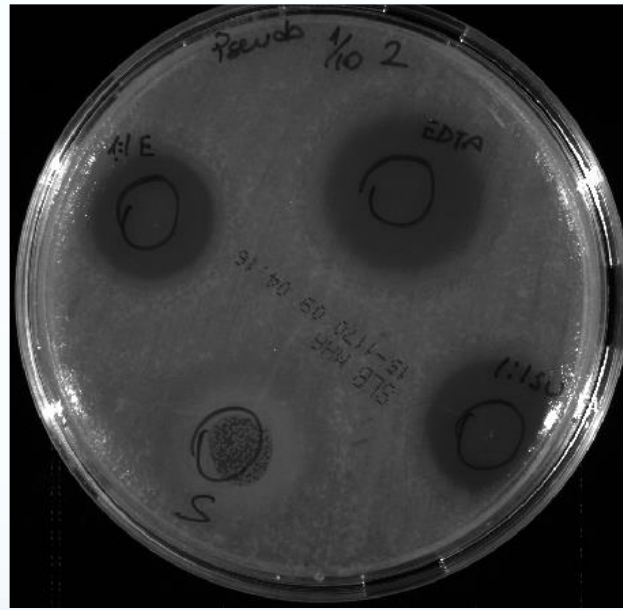
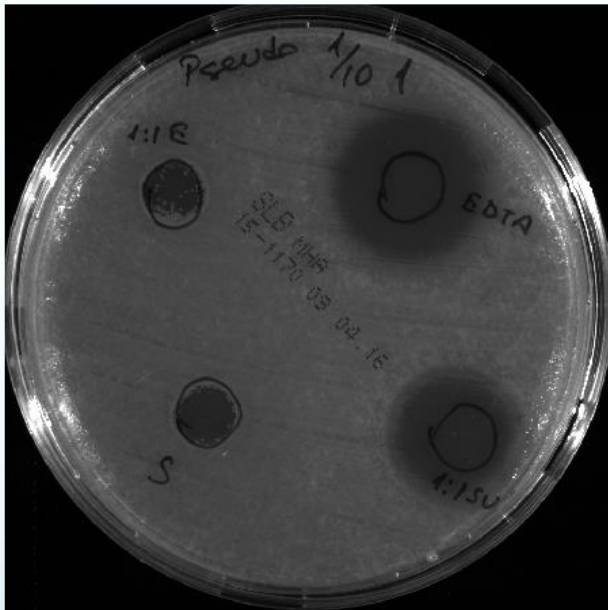




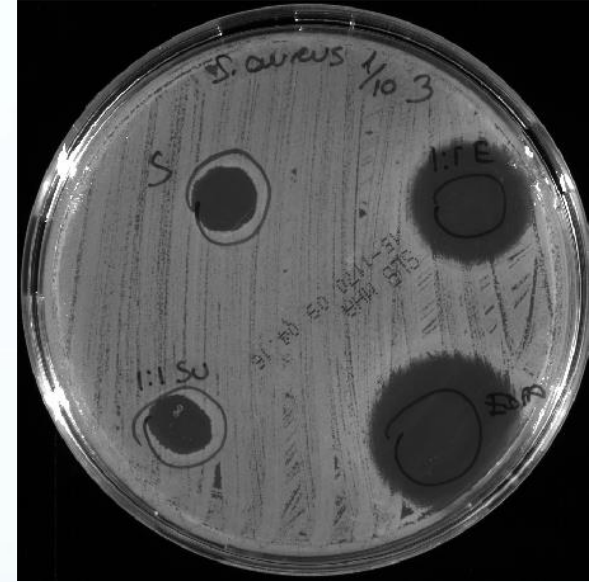
E. coli'ye etkinlik

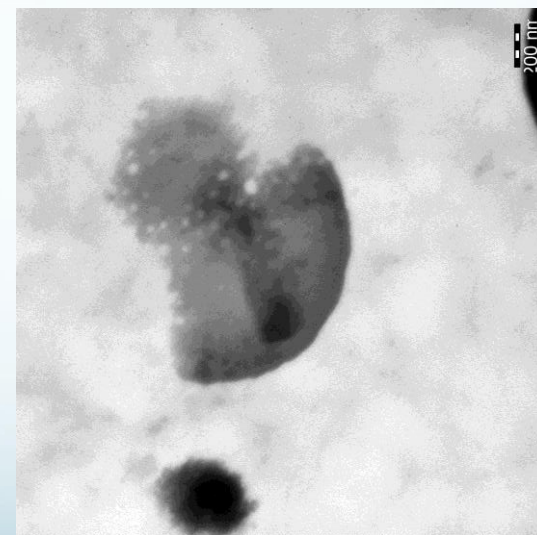
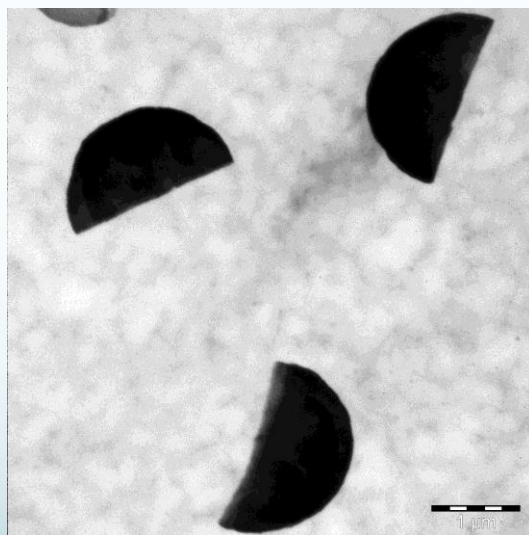
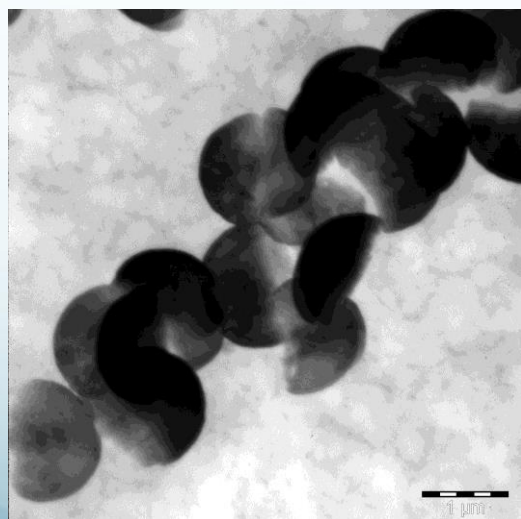
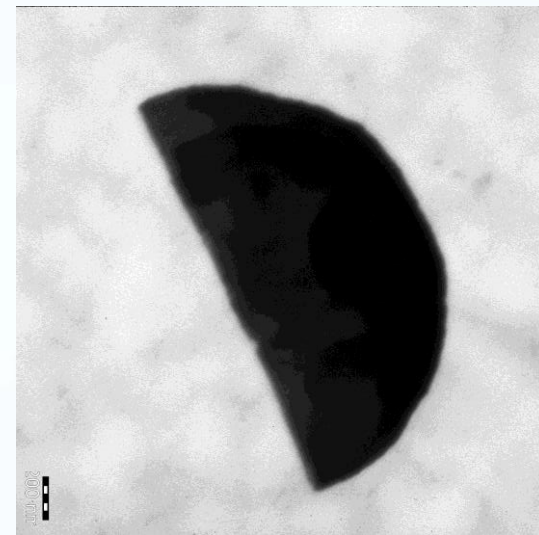
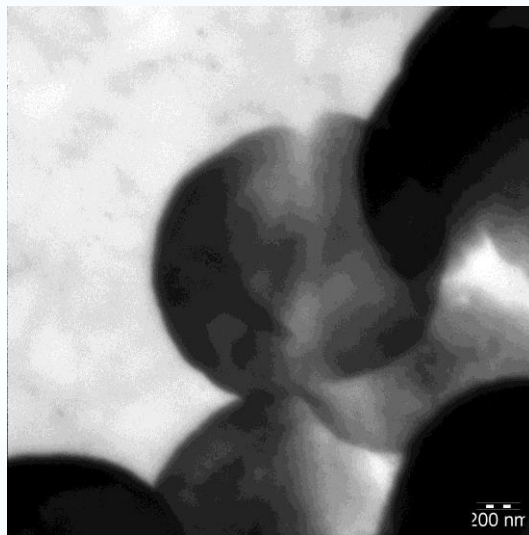
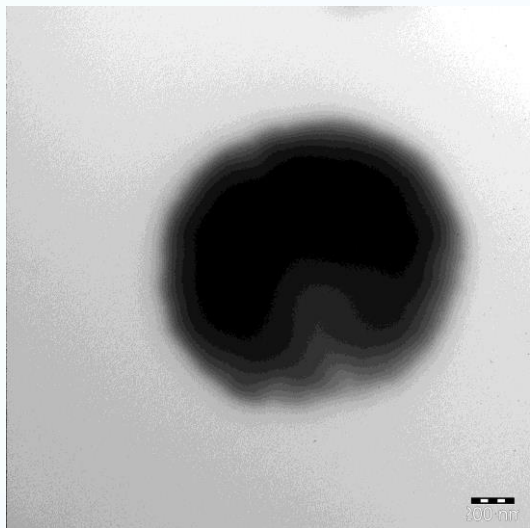


Pseudomonas aeruginosa'ya etkinlik



Staphylococcus aureus'a etkinlik





Teşekkürler

