

Unveil new mechanisms of old drugs

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Sochi, 2019

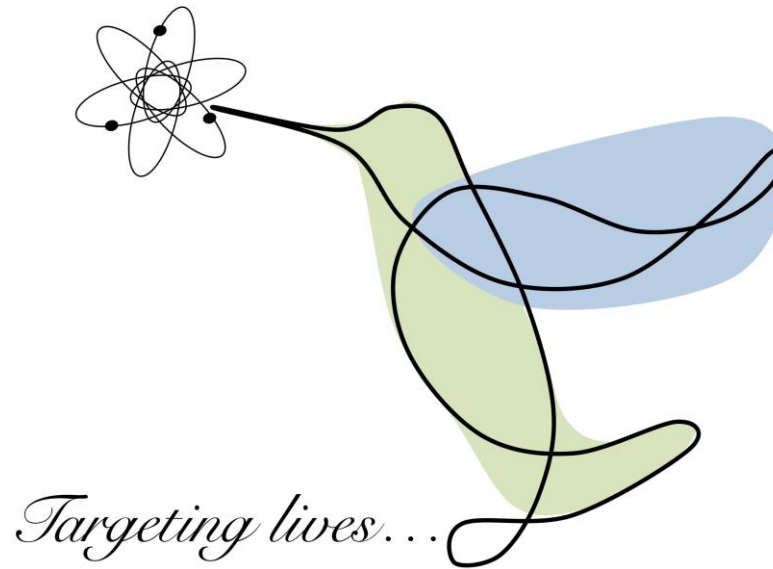


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Radiotarget

Develops radiopharmaceuticals technology, products and services

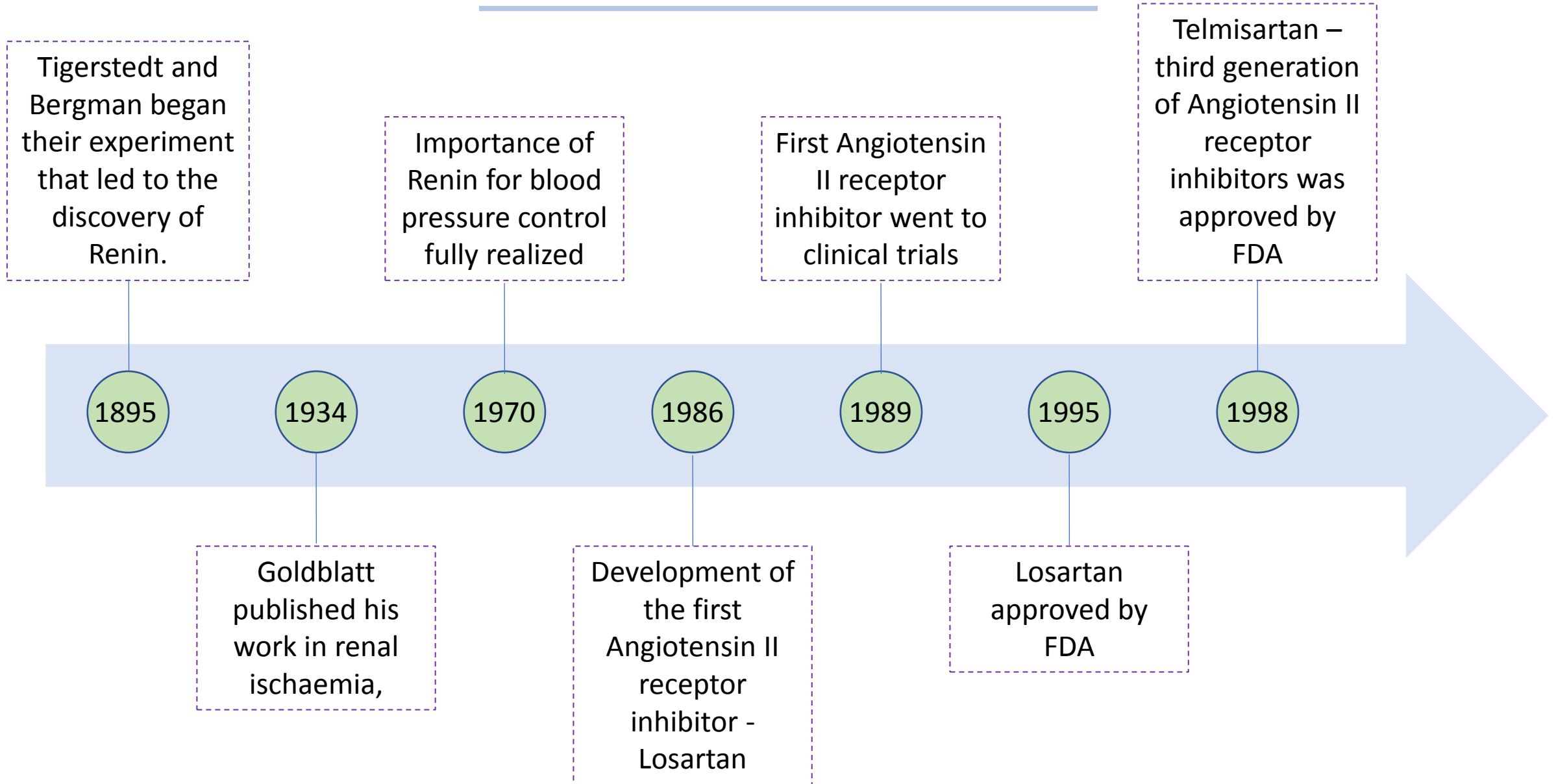
Aims: Develop PET / SPECT imaging agents and cancer treatment using radionuclides



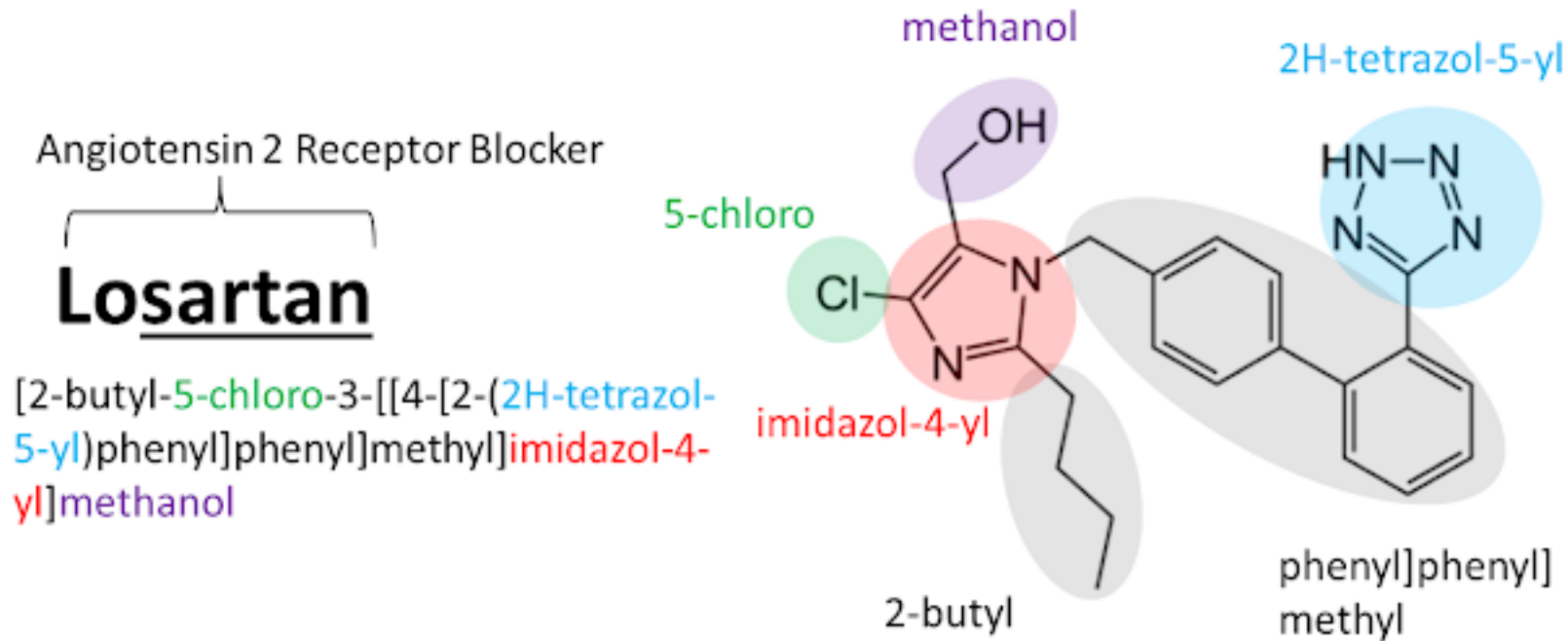
The only startup in Brazil to develop innovative radiopharmaceuticals (in Brazil and worldwide)

Technology based on molecules that will address the radionuclide: aptamers, peptides, nanoparticles...

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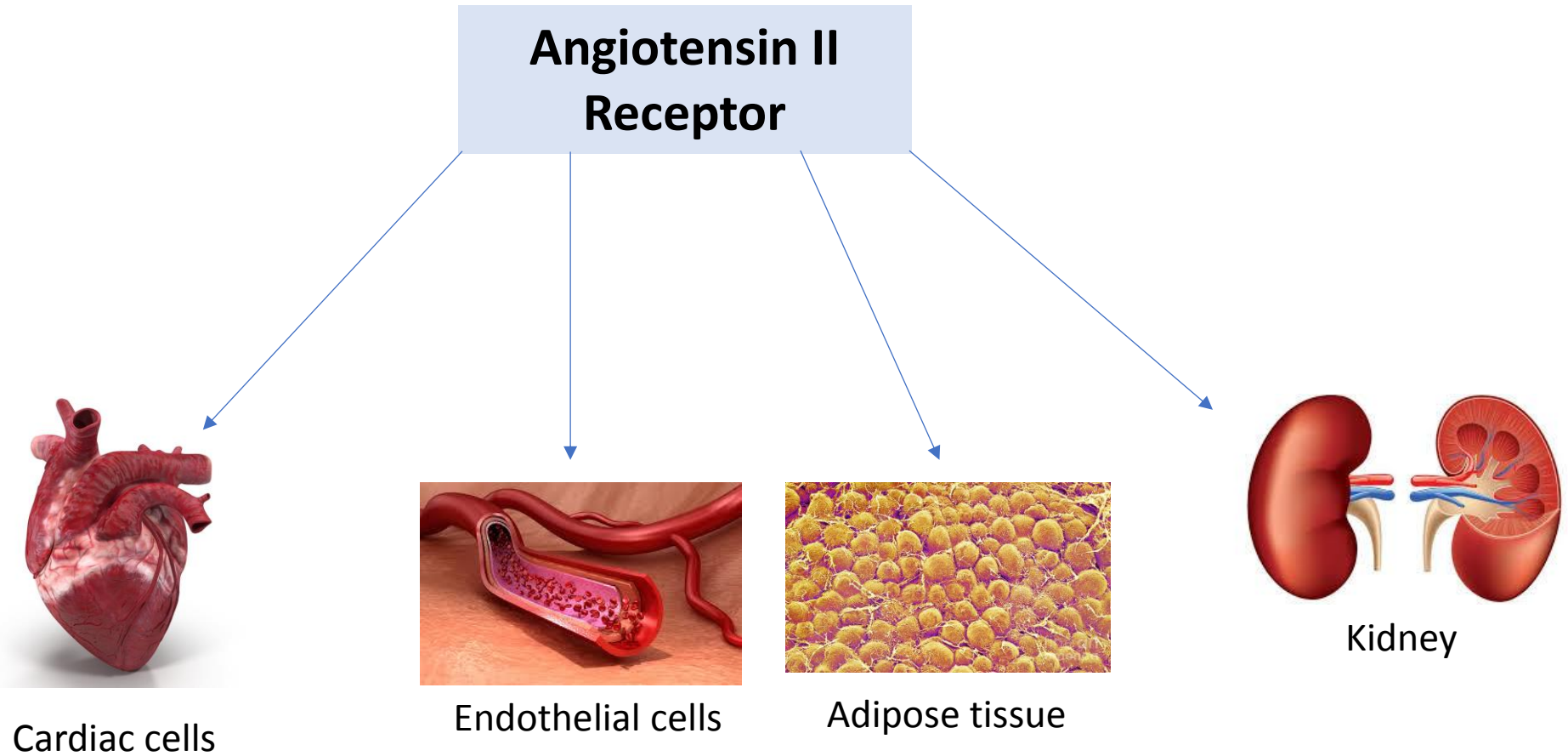


Competitively inhibit the binding of Angiotensin II to AT1R in many tissues

This inhibition prevent vasoconstrictive and aldosterone-secreting effects

Results: It decreases vascular resistance and blood pressure

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Losartan role in cancer

Losartan treatment enhances chemotherapy efficacy and reduces ascites in ovarian cancer models by normalizing the tumor stroma

Yanxia Zhao, Jinghong Cao, Alexander Melamed, Michael Worley, Allison Gockley, Dennis Jones, Hadi T. Nia, Yanling Zhang, Triantafyllos Stylianopoulos, Ashwin S. Kumar, Fotios Mpekris, Meenal Datta, Yao Sun, Limeng Wu, Xing Gao, Oladapo Yeku, Marcela G. del Carmen, David R. Spriggs, Rakesh K. Jain, and Lei Xu

PNAS February 5, 2019 116 (6) 2210-2219; first published February 5, 2019

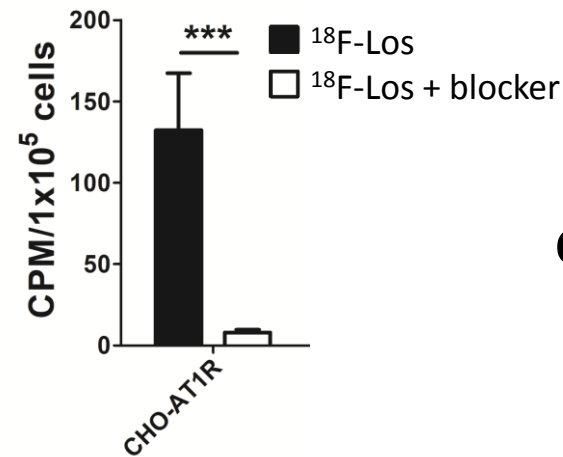
PNAS, February, 2019

Half-life of Losartan = 2 hours

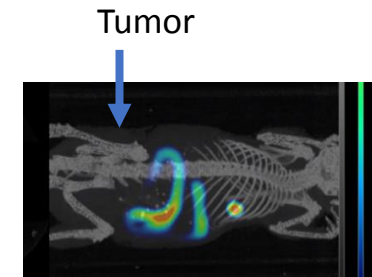
Radiotarget

- ✓ Developed: ^{18}F -Losartan
- ✓ Similar affinity for AT₁R than Losartan (7.9 ± 0.4 nM)
- ✓ Binds to cells *in vitro* (A)
- ✓ Doesn't bind to tumor when injected intravenously (B)
- ✓ It is retained in tumor site when injected intratumorally (C)

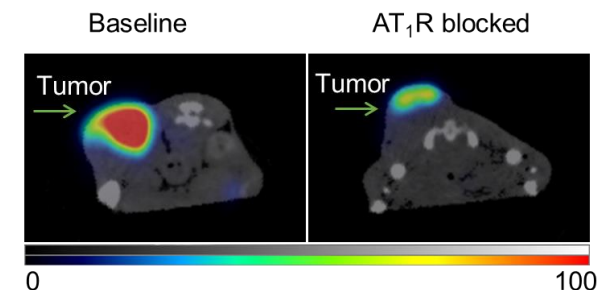
A



B



C



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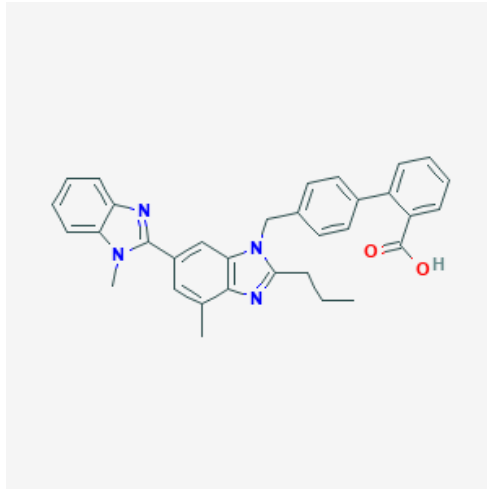
Telmisartan role in diabetes

Cell Biochem Funct. 2019 Mar 25. doi: 10.1002/cbf.3383. [Epub ahead of print]

Telmisartan protects against high glucose/high lipid-induced apoptosis and insulin secretion by reducing the oxidative and ER stress.

Wang Y¹, Xue J¹, Li Y¹, Zhou X², Qiao S¹, Han D².

Cell Biochem Funct., March, 2019



Several groups

- ✓ Developed: ¹¹C-Telmisartan
- ✓ **Challenge:** discover mode of action in diabetes
- ✓ Potential use for the diagnosis of multiple sclerosis? (Radiotarget Project)

Half-life of ¹¹C-Telmisartan = 24 hours

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