

***48. JAHRESTAGUNG BERUFSVERBAND  
DEUTSCHER NUKLEARMEDIZINER E.V.***

**ENLARGED SUPPLY CAPACITIES OF N.C.A.  $^{177}\text{Lu}$  AND  $^{225}\text{Ac}$**

Francesco Sergi, 21.9.2019



## **PRECISELY FOR ME.**

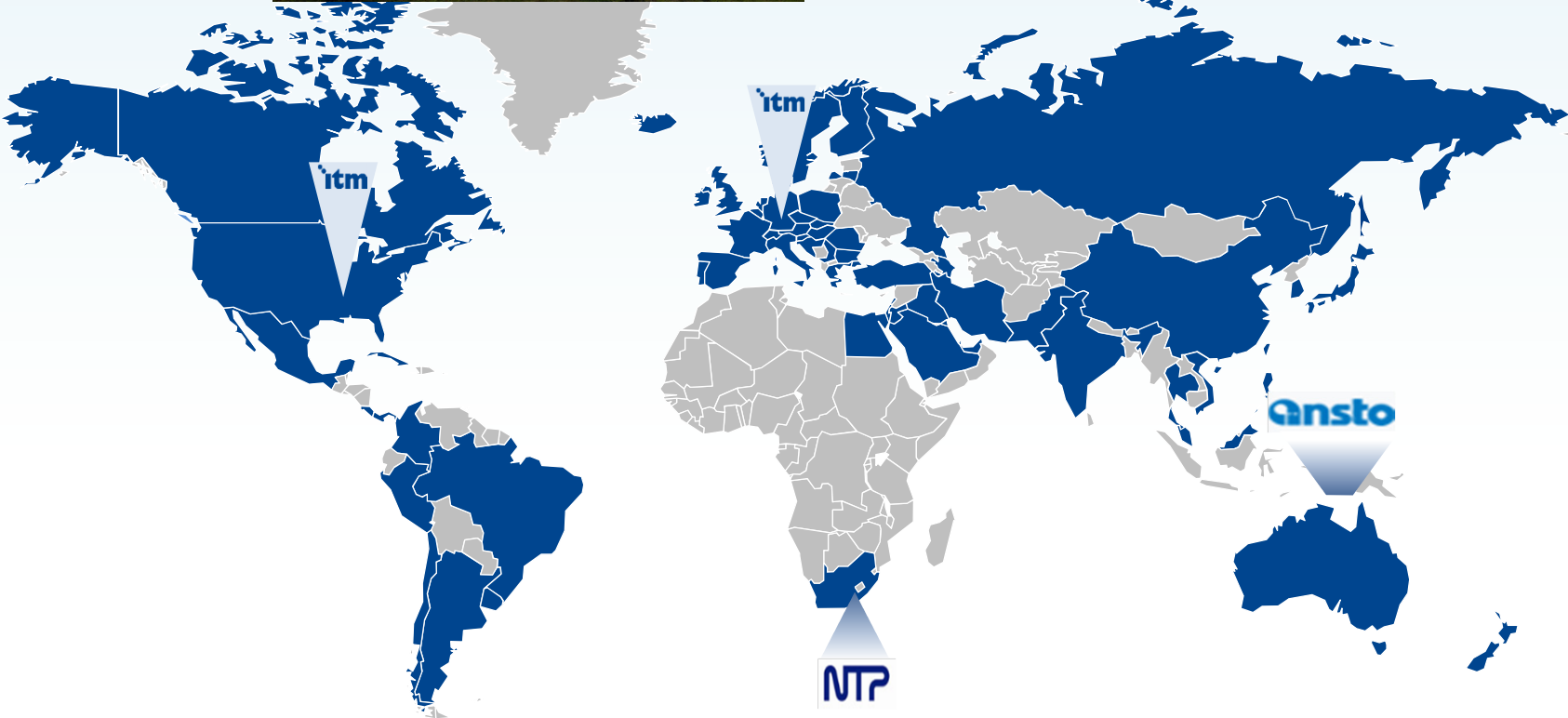
Dedicated to giving cancer patients  
better answers than „maybe“.

## WE ARE GROWING

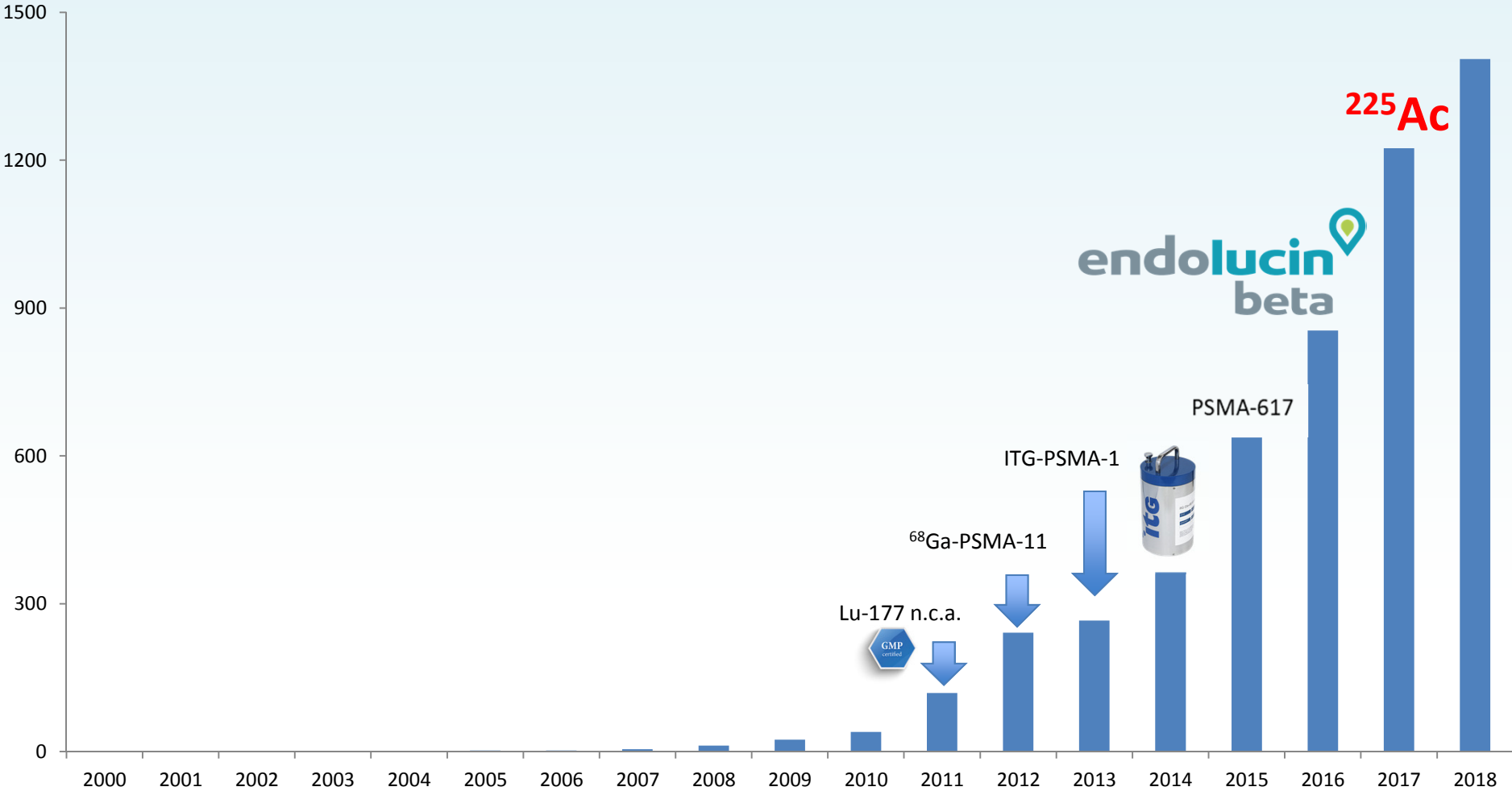
- Founded in 2004 in Garching, Munich
- Privately held biotechnology and radiopharmaceutical group of companies
- Over 200 highly trained employees
- Next generation radiopharmaceuticals & GMP grade radionuclides



# WE ARE EXPANDING THE CAPACITY



# WE SHAPE THE TRENDS IN THERANOSTICS



# NOT „ONLY“ RADIONUCLIDES...

## Non carrier added Radionuclides

- $^{177}\text{Lu}$ ,  $^{225}\text{Ac}$ ,  $^{68}\text{Ga}$

## Production Tech. & Chem.

- Synthesizers and consumables

## Quality Control

- Compact & fully integrated HPLC system

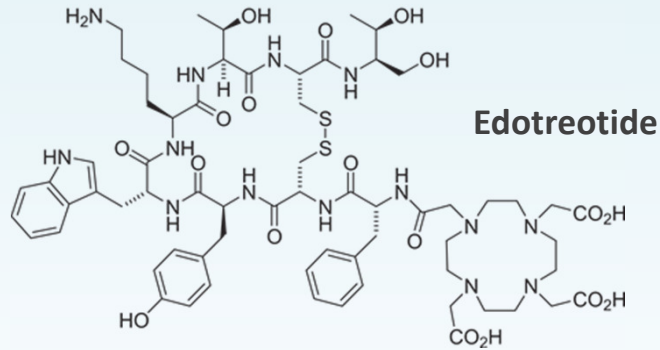
## Ready to use Products

- TOCscan<sup>®</sup> and Solucin<sup>®</sup> (in Phase III Clinical Trial)



# THERANOSTIC PAIR IN PIPELINE

**$^{68}\text{Ga}$**   
 $\beta^+$   
 67.71 m



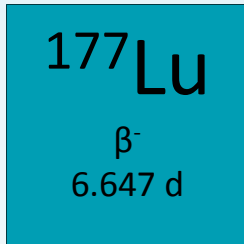
**$^{177}\text{Lu}$**   
 $\beta^-$   
 6.647 d

**tocscan** 

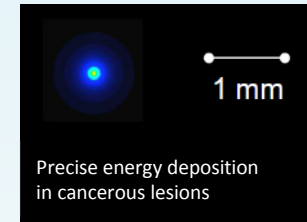
**solucin** 

Indication	Product	Discovery	Preclinical	Phase I	Phase II	Phase III	Marketed
Neuroendocrine Tumor (NET) Therapeutic	<b>solucin</b>  n.c.a. $^{177}\text{Lu}$ -Edotreotide						
Neuroendocrine Tumor (NET) Diagnostic	<b>tocscan</b>  $^{68}\text{Ga}$ -Edotreotide						

# ENDOLUCIN BETA – ESTABLISHED WORLDWIDE



- Low energy beta ( $\beta^-$ ) emitter  
 $E_{\text{max}} = 0.498 \text{ MeV}$   
 $t_{1/2} = 6.647 \text{ d}$
- Gamma radiation for precise dose localization during therapy. **Allows for low dose SPECT/CT scan.**  
E (%): 113 keV (6.17), 208 keV (10.36)



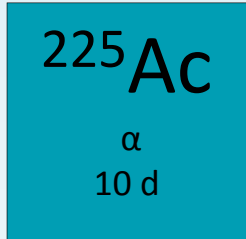
# endolucin<sup>®</sup> beta

EndolucinBeta<sup>®</sup> 40 GBq/ml Radiopharmaceutical Precursor, Solution  
Active Substance: no-carrier-added (n.c.a.) Lutetium ( $^{177}\text{Lu}$ ) Chloride





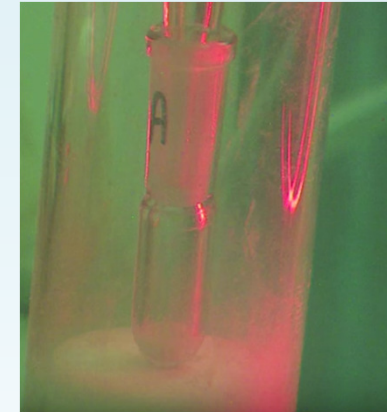
# <sup>225</sup>Ac – GENERAL INTRODUCTION



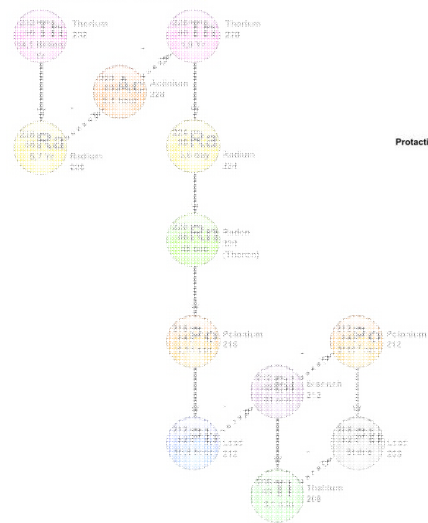
5.83 MeV α  
Half-life 10 d)  
4 Alpha particles with high LET

### Key Features:

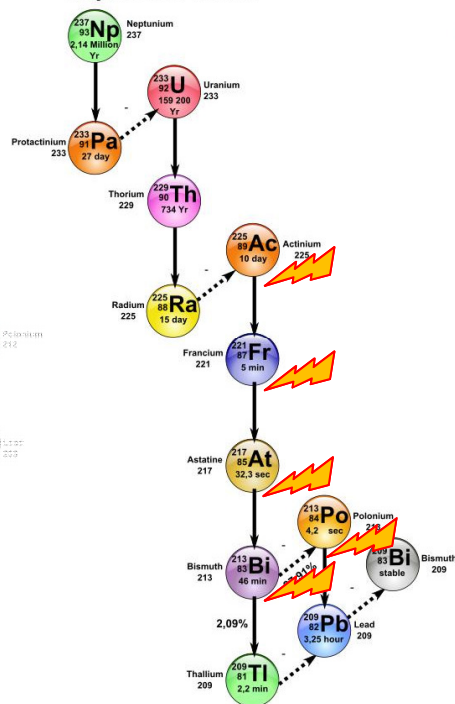
1. Shipping once a month
2. No <sup>227</sup>Ac contamination
3. Simple shake and bake chemistry



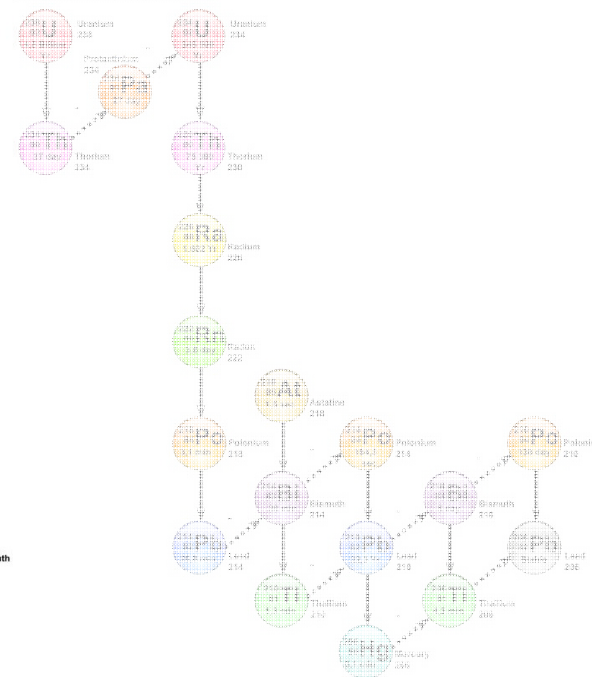
Thorium series



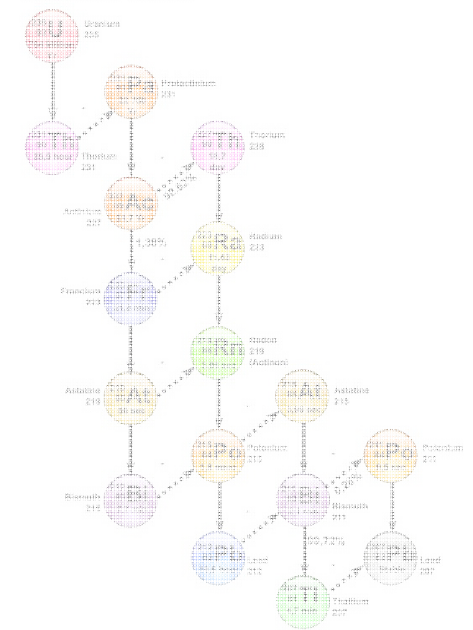
Neptunium series



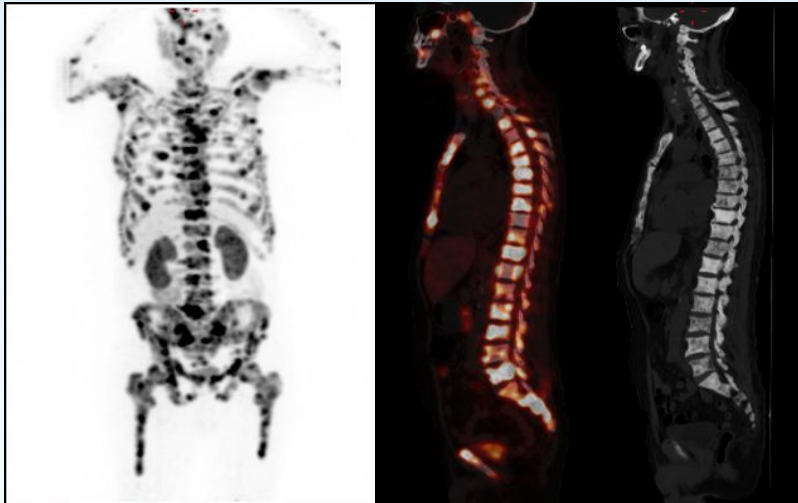
Uranium series



Actinium series

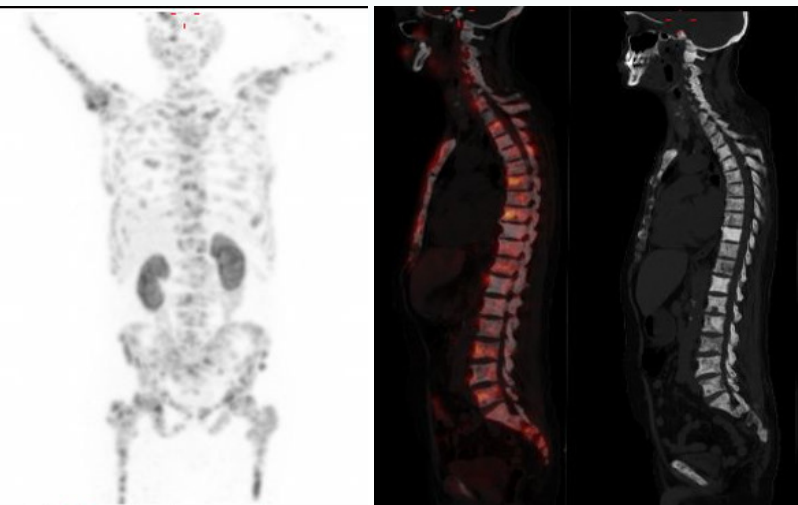


## <sup>225</sup>Ac CLINICAL STATUS: SUCCESSFUL



PSA Levels: 1126 ng/mL

1 × 7 MBq <sup>225</sup>Ac-PSMA



PSA Levels: 112 ng/mL

Small study with 12 patients:

No nephrotoxicity reported

Xerostomia

Mild hepatotoxicity 3/12

Low-no hematotoxicity

Extremely low dose injected

**Outpatient treatment is an option – up to you**

State of the Art:

- Ra-223 is used for ambulant therapy of bone metastases in prostate cancer patients.
- Therapy with alpha emitter already present in the EBM system.
- Limit for discharge of the patient set to **15 μSv/h at 1 m distance.**

PASSION FOR PRECISION

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